

Practice implications of Morpic, a new assistive technology delivery and configuration tool

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INTRODUCTION

Many individuals who need assistive technologies do not have the resources to be able to purchase their own and do not have a program that will pay for it for them. This is especially true when the assistive technology is not something that looks medical in nature like a communication aid. Computer access aids in particular, are often not covered or are provided in school but not able to be taken home. Going to a library may work if the particular AT a person needs is one of the few they have there, and if they only need to use it in the assistive technology resource area (on one of the floors). If the person needs to use it with a study group, or they want to participate in a program in the lab etc. it will not help. It will also not help if the person needs it in different classrooms and labs at school, at their tutors, etc.

A second problem is experienced by clinicians, vocational evaluators and other professionals who see a wide variety of users with different needs, but cannot afford to purchase and maintain all of the different assistive technologies that might apply to their client base. Some mechanism to allow them to have access to all of the different technologies that might apply is needed for them to be able to properly evaluate, try and fit users with the best solution.

This paper describes a new open-source platform that to address these and other problems faced by users of assistive technologies. It also describes a number of pseudo-case studies of the use of Morpic. These cases are not actual people but are based on actual problems described to us by consumers and illustrate different ways that this new platform can be used in practice.

MORPHIC

Morphic (<http://morphic.org>) is a combination of an extension to the operating system and set of cloud services that

- 1) Make it easier to discover, and easier to use, access features build into products.
- 2) Allow both the users assistive technologies, and all of their AT and computer settings to follow them to any other (Morphic enabled) computer they need to use (home, school, labs, library, tutors)
- 3) Allows users to instantly change the setup of their computer to address different tasks, changing abilities over the course of the day – or different users in a home.

These basic capabilities allow Morpic to provide a wide range of new options for both people with disabilities and for those working with them (clinicians, teachers, libraries, schools, companies).

Examples of ways that Morpic can provide new options

Josh

Josh can't afford his own computer, so he uses laptops loaned out in the library. He would benefit from special settings and software that address his learning disabilities. But he can't set up each laptop at school to meet his needs, nor restore it to standard when he is finished.

With Morpic added to the computers at Josh's college, whenever Josh uses a college computer (desktop or laptop), Morpic instantly installs all his assistive software and settings so it is ready for him to use. When he is done with it, it is reset back to standard settings. All the computers now act like they are his personal computer.

Sarah

Many people with disabilities like Sarah can only use the computers in a special area of the library. And even those computers often don't have the right assistive software, or it is not set up properly. Then Sarah has to find staff who can help her adjust settings or software before she can use it.

Now, with Morpic installed on all the library's computers, Sarah can use any computer in the library. Morpic will set it up by installing any assistive software she needs, along with all her settings. And because her friends use many of Morpic's other features, she doesn't feel different using it. For the first time Sarah can use any computer in the library, participate in all library programs, use the stacks, and sit with her friends - just like anyone else.

Teresa

Teresa needs computers that are simpler to use. Teresa has used mobile devices and a web-laptop all her life. She can use her phone fine, but in college (and for a job later) she has to use desktops - and they are not like her phone. At the community college, she has to use Windows and she is often lost. For example, one word processor she has to use has 11 ribbons and over 200 icons. And locating programs and files on the computer is baffling. She was losing time and falling behind in her classes.

Morphic made using the computers at the college much easier. One Morpic button creates a single ribbon in Word with all the functions the instructors want her to use. Other features help locate files and put the programs she needs at her fingertips. She is now able to keep up as she masters the rest of Windows.

Phil

Phil needs his assistive technology set up from day one to succeed in his internship. Internships are critical both for learning and for securing a job offer. However, on Phil's last internship, it took 3 weeks before IT could get the computer assigned to him set up with his assistive technology. By then, he was behind the others and didn't look like such a good prospective employee.

Now, with Morpic and its Installation on Demand and special security-cleared AT package, the computer at Phil's internship can be set up before he gets back from his first orientation lecture. Phil can show that he can hit the ground running both in his internship and in any new job.

Wesley

Wesley is a teacher who had to spend much of each class helping his students set up the computers and assistive technologies they needed - and then undoing it all before the next class came in. A recent software update changed the feature menus in the software they used in class, frustrating both Wesley and his students.

With Morpic, Wesley can quickly set up all of the class computers for today's lesson - including quick buttons for all of the materials and software needed for that class. And when students sign in - any assistive technologies and special setups they need are automatically applied without him having to do anything. Now Wesley can concentrate on teaching, not tech support.

Mira

Mira used to use the family computer for mail, Skyping and photo sharing with grandchildren, and a Facebook group with her friends. However, everything had to be set up for her each time, and she didn't know how to re-set it. One day she overheard the kids say, 'Aw, the computer is messed up for Gramma again.' So she quit using the computer. "I've had my time; this is theirs - so I quit using the computer" she explained.

With Morpic on the computer, Mira's settings are saved to the cloud. When she wants to use the computer, she just inserts a Morpic USB key into the computer and it is instantly set up for her. Removing the key re-sets the computer. It even works at her kids' houses, her friends, the library and the senior center all of which now have Morpic installed. She can now enjoy using the computer every day again without interfering with its use by others.

Janet

Janet is an evaluation specialist who works at a vocational rehabilitation office. She wants each new person to do their best in their evaluation - but until they show up, she has no idea what they need and how to set up her eval computer for them. And if they already have adaptations, it can be hard to transfer them to the test computer.

With Morphic, she can have dozens of different setups saved that she can instantly call up and try with a client. If the client already has adaptations on their computer, she can use Morphic to capture them and instantly set up the evaluation computer to be exactly the same as theirs. And if she recommends new features, software, or settings for them, they can use Morphic to instantly apply them to their computer at home, work, or anywhere.

Jim

Jim has trouble focusing, so he needs to turn off distractions when using a computer. Everything on the computer distracted him - email, social media, calls, texts. He was constantly pulled away by one thing or another. He tried turning things off manually when he needed to focus, but it was too complicated and time consuming. He didn't know where all the settings were and always missed something. Then he had to turn them back on again later - so it was back and forth each time he wanted to focus.

With Morphic, he can use a new focus button to turn off all distractions with one click - and back on again just as easily. The button can be customized and works across different programs simultaneously on any computer with Morphic installed.

Cynthia

Cynthia needs to be able to do her best on standardized placement tests to get into a good college. So she was upset to learn that she couldn't use her own computer and AT for placement tests. Cynthia's screen reader and computer are optimized so she can work efficiently. Placement tests are hard and will determine whether she gets accepted at the college she wants. The last thing she needs is to struggle or be distracted by using a different computer and screen reader setup.

However, now that the testing agency uses Morphic, Cynthia can install Morphic on her personal computer and have it capture the software and settings she uses. Then the testing agency uses Morphic to install a clean version of her exact screen reader and settings. The test computer now works exactly like hers.

Sid

Sid wants to use a computer - but doesn't want to be viewed as needing anything "special." He joined the Computers for Seniors program at his local library but dropped out because the text was too hard to see. They had some special software, but he didn't want to use it. He isn't "special" - he's just old! "Why can't they make a computer that works for older people?" he asks.

With Morphic, Sid has discovered buttons on the strip at the bottom of the screen that can make everything larger or louder - along with other helpful buttons for everyone like the "Coupon Clipper." He can now use the computer along with all the others without having to use a special computer set up for people with disabilities. (And he put Morphic on his home computer too)

Susan

Susan needs different computer setups at different times of the day. She is an editor who works from home. Because of her disability, her skills and abilities change over the course of a day. She starts off strong every morning, but by mid-afternoon her eyes can't read normal sized print very well and her hands are tired. Constantly changing all the settings in different programs required a lot of work and lost time.

With Morphic, she can create multiple, different setups to fit her different needs. She can then switch between completely different setups and programs with two clicks. She can use one when she's fresh, and another when she's tired. She can also change them for different types of tasks. She can now be more productive and less tired at the end of the day.

SUMMARY

Morphic is an open source project that provides a set of basic capabilities that can be used individually or collectively to provide a wide range of new assistive technology evaluation, delivery and setup options:

- 1) **Preference portability** - the ability to capture a user's settings and preferences, store them in a secure private vault in the cloud, and then use them to set up any other device the way the user wants or needs it
- 2) **Feature discovery** – the ability to more easily discover features in an operating system or software that make the computer easier to use and understand

- 3) **Quick simple access** – making features that a user needs much easier and faster to find and use
- 4) **Solution Portability - Installation on Demand** – the ability to have software a user needs show up on any computer they encounter at school/library/work
- 5) **Simple, focused environments** – Simplifying a teaching/study/work environment on a PC by providing just what the user needs in one place and nothing else. It can also remove some features that should not be there during testing (e.g. spell checker during spelling test, or translator during foreign language or ESL test.)

We have just begun working with consumers, clinicians, and others to discover how it can be best used to meet the varying needs of both consumers and the public places, schools, families and companies that they are part of. We look forward to further ideas and suggestions on how the platform can facilitate the lives and work of all of these groups and others.

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