Usability and Wireless Technologies for Our Health- improving the user experience

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We are on the cusp of something big—something entirely new for health consumers and professionals alike—but significant adoption and improvement to health can only be made possible if the products and services are easy to use and address real consumer challenges.

The field of usability engineering and user experience design has a long history of incorporating a user-centered design approach to products, services, and systems. Typically, this has involved studying and understanding end users, proposing design solutions that meet their needs, developing prototypes and concepts, testing these concepts with representative users, and iterating the design until performance goals are met. This process has been applied with great success in military systems, consumer products, and computer hardware and software.

To this end, key usability guidelines include reducing training and learning time, using terminology that makes sense to target users, and providing relevant feedback to the user. Ideally the user interface is an intuitive, pleasurable experience that customers will enjoy using repeatedly.

However, new and different challenges and opportunities are presented by the introduction of wireless technologies in health and fitness products.

One new opportunity is the ability for wireless devices to passively collect data and update sensors (based on user consent) thereby reducing the burden on the user and improving data accuracy. Connected health devices allow actionable, relevant health information to be pushed to the consumer in a timely manner. Location-based services are another example. GPS capabilities are already utilized in some fitness devices by allowing the user to track exercise routes and compare results with others. The powerful computing processors in devices along with ubiquitous high-speed networks will allow cutting edge technologies such as augmented reality to identify nutritional content in food, identify pills, and perform other functions that combine real-world imagery with server-side meta data. The opportunities for wireless technologies to improve health and wellness abound.

Still, there are a variety of user experience challenges.

For instance, wireless devices may have different setup and configuration requirements, which could pose problems to users who may not be familiar with setting up a WiFi network or pairing Bluetooth devices. Care must be taken to streamline and simplify these procedures, and Qualcomm Labs [1] is working to develop the technologies, business strategies, and user experience requirements to enable seamless connectivity for the consumer. The key for the future will be the

ability to combine data from many of these tools, devices, and data sources to create real, personalized health self-management solutions. Qualcomm Labs is actively working on and continuously upgrading the technologies to make this a reality—to enable medical device companies, health software companies, and health analytics to play together to develop more convenient, relevant, and easy to use solutions that change the way we think about our health, and how we can work to improve it.

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