

Feb 2019

Project WearEver– Pilot Studies Requirements

WearEver Project Goals

The goal of Project WearEver is to use garment-embedded information technology to measure clothing use and create a market-based system that incentivizes demand for clothes that have superior emotional and physical utility and durability. Such a system will allow deeper, on-going engagement between brands, retailers, and consumers. Project WearEver is implementing pilot studies in 2019 to demonstrate the use of digital technology to track clothing use and laundering, and prototype measurement standards, privacy policies, and analytics that create value and reduce risk for brands, retailers, and consumers. Possible technologies to be demonstrated include RFID, NFC, and motion or thermal sensors.

WearEver Project - Pilot Study Objectives

The main objective of any pilot study is to demonstrate that tracking technology can be used to identify when an item of clothing is being worn (used), being laundered, or being stored (not used). This includes:

1. Validate the use case, i.e. that garment use versus dormancy can be detected reliably.
2. Identify cases where tracking errors occur, or limits to functionality exist.
3. Identify problems with configuration installation, operation, and maintenance.

In addition to demonstrating the technology use case, participants in pilot studies and other stakeholders will be involved in supporting these broader objectives during this proof-of-concept phase:

4. Using a multi-stakeholder approach, develop measurement standards and protocol that can be used to create standard utilization and longevity metrics that are reliable and comparable across companies.
5. Develop the consumer privacy protections, brand anonymity protections, and data governance policies that make consumers, brand manufacturers, and retailers feel safe.
6. Develop a plan for raising awareness and scaling to industry-wide adoption during the next phase of implementation.

WearEver Project - Technology Requirements

Project WearEver is seeking to engage as many different technology providers as possible. The proof-of-concept will not give preference to any particular technology or technology provider. Many different technologies exist that can meet the use case, and more will exist in future. The measurement standards and privacy protections that are developed should be able to be relevant for any technology used.

A tracking technology consists of a configuration of digital tags or sensors and digital readers that link a tagged garment by ID number to a measured position or other parameter than can be used to infer the garment's use status. The requirements are:

- The configuration must be able to collect data that can be used to infer whether a tagged garment is dormant in a closet or being used outside the closet (or specified area). Optionally, it should also be able to infer a garment is being laundered (or in a laundering area). This means there should be a way to map the data captured by the digital reader to the garment's status.
- The tagged garment must be able to withstand laundering and normal wear.
- The tags or sensor must convey an ID number for the specific garment via being serialized or writeable.
- If a configuration uses a participant's phone as the digital reader, the configuration must assure only relevant data is being transferred from the phone to a data collection system.
- Technology providers must provide technology, training and instructional material to the research team and participants.

More detail about the how technology providers can participate in Project WearEver can be found <https://bit.ly/2GTQhIF>.

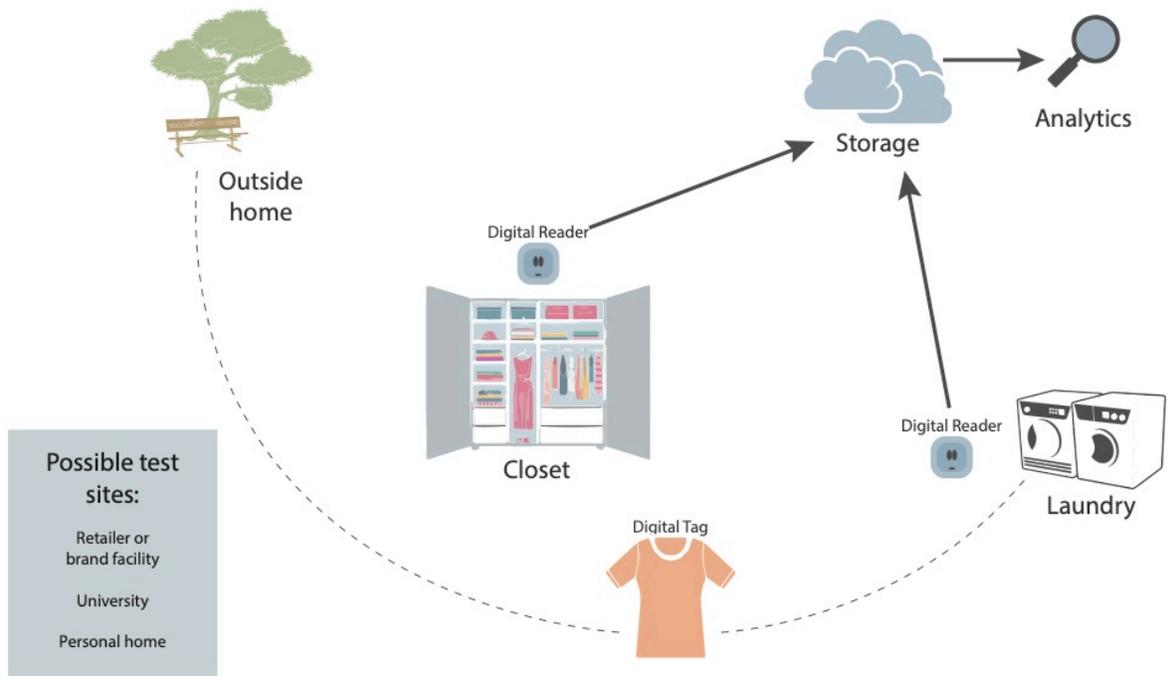
Project WearEver - Pilot Study Location Requirements

A pilot study is linked to a particular site and is designed to achieve the objectives listed above. There are two types of sites where pilot studies will take place - Office and Home. While the target end application is Home, an Office environment can act as a laboratory and be arranged such that it has similar functional characteristics as a Home environment would. For reasons of experimental control, Office sites may yield more useful data more rapidly at this stage.

A pilot at an Office Site consists of the following components:

- Site: Location where tagged garments and readers are placed, mimicking a closet. Optionally, a laundering room will also be designated.
- Participants: Participants will opt-in and wear the tagged garments for some period of time, and then return them. Participants will fill out survey data so that the technological data can be verified with actual behavior. With some cases, the participant's cell phone will act as the data collection device.
- Tagged garments: Garments will be tagged with a particular technology. The tags may be threads or externally-applied. No undergarments will be tested at this time.
- Tracking technologies: Tags or sensors and readers that link a tagged garment by ID number to a measured position relative to a reader.
- Data collection system: IT needed to gather data from readers, collate, and present. This includes development of analytics to transform sensor data into usable data.
- Project manager: Personnel responsible for managing the pilot study at the site.

A pilot study at a Home Site consists of the same components, except the site is a person's home rather than an office. In this case, a Project manager will coordinate several Home Sites in a metropolitan area and will visit the Home Sites to help with installation, maintenance, and possible data download. Home Sites ideally should have multiple tagged garments, representing a portion of a wardrobe. A sample configuration of an Office and Home Site is shown in the Figure below.



Depiction of Experimental Configuration