

# User profiles and personal in the design and development of consumer health technologies

Sweta Sneha, PhD



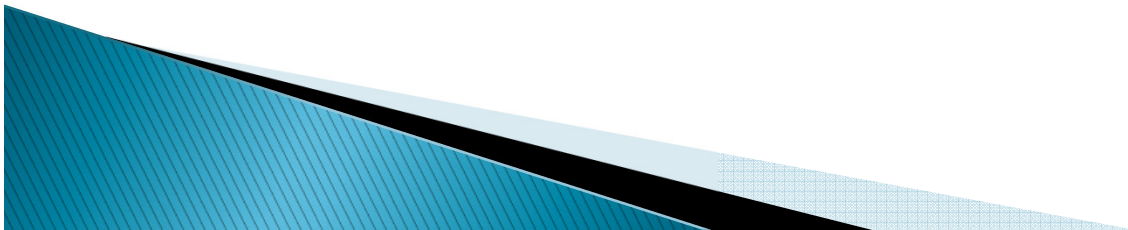
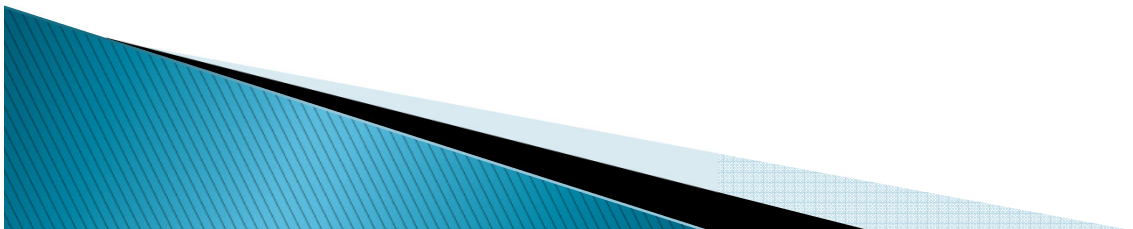




PHOTO: THINKSTOCK







# UCD Methodology

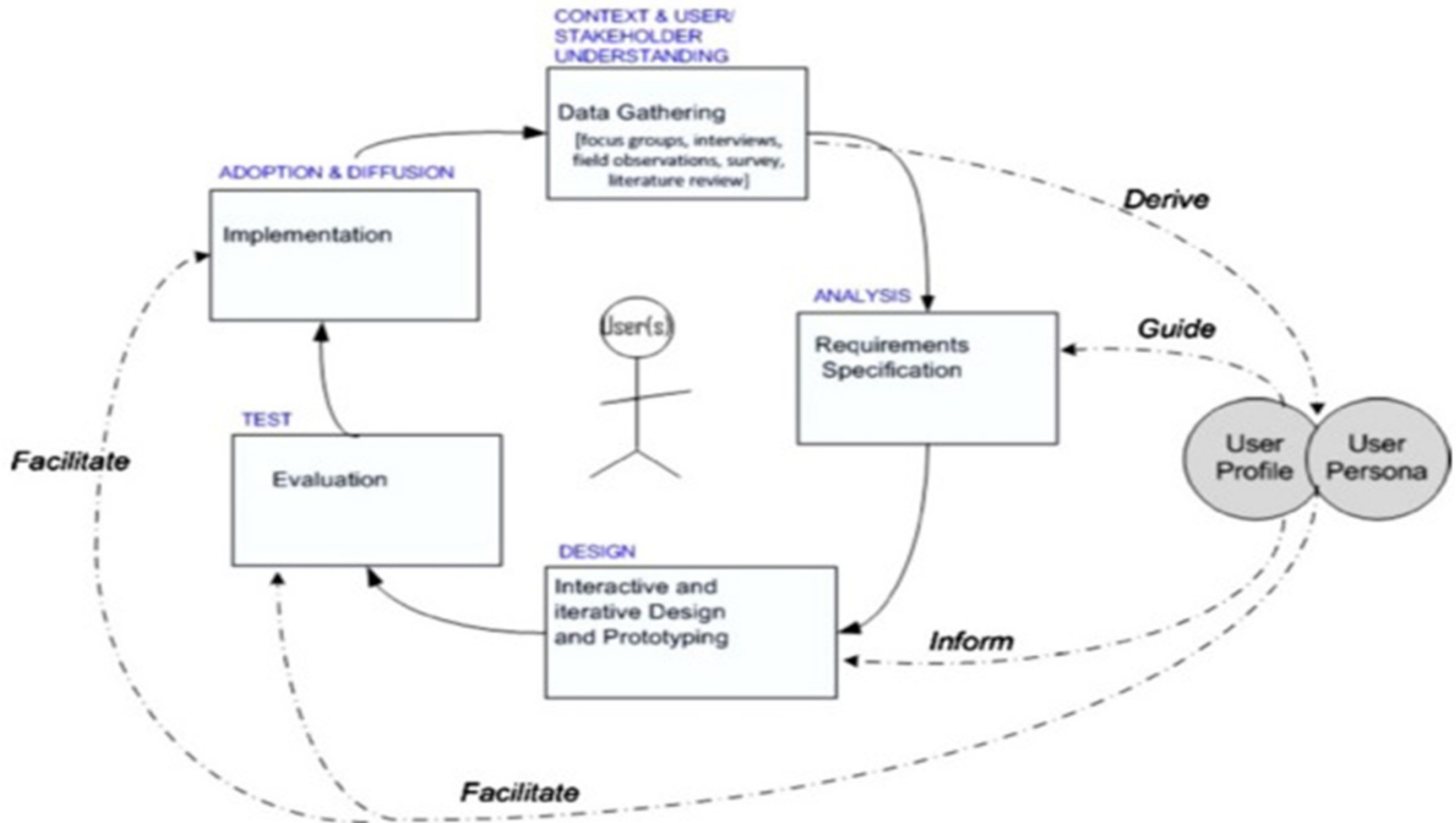
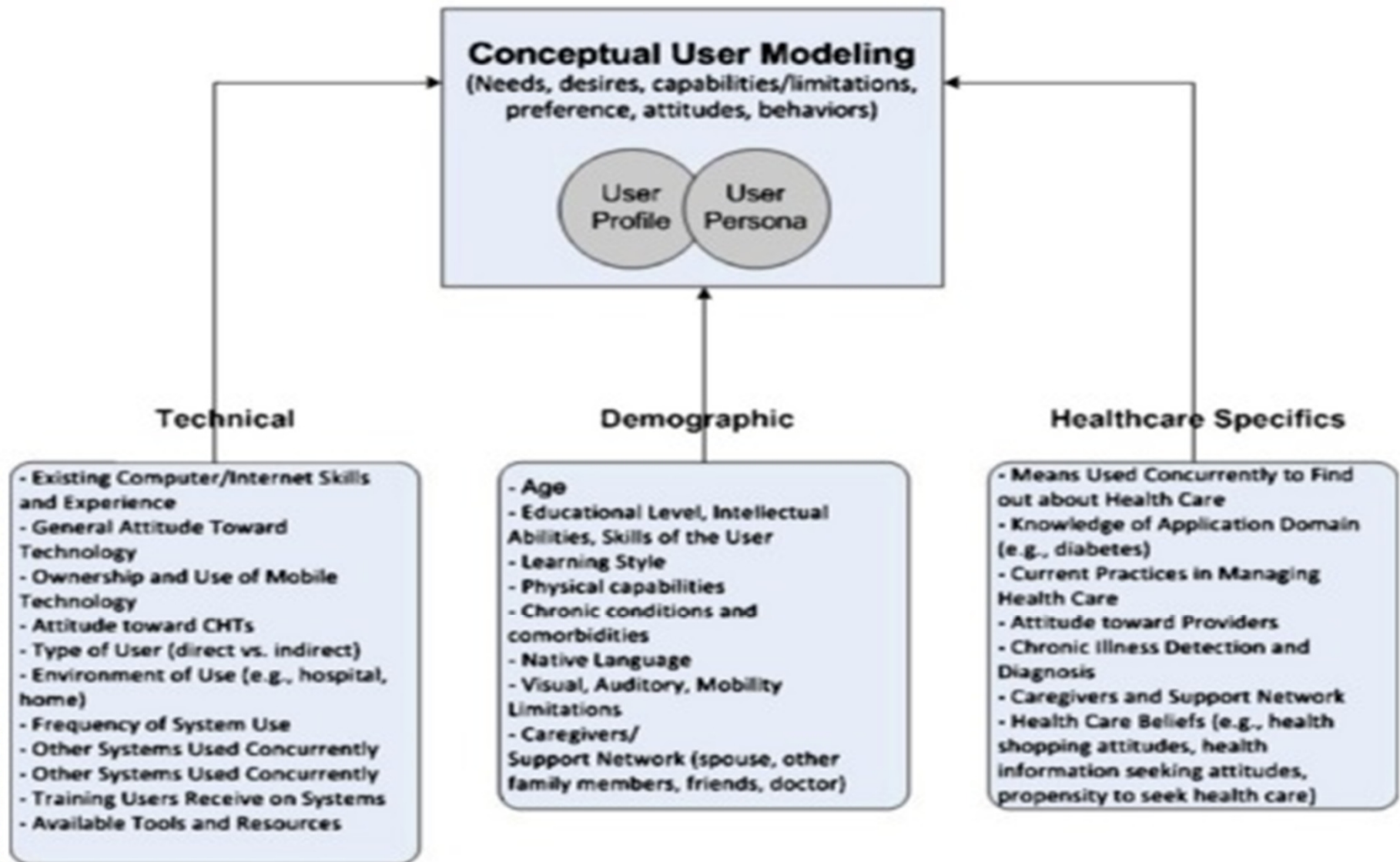


Fig. 1 – Multi-phase user-centered design methodology.

# CHTs for Self-Management of Chronic Illnesses (e.g., CADA for diabetes)



## Urban Patient

### personal profile

Mrs. Shuxin Gao, a 63-yr retired account, lives with her husband in a comfortable 3-bedroom apartment in Beijing. With a family history of diabetes, Mrs. Gao was first diagnosed with gestational diabetes in 1974. Starting her mid 50's, Mrs. Gao tried to control her blood glucose through diet, but this did not work and she switched to oral medications. In 1998, Mrs. Gao's retina suddenly started bleeding, eventually she lost her left eye because diabetes induced glaucoma. She is now on insulin.

A few years back, many primary hospitals in Beijing started offering health seminars. Mrs. Gao likes attending the diabetes seminars. Although the seminars often present too much information each time for her to digest and remember, she enjoys making friends with other diabetes patients. Unfortunately, Mrs. Gao is not able to attend those seminars as often as she would like because commuting to the seminars takes a lot of time. Through the seminars, she has mastered the basic knowledge of diabetes and her blood glucose level are pretty much under control.

Mrs. Gao tests her blood glucose level often, at least once every three days. She learned from the seminars that she should record her glucose test results to see how she is doing over a period of time. Mrs. Gao only occasionally uses the log booklet that the glucose meter company provided, as it is such a hassle writing things down each time. Mrs. Gao knows that diet is important, but struggles with managing her diet during frequent family meals with her children and grandchildren and especially when they go out to eat. Mrs. Gao often forgets what or how much she ate hours later when she tries to write down what she ate in her log. Mrs. Gao enjoys group ribbon dancing in a nearby park every morning.

Mrs. Gao carries her cell phone around so her husband who suffers hypertension can reach her easily. She likes to exchange short messages with her son who lives in Shanghai and only comes home for major holidays.

## Shuxi Gao 高树新

*"I want to help other diabetics."*



### background

- Lives with her husband of 38 years, both have stable pension
- High school graduate with an accounting certificate
- Enjoys cooking, knitting, and learning how to play poker games on computer with her husband

### attributes

- Outgoing and warm hearted
- Has a clear goal in diabetes management and likes to plan ahead
- Feels empowered by diabetes knowledge she has accumulated over the years and wants to share with others
- Avid information seeker (e.g., nutrition, healthy diet)
- Decision maker for the family regarding health care

### user needs

- Easy and portable way to log and track daily diet, glucose levels, and exercise.
- Better access to enjoyable diabetes education approved by her doctors.
- More time and individualized attention from her providers
- Assistance to make diabetes self-management more convenient and fun at an affordable cost



## Rural Patient

### personal profile

Ms. Qi is a 68-yr old grandma lives in a farming village in Sichuan Province in southwest China. Her three grown children all moved away to work in big cities. Ms. Qi and her husband have been raising their granddaughter since she was a little baby. Ms. Qi was diagnosed with diabetes three years ago. She had been feeling tired for a long time and had drastically lost a lot of weight before she sought care. The lab work confirmed diabetes: her blood and urine glucose levels were pretty high. In fact, the doctor told her that perhaps she might have had diabetes for several years by then.

After trying various health products, Ms. Qi's blood glucose level was still out of control. During a third hospital stay in two years, she was put on insulin. Although it took her a while to learn how to inject insulin on her own and it's troublesome to take two shots a day, Ms. Qi trusts that her doctors will prescribe the best medicine for her.

To manage her diabetes, Ms. Qi also tries to eat less. Like many older Chinese, Ms. Qi loves eating the comfort food congee for dinner. She reasons that compared to a bowl of steamed rice, a bowl of congee contains less rice. Ms. Qi cooks bitter squash dishes often and drinks a bowl of bitter squash juice everyday, since she heard from a couple of other diabetics in the village that bitter squash is good for diabetes patients.

The village clinic owns a glucose meter. However, Ms. Qi only had her glucose measured there a couple of times, because her fingers became so painful from all the piercing. Ms. Qi feels that she can tell when her glucose level is high or low by how she feels, so testing blood glucose at the clinic is kind of unnecessary and costly. Ms. Qi's daughter left them a cell phone after getting a new model. Ms. Qi was initially intimidated by the phone, but her granddaughter is helping her to become more comfortable with using the phone. Whenever she gets some free time, Ms. Qi likes watching soap operas on TV.

## Shufen Qi 齐淑芬

*"I want to see my granddaughter grow up and get married."*



### background

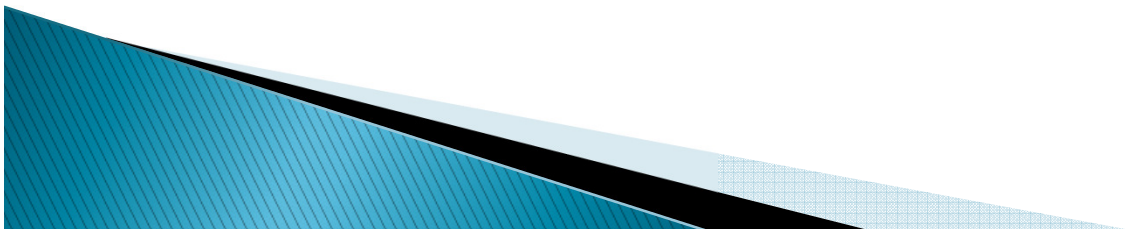
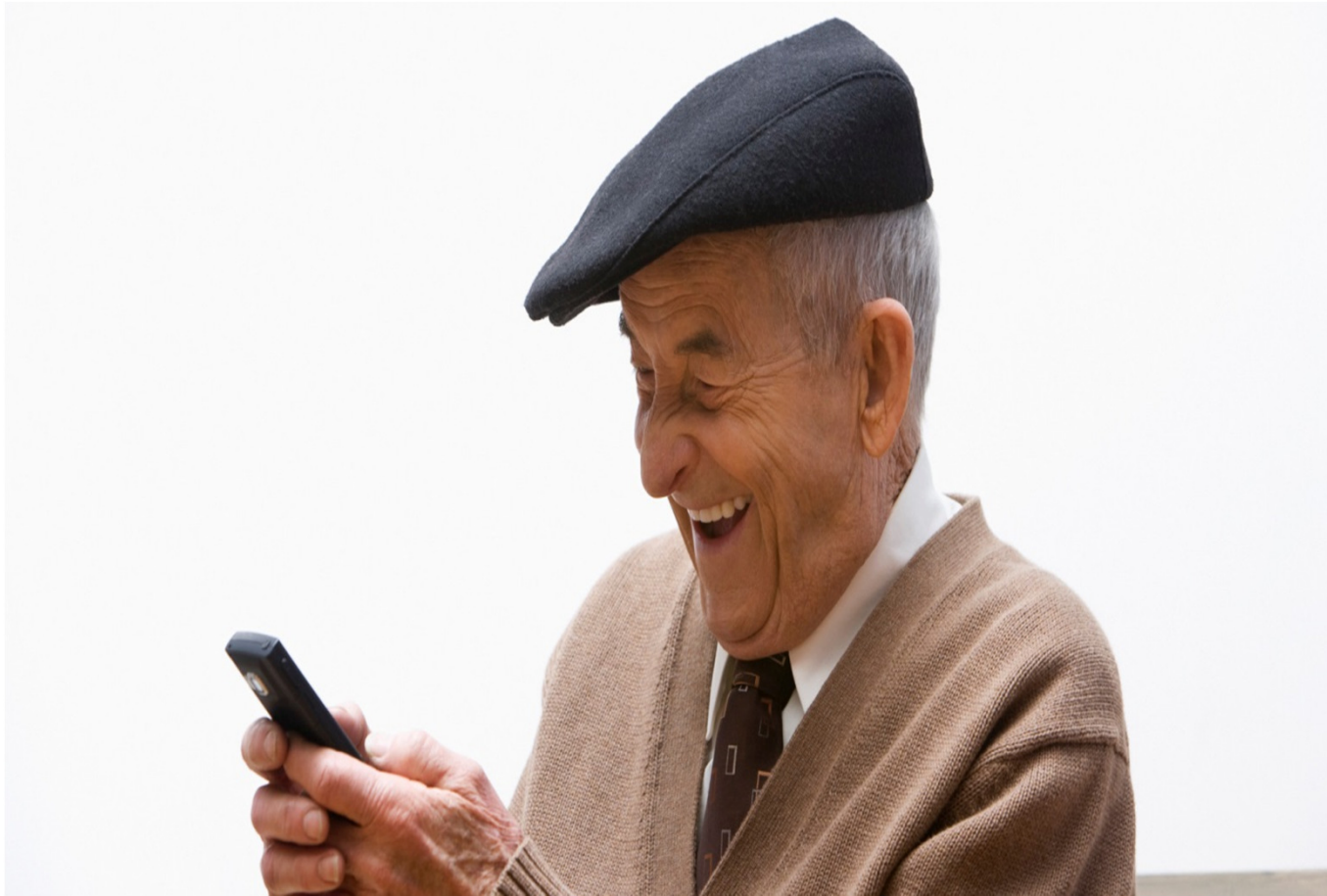
- Lives with her husband of 40 years and a 7-yr granddaughter
- Husband feels diabetes is just a part of getting old
- Very limited education, finished primary school, never used computer

### attributes

- Unaware of the importance of monitoring of blood glucose level on a regular basis
- Trusts diabetes information she encounters blindly
- Dependent on close ones for health care decision for self
- Has a lot of misconceptions about diabetes
- Fearful of and minimal interest in technology

### user needs

- Correct and trustworthy information about diabetes self-care basics
- Assistance in managing diet
- Corrections on current misconceptions
- Improve awareness of the potential seriousness of diabetes complications





▶ Thank you!

