Fatronik
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Adoption and abandonment – it's not just the system.

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Build it and they will (not) come

Assistive technology is an interesting example of the broader domain of technology adaptation and abandonment. I will discuss causes for abandonment and Rodgers approach to adoption of innovations.

Assistive technology

Definition of AT

The existing world of AT

Categories of AT

- Motoric
  - Wheelchairs
  - Prosthetics
- Sensory
  - Eyeglasses
  - Hearing aids
- Cognitive
  - AAC
  - Task and schedule support
  - Memory support

Abandonment Examples

- The Visions system and the Imagine Centre for Developmental Disabilities
- Liberator AAC and the BVSD
- Hearing aids

The Horrible Truth

1/3 of all AT is abandoned in first month of ownership

Abandonment is higher as technology gets more complex

Abandonment is higher as application moves from sensory to cognitive

Even worse

Abandonment has been found to be as high as 70% and often is above 50%

Why?

Surprising lack of studies

Obvious ones

I don’t need it anymore

Lack of training

Hard to maintain or setup

Device aesthetics (Dorky)

Complex written instructions,

Bad device performance

Difficult to use / doesn't fit me

Not so Obvious ones

Changes balance of power in family

Initially works but doesn't fit me now

Requires personal help I can’t afford to keep it going

Why can’t the system just be self-adapting?

An example - lots of failed attempts to automate the choice of AT

AT is more art than science currently

- At least in non-motoric domains
- It’s not a well bounded problem

My work on this problem

High functioning cognitive AT

Universe of 1 requires deep configuration

Adapt to change of-

- User (short and long term)
- Task or application
- Environment

Caregivers must be involved (post sales)

Two user types & one system

What to do

Pay attention to system over the life of the system

Pay attention to caregiver role

- Stakeholder analysis

Design with, not design for

Pay attention to your model of the end user (especially the one you don't notice)

Be humble

Further reading

Scherer, M. J. (1996). Living in the State of Stuck: How Technology Impacts the Lives of People with Disabilities.

Scherer, M. J. and J. C. G. (1996). Evaluating, Selecting, and Using Appropriate Assistive Technology

Reimer-Reiss, M. (2000). Assistive Technology Discontinuance. Technology and Persons with Disabilities Conference.

LoPresti, E. F., A. Mihailidis, et al. (2004). "Assistive technology for cognitive rehabilitation: State of the art." Neuropsychological Rehabilitation

The other side of the coin adoption

How do we adopt new technologies?

Why do we care about this

Rogers, the father of adoption studies

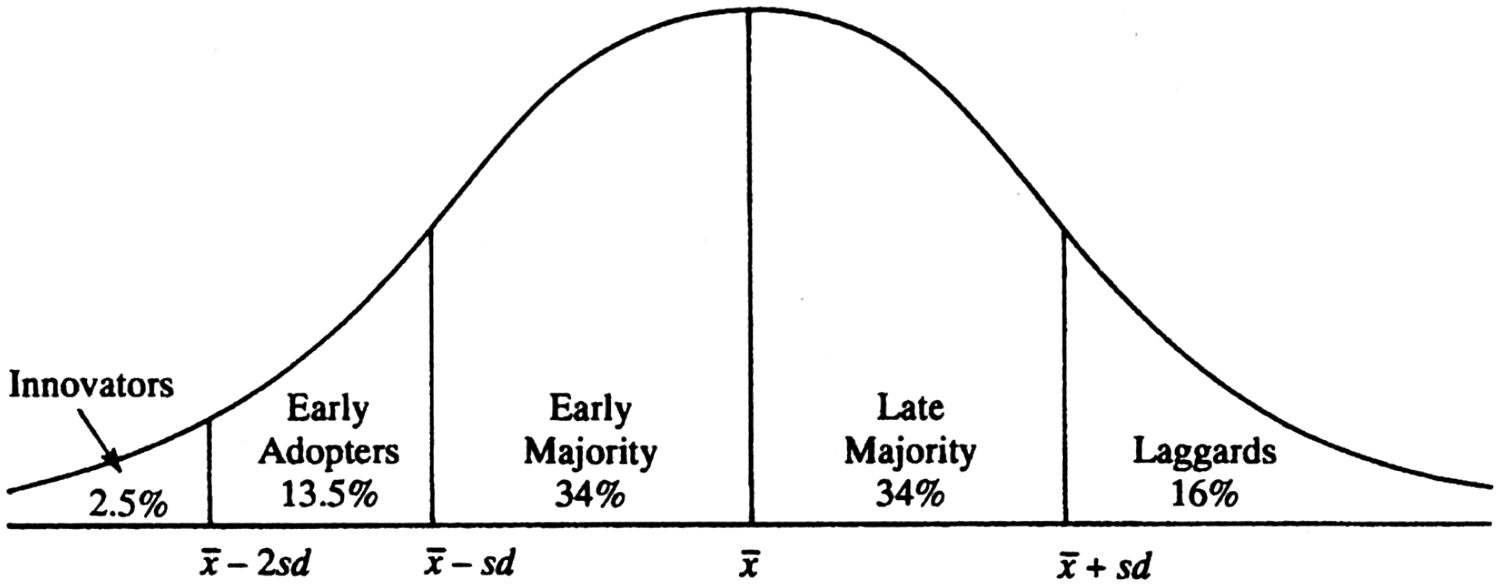
Diffusion of Innovations (1962-2003)

Looking at how a new technology is adopted

Sociological approach (i.e.the whole picture)

Players

5 kinds of adopters - partitioned by average and SD



What are they like?

Innovators:.

- disposable income .
- technical knowledge
- Patience and motivation

Early Adopters

- High status
- Look to innovators for guidance

Early Majority

- between the very early and the relatively late to adopt makes them an important link in process

Late majority

- Need peer pressure to adopt

Laggards

- Reluctant to change (economics)
- Resistant to change (social structure)

What does this tell us

Don’t do usability tests with innovators

Don’t do design work with late adopters & laggards

Perceived attributes of innovations

Relative Advantage
- Is this better than what I have?

Compatibility
- Will this work with what I have (what I already know?)

Complexity
- How hard is this to learn?

Trialability
- Can I just try this or do I have to throw away the old thing before I even try it?

Observability
- If the neighbours see the new thing, it's easier for them to adopt

Other adoption perspectives

Technology Acceptance Model
Fred Davis

Factors influencing how and when adoption happens:

- Perceived usefulness (PU) - “the degree to which a person believes that using a particular system would enhance his or her job performance”.
- Perceived ease-of-use (PEOU) - “the degree to which a person believes that using a particular system would be free from effort”

Good way to look at why to choose AT in the first place

BUT, it tends to focus on person out of context of use and culture

How adoption studies help design

Study existing work practices

Understand how technology is embedded in cultural matrix - not in isolation

Adoption is part of use

Thanks!

Thanks for coming to my talk
and my thanks to Professor Carro for inviting me.

If you have any questions or comments later I'm at

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