How should information from Smart Meters be presented to foster satisfaction & behaviour change?

Joanne Oldfield

March 2010

Overview

- The Research Problem Explained

- Methodology

- Socio-demographics of the Group

- Analysis of Results by Theme

- The Perfect Real Time Display

- Conclusions

- Lessons Learn & Future Work.

The Research Problem Explained

- Recent Government legislation states that by 2020 all homes in the UK will have new Smart Meters fitted

- Smart Meters will replace existing electric meters and remove the need for consumers and service providers to physically read the meter displays

- Smart Meters have the ability to be paired with in home real time displays i.e. Smart Monitors

- Many are aware of Smart Monitors but our sponsors were keen to explore alternative means of displaying personal energy consumption

In Reality

- The method and provider of the real time displays that will accompany the new Smart Meters is still open to tender

- Competition is tough with value for money and return on investment key

- The utilities industry is a multi million pound global affair, the process of implementing Smart Meters and their accompanying monitors is driven by reducing costs and maximizing profits

- Our sponsor has pre existing patented software that can remotely read and relay back to consumers their household energy consumption
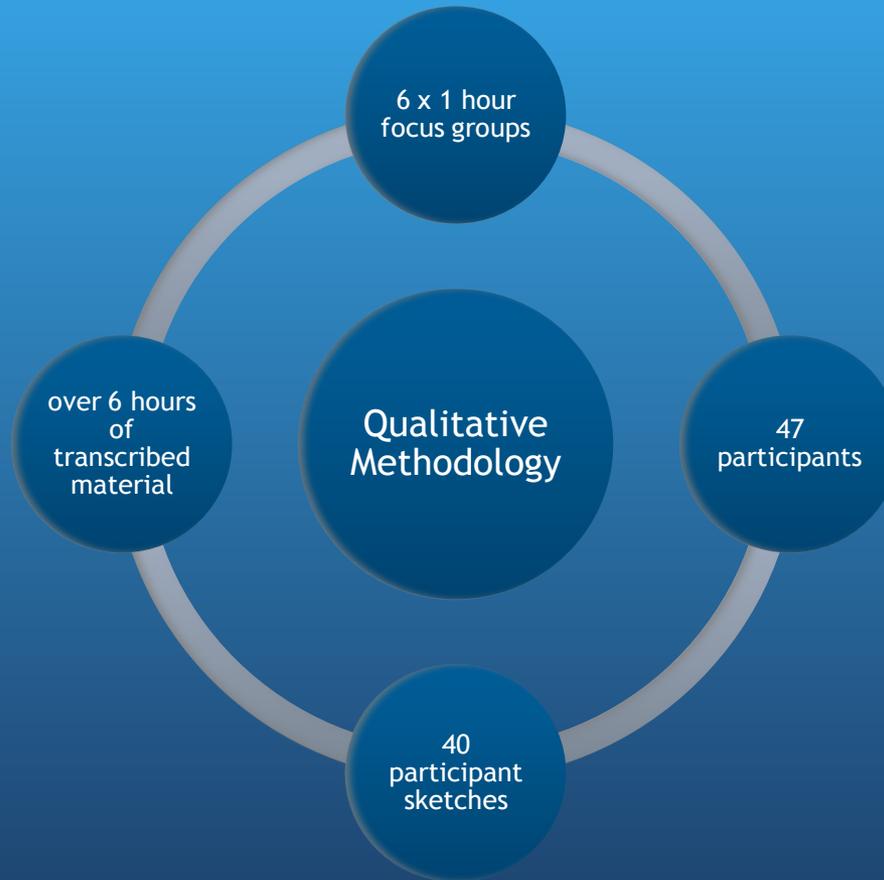
The Question is....

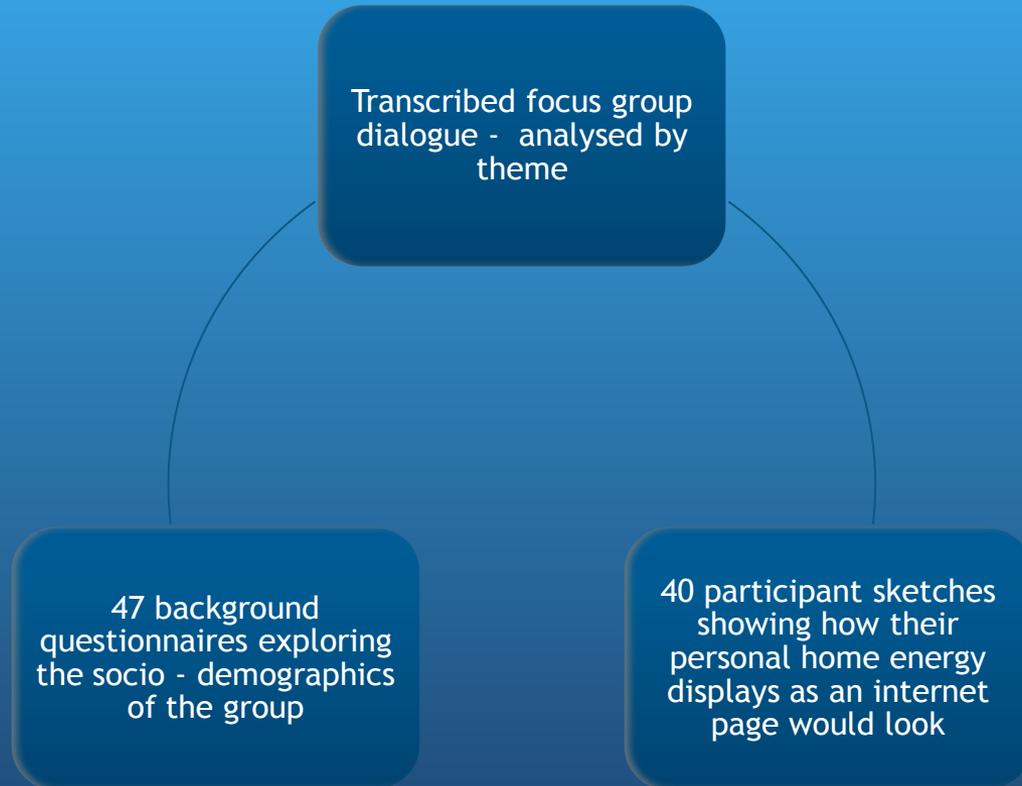- **How and where do people want their energy information presented to them?**

... and would such additional information influence their energy habits?

Methods Used

- 6 x 1 hour focus groups
- 47 participants
- 40 participant sketches
- over 6 hours of transcribed material

Qualitative Methodology

Results Returned

Transcribed focus group dialogue - analysed by theme

47 background questionnaires exploring the socio - demographics of the group

40 participant sketches showing how their personal home energy displays as an internet page would look

Socio-Demographics of Participants

Age

Over 75% of those we spoke to were aged between 16 and 39.

Just over half of all those taking part were women.

Tenure

75 % lived in a 2 or 3 bedroom home.

40% share their home with one other person and the other 40% with an additional two or three people.

Qualifications

Everyone we spoke to had gained a minimum of 5 GCSE passes with just under half having a degree or higher.

Hours House Occupied

Just under 75% of participants said that their homes were occupied between 13 and 18 hours a day.

Status

Over 60% of participants were primary bill payers.

Due to time constraints only 16% of all those taking part were not employed by the university or studying at one of the feeder schools / colleges.

Questions Posed in the Focus Groups

- **How does your household receive information about your energy bills at the moment?**

- **Do you monitor your households energy use?**

- **Do you compare your energy use with anyone else?**

- **Would you like more information about the energy that you use?**

- **Where would you like additional information about your energy usage presented?**

- **Using the paper provided please draw how you would like your energy information to be displayed on a dedicated webpage.**

- **If you had additional information do you think that it would influence your energy use?**

- Is there anything other than additional information that would change your energy use?

- **Do you have any concerns about increased energy monitoring?**

Results by Theme

Receiving Information, Current Energy Monitoring & Future Additional Information

- Current energy information is received either quarterly by post or monthly via email statements (this in an opt in process and reduces bills by a small percentage)

- Participants do not actively monitor their energy consumption although they are aware of their monthly direct debit payments and household energy budgets

- Participants also insisted they didn't truly compare their energy consumption with others, less than 10% said they had brief conversations with neighbours or close family

- Overall the groups were very open to receiving additional information, resistance came later when questioning how they would like the information presented and if it would change their energy habits

Results by Theme

Where would you like the additional information presented?

TV Channel

Overall positive responses towards 'pressing green' to view personal energy use.

* initial responses raised concern s

* after thought many favored the TV channel over the internet

* viewed this RTD as a viable alternative to the Smart Monitor.

Smart Phone

Immediate dislike.

Very critical with concerns including the:

* restrictive nature of the application

* expectation of owning a smart phone

* niche market it appeals to

* restrictiveness of a small screen.

REAL TIME DISPLAY

Internet Page

Once explained participants could see the advantages.

Received overall skepticism with concerns including:

* accessibility

* usability

* the tendency to bore easily of logging on to check their status.

Smart Monitor

The majority of all participants initially favoured this as their chosen RTD.

It was seen as:

* universal for all to understand

* favorable as a stand alone device

* accessible for all to use to varying degrees

* the ideal starting point.

The Preferred Real Time Display

- No one group overly favoured a particular device

- Different people within each group chose different devices to suit their personal needs

- The majority were very happy with having a dedicated Smart Monitor

- After discussion and further explanation internet users began to warm to online energy checking sites, with older members and women with families preferring the TV as an ALTERNATIVE not a REPLACEMENT to the Smart Monitor

- Not one participant wanted the function as an application on their smart phone

- The Smart Monitor was the preferred choice with participants requesting either the 'add on' feature of an internet page or TV channel.

Results by Theme

Influences to current energy use and resistance to increased monitoring

- Participants were split when questioned if additional information would change their habits, many said no if they could afford to pay the bill. Others said it may initially but they weren't sure for how long.

- The majority were highly aware of the environmental issues connected to reducing their personal energy use but many argued why they should given Americas example or that they probably wouldn't reduce the amount of energy they used if they could afford the bill.

- Cost was the primary motivating factor in reducing energy consumption and also featured as the main aspect of personal energy use participants would monitor.

- Many had varying initial fears and worries about increased energy monitoring relating to providers creating advanced users profiles and advanced billing tariffs.

- The majority of all those questioned would like more information about; the Smart Meters, their capability and the level of additional monitoring that will be involved with the changes.

Conclusions

- Whilst participants were interested in energy monitoring no one was overly enthusiastic or excited by increased energy monitoring

- Many chose one of the four devices because they had to, the majority were satisfied with the information they currently received but wouldn't disregard the opportunity to have additional information on their quarterly statements

- Overall people favoured the stand alone Smart Monitor with some warming towards the increased functionality of the internet and tv pages

- Additional work is needed to test further if people are happy with the restricted displays of the Smart Monitors or would use the expandable functions associated with web and tv applications.

Lessons Learnt & Future Work

- The quality of the results depends on the quality of the questions asked and the cooperation of the participants

- Never underestimate the time admin tasks can take – securing funding, liaising with client sponsors, processing invoices for services, booking rooms, arranging participants etc

- The participant sketches suggest that the majority of people would use additional information on the cost of their energy use over time

- Planned online surveys could explore in greater detail the visual methods of displaying energy data.

Any Questions?

- Contact
    - Joanne Oldfield
    - E-Futures DTC Student
    - J.Oldfield@sheffield.ac.uk