



MATCH

NEWSLETTER

Multidisciplinary Assessment of Technology Centre for Healthcare

IN THIS ISSUE

Welcome 1
 MATCH Members Day..... 1

MATCH Plus:
 Cognitive Prosthetics Project..... 2

MATCH-making in Norway 3
 Secondment at Matrix 4

Welcome to Newsletter 7

Prof. Terry Young



With less than three years to go in its 10-years of grant funding, MATCH is focusing strongly on the impact it can make on a medical devices market that is approaching £200 billion per annum. We have developed tools and the supporting training – notably a health economics evaluation spreadsheet and two guides on user needs and evaluation – that will enable inventors and research managers to take a broad view of where the value lies in new concepts. Approximately 200 people around the UK have received training in early stage evaluation methods and we aim to boost that number considerably.

Our latest research aims to take the business of economics a stage further and try to put a premium on the elements of devices that users most value so that the design can be driven by their preferences.

For instance:

- What is a larger display worth?
- How much would a customer pay?
- Are bigger buttons worth more than a printout of what you entered?

This type of value is hard to capture, but we have started to pursue it and have already made some progress in quantifying elements of what users value around device safety.

Of course, getting hold of customers can be very difficult, and so we have been researching the use of the internet – blogs and on-line information – to inform device design. Given that many important positioning and scoping decisions are made early in the lifecycle, and before a great deal of investment can be made, the more we can empower the lone inventor or research engineer with access to high quality views and information, the better.

I hope that gives you some idea of what we are currently up to. This newsletter seeks to keep you abreast of our progress and introduce you to some of the people and the projects they are taking forward.

MATCH Members Day

Elizabeth Deadman



The MATCH Team held a Members Day at Brunel University in February. The purpose of the day was to inform our members of some of the emerging results from the MATCH programme related to investment and pricing decisions in markets subject to value-for-money evaluation (such as

those informed by NICE guidance). We also solicited the views of our guests on how best to steer this highly promising research. The following presentations were given:

- **Prof. Paul Trueman**
Plenary talk: 'Price is what you pay. Value is what you get'
- **Jeshika Singh**
What's safety worth? Putting a premium on safer practice.
- **Dr Sarwar Shah**
Can you use blogs to find out what your customers want?
- **Dr Simon Taylor**
Expectation/Expertise Open Discussion

- **Dr Julie Barnett and Prof. Ian Robinson**
Users: How much do their views really matter?
- **Amanda Chapman**
Assessing value of medical devices early on
- **Prof. Terry Young**
Summary

If you would like a copy of the presentations or information for future events, please contact Elizabeth Deadman:
 elizabeth.deadman@brunel.ac.uk

MATCH Plus: Cognitive Prosthetics Project

Prof. Chris Nugent



One of the main features associated with those suffering from dementia is memory loss. It has been shown in recent studies that the deployment of technological reminder based solutions, have been capable when deployed within certain circumstances to alleviate a number of the issues associated with memory loss. Nevertheless, from a technology and usability perspective there are still major challenges which are hindering large scale uptake of technology based solutions.

The technology solution being considered within the MATCH Plus Cognitive Prosthetics Project is based around the concept of delivering video based reminders through a mobile phone. There are three main technical components which are used to support both the person with dementia and their carer; a system for the carer with the ability to record and schedule video based reminders, a back-end server used to store all reminders and schedules for all patients and a modified mobile phone used to deliver the video based reminder for the person with dementia.

It has been the aim of this MATCH Plus Project to undertake a rigorous assessment of the impact of user needs data generated

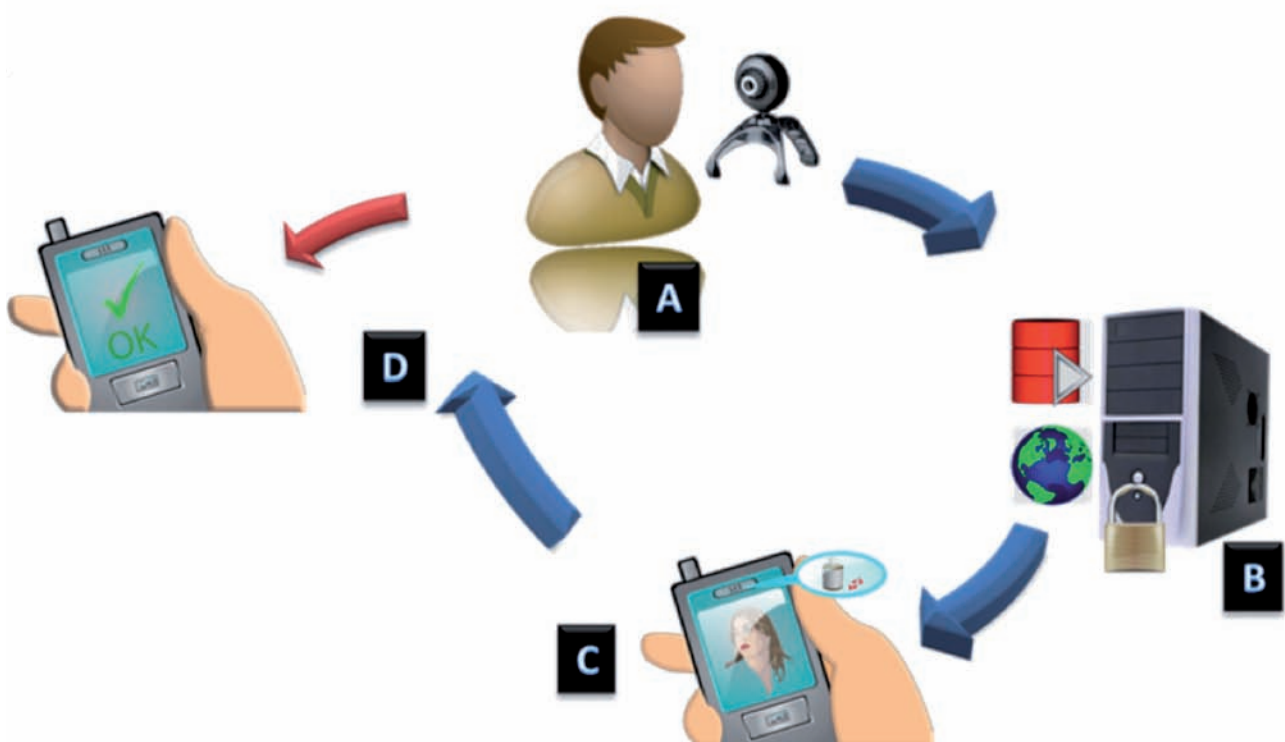
through ongoing evaluations of the mobile phone based video reminder system to support persons with dementia. Analysis of this data is being used to guide future device development. In addition, the Project aims to investigate the methods required to incorporate the data obtained from users (patients, clinicians and carers) into a study of the economic impact on stakeholders adopting the technology.

To date, the Project has undertaken a number of workshops and evaluations with people with dementia and their carers. Two workshops have been undertaken to elicit users needs: a workshop involving the participation of people with dementia and their carers and a further workshop involving a cohort of healthcare professionals. Feedback from both of the workshops have resulted in a number of positive comments being received both in relation to usability and utility. In addition to the workshops a number of ongoing evaluations with persons with dementia, elderly and those with a form of mild cognitive impairment have been undertaken. To date 48 persons have evaluated the system providing in excess of 300 days worth of usage. The Project is currently in the process of analyzing all of

the information which has been collected, from a user needs perspective, to assist with the process of future device development.

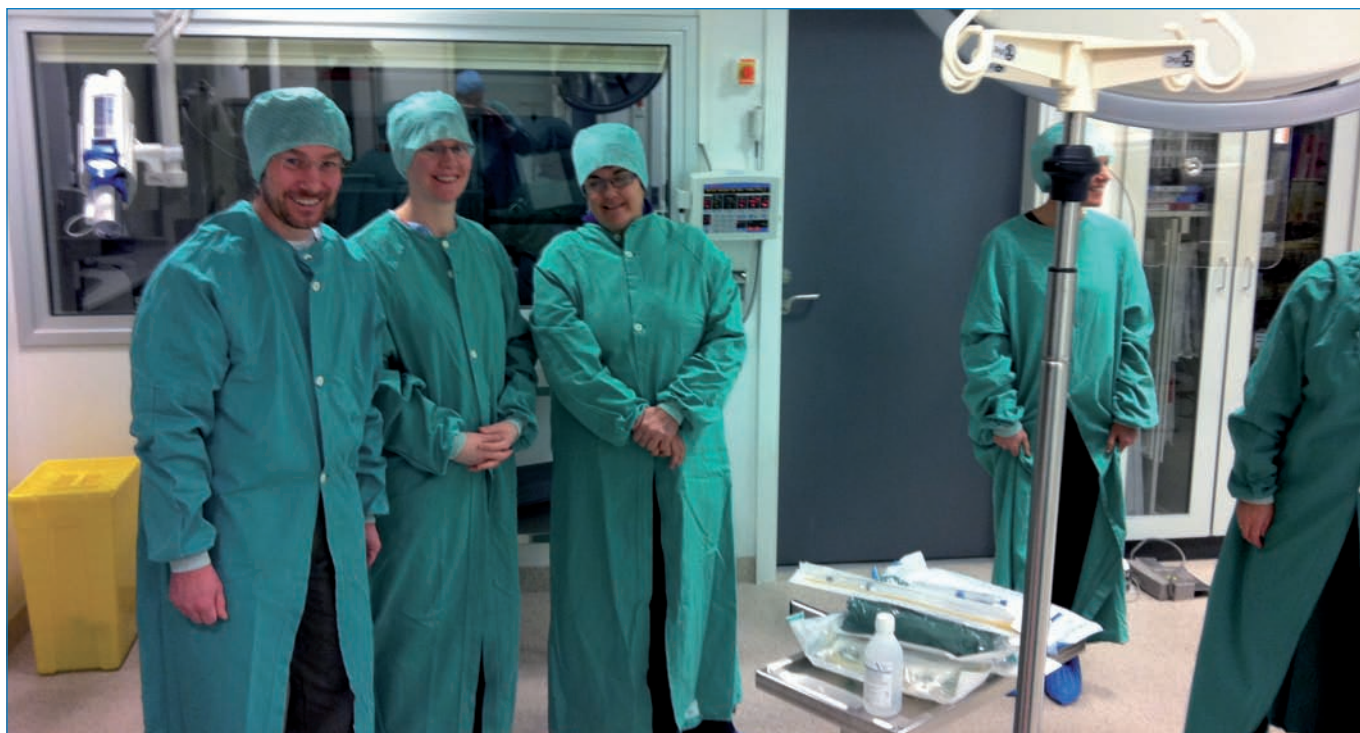
Future work within the Project will address three main areas. In the first instance recommendations will be made as to how future developments of cognitive prosthetics can be enhanced based on the incorporation of user needs assessment. Secondly, based on the data collected from the ongoing evaluations an economic impact assessment will be conducted. Thirdly and finally, a technology roadmap will be produced which will aim to take into consideration the evolving availability of technology in addition to its integration within smart environments.

The Cognitive Prosthetics MATCH Plus Project team is a multi-disciplinary collaboration between the Computer Science Research Institute at the University of Ulster and clinical consultants from the Queen's University Belfast and the Belfast City Hospital.



MATCH-making in Norway

Prof. John Crowe



John, Jennifer and Julie (L-R) pose in the 'operating room of the future'.

In February MATCH travelled to Trondheim, Norway the home of SINTEF the largest independent research organisation in Scandinavia. The trip was organised between Lars Bodsberg the Director of the Safety Research section of SINTEF's Technology & Society unit and MATCH's Julie Barnett who know each other via their work for the Society for Risk Analysis. Julie was accompanied by John Crowe and Jennifer Martin.

The first meeting was hosted by Toril Hernes who heads the Medical Engineering Department of NTNU (Norwegian University of Science and Technology), based at the impressive St. Olavs Hospital complex. Following introductions to the research interests of NTNU's medical engineering group and MATCH's expertise and aims the discussion focussed on the InnoMed & SINTEF programme for user driven innovation in the health care sector. This covers over 50 research projects that aim to provide products or software solutions whose inception and development has been led by clinical staff and carers who have identified an unmet clinical need. The projects are carefully and sensitively managed with industrial involvement regarding the manufacture of the necessary

'solution' being introduced as and when appropriate. It was encouraging to discover common ground between the InnoMed approach and that adopted by MATCH case studies. MATCH research that proved of particular interest was the use of very early stage health economic assessment. An InnoMed project of particular interest to John was the use of GPS to monitor patients with early stage dementia that has similarities with his work aimed at people with bipolar disorder. This project was described by Helene Blakstad who also provided a guided tour from the hotel to St Olavs Hospital earlier in the day.

The group moved to another part of St Olavs for a presentation by Anne Karin Wik, a research nurse responsible for one of the four operating theatres that were custom designed and built as part of the 'operating room of the future' project. The four theatres are different with each covering a particular medical speciality.

Project partners include companies such as Sony, Siemens, Olympus and Covidien. This part of the trip concluded with a visit to one of the operating theatres that necessitated 'gowning up' as illustrated in the picture.

The final meeting was held away from the St Olavs complex, at one of SINTEF's

adjacent offices. Their close proximity alongside that of the central university buildings makes collaboration efficient and effective. Here we met Jarl Reitan and Kristine Holbo; who John had previously met at the 'Therapeutic Strategies: A Challenge for User Involvement in Design' workshop in Reykjavik, October 2010. After visiting their environmental testing chamber, where a cross country skier was being tested to near exhaustion. Jarl described the work of SINTEF's Technology & Society section.

It was valuable to compare the approaches being taken by SINTEF and MATCH. Of particular interest was a discussion on how these relate to Liz Sanders' design/research led – expert/participatory mindset diagram.

Overall the trip provided an ideal opportunity to discuss our work with a very well co-ordinated group pursuing similar aims in an exemplary manner. A particular message learned was the more prominent role that design is afforded in SINTEF's work. Discussions are already underway regarding MATCH's involvement in forthcoming SINTEF projects that will hopefully lead to a fruitful collaboration.

Secondment at Matrix

Jeshika Singh



As a MATCH Researcher from the *Economic Evaluation* theme, I had an opportunity to work at the London consultancy group Matrix Evidence Ltd for two weeks secondment during September 2010. I worked with members of the Economics Team within Matrix and conducted an exploratory study on how Matrix could provide consultancy services related to value based decision making to the health technology industry within UK.

Matrix Evidence Ltd specialises in analysis for policy and management through operational research, economic appraisals, public policy evaluations and evidence reviews, to design and supply consultancy services to help healthcare technology developers make better value-based product-development decisions. The target markets for these services include pharmaceutical and medical device companies in both UK and overseas markets.

This is Matrix's first foray into consultancy for private sector and it was as much of a new experience for them as it was for me. Nevertheless they are ambitious, driven and organised. The expectations from my secondment was realistic and I was asked to collate as much information as I could to bring the Matrix team up to date on how the health technology industry was organised, how technologies were developed and the methods used for economic evaluation, so they could get a general overview of how the industry worked.

Personally it was a great exposure and learning experience for me as I got the opportunity to interact and work in a different environment to academia. This experience helped me explore use of economic evaluation at different stages of decision making regarding product development as well as different kinds of decision making

by decision makers. It is still only a general overview but now I believe MATCH was one of the forerunners to have understood that economic evaluation of health technologies is different from standard economic evaluation of drugs and encourage multidisciplinary assessment. And that it is really trying to 'match' the needs of users with product development by exploring different methods of assessment and through the perspective of different stakeholders, and create a win-win situation for suppliers, regulators and consumers.

Finally as a researcher working on individual project and having MATCH spread across four universities one often gets to a point where you can't see the wood for the trees. This experience has helped me understand and appreciate work done by other members of MATCH.

About MATCH

MATCH is a collaboration in the field of healthcare technology assessment involving four leading UK universities and a cohort of industrial partners from the sector. It provides a critical research mass stretching across the UK healthcare technology sector.

It supports companies and user communities by creating methods to assess value, from concept through to mature product, and by engaging with regulatory bodies at home and abroad.

Contact MATCH

Elizabeth Deadman, Communications Manager (Healthcare)
Brunel University, Uxbridge UB8 3PH
Tel: 01895 266050
Email: elizabeth.deadman@brunel.ac.uk

Peter Taylor, Healthcare Programmes Manager
Brunel University, Uxbridge UB8 3PH
Tel: 01895 265437
Email: petermichael.taylor@brunel.ac.uk

www.match.ac.uk

UNIVERSITY OF
BIRMINGHAM

Brunel
UNIVERSITY
LONDON



The University of
Nottingham

University of
ULSTER

EPSRC