

Alistair Ruff

User-centred design & research

www.alistairuff.com

alistair.ruff@gmail.com

@alistairuff

I plan, manage, carry out and analyse user research to inform the design and prototype of services, interactive products and user interfaces. My experience includes consumer electronics, medical devices, financial services and work in the public sector.

I work closely with stakeholders ensure shared project understanding and that the results of research and design projects are communicated successfully. My roles have made me comfortable discussing the value of the work I perform in a business development and internal context.

I am also studying for a Professional Doctorate part-time, exploring approaches to prototyping in service design and their similarities and differences to those in interaction design.

Public Domain Work:

P1vital Predict

Research, design and usability testing for a digital depression treatment monitoring system

Visual Design - Information Architecture - Digital Prototyping - Protocol Planning - Usability Testing - Handover specification

DHS Smart Pump

Design and interactive prototype of a connected pressure area care mattress pump

Interaction Concepts - User Experience Design - Interactive product prototyping

Huntleigh Sonicaid Team 3

Design, prototype and testing of a touch screen interface for a foetal heart monitor

Visual Design - Information Architecture - Digital Prototyping - Protocol Planning - Usability Testing - Handover Documentation

Cellnovo Diabetes Management System

Formative usability testing for dedicated diabetes management system

Protocol Planning - Usability Testing - Design Recommendations

Kenwood

Mapping the customer experience of blenders and food processors

User Research - Data Analysis - Strategic Concept generation

P1vital Predict

Research, design and usability testing for a digital depression treatment monitoring system

Based on research conducted at Oxford University, P1vital's product brings together decades of clinical research and proven artificial intelligence to deliver digital tools that help improve recovery rates for depression sufferers whilst reducing the overall cost of treatment.

Approach

Internal knowledge audit

Led by senior colleague

GP Skype Interviews

Led by senior colleague

Visual Design

Led by me

Interface Design and Prototype

Led by me

Usability Testing

Led by me

Handover Documentation

Led by me

As a Class I medical device P1vital had more considerations than a standard consumer focused website. I was involved in a user-centred design approach to understand how both NHS staff and patients would use the website and wider system.

Using P1vital's expertise and existing research to avoid duplication and inform research methods & content.

Cost effective, allowing for regional NHS variations and fitting into busy GP's schedules. Semi-structured interviews around how P1vital system could sit within their workflow.

Defining colour, grid layout and visual style for the system, informed by internal P1vital brand values.

Overall system architecture down to interaction details, prototyped to high fidelity in Axure. Radically streamlining existing clinical trial software for patient users, for desktop and mobile use.

Protocol creation of frequently used functions, recruitment of participants, facilitation of 1hr lab-based usability studies, analysis of results and subsequent design changes.

Creation of handover documents for P1vital and external software developers. Usability study results and resulting design guidelines alongside detailed design specifications.



Outcomes

Key findings:

- GPs need system to integrate with their existing NHS systems
- GPs desire for as few notifications / emails as possible
- Patients find system simple to use on 'good days' but 'tests' require a quiet space and concentration which those suffering with depression don't always have.

Product has been re-branded as 'i-spero', with ongoing work to integrate into NHS systems and continuing research to obtain patient results from a short a 'test' as possible. Trials remain ongoing and the product is available at www.i-spero.com/

Client returned for further work on their product

DHS Smart Pump

Design and interactive prototype of a connected pressure area care mattress pump

Direct Healthcare Services (DHS) manufacture and provide pressure area care solutions, with a portfolio of innovative, award-winning products including mattresses, cushions and overlays. However they had not previously developed their own dedicated product from scratch.

I was part of a 3 strong product design team, tasked with developing their new product, with market leading connectivity and design from concept to interactive prototype to launch at a trade-show.



Approach

Design Concept

Collaboration with Industrial Designer

Proposing integrated product and interface design concepts to client, ranging from full touchscreens to discreet hidden-to-lit display

Prototype Planning

Collaboration with Design Engineer

Identifying appropriate interactive prototyping approach for selected design concept, including technology required to provide desired visual and functional outcome.

UX Design

Led by me

Defining user flows and service that sits alongside the pump, incorporating mobile app controls.

Interactive prototype

Collaboration with Design Engineer and Software Developer

Planning and building 'works-like' prototype using arduino, raspberry pi, wireless plugs and app to control a pressure area care mattress live at the trade show.

Challenges:

- Using a 'dumb' prototype to control two existing pumps to simulate full functionality of new device.
- Connecting LED Matrix, Multiple LEDs and wireless plug controls to Raspberry Pi due to GPIO port constraints.
- Communicating intent to sub-contracted software developer



Outcome

Prototype completed to deadline, and performed as required at trade-show generating a lot of positive interest.

Product remains in development with the client.

Huntleigh Sonicaid Team 3

Design, prototype and test of a touch screen interface for a foetal heart monitor

Huntleigh saw the need for a user-centred approach to develop the interface for a new Foetal Monitor. The design was fundamentally different than any of its predecessors, with the inclusion of more powerful features and a touch-screen for the first time.

As the junior member of a team of 3 I was responsible for the visual styling and prototyping of the interface, working alongside others to define how the device's functionality would translate into the new interaction styles.

Approach

Existing Product Analysis

Led by senior colleague

Capturing the features and user flows of the current product, which was heavily defined by a restrictive interface.

Paper Prototyping/Card Sort

Led by senior colleague

Generative research approach used internally and with midwives, a 'jigsaw' interface and card sort approach defined priority features and information architecture.

Visual Design

Led by me

Defining colour, grid layout and visual style for the system, refining initial 3 concepts to one selected direction.

Interface Design and Prototype

Collaboration with other UCD staff

Planning in wireframes and sketchwork to define navigation and IA through to high fidelity prototype in Proto.io. Prototyped to demonstrate full functionality, interaction details and visual style.

Usability Testing

Led by senior colleague

Acting as note taker for usability studies, ensuring smooth running of prototype and facilitating later studies. 1hr studies conducted in lab environment with midwives.

Handover Documentation

Led by senior colleague

Creation of handover documents to communicate design intent to Huntleigh Development team. Presentation of results of work to client.



Outcome

Key insights that informed design direction:

- Midwives preferred large number display over graphed data
- 'Night Mode' proposed for monitoring when dark was preferred by some for all hours.

Product was launched in Q1 2017 and is on the market.

Cellnovo Diabetes Management System

Formative usability testing for dedicated diabetes management system

Cellnovo had an existing product already on the market and were seeking to launch the second iteration. Prior to launching the updated hardware they wished to find out whether the proposed changes would impact upon the usability of the device.

Approach

Product and Risk Review

Led by senior colleague

Protocol Creation

Led by senior colleague

Usability Testing

Led by Senior Colleague

Results Analysis

Led by senior colleague

Results Presentation

Led by senior colleague

I acted as support for these usability tests, with no design input required. As with all medical device projects the testing and results analysis was conducted and captured to support the client’s design history file for based on ISO 62366 / HE75 guidelines.

Understanding the product’s key features, reviewing provided risk analysis and using these to define the required user flows and tasks to be tested in usability testing.

Translating user flows and functions into understandable and contextual tasks for users to perform. Preparing scripts, task assessment capture, ethics applications and participant consent/information sheets

Lab based usability testing including tasks for device power-up, insulin control and food tracking. This encompassed the main device and an accessory device. Task assessment results captured alongside qualitative feedback on the device and System usability scale questionnaire.

Identification and categorisation of usability issues, cross-referenced with qualitative data to understand user’s experience at these points.

Presentation of usability testing results with initial design recommendations where necessary. System usability score used to benchmark overall usability of product.



Outcome

Usability testing results:
- touchscreen was not on par with expectations of modern devices, users frequently compared how much easier their smartphone was
- Some interaction styles used across the device exacerbated the poor quality touchscreen resulting in input errors.

Cellnovo have updated the hardware device to a ‘locked-down’ smartphone available at: <https://www.cellnovo.com/handset>

Kenwood

Mapping the customer experience of blenders and food processors

Kenwood, a true household name in British kitchens, has been designing and manufacturing quality kitchen appliances since 1947. They identified the need to understand the experience of purchasing its kitchen products, through the eyes of the customers,

to help recognise areas of the journey that require greater attention. With the focus on understanding users values and priorities research was planned to identify both new product and service opportunities alongside iterative improvements for current products.

Approach

Mystery shopping / Store Safari

Collaboration with other UCD Staff

Semi-contextual Lab Study

Collaboration with other UCD Staff

In Home observation

Collaboration with other UCD Staff

Ideation and concept generation

Collaboration with other PDR Staff

Analysing product presentation, categorisation and positioning with stores. Acting as purchasers to gather staff advice and input on products. Identifying difference in perception with competitor brands.

Study beginning with 'shopping process', identifying product touchpoints, comparison techniques and monitoring gaze through observation and behavioural coding. Followed by semi-structured interview to identify underlying motivations and decision making factors. Included value tasks, identifying customer expectations of costs and how they made these decisions.

5 participants provided with Kenwood devices, research session observed them from unboxing through preparing two dishes. Data recorded in video, images and notes. Analysis of how product translated in-store promise to in-home usage context.

Data refined into key insights for ideation process, generating a large quantity of different approaches to enhancing Kenwood's product and service offerings to improve the customer's journey with their products.



Outcome

Confidential

Customer continues to undertake equivalent projects with the us to drive their product and service innovation.

Confidential Work:

Global Pharmaceutical Company

Strategic research and design project, identifying opportunities for growth in existing and emerging international markets

User research - Data analysis - Strategic concept generation

Design and Prototype of next generation flagship device

Interaction Concepts - User Experience Design - Interactive Product prototyping

National Financial Institution

Research and development within developing customer segments

User Research - Data Analysis - Service Design - Digital Prototyping - Physical Prototyping - Brand Development

Research and development of new product offerings

User Research - Data Analysis - Service Design - Digital Prototyping - Usability Testing - Management

Ongoing strategic design and innovation support for propositions, marketing and digital transformation teams

Innovation Strategy - Workshop Facilitation - Training - Management - Usability Testing

International Medical Device Manufacturer

Redesign of GUI

Visual Design - Information Architecture - Management

International Consumer Electronics Brand

Research and design to inform next generation product

User Research - Concept Design - Interactive Prototyping - Usability testing

International Medical Device Manufacturer

Research and design to inform next generation product

User Research - Concept Design - Prototyping - Management