Observing Everyday Usage – Bringing observations from everyday lives to design and business decisions

Katherine Gough & Michael Davis-Burchat
Nokia
Dr Bas Raijmakers & Dr Geke van Dijk
STBY

Abstract
Research teams face continual pressure to design research engagements that are both affordable and meaningful to act upon – to multiple business needs across different teams. Project specific studies were beginning to duplicate outcomes and analysis from different areas could be seen to contradict in some instances. This raised difficult questions about the best method to unify projects, methods, data captured and consumer types.

The challenge this paper describes was to shift away from project focused studies to a method of gathering a ‘global kit’ of user observations and analysis resources which could benefit any project, in the context of varying design and business planning requirements (assumed to be on strategy). This was seen as an opportunity study users a broad range of ages and abilities to in order to improve universal human factors, rather than resort to typifying consumers according attitude and lifestyle.

Keywords
Design research, User, Activities, Usage, User centred, Engineering, Design, Business, Global, Regional, UX, Experience, Video, Observing, Ethnography, Contextual Inquiry.

Introduction

Background
Global technology manufacturers race to deliver consumers market leading devices, and brands seek to deepen relationships with consumers though more ‘emotional’ and lifestyle connections. How do companies keep track of how technology assists people in their everyday activities, regardless of region, life-stage or age? Initiatives in inclusive design at Nokia have successfully engaged teams in the past with issues associated with aging and ability. Although analysing aspects of life-stage, age and attitude has
always been a large part of Nokia’s consumer understanding and data gathering for planning and analysis, the pressures of the marketplace prevented specific initiatives identifying enough sales potential through the inclusive design initiatives.

This paper describes an embedded approach to inclusion, rather than the journey of an exemplar product, software and service or application. It describes user-centred observation research was used to inform opportunity and proposition identification and include the needs of a wider global audience during design and development.

This is not a story about making the interface on a device so accessible that it can do everything, the paper describes the user research, design and business engagement process that makes visible the clear user needs for access to content, experiences and social inclusion through specific features. The focus of this approach is not on large scale global solutions, rather on opportunities for technology solutions that enable specific human needs regardless of region or lifestyle, and independent of the model of development for target markets or targeted consumer psychographics.

The landscape of global observational research
Large-scale global observational research is expensive. Being able to immerse in a regional culture, social experiences and most importantly observing how technology and communication is used in peoples lives for a global company is a huge undertaking, and it is one in which Nokia invests a great deal and values greatly. However, with global recession and a competitive marketplace, there was a business need to complete research more efficiently, in an agile way, while providing deeper and more meaningful observations directly related to specific projects and lines of inquiry.

In the market research industry, ways in which research scope and costs have been reduced in the past have included adhering observations and research scope tightly to a planned main target market or consumer for a specific concept or product. This in turn enables research to use more tightly defined business planning parameters to conduct research with specific ages, attitudes, regions and life-stages.

With the Design Research team in Consumer Insights and Nokia Design collaborating regularly to carry out design research for design team needs in the past, we were aware of the benefits and also the constraints. Design research typically could be requested to cover up to 6 influential regions around the world in South East Asia, Europe and the Americas on a project-by-project basis. Designers, engineers and planners from around the business participated in fieldwork and were immersed in the everyday environments of people, their workplaces, homes and communities using ethnographic techniques with a research specialist. This process produced varied and interesting observations from the field and gave business observers strong observations to recount in their work.

However, in reviewing the process during early 2011 we identified some constraints, which had longer-term effects on efficiency, analysis and recommendations to design and business needs.
Observations from past design research process

Research to different design and business needs could inadvertently duplicate similar observations with users and consumers during different projects. Requirements in the analysis and specific recommendations to certain business groups might not be relevant to another. This might occur through differences in methodology, recruitment criteria or analysis process. Research projects, which covered global markets so frequently, produced a lot of data to analyse. Making the data surface-able and applicable to people who would need it again required engaging a wider team in an agency for further analysis of large data sets to specific business contexts.

Research projects to observe users and consumers, their lives and technology usage was often closely linked to specific annual project cycles, with 2 or 3 iterations of research during development. Having reviewed our work over previous project cycles, we identified that users did not change radically or regularly as 6 or 12 monthly project cycles would suggest, so frequent renewal of observational data across multiple regions was not necessary. We asked ourselves if it was necessary to apply business parameters before research? Could we apply them afterwards during analysis, given the right methodology?

Large scale, quantitative data provides Nokia with weighty global statistical analysis across multiple key consumer touch points, including features and User experience (UX) amongst other categories. These metrics assist in analysis for shaping and sizing the market and sales opportunities, using information gathered in demographic, attitudinal and psychographic form across the world. Numbers alone are not enough however, qualitative research, or stories, are equally important. A large consumer and business technology company needs both, that is beyond discussion. The discussion is about how to connect numbers and stories in valuable ways. The biggest value occurs when numbers and stories fill in each others weaknesses. Stories should not be used to duplicate what is understood through numbers, nor should numbers replace certain stories. They should not compete with each other. When used to the greatest benefit, numbers are capable of going beyond the understanding that stories can give, and vice versa. What is most valuable depends on the particular need a designer, marketer or business strategist has at a given moment. A marketer might need the numbers of a segmentation to determine a certain market share to target, but then needs the right stories to convince people that constitute that market share of the benefits of an offering.

The goal

To develop user research engagements that are cheaper and engage with users more deeply and create more meaningful insights and recommendations, was identified as the goal to ameliorate global business needs and qualitative research constraints. Shifting away from project focussed research, to a method of gathering user observations and analysis resources which would be beneficial across many projects, many design and business team requirements, and empower an audience to use the insight themselves to communicate to others.
Observing Usage

Usage rather than testimony
A precept of empathic study in design research is that people – or users – are inaccurate reporters of their own behaviors, and values. [1]. Survey methods, focus tests, and audio interviews can be recorded, interpreted, and presented in ways that shed their context or distorts what is sought about them by the business client. For these reasons it became necessary to capture evidence as a ‘thick description’ [ibid.] rather than distill it into writing or bullet points, frequently used in decision-making.

The presentation of insight to business managers, planners, and executives, should be brief as well as actionable. And it should frequently be prepared on short notice. For this reason the ‘thick description’ captured in the field needs to be evident, actionable and ‘conveyed’ within a matter of minutes, to get digested within the acceptable flow of a planning workshop.

Collaboration began with a trusted agency, STBY. Thick descriptions we collected were in the form of short edited video films, design documentaries [5], that will not lose their context, nor lose their significance to the industry. Regardless of how often they ‘change hands’, for a period which can be measured in years. In research planning and fieldwork and then the process to distill hours of video ethnography into meaningful units of knowledge that can never be separated from their context of the user’s daily life. The researchers worked together with the participant to articulate from their experience a recent activity through empathic re-enactment on camera. The researchers bring their understanding of an activity, its next larger context, and the participant’s identity into the short story. Making the usage of a technology, as well as the human purpose, accessible for others to witness for themselves. [2] The short films of about 3 minutes each, always contained one story of usage, of one participant in a particular situation. This became our unit of analysis.

What activities do people do – in the company of a product everyday?
When we gather evidence of daily activities, we are ready to interpret ‘the surprising’ as well as ‘the familiar-yet-important’ practices of a user, without discriminating against the user based on their age their ability or their attitude toward technology – that may be commonly used in market research methods. Workarounds, frustrations and successes offer clear indications of about the ways that an industry consensus (which include bloggers, journalists and industry experts) will differ in their thinking from any user’s experience of the state of the art. Such moments of clarity indicate ‘new knowledge’ to make sense of. Although we are not yet prepared to explain why nor to present it as insight that can be acted upon, we can model patterns of experience and journeys that will need deeper interpretation, and ostensibly will need product innovation.

Capture frameworks such as AEIOU (activities, environments, interactions, objects and users, the creation of which is attributed to Rick Robinson of eLab) [3] provide a structure for analyzing a vague pattern into complete set of clear findings with precise
detail. In essence, researchers and analysts take a thick description of events and break them down into five layers that elevate meaning. We used five human factors to probe for impediments to pleasurable experiences. Physical, Cognitive, Emotional, Social and Cultural lenses help researchers in partnership with designers and managers to explain such impediments precisely enough for the various disciplines and departments to act upon.

Understanding how an activity was enabled or disabled by infrastructure or through influence of the context of use, and importantly was crucial to observing workarounds with existing technology – not just to identify hygiene factors for team to improve incrementally in the experience, but also to identify opportunities for new technology to solve genuine user-centred problems.

Through the structure and description involved in the short video films, these needs could become more visible and tangible. By enabling an audience to observe first hand the user’s experience and demonstrate how the environment, context of use, or interface could disable an activity

**Global affordable design research**

**Research and video capture**

By taking control over the research questions from teams around the company, we were able to maintain openness to a participant’s most meaningful activities and also capture information that would work across multiple parts of the organisation. Once in the field, we needed to collect data in the format and using the methods we designed. This can be a challenge as in the field an observation doesn’t always present itself as anticipated. That is however part of the joy of the work: everyday life is not predictable. It is a combination of routines and surprises. The skill to develop here is to embrace the surprises encountered in the field without breaking the designed research structure - but you may need to bend or stretch it. We did need to come away from the field with data that would put us in a good position to create the unit of analysis that was designed earlier. The design of the unit of analysis, a short film of 2-3 minutes with one story of one participant, was however flexible because it did not prescribe what stories would be eligible, allowing us to respond on the spot to the stories presented to us by participants. This also determined our structure of the participant visits, of 2-3 hours each. First we explored with the participants which stories they would be able to tell, roughly within the lines of enquiry we had chosen previously. From that collection, we then selected together with the participant three stories to make each a film of. This also allowed us to create a collection that nicely covered all the topics we were interested in across all participants, since we kept a list of the topics covered in the visits done, showing which lines of enquiry were well covered already early on and which needed further stories.

Finally, this systematic set up allowed us to conduct the fieldwork in several regions in the world simultaneously, by different teams. In this example, we worked with parallel teams in India and China, after the initial pilot in the UK. These teams were all part of the
Reach network of global design research, founded by STBY who did the initial UK research and coordinated the global fieldwork and later analysis too. Without the systematic yet flexible approach chosen, scaling up to a global level would not have been possible. After all, ethnographic research needs to be culturally sensitive not only in analysis but also in execution to get to the desired thick description films we aimed for. In India it is for instance considered rude to stay only two hours for a participant visit and they do not really mind if there is not a clear ending time agreed, whereas in the UK visits from over two hours are seen as rather long and tedious, and you are not supposed to run over.

**Analysis and communication**

**Pre-analysis with video evidence**
Even though we had already conceived in the field which films we would make, these films still had to be edited from the raw footage we shot. Data needs to be structured to make it accessible to others, and analysed to a certain extend to result in a collection of units of analysis, like the 2-3 minute films we aimed for. Each edited film had to tell one story of a particular participant practice (usage) and the motives for that behaviour as expressed by her or himself. The film editing process is at the same time used to add the understanding of the design researchers in the field, which may further add to the participant motives. Still the stories should remain open to further interpretation, as more analysis was to follow. That is why we came to see the film editing as a pre-analysis.

Indeed we can make the case that the films are each a thick description of a certain usage. The researchers were able to bring their understanding of the context/environment and person into the film story, to make the usage accessible and understandable for others without such prior knowledge. Nor indeed can the participant articulatate this her/himself. The researcher needs to articulate together with the participant through an ‘empathic conversation’ [3]

**Communicating to different team needs**
Creating video evidence situated the observations at a level that met the different business interests across teams. The same video may be used to observe how someone uses a User Interface (UI) flow to inform UX development, analyse the need or motivation for an activity to inform a product proposition, or analyse the parameters by which a user experiences a service to inform engineering planning for specifications. Captured and edited video films were analysed according to different ‘human factors’ - social, physical, cognitive, environmental and cultural.

For example, a video illustrating the user journey that a Chinese student took using social networking applications on her device did not simply signify that social networking or Wi-Fi technology should be enabled for a certain demographic. Social factors identify that her engagement with the service brings her social standing with her friends for posting unique content. Physical and cognitive factors identify that editing the
Photographs she takes helps her to communicate in a way that is more meaningful to her and her friends, quickly, the moment that it happens. Pattern spotting across the evidence draw us to the activities of a retiree in India who when asked if he ever used the camera on his smartphone, initially stated that he didn’t really think he would use it since it wasn’t good quality. However, when demonstrating his phone he described his act of taking a photograph on the phone of a local spectacle as something humorous befell a local builder transporting materials, describing the value of that photograph helped to understand the same need in social standing through content he considers interesting and worthwhile.

Both activities demonstrate a similar motivation in sharing unique content and ultimately can contribute to a design brief, which can meet both users needs and interests.

**Inclusion in the research process**

Use of technology is universal and, we are motivated to use technology to assist or delight us. That benefit can be heightened for those of us with different abilities, ages or income. By ensuring that respondents are recruited more widely across age, life-stage and lifestyle, as well as including the users and consumers that the business wishes to target, we were able to identify needs that were present across spectrums of different ages and abilities, as well as regions and incomes. Understanding how technology is being used, and the moments when people blame themselves, engage more deeply because of a pain point, or are able to see how their life can be made easier or more delightful occur across those spectrums with similar needs and motivations for technology.

A respondent in San Francisco, who was recruited for their daily use of voice commands in the car, had begun to use them to his advantage following a stroke. Not recruited on an ability basis, his feature usage had included him in the study, providing vital understanding of needs and motivations.

The retiree in India who through cycling to help his health, had been tracking his journeys using GPS. While demonstrating how he records his cycling trips on his smartphone, travelling in unfamiliar villages, he struggled to recall a previous trip to the screen. He said “Although I have two efficient thumbs for typing, I have ten thumbs for navigating”.

Users do not self-segregate themselves away from involvement with research on technology and with open recruitment criteria, the inclusion of respondents with impairment occurs naturally. It became possible to include any participant across age or device usage that considers themselves to be engaged with technology.

**Creating a library of assets**

Building a library with the video evidence gave design research and consumer teams more activities and thick descriptions to work with. The library has grown in the 2 years since the 2011 pilot, and projects generated as gaps in knowledge with feature usage or
regions emerged, or as a new device is launched to market. It continues to grow as the Observing usage methodology is applied with different research team analysis projects and as other researchers recognise the value to capturing video in the 3 minute thick description.

Analysis Workshops with wider design and business teams
Working sessions and workshops to design and business needs or behavioural areas developed collaborative analysis, not just at ideation stage, but also throughout UX development.

Once a particular selection of films is curated for a specific team or purpose, follows analysing and interpreting the films. The teams generally need a deep understanding of the practices and motives of the fieldwork participants, often focused on a particular topic such as: How do people keep themselves entertained while on the move? The edited films presented to these teams as the units to analyse, provide a clear starting point for the deeper analysis. Since the films are very accessible and can be viewed by themselves, without further explanation, team members who come new to this material feel that they can engage with it directly. This levels the playing field between researchers and team members, an important first step to help the teams create insights that they can truly own and defend. Collaborative sense making gives the best results as the insights created are owned by teams that helped to create them. To build a user-centred case to answer a business question quickly and with consensus around video evidence.

Conclusions

Identifying user needs common across region, age and life-stage
By understanding what activities people are doing with technology in their lives, and analysing the needs and motivations for those actions, it is possible to make technology specifications meaningful and understand what user needs will be excluded from an experience. Developing the ‘Observing usage’ practice grew from piloting new ways of capturing data and demonstrating the analytical capabilities, which aided adoption across business groups and regional teams.

Observing usage gave us scope to understand current users and consumers practices, workarounds, frustrations and successes on Nokia and competitor devices. Identifying robust observations of everyday usage to bring patterns of needs and motivations through analysis.

By ensuring that ability, age, income and other aspects, which can be at the risk of exclusion in mainstream product development processes, were not a barrier to participation in the research, we sought to be inclusive of a wide spectrum of behaviours observed. Through STBY and Nokia moderation, teams recognising the value in needs and motivations edited into video evidence we maintained video assets that illustrated barriers and failures in everyday activities. Furthermore, with a research team that
ensured that all analysis and workshops maintained the inclusion of all valuable and illuminating aspects of usage, rather than only examining one demographic. We were able to treat the evidence gathered as normative, not specialised or labelled “Inclusive” to the audience.

**Resonating with the design and business audience**

Providing rich evidence and thick description through short 3-minute videos engaged teams viscerally with the experiences of the user. By enabling an audience to observe the user’s experience first hand through video, and demonstrate how the environment, context of use, or interface could disable an activity, an audience in business and design were able to identify strongly with the problem. Recognising issues associated with one user, led to empathy for similar activities they themselves or other users did, and ultimately generated a sense of ownership and championship for the user in decision making.

The video evidence also enabled the audience to link user needs regardless of demographic, ability, life-stage or attitude, gave the work created greater momentum for concept development, and means that wider population needs can be included within targeted products.

**De-mystifying user observations**

Video assets are carefully edited to communicate much of the context in the activity and behaviour. Providing consistent frameworks for the activities and thick description in each video gives robustness and makes for interesting viewing. Situating the benefits and frustrations for people during their activities contributed to a benefit led discussion within teams, rather than only a feature led discussion.

The creation of video assets and longer compilation films pulled down the barriers of user understanding. Reassuring a design and business audience through the nature of a method that doesn’t try to mystify research methods or ability to observe everyday life. Without needing to understand how an observation and rich evidence was captured, the audience watch and became engaged with user behaviour, becoming strong advocates in sharing the knowledge of user needs.

**Longevity of the evidence**

Through the collections of video stories that contain user activities with thick descriptions of their context edited inherently within them, the data lives longer than the life of the teams in the fieldwork. Empowering an audience to watch a video alone or as part of an analysis set much of the knowledge encapsulated in one file, democratises the data and invites other teams to contribute to the library of assets, or conduct their own analysis without supervision.

**The case for further inclusion**

Prioritising accessibility within the video assets also allows particular user activities to remain prominent over several years. We estimate the data to be relevant for at least 5
years. Furthermore, within that, after two and a half years it is possible to see that particular user needs and user activities remain prominent to Nokia and the needs and motivations that inform future opportunity identification. As we have discussed, evidence captured with older users or those with different abilities have provided some of the strongest observations that are comparable with younger people’s needs and motivations. The continued wide spectrum of ages, abilities, regions and incomes is well demonstrated across the current set, with new areas for investigation focussing on knowledge gaps or new technology available. Regardless, strong evidence remains in the data set for a long time to inform future work.

References


