DESIGNING USABLE E-GOVERNMENT SERVICES FOR THE CITIZEN
- SUCCESS WITHIN USER CENTRED DESIGN

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Abstract

E-Government websites and other online channels have the potential to empower citizens by making Government services more accessible and convenient to use. However these services need to be both valuable and easy to use in order for this potential to be realized. In our experience as User Centred Design (UCD) practitioners working in the United Kingdom Government domain, usability techniques are not being been sufficiently embedded in e-Government projects. We examine three recurring challenges to applying UCD in the public sector and then describe a successful service design project that overcame these challenges. We recommend practical techniques that UCD practitioners can apply in their jobs.

Keywords: e-Government, service design, user centred design, participatory design, case study

1. Introduction

The United Kingdom's e-Government landscape is evolving quickly. The Government's *Transformational Agenda* (Varney, 1994), along with commendable initiatives such as Race Online 2012 (PricewaterhouseCoopers, 2009), makes the vision of providing public services for citizens through the online channel a key driver for policy thinking.

Well-designed web based services have compelling benefits for citizens and for Government. For citizens, web based services offer convenience, empowerment, inclusivity, accessibility and choice. And from the Government's point of view, recent economic and financial instability, with the resulting increase in the public debt, has heightened the focus on moving from face-to-face provision of services to online self-service. Effective delivery of services online (and, where possible, online only) is seen as a key route to the desired financial efficiencies.

While it is true that the Government comprises well-motivated and capable civil servants, the consistent creation of easy-to-use web based services has proved elusive to Government, exemplified by a lack of focus on the citizen (National Audit Office, 2007). Indeed, the UK Government's Digital Champion Martha Lane-Fox, who was appointed to make recommendations about improving e-Government services, concluded:

"There has been a reinvention of the Internet and the behaviour of users in the last few years. Digital services are now more agile, open and cheaper. To take advantage of these changes, Government needs to move to a 'service culture', putting the needs of citizens ahead of those of departments." (Lane-Fox, 2010, p.1).

We believe that a number of barriers need to be overcome if this 'service culture' is to be achieved:

- While new Governments and new ministers may entail rapid policy swings and departmental reorganisations, the underlying organisational framework, with its administrative approaches and methods is deeply embedded and resistant to change. This means that it can be difficult for relatively modern methods like user-centred design (UCD) to become established within Government.

- The design of citizen focused usable Government services requires a holistic, multi-level, user centred design approach, integrating user and business requirements through UCD. Traditional linear and hierarchical approaches to software design – deeply embedded in Government – are ill-equipped to achieve this vision.

- There is often a lack of 'end to end' coherence in the design and development process in Government. There are no single multidisciplinary UCD teams working on the problem from start to finish. Instead, design and development tasks are often completed in isolation, leading to a loss of focus on user needs and to disjointed outcomes. UCD is often only partially implemented. This leads to projects in which the outcomes serve anyone but the intended audience.

To us the authors, who are UCD management level practitioners, the UK Government's Transformational Agenda is exciting and timely – mainly for the benefits to citizens from well-designed e-Government services. However, for Government, the challenges involved are not insignificant. We feel that that online service design in Government is not being optimised to meet user needs – by this we mean that UCD cannot be applied in its full sense and scope. Citizens therefore, do not stand to benefit from online access to Government services. Moreover, by not adopting UCD techniques, the Government will not realise the cost savings that effective customer-focussed online services could deliver.

The remainder of this paper is structured as follows. In section 2 we describe three challenges we have faced in trying to apply UCD to the design of Web-based services in Government. We have experienced these three challenges over several projects. Section 3 describes a case study of one successful Web project that

overcame these challenges. The case study describes practical UCD and stakeholder-management techniques that helped integrate UCD into the project. We believe that these techniques could help other UCD practitioners working on e-Government projects. Section 4 concludes by summarising our key insights and recommendations.

2. The challenges of applying UCD in Government

We see three main challenges that UCD practitioners face on Government projects:

1. Skills and method gap between UCD practitioners and Government decision makers
2. Teams and business processes working in isolation
3. Mismatch between business and citizen goals

These are described below. We then describe how these challenges were addressed in a successful UK e-Government project.

2.1. Skills and method gap

Our experience is that the public sector has a nascent appreciation of UCD. But while there are pockets of good-practice, UCD is by no means institutionalized in Government departments. For many, the usability paradigm is unknown. Essentially, there is a knowledge gap between usability practitioners and Government staff – usability appears to be new domain for many in Government.

This gap in UCD skills within Government manifests itself in how design challenges are initially framed. For example, the objectives for a website design are often framed in terms of only policy objectives, not citizens' needs. Functionality to deliver that policy is considered from only a technical perspective, not a socio-technical perspective, where one would also consider how, when, and where citizens would use that functionality.

We have also seen UCD techniques get misapplied. For example, we have seen usability testing being done post-release rather than with early prototypes, and card sorting used to define process sequences, rather than taxonomic categories. The results and conclusions from applying these techniques can also be misunderstood and wrongly operationalised by staff who lack UCD knowledge. Inevitably, this lack of expertise leads to suboptimal designs that are less useful and usable than otherwise could be the case.

2.2. Teams and business processes working in isolation

The second problem we have seen repeatedly is teams working largely in isolation from one another, even though they are jointly responsible for delivering Government objectives. For example, we have seen Government customer research teams commission qualitative research to identify citizen needs, and a design team then (months later) receives a report from the insight team as input into the design phase, and an out-sourced technology company then implement the design.

The communication between such teams is often limited in frequency and duration, and often hindered by the teams being in physically separate locations, whether different rooms or different towns. Meanwhile, the internal client, who is responsible for delivering the policy, often devolves running of these sub-teams and process to an internal technology team (or outsources it completely), and therefore themselves lack visibility and understanding of project activities. This fragmentation

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of work processes, communication, and responsibility means that citizens' needs and policy objectives are often "lost in translation".

In such an environment, the goals of each team are often not aligned, overt and covert agendas are not challenged, and ultimately identifiable, accountable and empowered overall project leadership is at best hampered, at worst completely stymied.

2.3.   Mismatch between business and customer goals

In our experience of organizations where UCD is effectively practised, client-side stakeholders appreciate the business value and benefits of usability. However, in Government, we often find ourselves in situations where the goals and objectives of citizens are almost considered to be counter to the Departmental and policy objectives. In other words, it is not understood or acknowledged that the goals of the user *are* what the business should be designing for. Involving and accommodating users is in some instances perceived as an impediment to, rather than an enabler of project success. This can happen at both a *policy* level and a *design* level.

Example 1: At a *policy* level, one UK Government department is responsible for helping people to find jobs and get back into employment. Another department, however, is responsible for helping people to find training courses and get funding for courses. Each department has its own websites and "owns" different functionality. However, for citizens, finding training, getting funding and applying for jobs are all 'joined-up' activities in their wider life goals of having a secure and reliable income. But in this instance, the goals of individual departments result in the fragmented experience citizens have in interacting with these Government services on different websites, rather than as a joined-up experience.

Example 2: At a *design* level, we have seen Government staff publish data in unusable formats, write lengthy web pages on policy with little or no relevance to user goals, and restrict users' navigation options. This is due to policy staff with little understanding of usability attempting to shape users' *behaviour*, without accounting for how people actually interact with online media, nor how they *want* to.

We don't however believe that these three challenges (in sections 2.1 to 2.3) are insurmountable - we deeply believe, and indeed can demonstrate that these challenges can be overcome if the right support is provided. That is, support to empower the staff and create the right atmosphere in which UCD is allowed to effectively function across the organisational chain-of-command - from the often isolated practitioners on the "coal face" of the project to the sometimes distant decision makers, who are usually isolated from each other.

3. Case study

We will illustrate how UCD can be allowed to function across the Government organizations by describing a project to develop the Next Step website (Skills Funding Agency, 2010). The Next Step website was developed to support adults (18+ year olds) plan their career, find training courses and funding, and improve their job hunting and interview skills. It was funded by the Department of Business Innovation and Skills, and developed by the Learning and Skills Council, the Government agency then responsible for funding further education and career assistance programmes (since replaced by the Skills Funding Agency).

The website went live in 2010 after a year of joined-up UCD and build work. Staff at the Learning and Skills Council were responsible for delivering the website in

co-operation with other Government agencies, internal website development staff, and third party technology suppliers. Much praised for the successful outcome, it was nominated and reached the finals of the UK's e-Government awards.

While the case study below illustrates that it *is* possible to deploy UCD techniques effectively in Government, it needs to be remembered, however, that *all* Government departments need to adopt a more user centred culture and this requires organisational change that goes beyond the tactics deployed in any one particular project.

The subsections below describe the stages that the UCD team went through to design a citizen-focussed website. We describe how the UCD team overcame the three challenges described above:

1. Skills and method gap between UCD practitioners and Government decision makers
2. Teams and business processes working in isolation
3. Mismatch between business and citizen goals

It is worth highlighting upfront that overcoming these three challenges is not simply a matter of making sure that UCD practitioners follow UCD techniques. As we describe below, it is also important to pay close attention to managing stakeholder relationships.

Starting at the beginning by understanding the background to the project, then identifying users' needs, through to participatory design workshops, then detailed user interface design and usability testing, the key phases that the Next Step project went through, were:

1. Understanding the project background
2. Demystifying UCD for project stakeholders
3. Agreeing a Terms of Reference
4. Creating a unified vision using Participatory Design workshops
5. Challenging policy-oriented design-thinking
6. Maintaining momentum in the detailed design phase

We take each of these six phases in turn, describing how they addressed the three challenges outlined earlier.

3.1.   Understanding the project background

At the onset of the project, the UCD team were briefed about the project background, its history, its objectives, the project plan and key stakeholders. It became evident to the UCD team that the project had not taken a user-centred approach to date and indeed progress had "ground to a halt", with the client and other stakeholders unable to agree a vision for what the website would offer citizens

This is an instance of a project being delivered by teams working in isolation rather than in orchestration. We saw immediate evidence of this on the Next Step project: qualitative user needs research had been conducted by an external agency, with little awareness of the uses the research might be put to. In parallel, functionality was being developed by different teams, with little consideration as to how they might fit into the website, let alone as coherent user journeys. These functionalities included registration functionality, a curriculum vitae (resumé) writing tool, and a skills self-assessment questionnaire. The project manager appeared to have little sight of these sub-projects.

Indeed it was this situation that motivated the senior managers to turn to a radically different, customer-focused approach. Therefore, the six phases outlined in this section were only possible because the senior managers had approved them. Not all projects will be in this fortuitous position, but we regard having such a mandate to be essential.

3.2. Demystifying UCD for project stakeholders

We started by running a "show-and-tell" workshop with the project stakeholders who were unfamiliar with UCD approaches. In the workshop we showed what a persona actually looks like, what a wireframe is, how it differs from a prototype, and what is involved in usability testing (it's not user acceptance testing!) This was all an effort to work collaboratively with the client, build trust, make our techniques understandable, accessible, and transparent – in essence to demystify UCD and to bridge the skills and method gap between us, as UCD practitioners, and them, as the client.

3.3. Agreeing a *Terms of Reference*

After demystifying UCD we put together a sequence of UCD techniques to place the citizen back at the centre of the project: develop personas, run participatory design workshops, develop wireframes and high-fidelity prototypes, test these with users, then refine the prototype. We agreed to deliver a high-fidelity user-tested prototype and accompanying functional specification within 6 months.

All this was written and agreed in a *Terms of Reference* document (approximately 10 pages) in which we defined:

- The objectives and scope of the project
- UCD activities we would do (e.g. persona definition, participatory design workshops)
- Deliverables that these activities would produce (e.g. personas, presentation of personas, clickable prototype)
- Staff responsible for the deliverables
- Resources we would need (e.g. space, equipment, access to stakeholders)
- Timelines (a Gantt chart)
- Communication plan defining project stakeholders and how they would be communicated with.

Although this is a matter of good project management practice, in our experience projects often fail because these key documents are not discussed and agreed at the start of projects. We believe that a jointly created *Terms of Reference* document is paramount to avoiding confusion further down-stream.

3.4. Creating a unified vision using Participatory Design workshops

Different teams had been developing functionality with little consideration as to how they might fit into the website. And there was little coherent vision over what the website would offer citizens.

Our solution to this problem of fragmented teams working in isolation was to organize a participatory design workshop to bring together the user needs research and proposed functionality. Our aims for the workshop were:

1. Unified vision: We wanted key stakeholders (us, the client, user representatives, project managers, developers) to jointly develop a shared vision of the website. (Manktelow, 2005)
2. Client ownership: We wanted the client to take more ownership of the website design than they had been doing to date – and in a unified manner, not as a set of isolated teams.
3. Domain expertise: As UCD practitioners, we needed the input of client subject-matter experts (e.g. career advisers) so as to have a better understanding of what citizens would want from the website.

Without these in place, the project risked delivering disjointed functionality that users would be unable or unwilling to use.

In a three-day participatory design workshop we:

Carefully managed the stakeholders:

- Used the communication plan to invite the appropriate stakeholders (for both project and political reasons)
- Re-iterated the UCD process (to demystify UCD and again bridge the skills and method gap)
- Created a collaborative atmosphere in which hierarchies were left at the door
- Directly addressed overt and covert concerns over control, trust, and ownership.

Conducted the UCD technical business:

- Presented personas (based on the user needs research from an external agency)
- Co-designed user journeys on flip charts for these personas

The outcome of this workshop was a unified vision of what the users' needs were, what information and functionality these users would need, and how the website would enable access to these. As importantly, however, was a much greater sense of project coherence, collaboration, and trust among previously disparate teams.

3.5.   Challenging policy-oriented design-thinking

During the Participatory Design workshops we saw clear evidence of business goals being prioritized over user goals (one of our three main challenges discussed earlier). In the workshops some stakeholders wanted to structure user journeys around what *they wanted* citizens to do rather than what *citizens would want* to do.

For example, some stakeholders wanted users to register to the site before being able to write a CV (using the CV-writing tool), so as to maximize the number of registered users (and thus meeting a policy objective). We, as usability specialists, explained that citizens would probably be unwilling to register until they had experienced the benefits of the website first-hand, and so we recommended that citizens should register only when they wanted to save their CV – that is, we suggested that users would be more willing to register when the benefits were apparent.

The participatory design workshops provided a forum for identifying and discussing business goals, uncovering policy-driven thinking, and challenging false

assumptions about user behaviour. Over the three days of the workshops, trust between the parties developed and we could better appreciate each others' perspectives and concerns while also moving towards a unified design vision.

3.6.   Maintaining momentum in the detailed design phase

Once the set of user journeys had been finalised, we developed a set of grey-scale wireframes. We then organized another one-day workshop in which senior project stakeholders were shown what we had done so far. Again, we invited managers, user representatives, external and internal suppliers. We reiterated our objectives, showed our deliverables, requested feedback, and agreed next actions. We believe that the visual, discursive and collaborative nature of this workshop was critical in getting senior management's approval for the next phase of visual design. Moreover, it provided direct evidence to the senior management team of a cohesive team working together towards a common goal.

In the subsequent phases of the project we developed a clickable high-fidelity prototype, and then put it through user testing which project stakeholders attended. We also worked closely with external suppliers, explaining the prototype and uncovering technical constraints. In many ways, the prototype became the shared artefact of reference that held sub-teams together, and also provided a common ground to communicate and jointly focus on.

The six phases described above took the embedded UCD in the project in a structured manner. From developing personas, to running participatory design workshops, then designing prototypes and testing them with users, we helped deliver a website more closely matched to citizens' needs. In addition, the six phases also paid careful attention to stakeholder management, providing us with the leverage to take forward the UCD activities and deliver effective outputs.

4. Conclusion

We have suggested that e-Government has the potential to empower citizens by making Government services more accessible. However, our experience is that UCD practitioners face challenges in applying UCD techniques in the public sector. We discussed three challenges in this paper: (1) a lack of UCD skills and knowledge within Government departments, (2) isolated teams and business processes, and (3) a conflict between business and customer goals. In the Next Step project we found that demystifying usability by "show-and-tell" workshops helped close the skills and method gap. Moreover, involving client-side stakeholders in participatory design workshops gave them direct experience of the power UCD techniques in action. The workshops also enabled us to address the second challenge by bringing previously isolated teams and processes together to work in a unified manner. Finally, the workshops also helped identify and resolve conflicting business and user goals.

We do not claim that the approach we took to addressing the three challenges is the only or the best way. Future work could examine other approaches to overcoming the challenges we have described. For example, structured training sessions for Government staff may be more effective in overcoming the skills and knowledge gaps. Similarly, show-casing successful projects and embedding usability processes throughout the business can also be successful in getting buy-in to UCD (Shaffer, 2004).

For UCD to become standard practice in Government, however, much deeper cultural and organizational change will be required, going beyond the tactics deployed

in any particular project or specific departmental context. Issues that may need to be addressed to achieve this include:

- Recruitment of qualified UCD practitioners to senior leadership positions in areas focused on digital production in Government.
- Development of a professional class of qualified UCD specialists across Government, to manage and implement the design of digital services
- A rebalancing of the power structure in IT projects in production, so that the user centred considerations are given much greater weight in relation to the prevailing policy, technological and business process agendas.

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