

RESEARCH BRIEFING

Digital Benefits and Disbenefits Project

IMPLICATIONS FOR DESIGN

Nº2

Design implications for digital welfare HCI researchers and other people implementing digitised social protection payment public services

The *Digital Benefits and Disbenefits* project explored e-government technology-generated remote self-service encounters in welfare benefit public services. Analysis of findings from three studies were used to identify how associated harms to citizens might be reduced. Harms are negative effects impacting claimants themselves (e.g. time, physical, mental, financial) arising from the digital implementation itself, separate to policy choices (e.g. legislation, regulations) or the inherent nature of digital channels (e.g. availability of devices, internet access, ability to use devices and software). This *Research Briefing Nº2* describes the implications for design identified during the project.

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Introduction

Analysis of findings from the research's studies lead to the identification of design implications for digitised social protection payment public services, to reduce the types of harms identified during the research project (*Research Briefing N°1*).

Summary of implications for design

The design implications are grouped by broader Design Recommendations (DRs):

Design Recommendation		Design Implication	
DR-A	Support claimants' own ecosystems	DR-A(i)	Recognise how wider ecosystems contribute to social protection service delivery
		DR-A(ii)	Generate structured data for visibility and re-use by claimants and other actors
DR-B	Acknowledge claimants as people in digital design	DR-B(i)	Prioritise claimants' interests over system efficiencies
		DR-B(ii)	Ensure system and state accountability to claimants
		DR-B(iii)	Provide clear and configurable communications about process and decision statuses
DR-C	Reduce claimants' interaction burdens with digital welfare	DR-C(i)	Shift the burden of gathering evidence from claimants towards the state
		DR-C(ii)	Provide greater flexibility and accommodations for claimants in the accuracy, precision, timeliness and permanence of the remaining information they provide
		DR-C(iii)	Provide full social protection services across wider interoperable channels
DR-D	Embrace a wider ecosystem and fuller claimant activity viewpoint for digitised public services	DR-D(i)	Legitimise extensibility and customisation of digital infrastructure
		DR-D(ii)	Design for the needs of claimants' lives covering their expansive activities
		DR-D(iii)	Use claimant-related policy outcome measures to assess digitisation
DR-E	Design systems which support the division of labour with claimants' ecosystems	DR-E(i)	Integrate accurate specific and contextual primary guidance about making claims within systems and promote secondary professional assistance
		DR-E(ii)	Expand claimant autonomy, control and choice, backed up by transparency of actions and activities
		DR-E(iii)	Recognise changing trust effects in design of digital systems
DR-F	Design to assist claimants across the full span of their own activities	DR-F(i)	Provide capabilities for activities prior to, during and after direct public service interaction
		DR-F(ii)	Accept, permit and encourage direct sole-use, shared-use, assisted use, and indirect intermediated use and proxy use of systems
		DR-F(iii)	Recognise and promote the synergistic effects wider ecosystems can offer claimants
DR-G	Signpost when additional assistance should be sought and recognise the time and effort needed to complete these activities	DR-G(i)	Indicate to claimants when professional advice is crucial
		DR-G(ii)	Reduce barriers for claimants to seek assistance and allow time for this to occur

These design implications are meant for digital welfare HCI researchers and other people implementing digitised social protection payment public services. The two Case Studies used, Universal Credit (UC) and Personal Independence Payment (PIP), are UK public services targeting people living with poverty, to provide additional income. But participants noted that very few online government or other services are accessed by this population, and therefore these design implications can also be read with a different lens, interpreting them for technology development with this user group.

The earlier design implications (in DR-A and DR-B) were formed in the first study, drawn from experiences of accessing Universal Credit online and also by exploring speculative small changes to the existing system, providing eight design implications to reduce harms (impacts of service digitisation which are disadvantageous to claimants). The research participants described how the state's service design touchpoints (all the points of interactions, whether physical and virtual, technological and human, between a claimant and the state's facilities, systems and employees used to provide the public service) are only some of the activities which online claimants have to undertake to achieve and sustain access to the Universal Credit Online web application and the UC award payment.

Existing theory had drawn attention to the necessity of exploring all the mechanisms which control access, to analyse where, how and when harms arise, requiring a broader perspective to identify effects of digitisation. Therefore the later studies, involving the design and evaluation of digital interventions, primarily addressed design implication DR-A(i) (Recognise how wider ecosystems contribute to social protection service delivery). The final two studies in the research explored ecosystem effects through prototype digital interventions to reduce harms using previous implications in each. These led to the design implications in DR-D, DR-E, DR-F and DR-G related to how harms arise, and are attenuated or amplified by and through claimants' own ecosystems (all the other actors and components such as notation, instruments, rules, community and division of labour, which affect access by claimants to a social protection payment service).

Further details of each DR and its related design implications are presently described. Prior work, further discussion and explanation are provided in the thesis related to this project.

DR-A Support claimants' own ecosystems

It is accepted there is a degree of complexity in social protection payment public services and therefore assistance may be required to help citizens make and maintain claims for benefit awards. Consequently, digitised systems should acknowledge and facilitate the leverage of formal and informal third-party help and resources to increase people's resilience and increase uptake of state support for which they are eligible. Research participants in the first study had made their initial online claim for UC by themselves, without intermediated technology use. However, some subsequently sought additional assistance since their needs vary with their life patterns such as when their circumstances changed. There are already harms affecting those ecosystems, such as transfer of effort from the state to these ecosystems as the state attempts to achieve internal service delivery efficiencies, and the research's findings show that digital implementation choices can increase these harms. Digital service provision can also isolate people further from community assets, and design choices can make it more difficult for claimants to get assistance from actors in their ecosystems. The analysis also identified how a lack of transparency further adds to costs transferred to these ecosystems. Two related design implications are as follows.

DR-A(i) Recognise how wider ecosystems contribute to social protection service delivery

For these systems, the “service user” is rarely just one person and there should be provision for other actors in people’s wider ecosystems. Facilitate and aid these existing assets by enabling, encouraging and promoting information sharing, additional user roles with different privileges, delegated access, real-time-integrations, and other ways to involve the assistance of others.

DR-A(ii) Generate structured data for visibility and re-use by claimants and other actors

Provide, signpost and explain functionalities to span the fullest range of claimant activities, so as to reduce the need for, and use of, messaging/chat interactions (like the UC Journal) which result in unstructured data. Ensure the structured data enables re-use to increase wider ecosystem efficiencies: provide for recording and keeping full records of every interaction by every channel (including files, form submissions, all communications), and provide methods to ensure information can be found and referred to, and easily exported or shared with others as required.

DR-B Acknowledge claimants as people in digital design

The findings reveal how digital technologies can exacerbate power differences between claimants and the state. Public service digitisation is known to be at risk of weakening professional and relational values through reduced personal interaction between claimants and government officials, and the study examining UC Online found concerns with attitudes towards claimants who desire respect, to be treated as honest if imperfect, similar to previous work, rather than being assumed to be dishonest and lazy. There is a sense of a lack of transparency of decision-making processes including payment calculations, also noted by others, and what evidence was used and how. The findings contribute to observations about similar services in other jurisdictions’ fair use of data and how digital technologies can lead to the destruction of value. However, despite a high level of concern by many participants, some thought the relevant public sector organisation should be the primary source for information, assistance, tools and decisions. Three related design implications are as follows.

DR-B(i) Prioritise claimants’ interests over system efficiencies

All digital welfare design processes, methods and decision-making should prioritise claimants’ needs to achieve best outcomes for individuals rather than system efficiencies. Organisational knowledge and resources should be utilised to this respect including intervening in advance to identify matters that affect claims or what claimants may have forgotten about.

DR-B(ii) Ensure system and state accountability to claimants

Equalise accountability between claimants and the state. Promote a sense of fairness by enforcing an expectation that service level standards for actions and response times should be similar to those expected of claimants, with related penalties not disproportionately, or only, affecting claimants. Provide tools/methods for claimants to easily check, query and challenge actions and decisions.

DR-B(iii) Provide clear and configurable communications about process and decision statuses

Use methods proactively, such as internal notifications and external alerts, to help people understand what they need to do/when, and what is in progress by others. Provide confirmations when actions have been completed, information received, decisions made and statuses changed. To accommodate people’s individual needs and preferences, provide choices about what, when and how these are received, who they are sent to and copied to. Offer content options such as

whether to have a topic, priority and hyperlink, and ensure it is clear where and how to complete any required action.

DR-C Reduce claimants' interaction burdens with digital welfare

The digital channel is used to both access and receive the UC service, so any barriers then continue to be present as people maintain their awards and receive payments. Claimants' difficulties are worsened by an unfamiliarity with welfare benefit rights, regulatory requirements and service provision, leading to greater uncertainties about online functionality: what to use, when, how and where. Limitations with interfaces, including lack of functionality, reflect service journeys which do not match life experiences. Similar to other work, claimants do not want to perform unnecessary work such as data entry activities, which does not provide real agency. Instead, the findings indicate claimants want insight and control over data about them. Different time, different place, or asynchronous distributed interactions, lead to a disjoint with claimants' life experiences. The participants repeatedly identified this as contrary to their experiences with synchronous interactions in other systems online and also across other channels, in a similar way as understood in multi-touchpoint experience service design, which for public services involve a series of individual interactions between the citizen and the state. Three further related design implications are as follows.

DR-C(i) Shift the burden of gathering evidence from claimants towards the state

Transfer effort from claimants to the state, to improve timeliness and reliability. Prioritise the implementation of digital processes to gather or import, check and use necessary data from internal and external providers. Change claimants' role to verifying the data, rather than providing it, and ensure claimants have visibility and control over derived status attributes.

DR-C(ii) Provide greater flexibility and accommodations for claimants in the accuracy, precision, timeliness and permanence of the remaining information they provide

Design for people's lives which can be complex and where changing events and circumstances, often beyond their control, drive their need and eligibility for social protection payments. Allow adequate, rather than complete and precise, data that suffice for the state's needs. Increase flexibility of use by avoiding strict deadlines; limiting the use of actions that block progression; permitting correcting, updating and reversing information; and withdraw penalties for simple slips and lapses.

DR-C(iii) Provide full social protection services across wider interoperable channels

Ensure all service provision and modes of assistance (e.g., provision of advice, practical support and self-help guidance) are available through multiple interaction channels (e.g., telephone, web, mobile app) which are accessible to varying resources and capabilities (e.g., communication skills, equipment, language, physical and mental abilities). Permit the use and intermixing of channels without restriction. Consider providing on-demand synchronous interactions through digital as well as other channels.

DR-D Embrace a wider ecosystem and fuller claimant activity viewpoint for digitised public services

It is recognised in prior work that more complex personal matters may never be addressed by digital welfare systems, thus requiring ways to cater for these needs. Closed systems and restricted information about design and operation, limits opportunities for others to build community infrastructure around these public services. The study involving the design and evaluation of

a prototype digital intervention for UC (*Research Briefing N°3*) explored access harms and gains outwith conventional digital systems boundaries by using an augmentation which blurs the boundaries of state-provided systems, demonstrating how existing systems might permit more expansive ecosystem integration. Examples provided by the participants of service-specific harms suggest that accounting for the overall gains and harms should be based upon measures of the intended policy outcome (in UC, to mitigate low household income) because this matches the claimant goal (to receive the UC award). In other words, for claimants the internal efficiency of delivering a service is much less important than the effectiveness of delivering the objective of the social protection policy. These points lead to the following design implications, which add specific guidance to the earlier design recommendation DR-A (Support claimants' own ecosystems):

DR-D(i) Legitimise extensibility and customisation of digital infrastructure

Deploy technology in ways that will permit, support and advocate integration with digital welfare by other actors. Provide timely, free and open access to system information, supporting content, and details of upcoming changes and updates to support these efforts.

DR-D(ii) Design for the needs of claimants' lives covering their expansive activities

Recognise that service take-up requires more than direct interactions with the state. Ensure design is not restricted to service delivery between interaction points of claimants and the state within a 'user journey', and instead span all actors and mediating instruments that come together to achieve the claimant's goal.

DR-D(iii) Use claimant-related policy outcome measures to assess digitisation

The most relevant factors of success of digital transformation are metrics based on the intended purpose of the policy rather than focusing on state-incurred financial costs. The advantages of digitised policy implementation must be balanced with the gains and harms across the whole ecosystem from the viewpoint of claimants.

DR-E Design systems which support the division of labour with claimants' ecosystems

Other researchers have described how digitisation can raise expectations that claimants will become more interactive, transferring effort to them, but this requires sufficient capabilities. Participants in the third study of the research project, exploring the design and evaluation of a digital intervention to reduce harms in UC (*Research Briefing N°3*) described how many claimants do not look for additional assistance, even when they ought to; mirroring what different participants in the first study had described about difficulties knowing what to do when unexpected or unusual life events occur. Proactively offering independent assistance could counter this, especially to those less digitally skilled, who participants noted can easily be overwhelmed. Other researchers saw the potential for better access to relevant information as a way to counter imbalances of power between claimants and other actors countering loss of control. Like other work identifying the need for greater legibility on what a third party is doing for someone, so a citizen can better comprehend what actions are occurring by an intermediary on their behalf, more collaborative methods to support remote self-service claimants will also need to expose such information. This would help address concerns raised by participants about who to trust, and also adds to the previous design implications DR-A(ii) regarding supporting visibility and to contribute to DR-B(ii) by increasing accountability of all actors, not just between the state and the claimants. These matters lead to three related design implications.

DR-E(i) Integrate accurate specific and contextual primary guidance about making claims within systems and promote secondary professional assistance

Complement state provision to explain, inform, guide and educate claimants within the context of their existing interactions with digital welfare. Expose and promote contact with providers of independent professional advice providers who can offer assistance about both the public service and other matters related to the policy's objective.

DR-E(ii) Expand claimant autonomy, control and choice, backed up by transparency of actions and activities

Enable claimants to better engage with digital welfare and empower them to make their own choices and decisions. Attribute information sources, other advice and decisions; build in logging and audit trail generation; provide access to records of what information was used to make choices/decisions and by whom; provide mechanisms for claimants to question, discuss and challenge actions, provide feedback, and make complaints.

DR-E(iii) Recognise changing trust effects in design of digital systems

Claimants have different opinions about the trustworthiness and motivations of the state, unfamiliar claimants and other actors, which affect their tolerance to accept harms, requiring flexibility in choosing assistance and recognition how this trust can change over time: prior to making a claim, while maintaining a claim, and after ceasing to be a claimant.

DR-F Design to assist claimants across the full span of their own activities

The final study explored the design and development of a toolkit (*Research Briefing Nº4*) to fill a gap between existing touchpoints to claim PIP. This examined how actors and instruments in citizens' ecosystems can contribute before, during and after each conventional service delivery interaction (the gaps around touchpoints) e.g., getting assistance sooner, or ensuring more time to collect evidence from supporters makes it more likely to make a better claim, which in turn increases the likelihood of an award. This requires flexibility in not only availability of alternative communication channels but also the arrangement of actors and instruments for shared work since these affect how and where harms arise: in time, in space and the assignment of activities and actions. This wider opportunity for involvement must also recognise that a claimant's own objective to make a claim is not the cause of their need and that facilitating ecosystem access can also lead to synergistic gains. These ideas lead to three related design implications.

DR-F(i) Provide capabilities for activities prior to, during and after direct public service interaction

Consider the temporal aspects of claimants' activities across the whole lifecycle from before making a claim, to after ending an award. Acknowledge how earlier and repeated interventions can reduce later harms, empower claimants and increase the capabilities of claimants.

DR-F(ii) Accept, permit and encourage direct sole-use, shared-use, assisted use, and indirect intermediated use and proxy use of systems

The nature of activities requires flexibility in how claimants and other actors in ecosystems interact with each other and with state systems, and these can change over time.

DR-F(iii) Recognise and promote the synergistic effects wider ecosystems can offer claimants

Networks of actors and instruments contribute gains to claimants unrelated to the social

protection payment public service, yet can contribute to improving people's lives. Ensure the integration of other actors is not purely transactional, but also provides opportunities to explore other beneficial aspects.

DR-G Signpost when additional assistance should be sought and recognise the time and effort needed to complete these activities

The meaning of the PIP request for supporting evidence form's questions and the importance of how they were answered is not clear, whether the forthcoming online form or existing paper form, similar to comments by other participants about UC Online. The necessity and urgency of seeking professional help for the PIP Case Study topic is a stronger, more-comprehensive, recommendation than for the UC Case Study, but even the findings from research on UC indicated a recommendation for professional assistance in some circumstances (e.g., already receiving an existing legacy benefit payment), for some events (e.g., partner moves into household) and for some capabilities (e.g., poor reading skills, computer anxiety, English/Welsh not first language). The related design implications are as follows.

DR-G(i) Indicate to claimants when professional advice is crucial

Some activities undertaken to receive a social protection payment award require much more specialist knowledge and experience than most citizens have; such involvement can counter complexity to avoid becoming overwhelmed; increase visibility of when claimants should check whether advice can help by highlighting higher-risk parts of the process; avoid overly simplifying processes which can hide the underlying and necessary complexity of making and maintaining a claim and thus discourage seeking knowledge and experience in the wider ecosystem.

DR-G(ii) Reduce barriers for claimants to seek assistance and allow time for this to occur

Provide pointers to claimants where they can obtain independent professional help ensuring there is always a choice of communication channels and sources, whether by self-service or from elsewhere in ecosystems. Avoid deadlines which limit claimants' opportunities to access assistance, providing sufficiently long periods for activities to include these actions if required.

Derived outputs

Subsequent to the research, and to help disseminate the findings, a practical tool has been created for those designing and implementing e-government services. DBD Cornucopia helps teams review their work to identify where and how harmful effects can arise, using gamification. Further information and downloads are available at <https://www.digitalbenefits.uk/cornucopia/>

Research Briefing Nº2: Implications for Design

This is one of five documents describing outputs from Colin Watson's doctoral human-computer interaction (HCI) research project *Digital Benefits and Disbenefits*, undertaken 2019–2023 at Open Lab, Newcastle University, UK. These research briefings draw on findings, analysis and discussion published in his thesis *Understanding and Reducing the Negative Effects of Digitisation on Claimants' Access to Online Social Protection Services through the Design of Citizen-Controlled Digital Tools*, supervised by Dr Ahmed Kharrufa (Open Lab, Newcastle University) and Professor Ruth McAreavey (Sociology, Newcastle University). Colin Watson qualified for the award Doctor of Philosophy in the School of Computing on 18 March 2024.

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