

Simple Account Origination Experiment

Exploring CDR-enabled Mortgage Refinancing

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Abstract

In 2023, the Data Standards Body (DSB) received feedback from the Consumer Data Right (CDR) community and agencies that there was a need for alternative mechanisms to explore speculative CDR propositions, especially in the context of actions being considered in the CDR.

An 'experiment' was proposed in response to this feedback. Following socialisation with key CDR stakeholders a simple bank account¹ origination experiment was initiated to leverage existing CDR capability. The DSB led this experiment with the participation of accredited data recipients, data holders, and LIXI.²

The experiment focused on how the CDR could enable new-to-bank customers to submit a loan product application and facilitate mortgage refinancing. To assess the most compelling opportunities for CDR-enablement of this use case, the experiment group collaborated on end-to-end consumer journeys and designs that were tested in consumer research, and co-developed experimental technical standards to facilitate application discovery requirements and data disclosure.

The experiment identified several ways that the CDR could enable this use case with existing consent mechanisms and the leveraging of existing LIXI standards, as well as hypothetical CDR enhancements that could include a consent uplift, a 'warm lead' instruction, and voluntary CDR standards. This paper discusses the findings and insights following the completion of this experiment. The experiment also identified limitations and gaps that would benefit from further research and consultation.

¹ In this context, a 'simple' account is one that is available to a broad base of customers and does not require manual tailoring or a custom process to establish.

² [LIXI](#) is a not-for-profit company that develops mortgage processing data message transaction standards.

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Introduction

This report discusses the findings and insights generated through a government collaboration with industry, which explored how the CDR might enable mortgage refinancing.³ In response to community feedback, the DSB commenced ‘experiments’ to explore speculative CDR propositions, especially in the context of actions being considered in the CDR.⁴ A simple bank account origination use case was the first experiment subject used to test and explore the CDR’s capabilities.

The origination of a financial services account can be highly complex and may involve Know Your Customer (KYC) identity verification, credit decisioning and fraud checking. It also involves complex requirements to meet obligations such as Anti-Money Laundering and Counter Terrorism Financing (AML/CTF) regulations, among many others. The stated purpose of this experiment was to identify a relatively easy path for the introduction of account origination for the banking sector that could be adopted with minimal regulatory or implementation overhead.

The DSB led this experiment with the participation of accredited data recipients (ADRs), data holders (DHs), and LIXI. The experiment group initially discussed a range of bank account origination propositions, and agreed to focus on how the CDR could enable new-to-bank customers to submit a loan product application and facilitate mortgage refinancing. A video outlining the fictional offering can be viewed [online here](#).

To assess the most compelling opportunities for the CDR to enable this use case, the experiment group collaborated on end-to-end consumer journeys and consent designs that were tested in Consumer Experience (CX) research, and co-developed experimental standards to facilitate application population and data disclosure.

The experiment tested 4 hypotheses and identified several ways that the CDR could enable this use case. These findings included that the use case could be enabled with existing consent mechanisms and the leveraging of existing LIXI standards, with additional opportunities including further streamlining with hypothetical CDR enhancements that could include a consent uplift, a ‘warm lead’ CDR action, and voluntary CDR standards.

Experiment Overview

The Account Origination Experiment ran for 30 weeks, starting on 5 October 2023, with participants meeting weekly on a Thursday.

A total of 26 meetings were held. Meeting agendas, action items and minutes have been made publicly available on [GitHub](#).

³ While the group initially considered how new-to-bank customers could use the CDR to apply for a credit card or home loan, the decision was made to focus on mortgage refinancing. Starting with this complex use case was chosen with a view to extend the findings to simpler account origination scenarios. While this approach was valid, this report should not be assumed to apply to other use cases by default. Refer to [Use Case Insights](#) for more detail on the selected use case.

⁴ While the Treasury is considering action initiation designation, this experiment does not imply or presuppose what actions may be designated in future, nor does the report imply a pathway to designation has been made.

The experiment involved ADRs, DHs, and LIXI as per the below table:

NAME	ORGANISATION	NAME	ORGANISATION
Jim Basey	Basiq	Dan Jovevski	WeMoney
James Bligh	DSB	Harish Krishnamurthy	ANZ
Eunice Ching	DSB	Joseph Lucas	ANZ
Andrew Clinch	ANZ	Terri McLachlan	DSB
Kris Davant	Frollo	Michael Palmyre	DSB
Jon Denly	Basiq	Shane Rigby	LIXI
Sewmee Dharmasiri	ANZ	Diana Runkle	DSB
Shane Doolan	Adatree	Tony Thrassis	Frollo
John Heaton	Alex Bank	Richard Williams	Frollo

Approach

The experiment progressed in three broad phases focused on **conceptualisation**, **evaluation**, and **analysis**, through which opportunities for adoption and improvement were considered.

The **conceptualisation phase** of the experiment focused on the problem space, using end-to-end customer journeys to outline existing processes and highlight considerations within and adjacent to the CDR. This phase considered various ways to facilitate a loan application, including an exploration of CDR consent mechanisms that could be leveraged, consumer journey considerations, relevant datasets, and technical functionality. In this stage, an experiment canvas was developed to outline the parameters of the experiment, the value proposition of CDR-enabled mortgage refinancing, research questions, and regulatory considerations (see: [experiment canvas](#)). A use case blueprint was also developed to outline the hypothetical end-to-end future state of a CDR-enabled home loan application journey for evaluation in CX Research (see: [experiment blueprint](#)).

The **evaluation phase** of the experiment tested refined consent flow designs, experimental standards, and various artefacts in consumer research. API specifications were published online for participants to assess and, where possible, implement (see: [simple bank account origination standards](#)). These experimental standards outlined additional Product Reference Data (PRD) and a new product application endpoint. Ten consumer participants were engaged in CX research sessions to evaluate the experiment proposition and consent flow artefacts based on the experiment blueprint (see: [wireframes](#)).

In the experiment's **analysis** phase, participants assessed the viability and desirability of the proposition based on findings from the evaluation phase. This included the synthesis of key insights from CX research regarding consumer adoption, the benefit and form of supporting standards, and the identification of opportunities that may facilitate the implementation of this use case. This report focuses on key findings and opportunities arising from the experiment; detailed insight descriptions, including CX research, can be found in the appendices.

Hypotheses

The following hypotheses⁵ were evaluated as part of this experiment:

1. New PRD fields describing product application requirements would reduce overheads for a service seeking to integrate with multiple banks.
2. An account origination API that provides a “Warm Lead” to a bank would be relatively low risk and impose a relatively low regulatory burden while still supporting an acceptable consumer experience.
3. An account origination API that passes application data into existing business processes, without requiring ongoing ADR interaction with the consumer, would reduce implementation burden while supporting an acceptable consumer experience.
4. The initial use of LIXI data models will reduce implementation costs for participants.

Measurement

The below measures were used to guide the evaluation of the hypotheses:

- An estimation by each participant of the cost to implement the resulting experiment solution as a production capability.⁶
- A CX review of the resulting solution to evaluate the acceptability of the solution for consumers.
- Perspectives of the viability of the approach and solution from experiment participants.

Assumptions

The hypothetical future state evaluated in the experiment included the following assumptions:

- The ADR and prospective lender would both be accredited, but the lender would either become a data holder of the data, or would handle data according to non-CDR protections, such as the Privacy Act and in line with their existing lending obligations.
- Implementation of the Consent Review proposals, app2app authentication, and FAPI 2.0 Rich Authorization Request (RAR) functionality for the initial consent flow between the ADR and DH.
- Simplified consent flows for accredited person disclosure consents and/or the process for an accredited person to be a DH (see Rule 7.2 in Schedule 3, Part 7), where duplicative consumer permissions were omitted to facilitate data disclosure where no pre-existing consumer relationship with the prospective lender exists.

⁵ These hypotheses reflect those listed in the original experiment proposal paper, available [here](#).

⁶ During the experiment, participants agreed that a complexity measure, rather than a cost estimate, was a more appropriate measurement approach. For further details, please refer to the insights on [Implementation Cost](#).

Key Findings and Opportunities

Conceptualisation

This section outlines the key findings generated during the conceptualisation phase, which focused on the problem space, value proposition, and core enablers.

Existing CDR mechanisms can already enable simple bank account origination, but they are under-utilised and sub-optimal.

The experiment identified several CDR consent mechanisms that could be used to enable this use case today, where an ADR discloses data to a lender for the purposes of a loan application.

Participants are already using Trusted Adviser Disclosure Consents to do this via mortgage brokers, but other consent mechanisms that could be adopted are underutilised. This includes accredited person (AP) disclosure consents, which could facilitate this use case between accredited parties. Rule 7.2 in Schedule 3, Part 7, which allows an accredited person to become a DH of CDR data, could also enable this use case, though there was limited awareness of this rule among participants. Rule 7.2 could allow data to be received by an Authorised Deposit-taking Institute (ADI) directly, potentially including derived data, rather than adding an unaccredited intermediary or broker to the process.

However, both Rule 7.2 and AP disclosure consents were noted as overly complex due to the multiple and unintuitive sequencing of consent requirements. Simplifications to these mechanisms were identified in the experiment and tested in the evaluation phase, where low value and duplicative elements were omitted to streamline the consent flow.

CDR should initially focus on application submission rather than an end-to-end account origination process.

The process for bank account origination can be lengthy, requiring a consumer to take many steps, and may involve a wide range of additional parties.

The experiment suggested that the CDR could initially focus on helping ADRs understand what information to include when submitting an application to a specific lender, the collection of the required data, and the submission of the application.

This was described in the experiment as a 'Warm Lead' or 'Straight To' processing, where the application is passed straight to the bank to manage, rather than 'Straight Through' processing, where the ADR may manage the entire process to completion.

An application endpoint must be client authenticated in some way.

While the receipt of an application should not require customer authentication in all circumstances (as the applicant may not yet be a customer) it should not be an open, unauthenticated, API.

The system facilitating the submission must be known to the bank as this is material in the decisioning process undertaken during origination. The experiment suggested that some form of client authentication is therefore required.

Existing regulatory frameworks will need to be considered beyond the CDR.

Compliance with existing regulatory frameworks will need to be considered in conjunction with a CDR-enabled application for any financial services account. For a lending product, this would need to consider frameworks including the Australian Securities and Investments Commission (ASIC) Design & Distribution Obligations, National Consumer Credit Protection Act (NCCP), and Responsible Lending requirements. However, these obligations would sit outside of the CDR and as such the ADR and lender would need to consider and meet them separate to their use of the CDR.

Evaluation

Key findings from the evaluation phase are listed in this section, where the experiment tested API specifications and refined consent flow designs.

The CDR could add value to bank account origination with existing CDR data and an extension of PRD to aid the discovery of application submissions.

PRD for banking defines financial product attributes, from eligibility to pricing. The experiment validated that PRD could be extended as a discovery mechanism to assist with programmatic product application. However, the accuracy of an application would depend on the quality of the PRD provided by the bank and may be made more complex where application requirements vary significantly by bank.

The experiment also validated that existing CDR data that is already designated can be used to pre-populate and streamline applications. CX research also showed that some consumer participants expected non-designated data held by banks, such as tax file number (TFN) and identity information, to be available for the ADR to access through the CDR.

Application may be complex for a CDR standard, so an existing LIXI standard may be preferred.

Initially, it was assumed that a CDR endpoint for the receipt of a basic application should be defined by the DSB. The experiment found that, for this use case, the creation of such an endpoint may require significant effort to produce what the LIXI standard has already achieved. For lending and transactional products, the development of a CDR application endpoint was shown to be less effective than adopting LIXI²⁷ as a normative standard. However, experiment participants suggested that despite the option of using LIXI, it would still be necessary to explore open standards that support different business models, products, sectors, and approaches to market.

⁷ For more information on the LIXI2 standard, see [this overview](#).

CDR-enabled mortgage refinancing was viewed by consumers as valuable, streamlined, and trustworthy.

The augmented CDR consent flow received a positive response in CX research. Consumer participants viewed the CDR-enabled process as trustworthy and simple compared to existing processes, with behavioural indications showing a high likelihood of consumer adoption.⁸ Consumer participant mental models aligned with the 'Warm Lead' or 'Straight To' process, and the research suggested that consumer expectations would not be met if the lender asked them to re-supply or re-verify data in addition to what the ADR had already provided.

Analysis and Opportunities

This section discusses further opportunities to support CDR-enabled mortgage refinancing in addition to the factors outlined in the evaluation phase.

Existing CDR consent flows could be simplified to more effectively support this use case.

The consent flow simplifications tested in the evaluation phase identified where low value and duplicative elements could be omitted to streamline the consent flow. These specifically relate to AP disclosure consents and the process for an accredited person to become a data holder of CDR data (see rule 7.2 in Schedule 3, Part 7). The tested simplifications removed superfluous steps and information and focused on allowing the consumer to provide a single express consent to the ADR to disclose data to the lender.

These simplifications would be critical to enabling use cases where the consumer does not have a pre-existing relationship with the lender or other end-recipient. The same improvements could be considered for the equivalent energy sector rule that allows an accredited person to become a DH, which could be explored in future experiments on energy account switching.

Initial support for this use case with voluntary standards could ease implementation burden.

The experiment highlighted an opportunity for voluntary standards to be supported in the CDR. This new standards pathway would allow banks to voluntarily offer additional information for PRD and supported schemes.

The voluntary nature of such a standard would be important as this CDR-enabled use case may result in some implementation burden, which could be eased with implementation optionality – i.e. voluntary standards.

The creation of voluntary CDR data standards may enable participants to assess the commercial benefits of this and other use cases against the associated costs before implementing. This could provide competition drivers for banks to support CDR-enabled account origination whilst also allowing market forces to drive adoption and uptake of action types beyond data sharing.

However, the voluntary adoption of this proposition would be highly dependent on market conditions, including both commercial appetite and mutual participation by ADRs and DHs.

⁸ For more information on consumer adoption, refer to insight [CX6.1](#) in Appendix C and information on [Behavioural Archetypes](#) and the [Fogg Behaviour Model](#) in Appendix E.

Proceeding with voluntary implementation could also allow policy makers to assess adoption rates and success before considering any need for government intervention, such as designation. To support the CDR-enabled use case defined in this experiment, a specific category of standards would need be defined for stable voluntary extensions.

A free LIXI2 standard could be offered to facilitate application submission.

While CDR PRD standards could facilitate the discovery of application requirements, the evaluation phase suggested that adoption of existing LIXI2 standards may be more effective than the development of a CDR application endpoint.

LIXI has offered to develop and maintain a LIXI2 CDR standard to support a CDR-enabled account origination use case. This freely available LIXI standard would consist of a small subset of the existing LIXI2 Credit Application (CAL) Standard and would be made available to any participants in the CDR under a zero-cost licence, using a sign-up model to access the relevant schema. The ability to access a free LIXI2 standard would provide a useful starting point for reducing implementation costs for participants. Some participants raised concerns about the reliance on a licensing model and the ability to openly maintain the standard. As identified during the evaluation phase, open standards may still be necessary to support different business models, products, sectors, and approaches to market, especially where no LIXI equivalent exists for an alternative sector or use case.

Curated tooling, purpose-based consents, and use case specific guidance may help enable key use cases while also reducing implementation costs.

Participants suggested there was ambiguity regarding how CDR mechanisms could be used to enable this use case, which could lead to conservative implementations that are less effective. The experiment indicated that specific guidance, mechanisms, and tooling to clarify how to leverage rules and standards for this use case would be useful.

Providing curated tooling could help reduce implementation costs, including for voluntary standards, as demonstrated with the use of existing DSB libraries in the experiment. A publicly available library curated by a federal entity was also suggested to be useful, particularly as some participants noted the use of pure open-source libraries would be difficult due to existing compliance policies.

Purpose-based consents (i.e. a specific set of data cluster language and/or scopes specifically designed for this use case⁹) could also improve consumer experiences, increase uptake, and be extended to support other functionality.

Providing implementation guidance for this use case in the form of a ‘use case blueprint’ was also agreed to be valuable by experiment participants. This artefact could consider how to enable this use case in current state, with potential improvements to inform future state considerations. Use case blueprints have been requested for other use cases since the conclusion of the experiment and could easily be extended based on community demand and program priorities.

⁹ See the [Decision Proposal 183 – Purpose Based Consents](#) consultation for further detail.

Standards enhancements can make the account origination process more effective.

Analysis and CX research conducted during the experiment suggested commercial and consumer benefits may result from further CDR improvements, including:

- **Rich Authorization Requests (RAR)** to enable greater accuracy and streamlining regarding required accounts, where the ADR can communicate which accounts are necessary for the use case. CX research indicated support for this functionality.
- **Enhanced messaging capabilities** to facilitate status updates between the lender and ADR, which some experiment participants supported and CX research suggested consumer participants would expect once an application has been made.
- **Authentication improvements**, including authentication flows with improved consumer experiences, would streamline the initial data collection process and help improve the end-to-end journey.

CDR-enabled account origination can be considered a form of action initiation.

The experiment conceptualised how a CDR consent can be leveraged by an ADR to instruct a potential lender, on a consumer’s behalf, to initiate a loan application. In the absence of any government declaration or designation, it would be voluntary for the lender to act on the instruction.

In the context of the account origination experiment, the ‘instruction’ to initiate a loan application could be passed by the ADR to the lender as a message clarifying the purpose of the data disclosure. In this sense, the experiment helped to demystify the concept of action initiation, and demonstrated a simple, voluntary, and low fidelity way for the CDR to support action initiation that could be applied to other use cases through further experimentation.

Hypothesis Results

The hypothesis results are summarised in this section based on the findings of the experiment.

***Hypothesis 1:** New PRD fields describing product application requirements would reduce overheads for a service seeking to integrate with multiple banks.*

The evidence partially supports the hypothesis.

While the inclusion of additional PRD fields can reduce overhead, refinement to the existing structure is needed. This method alone is also insufficient in significantly reducing ADR overheads but can be paired with other approaches to further relieve implementation burden.

***Hypothesis 2:** An account origination API that provides a “Warm Lead” to a bank would be relatively low risk and impose a relatively low regulatory burden while still supporting an acceptable consumer experience.*

The evidence partially supports the hypothesis.

The experiment found that some regulatory burden is inevitable for a more valuable consumer experience, particularly for complex use cases (e.g. home loan account origination). The absence of prior regulatory or validation steps may be more viable for simpler use cases (e.g. savings account origination). Further investigation would be necessary to better understand how other use cases could balance regulatory and technical burden and a valuable consumer experience.

Hypothesis 3: *An account origination API that passes application data into existing business processes, without requiring ongoing ADR interaction with the consumer, would reduce implementation burden while supporting an acceptable consumer experience.*

The evidence partially supports the hypothesis.

Having the CDR facilitate the application submission (i.e. 'Warm Lead' or 'Straight To') rather than the complete account origination process (i.e. 'Straight Through') can lower the implementation burden for banks while providing an acceptable customer experience. This could minimise disruptions to current business practices, though commercial models would ultimately need to evolve for this use case to be successful. Implementation cost and effort would also be affected as increased use case complexity may result in an increase to compliance obligations.

Hypothesis 4: *The initial use of LIXI data models will reduce implementation costs for participants.*

The evidence suggests yes.

Using LIXI data models as a starting point would reduce implementation costs for participants, especially for 'Straight To' application processes. However, open standards that recognise different business models and approaches in market and cater to other use cases and sectors will still be necessary in the future.

Conclusion

The account origination experiment has identified the following key considerations:

1. Consumers found the CDR-enabled mortgage re-financing use case to be streamlined, trustworthy, and valuable;
2. CDR data standards for discovering and submitting bank applications may be of material value and could likely reduce switching costs;
3. The CDR could initially provide a voluntary PRD standard for the discovery of application submission requirements;
4. The mechanism for application submission may be complex for a CDR standard, so the use of the existing LIXI standard may be preferred;
5. Support for this use case could be made more effective with consent simplifications and enhanced data standards;
6. Voluntarily adoption may still generate economic activity in the absence of a mandatory designation, but adoption itself would ultimately depend on the right market conditions and mutual cooperation between industry participants; and
7. The complexity of action initiation depends on the use case. While mortgage refinancing is complicated, the use of CDR action initiation to enable it can be simple and still provide commercial value and consumer benefit.

The experiment format and approach proved to be an effective way to explore speculative CDR propositions with industry participants. Future experiments should explore other use cases, actions, and sectors, and should be informed by industry requests and government priorities. The likelihood of voluntary adoption by industry should also be explicitly investigated in future experiments, along with further research and consultation based on the identified limitations and gaps from this experiment.

Following the conclusion of the experiment, the next steps are expected to be:

- The DSB and Chair will consider a new ‘voluntary standards’ category. Further details will be provided in a noting paper on voluntary standards;
- Subject to public consultation, the [experimental account origination standards](#) will be converted into voluntary standards;
- If voluntary standards are made, the DSB aims to gauge success by measuring factors such as implementation and adoption rates. The DSB welcomes community input on effective ways to approach this assessment;
- New CX artefacts will be created to support the community in the form of ‘use case blueprints’ to outline how CDR consent mechanisms could currently be used to enable mortgage re-financing; and
- The DSB, LIXI, and the respective Chairs will discuss how to progress a free LIXI2 standard and the subsequent adoption of them in the CDR data standards.

This report will be published on GitHub as [Noting Paper 348](#). The DSB welcomes community feedback, including suggestions on areas that should be prioritised for action and further investigation. This report will be socialised with other CDR agencies and organisations involved in the regulation and supervision of the Australian financial systems.

The DSB is planning further use case enablement experiments following the success of the account origination experiment. If there are topics that you would like to see explored as part of future experiments, please provide your suggestions in response to this report as part of the Github page for [Noting Paper 348](#).

Appendices

Appendix A: Summary of Findings and Opportunities

Appendix A presents a table summary of testing results and findings, which are grouped according to theme. Each ID links to further details about the finding outlined in the subsequent pages of this document.

ID	Finding
Hypotheses	
Hypothesis 1	<p>New PRD fields describing product application requirements would reduce overheads for a service seeking to integrate with multiple banks.</p> <p>The evidence partially supports the hypothesis.</p>
Hypothesis 2	<p>An account origination API that provides a “Warm Lead” to a bank would be relatively low risk and impose a relatively low regulatory burden while still supporting an acceptable consumer experience.</p> <p>The evidence partially supports the hypothesis.</p>
Hypothesis 3	<p>An account origination API that passes application data into existing business processes, without requiring ongoing ADR interaction with the consumer, would reduce implementation burden while supporting an acceptable consumer experience.</p> <p>The evidence partially supports the hypothesis.</p>
Hypothesis 4	<p>The initial use of LIXI data models will reduce implementation costs for participants.</p> <p>The evidence suggests yes.</p>
Additional insights	
Use Case Insights	
UC1	A CDR facilitated process for bank account application could be of material value.
UC2	CDR should initially focus on application submission rather than an end-to-end account origination process.
UC3	A CDR based solution should leverage existing systems and processes.
UC4	An application must include broker/advisor/intermediary data in addition to applicant data.
UC5	An application endpoint must be client authenticated in some way.
UC6	Commercial models will need to evolve if this use case is implemented.
Regulatory Insights	

ID	Finding
RG1	This use case intersects with several regulatory frameworks in addition to CDR.
RG2	A purpose-based consent for this use case would be of value.
RG3	A new 'voluntary standard' concept would be needed to support this use case.
RG4	It is unclear if this is a new distribution channel or an extension to an existing channel.
RG5	Certain CDR consents can already enable this use case, but they are under-utilised.
RG6	The consumer experience of the account origination process can be further streamlined by addressing certain existing requirements.
RG7	Using a CDR consent to facilitate account origination can be considered a form of action initiation.
Consumer Experience Insights	
CX1.1	Consumer participants demonstrated a high level of comprehension of the prototype presented. Although most found it to be a streamlined experience, some were surprised at the volume of data requested early in the process.
CX1.2	There was appetite to complete this process on a mobile device.
CX1.3	Consumer participants were generally open to account pre-selection in the authorisation flow. However, certain scenarios may warrant the functionality to de-select accounts.
CX1.4	Some participants exhibited increased positivity and comfort when going through the second consent.
CX1.5	There was a general expectation that once the application data was disclosed, the lender would continue the refinancing process without requiring additional data or verifications.
CX2.1	Overall, consumer participants had a good understanding of the data they were asked to share, who would receive it, why it was needed, and where it was shared from.
CX2.2	Some consumer participants expected data holders to share additional information as CDR data.
CX3.1	Sensemaker consumer participants trusted the CDR based on the information presented on CDR protections.
CX3.2	Known financial institutions were trusted to receive data.

ID	Finding
<u>CX3.3</u>	The notion of lenders retaining data for seven years caused discomfort among many consumer participants, despite this being a standard practice for loan applications.
<u>CX4.1</u>	The majority of consumer participants overlooked the data handling information.
<u>CX4.2</u>	Many consumer participants were under the assumption that the ADR and lender offered the same data handling protections.
<u>CX5.1</u>	Some participants expressed trust in the CDR specifically, while others placed their trust in the protections offered by the lender and the Privacy Act.
<u>CX5.2</u>	Concerns regarding control and data accuracy influenced consumer participants' preferences for how they shared their data, with conflicting views on whether sharing data via CDR or manually would be more accurate.
<u>CX5.3</u>	The presented experience had little effect on altering consumer participants' decision to share data via the CDR or via a manual method.
<u>CX6.1</u>	Consumer participants showed a high likelihood of adopting this CDR-facilitated use case, but there were mixed opinions on whether the availability of this method would motivate them to seek out refinancing.
<u>CX6.2</u>	Participants were more open to using CDR for home loan refinancing compared to a first home loan use case. Some still desired human assistance as part of this process.
Technical Insights	
<u>TC1</u>	The current extensibility model is suitable for voluntary standards.
<u>TC2</u>	PRD can be used to discover application capabilities.
<u>TC3</u>	Support for multiple, different, application paths are appropriate.
<u>TC4</u>	Specific application requirements should be defined as structured data.
<u>TC5</u>	The CDR should rely on LIXI2 and not define a specific application endpoint for this use case.
<u>TC6</u>	LIXI standards cannot currently be used as a binding normative standard as it is not public.
Testing Insights	
<u>TS1</u>	Testing tools designed for implementation of voluntary standards would be of value.
<u>TS2</u>	Curated tooling will reduce the implementation cost of voluntary standards.
Implementation Cost Insights	

ID	Finding
IC1	Standardisation reduces cost while variation increases cost.
IC2	Complexity increases cost.
IC3	Compliance costs are anticipated to be higher than technical implementation costs.

Appendix B: Detailed Hypothesis Results

This section outlines the findings of the experiment in relation to the statements articulated in the hypothesis to be tested.

Hypothesis 1: *New Product Reference Data (PRD) fields describing product application requirements would reduce overheads for a service seeking to integrate with multiple banks.*

The evidence partially supports the hypothesis.

While the inclusion of additional fields to PRD can reduce some overhead, refinement to the existing structure is needed. This method alone is also insufficient in significantly reducing ADR overhead but can be paired with other approaches to further relieve implementation burden.

The experiment validated that PRD should be used to discover application capabilities for applying for a product programmatically.¹⁰ Findings from this experiment showed that the current [extensibility model](#) is suitable for voluntary standards,¹¹ allowing banks to offer additional information for PRD and supported schemes.

Although these additional fields will reduce overheads of a service that wishes to integrate with many different banks, more work is required to refine the PRD. Using the existing PRD in order to drive selection of appropriate products for a customer showed a lack of detail in some areas (e.g. secured versus unsecured loans are not exposed directly via Product Reference Data at the moment).

Feedback from experiment participants indicated that higher variation across bank implementations would increase costs. Whilst standardisation was seen as important for third-party initiation, any standardisation should not limit or reduce actual product variation. A standard for account application would need to accommodate the flexibility and variation in relation to the products offered to market.¹²

Some participants have also raised that the quality of PRD could be an issue in providing accurate definitions of submission mechanisms. Further research and consultation are required in this area.

The inclusion of additional fields to the PRD alone was also noted as insufficient to reduce overhead. Other ways to reduce overheads could include:

¹⁰ Refer to Technical Insight [TC2](#).

¹¹ Refer to Technical Insight [TC1](#).

¹² Refer to Implementation Cost Insight [IC1](#).

- Mandating a set of entity structures (e.g. through the use of a free to use subset of LIXI) can reduce integration burden by providing single sets of consistent attributes for certain data. However, business rules and validation of data is also needed in addition to entities, and this differs substantially between banks and products.
- Separating a ‘Straight To’¹³ origination from a ‘Straight Through’ application by having a mandated structure from the free to use LIXI subset for the former and partially standardising the latter by mandating an extended set of entity structures (e.g. a paid licence extended subset of LIXI). Doing so will allow the ADR the choice of initiating a simple ‘Straight To’ process or a more complicated but potentially higher value ‘Straight Through’ origination.¹⁴ Further analysis to understand additional implementation considerations of both avenues may be required.

Hypothesis 2: *An account origination API that provides a “Warm Lead” to a bank would be relatively low risk and impose a relatively low regulatory burden while still supporting an acceptable consumer experience.*

The evidence partially supports the hypothesis.

The experiment found that some regulatory burden is inevitable for a more valuable consumer experience, particularly for complex use cases (e.g. home loan account origination). The absence of prior regulatory or validation steps may be more viable for simpler use cases (e.g. savings account origination). Further investigation would be necessary to better understand how other use cases could balance regulatory and technical burden and a valuable consumer experience.

End-to-end service mapping analysis¹⁵ investigated how a CDR-facilitated home loan account origination use case could cater to 3 levels of application:

- a basic application where only minimal data is shared with no regulatory or validation steps;
- a managed application where the initiating client evaluates the general acceptability of the product to the customer before submitting data; and
- a complete application journey where regulatory and validation steps are done by the initiating client before data is submitted to the prospective lender.

Analysis showed that a ‘managed application’ process was the optimal approach to be tested in CX research as it provided a more valuable service offering.¹⁶ A basic application was deemed to bring less value to the ADR service offering and customer experience,¹⁷ while the complete application journey was not a viable option due to the level of regulatory complexity involved.¹⁸

A simple CDR-enabled application can leverage existing systems and processes,¹⁹ while a more complex application that delivers higher consumer value could be disruptive to existing paradigms.²⁰

¹³ A ‘Straight To’ process is where the application is passed straight to the bank to manage. A ‘Straight Through’ process is where the ADR may manage the entire process to completion.

¹⁴ For other findings related to this hypothesis, please refer to insights [TS1](#), [IC1](#), [IC2](#) and comments from [Basiq](#).

¹⁵ Refer to the [Experience Blueprints on FigJam](#) for the end-to-end mapping analysis.

¹⁶ Refer to CX Insight [CX6.1](#).

¹⁷ Refer to CX Insight [CX1.1](#).

¹⁸ Refer to Use Case Insight [UC2](#).

¹⁹ Refer to Use Case Insight [UC3](#).

²⁰ Refer to insights [UC6](#), [CX1.5](#), [IC2](#), [IC3](#).

This is especially true for financial service applications as they intersect with several regulatory frameworks and need to support compliance with existing regulatory frameworks.^{21 22}

Note: Due to the timing limitations, these levels of application were analysed at a high level by the experiment group. Further research, consultation and analysis are required to uncover additional regulatory or technical barriers not addressed in this report.

Hypothesis 3: *An account origination API that passes application data into existing business processes, without requiring ongoing ADR interaction with the consumer, would reduce implementation burden while supporting an acceptable consumer experience.*

The evidence partially supports the hypothesis.

Having the CDR facilitate the application submission (i.e. 'Warm Lead' or 'Straight To') rather than the complete account origination process (i.e. 'Straight Through') can lower implementation burden for banks while providing an acceptable customer experience. This could minimise disruptions to current business practices, though commercial models would ultimately need to evolve for this use case to be successful. Implementation cost and effort would also be affected as increased use case complexity may result in an increase to compliance obligations.

The CDR should complement and facilitate the various non-CDR mechanisms in place that support financial account origination rather than replace them.²³ One way this can be done is by having the CDR facilitate the application submission rather than a complete account origination process.²⁴ As origination processes can vary, be lengthy and involve a wide range of additional parties, taking this approach allows lenders to receive the necessary data and use their existing business processes to continue the application.

This experience was tested in CX research and exceeded consumer participant expectations,²⁵ provided that duplicate information was not requested by the bank once a handover was made.²⁶ There were, however, expectations for the ADR to be informed about the application's status, so a communication channel between parties may be warranted.²⁷

An PRD updated with additional fields can also facilitate a more seamless handover to a lender's existing business processes. This allows ADRs to pass on more suitable applicants and provide the necessary data for the application, reducing the need for lenders to request additional data.²⁸

Existing and publicly available tooling maintained by the DSB can be used to fast-track the implementation of voluntary standards, further reducing costs for participants.²⁹

²¹ Refer to Regulatory Insight [RG1](#).

²² For other findings related to this hypothesis, please refer to insights [UC4](#) and [RG4](#).

²³ Refer to Use Case Insight [UC3](#).

²⁴ Refer to Use Case Insight [UC2](#).

²⁵ Refer to CX Insight [CX6.1](#).

²⁶ Refer to CX Insight [CX1.5](#).

²⁷ Refer to CX Insight [CX1.5](#).

²⁸ Refer to Technical Insight [TC2](#).

²⁹ Refer to Testing Insight [TS2](#).

Banks have multiple channels for receiving product applications, and the reliance on a single CDR API may not be sufficient to accommodate all scenarios and variations. Doing so could make it challenging for lenders to easily trust and accept the data sent to them.³⁰

The adoption of a LIXI2 CDR Standard may alleviate data acceptance issues by bringing consistency and standardisation.³¹ A large proportion of the industry already uses the LIXI2 standards in some capacity, and data consistency across different acquisition channels can be maintained.³² Costs and implementation burden are also dependent on use case complexity, as compliance with risk and legal obligations increase in more complex use cases (i.e. commercial property loan vs retail home loan).³³

Although disruptions to current business practices can be minimised, commercial models will ultimately need to address this new variability and should evolve for this use case to be successful.³⁴ Updating current business practices such as opening a channel to accept application data from ADRs and accepting CDR data in place of e-statements, can significantly enhance the customer experience.³⁵

Hypothesis 4: *The initial use of LIXI data models will reduce implementation costs for participants.*

The evidence suggests yes.

Using LIXI data models as a starting point would reduce implementation costs for participants, especially for 'Straight To' application processes. However, open standards that recognise different business models, approaches in market and cater to other use cases and sectors will still be necessary in the future.

Using LIXI would help bring consistency to the framework across participants, which would be an overall benefit to everyone. Initially, it was assumed that a CDR endpoint for the receipt of a basic application should be defined by the Data Standards Body. The experiment found that, for this use case, the creation of such an endpoint may require significant effort to produce what the LIXI standard has already achieved.³⁶

To support voluntary CDR standards, LIXI has offered to develop and maintain a LIXI2 CDR standard.³⁷ This would almost entirely consist of a small subset of the existing LIXI2 Credit Application (CAL) Standard and would be made available to any participants in the CDR under a zero-cost licence, using a sign-up model to access the relevant schema.³⁸

Using LIXI data models as a starting point would reduce implementation costs for participants, especially for 'Straight To' processes. 'Straight Through' processes, however, require business and validation rules configurable via LIXI that would be unavailable under the free model. ADRs will need to either address this themselves or bear the cost of a LIXI license.³⁹

³⁰ Refer to insights [TC3](#) and [UC4](#).

³¹ Refer to Technical Insight [TC5](#).

³² Refer to comments from [LIXI](#).

³³ Refer to insights [RG1](#), [IC2](#), [IC3](#).

³⁴ Refer to Use Case Insight [UC6](#).

³⁵ Refer to CX Insight [CX1.5](#).

³⁶ Refer to Technical Insight [TC5](#).

³⁷ Refer to comments from [LIXI](#).

³⁸ Refer to comments from [LIXI](#).

³⁹ Refer to comments from [Basiq](#).

Some participants did raise concerns about the reliance on a licensing model and the ability to openly maintain the standard.⁴⁰ Some preferred open standards developed by the DSB altogether and suggested a LIXI standard could be used as a transitional standard while a truly open standard was created. Open standards may still be necessary to support different business models, products, sectors, and approaches to market, especially where no LIXI equivalent exists for an alternative sector or use case.⁴¹

Appendix C: Detailed Findings and Opportunities

Additional, more granular, findings identified by the experiment participants during execution are outlined in the following sections.

Use Case Insights

The use case initially proposed for the experiment was discussed and refined by the experiment participants in the initial sessions. As a result, the specific use case was defined as *an application, equivalent to an online digital application, for a credit card or home loan for a new-to-bank customer, submitted via a service offered by an accredited data recipient*.

This use case was selected as it was decided early in the experiment that it was more beneficial to experiment with a complex use case (a new customer, a complex lending product) as this would provide more valid input.

To better understand the problem space, the experiment focused on a home loan refinancing scenario in our end-to-end service mapping analysis and CX research. Through additional research, the DSB identified that the chosen scenario is relevant to a significant portion of the Australian population, noting the following:

- There has been a dramatic increase in mortgage costs for households, with costs just below 17% of disposable income in 2021. This was projected to increase to at least 25% at the end of 2023.⁴²
- External refinancing was valued at a high of \$21 billion dollars in 2023 due to the surge of expiring low interest fixed rate mortgages. Although this value has now decreased, refinancing values are still considerably higher than the years prior to January 2021.⁴³
- Owner-occupier interest rates for outstanding variable loans has stayed at a high of 6.4% in early 2024, suggesting that mortgage refinancing activity could remain above average in the future.⁴⁴

⁴⁰ Refer to comments from [Basiq](#).

⁴¹ Refer to comments from [WeMoney](#).

⁴² [ANU Centre for Social and Research Methods: Housing Cost Trends and Projections](#): The ABS Survey of Income and Housing (and expenditure survey) provides data on housing costs and incomes in Australia and is available usually every two years. The latest survey data that is available as a unit record file is the 2019-20 survey. Estimates of income and housing costs beyond that point require estimation using microsimulation modelling. To project these figures, the ANU Centre for Social Research and Methods used a projection model to outline how housing costs and incomes have changed for households up to end of 2023.

⁴³ [The Australian Bureau of Statistics on lending indicators](#): Refer to the graph on external refinancing (seasonally adjusted), values, Australia. Stats reflect figures from February 2024.

⁴⁴ [The Reserve Bank of Australia: Lenders' Interest Rates](#)

- During the refinance boom in 2023, there was a considerable increase in homeowners exploring new lending options outside their existing lenders, with a peak of 72% of refinancers being external refinancers.⁴⁵

The most complex scenarios, such as commercial lending or tracking a submission to account establishment, were considered infeasible to develop in a reasonable time. The selected use case was therefore a balance in the level of complexity being addressed. As a result, the experiment did not specifically address all account origination issues and the insights generated should be read in this context.

The resulting insights derived from the experiment in relation to the defined use case are as follows:

Finding UC1

A CDR-facilitated process for bank account application could be of material value.

The findings arising from the experiment show that a common standard for discovering and then submitting applications for bank accounts may be of material value and could likely reduce bank switching costs. As the implementation of such a standard would generate direct economic activity for both data recipient and data holder, a common standard would create value without the need for implementation to be mandated.

It should be noted that it was also found the mechanism for application submission would be too complex for a CDR standard and that the existing LIXI standard would be preferred. The CDR could, however, provide a standard for the discovery of mechanisms for application submission.

A CDR-facilitated process is also supported by the clear finding that the ability to use CDR data that is already designated to pre-populate a submission would be of significant value.

Finding UC2

CDR should initially focus on application submission rather than an end-to-end account origination process.

The end-to-end process for bank account origination is a lifecycle and not a single event. The process can be lengthy, requiring many steps for the customer, and involves a wide range of additional parties.

For example, an average home loan may require up to 12 manual reviews as well as interaction with solicitors, property valuers and PEXA. It would be infeasible to attempt to standardise this process. In addition, LIXI has already made significant progress down this path.

The phase of the process where CDR can add the most value is in the collection of data for the initial application, the communication of what data is specifically required and the submission of the application.

During experiment execution one of the experiment participants described this insight as the need for CDR to focus on 'Straight To' processing rather than 'Straight Through' processing.

Finding UC3

A CDR based solution should leverage existing systems and processes.

⁴⁵ [Finder: Average Australian mortgage statistics](#)

There is already significant investment in various non-CDR mechanisms to support bank account origination. These mechanisms vary depending on the type of account, the type of customer, and whether lending is involved. This was not a case where a green field solution should be pursued. Existing mechanisms should be complemented and facilitated, rather than replaced, by the CDR.⁴⁶

Finding UC4

An application must include broker/advisor/intermediary data in addition to applicant data.

Direct applications from a consumer are only part of the value of the use case examined. The broker channel is considered of great importance and needs to be accommodated. This means that support for the communication of additional information such as broker accreditation and identity, as well as any intermediaries they are using, is important.

Finding UC5

An application endpoint must be client authenticated in some way.

While the receipt of an application should not require customer authentication in all circumstances (as the applicant may not yet be a customer) it should not be an open, unauthenticated, API. The system facilitating the submission must be known to the bank as this is material in the decisioning process undertaken during origination. Some form of client authentication is therefore required.

Finding UC6

Commercial models will need to evolve if this use case is implemented.

The facilitation of this use case via the CDR could generate value, but it is clear that it would be disruptive to existing paradigms. There would need to be evolution and adaptation of existing commercial terms and models and this will be a challenge both to organisations that adopt the use case and those that do not.

This insight strengthens the argument for a voluntary adoption approach rather than initial direct designation.

Regulatory Insights

During the execution of the experiment, we applied the principle that we should design the solution on the assumption that there were no regulatory barriers, but where one was potentially identified, we would note it.

The insights below were derived from this process and indicate the various areas where it was determined that a regulatory barrier existed that could hinder the successful implementation of the use case.

Note that the appropriate response to these insights may not be a change to regulation, especially where those regulations exist to protect consumers, but they do indicate areas where additional solution development would be required.

The regulatory insights identified are as follows:

⁴⁶ Refer to Technical Insight [TCS](#) for further details related to this finding.

Finding RG1

This use case intersects with several regulatory frameworks in addition to CDR.

The submission of an application for any financial services account needs to support compliance with existing regulatory frameworks. If the account is a lending product then the number of frameworks expands significantly. These frameworks include Australian Securities and Investments Commission (ASIC) Design & Distribution Obligations (determining the customer is a part of the target market the product is designed for), National Consumer Credit Protection Act (ensuring needs analysis is done appropriately) and Responsible Lending requirements. However, these obligations would sit outside of the CDR and as such would be obligations for the ADR and lender to consider and meet separate to their use of the CDR to enable this use case.

Finding RG2

A purpose-based consent for this use case would be of value.

The concept of a purpose-based consent, i.e. a specific set of data cluster language and/or scopes specifically designed for this use case, could significantly improve the consumer experience and, consequently, increase uptake. In the future this purpose-based consent could then be extended to include other mechanisms to actively increase the effectiveness of this use case. The concept of a purpose-based consent has been discussed previously in the CDR and it is unclear if it is a concept that can be implemented voluntarily without changes to rules or binding standards.

Finding RG3

A new 'voluntary standard' concept would be needed to support this use case.

There is currently no way to define a stable voluntary extension to the Consumer Data Standards. The closest in concept is a 'Candidate Standard' but that categorisation implies that the standard can become binding in the near future. A specific category of standards should be defined, along with how the Chair will define this category, for voluntary extensions as this would allow CDR participants to implement an extension standard with confidence that changes will be managed using a known process and will occur only after public consultation.

Finding RG4

It is unclear if this is a new distribution channel or an enhancement to an existing channel.

From a compliance perspective it is unclear if this use case would effectively be a brand new channel or an extension to the existing broker channels that already exist in the lending industry.

An open question remains on whether non-CDR regulatory requirements will be needed to govern the behaviour of entities using this use case to submit account applications, especially considering the possibility that those submissions could easily be driven by heuristics or AI agents on behalf of customers.

Finding RG5

Certain CDR consents can already enable this use case, but they are under-utilised.

The experiment identified several CDR consent mechanisms that could be used to enable this use case today, where an ADR discloses data to a lender for the purposes of a loan application.

Participants are already using Trusted Adviser Disclosure Consents to do this via mortgage brokers, but other consent mechanisms that could be adopted are underutilised. This includes

Accredited Person (AP) Disclosure Consents, which were noted as overly complex due to the multiple and complex sequencing of consent requirements. The experiment identified simplifications to AP disclosure consents that placed sole emphasis on the consent given to the initiating ADR.

Another existing mechanism exists in rule 7.2 in Schedule 3, Part 7, which allows an accredited person to become a data holder of the CDR data they receive, though there was limited awareness of this rule among participants. This mechanism could enable this use case today and allow data to be received by an ADI directly, potentially including derived data, rather than adding an unaccredited intermediary or broker to the process. The experiment revealed improvements for this rule and process that similarly relied on the consent being given to the initiating ADR.

These simplifications would be critical to enabling this use case in particular, along with other 'new-to-bank/provider' scenarios, given the consumer does not have a pre-existing relationship with the end-recipient of the data. The same improvements could be considered for the equivalent energy sector rule that allows an accredited person to become a data holder, which could be explored in future experiments on energy account switching.

However, while the use of CDR data to make multiple applications was deemed to be of value, there was perceived ambiguity regarding how CDR mechanisms can be used to enable this use case. This ambiguity could lead to conservative implementations that are less effective. The participants in the experiment indicated that specific guidance on how rules and standards would apply to this use case would be useful. Providing this guidance in the form of a 'use case blueprint' was agreed to be a valuable output, which could consider various ways to enable this use case in current state, and potential improvements that could inform future state considerations.

Finding RG6

The consumer experience of the account origination process can be further streamlined by addressing certain existing requirements.

Previous and current CX research has shown that the application of future-state recommendations such as consent simplification and authentication uplift can greatly improve the consumer experience of CDR data sharing.

An improved experience might be achieved by also addressing the following:

- **Rich Authorization Request (RAR) for greater accuracy and streamlining regarding required accounts:** This functionality allows the ADR to communicate which accounts are necessary for the use case. CX research has indicated that consumer participants were open to account pre-selection in the authorisation flow.⁴⁷
- **Enhanced messaging capabilities between the lender and ADR:** CX research has demonstrated that consumer participants expect contact with the lender once a data application has been disclosed onward. However, there are also some expectations that the ADR should be informed about the status of the loan application.⁴⁸
- **Parity in data handling obligations between ADRs and ADIs:** CX research revealed that while there is trust in CDR, the Privacy Act, the Australian Privacy Principles and ADI data handling policies, concerns about the difference in data handling between parties were present.⁴⁹ More exploration is required to gain a better understanding of this area.

⁴⁷ Refer to CX Insight [CX1.3](#).

⁴⁸ Refer to CX Insight [CX1.5](#).

⁴⁹ Refer to insights [CX4.2](#) and [CX5.1](#).

- **Simplification of disclosure consents:** Consumer participants were presented with an simplified Accredited Person (AP) disclosure consent flow. Findings from research show that removing the lender consent step did not have an adverse effect on trust or propensity to share, and participants overall found the process easier than anticipated.⁵⁰

Finding RG7

Using the CDR to facilitate account origination can be considered a form of action initiation.

This experiment conceptualised how a CDR consent can be leveraged by an ADR to instruct a potential lender, on a consumer's behalf, to initiate a loan application. In the absence of any government action declaration or designation, it would be voluntary for the lender to act on the instruction.

In the context of the account origination experiment, the voluntary 'instruction' to initiate a loan application could be passed by the ADR to the lender in relation to the disclosed data, which would clarify to the lender the purpose for the data disclosure.

Conceptually, this is similar to how CDR read access operates as a form of action, where the ADR instructs the data holder to disclose certain dataset for a certain period of time.

Consumer Experience Insights

An end-to-end prototype of the home loan refinancing use case was tested in CX research. Ten consumer participants from a wide spectrum of demographics and abilities across Australia were engaged in one-on-one moderated research sessions that consisted of:

- an initial interview to understand previous experiences, behaviours and attitudes related to data sharing for home loan purposes;
- an interactive prototype to elicit participant response and feedback; and
- a post task survey to gauge sentiment and comprehension.

Consumer participants were presented with a home loan refinancing scenario that included:

- an ADR using CDR to provide tailored home loan comparisons and applications
- an ADI data holder with whom the consumer currently has a home loan
- a prospective ADI lender, who is an accredited person and the recipient of the disclosed application data

During the interactive prototype the ADR requested that consumer participants:

- grant a consent to collect and use their CDR data for the purpose of receiving tailored loan comparisons (consent 1);
- manually input information required for suitability, serviceability and exclusion criteria checks that cannot be informed by CDR data; and
- grant a consent to disclose data to the potential lender for the purpose of pre-filling a loan application (consent 2).

To get a better understanding of the value proposition tested in CX research, the fictional service offering is outlined in [a video viewable here](#).

⁵⁰ Refer to CX Insight [CX6.1](#) in Appendix C and data related to [trustworthiness and propensity to share](#) in Appendix E.

For detailed wireframes tested in research, view the [brand-agnostic version of the research artefacts here](#). These wireframes reflect the prototype used in CX research, where a simulated data holder, ADR, and prospective lender were shown to consumer participants.

The following questions and hypotheses were posed before the research began. Corresponding insights have been derived from research findings to answer the research questions and validate or invalidate these hypotheses.

H1: What would a consent look like that initiated complex non-CDR activities that are ongoing?

Hypothesis: For a new-to-bank applicant, the consent will disclose data to the lender. Handover communication and progression responsibilities will also be passed to that lender.

Finding CX1.1

Consumer participants demonstrated a high level of comprehension of the prototype presented. Although most found it to be a streamlined experience, some were surprised at the volume of data requested early in the process.

The prototype presented consumer participants with two consecutive CDR consents: the first consent to collect and use consumer data for the purposes of recommending tailored refinancing options, and a second consent to disclose consumer data for the purpose of pre-filling a refinancing application.

Participants generally understood what they were doing throughout the prototype and understood why they were sharing their data with the prospective lender. At least two participants equated this experience to a simple comparison use case (i.e. Canstar) and did not see the need to share the amount of requested data for the value proposition, while another queried the need to supply a Tax File Number (TFN) so early on in the process to identify potential loans.

“It was good that it seemed fairly streamlined. It didn't seem as though it would be difficult to do. And it's good that you can go in and edit bits and pieces [...] They are not always accurate from what they pull from your bank account.” – P1

“I would be hesitant if it was just at the comparison stage for a refinancing. Hesitant to release so much information, just particularly the transaction details for all the bank accounts.” – P3

Finding CX1.2

There was appetite to complete this process on a mobile device.

Over half the participants would consider doing a home loan comparison and application on a mobile device. Reasons included:

- the ease of the overall process;
- app2app authentication experience;⁵¹
- existing familiarity with and usage of mobile.

⁵¹ Consumer authentication was only required in the consent to collect and use CDR data (consent 1) of the end-to-end flow. Consumer authentication and authorisation were not included as part of the disclosure consent (consent 2) of the tested flow.

Those that preferred to complete this process on desktop noted that they'd like a larger screen to easily view the product comparisons and read content heavy documents like the Product Disclosure Statement (PDS).

"Doesn't phase me at all. I feel like it may even be [a] better interface on a mobile phone than it might be on a desktop." – P9

"...these PDS and T&C stuff, usually they're multi page PDF documents. So navigating on a phone is quite tricky." – P3

Finding CX1.3

Consumer participants were generally open to account pre-selection in the authorisation flow. However, certain scenarios may warrant the functionality to de-select accounts.

Scenarios that suggested the de-selection of accounts was valuable included:

- when participants were uncomfortable with sharing certain accounts, such as accounts they didn't deem necessary for the benefit offered by the ADR
- when participants have multi-party accounts that were not relevant to the loan application

"They need to know everything that's coming in and out. I know when you fill out an application for things that they want every single item that you spend money on. So it will be just as easy to share that as to go through every single thing in your budget." – P1

Finding CX1.4

Some participants exhibited increased positivity and comfort when going through the second consent.

Participants were presented with two consent flows. When completing the second consent flow:

- Three participants exhibited a more positive outlook on proceeding with the CDR, and motivation did not decrease for any participants. This may be attributed to increased exposure to the CDR, more trust in the lender, or the consent better aligning with expectations.
- Four participants proceeded through the second consent faster. This could be attributed to increased comfort with the process, or participants may have assumed the content and process was the same as the first consent.

"I'll probably be four [out of five] still. So like I'm pretty happy to share it. There's obviously just that slight bit of risk that you're sharing personal data. [...] But I'd still be willing to do it." – P6

Finding CX1.5

There was a general expectation that once the application data was disclosed, the lender would continue the refinancing process without requiring additional data or verifications.

All consumer participants expected that the lender would reach out after their application was sent. Two consumer participants expected to be put in touch with a relationship manager from the lender who would assist them with the remainder of the application process. One consumer participant expected a phone call from the lender due to the scale of the financial decision.

Many stated that they would be annoyed if the lender asked for the same information that was provided through the disclosure consent. One participant noted they wouldn't use the lender in the future if this information was requested again.

Participants also expected continued communication from the ADR. Two consumer participants expected that they would be returned to the ADR; one hoped to see the status and progress of their loan application in the ADR context, and the other expected to be able to consider another lender should their first application be unsuccessful.

Four consumer participants expected to hear from the ADR after submitting an application to the lender; two expected the ADR to follow up and ask whether they'd had any issues; one expected to be given an update from the ADR; and another expected the ADR to ask for a rating.

"I think with [ADR], if I didn't get the result I wanted from the [lender], I'd like to be able to go back into [ADR] and look at another loan with another bank." — P1

"I imagine you would still have correspondence from [ADR] as well because they would maybe keep you up to date with how things were going. So, yeah, I think both [ADR and lender would communicate with me], at different stages." — P2

"I'd be annoyed [if I was asked to re-share my data with the lender after submission]... because I've done it once then I'm doing it again." — P8

H2: What is the consumer's level of comprehension regarding the data they are asked to share?

Hypothesis: Consumer participants will understand the data being requested.

Finding CX2.1

Overall, consumer participants had a good understanding of the data they were asked to share, who would receive it, why it was needed, and where it was shared from.

Participants were asked questions during the prototype to gauge their comprehension, and after the prototype to gauge their recall of what they had done.

Recalled answers were less accurate. This could be because participants conflated the two consents, or perceived the two consents as one holistic permission when answering the post-task survey.⁵²

When asked explicitly:

- Participants were generally able to recall what data will be disclosed to the lender.
- 8/9 participants understood they initially consented to the ADR.
- 7/9 confirmed the data was coming from the data holder after the activity, and all participants noted this correctly during the activity.
- All participants understood that the data was being disclosed to the lender.
- Only 6/9 correctly articulated the purpose of the second consent after the activity. However, the three participants that articulated this incorrectly were able to answer correctly during the activity.

Note: One participant did not complete the post-task survey to test recall ability.

"I think it's all stuff that they need to know to, to be able to apply for a loan." — P1

Finding CX2.2

Some consumer participants expected data holders to share additional information as CDR data.

Three participants expected Tax File Number (TFN) and identity documents to be shared by the data holder, given they already held that information.

⁵² Details on the [post-task survey](#) can be found in Appendix E.

"I have got concerns about resharing personal sensitive data which I think if I've already submitted it to banks, I should not have to resubmit it and to clarify that was like your tax file number and your ID documents." — P1

H3: How do consumer participants respond to CDR protections and sharing compared to other methods, such as email and screen scraping?

Hypothesis: Participants who are considered to be a Sensemaker⁵³ or Enthusiast⁵⁴ will view CDR as a more trustworthy method of data sharing.

Finding CX3.1

Sensemaker consumer participants trusted the CDR based on the information presented on CDR protections.

Not all participants initially noticed that the disclosure consent had different data handling protections. However, their understanding of these protections based on what they read or what was explained to them increased their level of trust in the CDR.

- 3/5 Sensemakers implicitly trusted the CDR.
- 2/5 Sensemakers trusted the process regardless of which regulatory protections applied.

There were no Enthusiast archetypes identified in this round of research.

"[ADR] is a CDR accredited I see which is good. It's making it trustworthy." — P7

Finding CX3.2

Known financial institutions were trusted to receive data.

The second consent flow was considered more trustworthy as the recipient presented in the prototype was a well-known financial institution. Increased trust also stemmed from the perception that lenders must comply with stringent data handling policies.

"I'm okay sharing my data with [the lender], but probably would have never shared with [ADR] to begin with... I'm ok with [the lender] having that data... [the lender] at the end of the day is a financial institution and I'm choosing to have, select my home loan product with them." — P8

"Probably a five [i.e. hopeful to share data]. It doesn't phase me at all this far. I think at the start when I was like a three [i.e. neutral]. It was probably because I haven't heard about this [ADR] platform as well. Whereas [the lender] [...] they have to have everything up to scratch to run properly." — P9

Finding CX3.3

The notion of lenders retaining data for seven years caused discomfort among many consumer participants, despite this being a standard practice for loan applications.

The prototype noted that data would be retained for seven years for record keeping purposes.

About half of the participants were uncomfortable with this:

- Some participants missed the reason for data retention and were concerned with the duration.

⁵³ Refer to [Consumer Experience \(CX\) Behavioural archetypes](#) for more about the Sensemaker archetype.

⁵⁴ Refer to [Consumer Experience \(CX\) Behavioural archetypes](#) for more about the Enthusiast archetype.

- Others questioned why the ADR would delete their data while the lender retained it for seven years.
- Some participants were concerned about their data being retained even if they did not proceed with the loan.
- At least two expected the data to be destroyed if they didn't get the loan.
- One participant suggested that this could impact a future application if the lender could refer to the shared data within seven years.

"I would question why they would need it for seven years [...] Personally, I think that would put me off more than anything. And then I would be making questions with the [lender] and then questioning my current provider to see if they also have the same policy." — P10

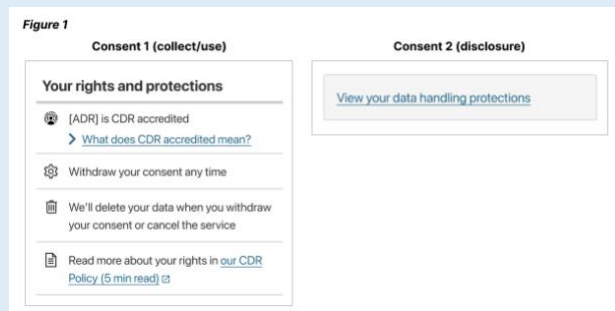
H4: Do consumer participants understand when/if CDR protections do and don't apply, and what those protections are?

Hypothesis: Participants will understand when CDR protections do and do not apply but may be unsure of why.

Finding CX4.1

The majority of consumer participants overlooked the data handling information.

Data handling details were presented differently in the two consents. In the first (collect/use) consent, most of these details were immediately visible while the second (disclosure) consent presented these details in a modal.



The prototype also outlined that data handled by the ADR was under CDR protections, whereas data handled by the lender was under Australian Privacy Principles (APP)/Privacy Act protections. As none of the participants opted to view the data handling protections unprompted in the second (disclosure) consent, it suggests that they may not be informed as to the differences between ADR and lender data handling practices.

One participant did note that they would have read it before approving the consent. Others noted that they did not review this information because they had already read it in the previous consent, or suggested it was standard privacy information. This suggests that data handling information presented in modal-type patterns are expected to be consistent or common.

"Because I've already read it before on the second screen when we were going through the ADR application process." — P8

"I don't normally click on them. [...] I sort of just trust the process. I assume it's just there for legal reasons and I won't need to read it." — P6

Finding CX4.2

Many consumer participants were under the assumption that the ADR and lender offered the same data handling protections.

When participants were prompted to review the data handling protections, most did not notice that the ADR was governed under CDR while the lender would align to the Privacy Act. The misconception may stem from the fact that both parties were accredited under the CDR, despite the lender not being required to adhere to CDR protections for this specific use case.

Only one participant (an accountant) understood the differing regulations upon reading the details.

About half the participants understood that there was a difference in data retention periods between the two parties.

Some participants were not concerned about the differences between data handling protections, provided either CDR protections or the Privacy Act applied. However, two participants questioned why they were not covered under the same protections.

“Well they’re governed by the what’s it called? The CDR?” — P3

“It has to stand out, it has to be a message [of] importance, be aware.” — P7

“[The reason] I’m not hopeful is because of that handling data protections, because the [lender] is not covered by the CDR. That would make [me] feel a whole lot better if they were under the same contract” — P2

H5: Does the existence or absence of CDR protections result in greater or lesser propensity to share data?

Hypothesis: The existence of CDR protections increases propensity to share, while the absence of CDR protections decreases propensity to share, unless other sufficient protections exist.

Finding CX5.1

Some participants expressed trust in the CDR specifically, while others placed their trust in the protections offered by the lender and the Privacy Act.

The CDR instilled trust for some due to the backing of the Government. These participants felt assured that CDR would be a safe method of data sharing. Others also placed their trust in the protections offered by the lender, citing the high level of regulation that financial institutions need to follow. However, one highlighted they felt their data was safest under CDR protections out of the two.

“I can see they’ve got the consumer data right thing there to look at. So I’m taking that that would mean it’s fairly safe to provide that information. I’ll probably have another really good look around about that and make sure first.” — P1

“It probably doesn’t make a difference in the sense that yeah, they are protected, they do have to, you know, uphold themselves to a certain level of security.” — P9

“Yeah, it’s peace of mind that, you know, [ADR] is somewhat regulated in terms of being accredited by the government. And obviously, the [lender] being in a regulated industry like the finance industry being part of the Privacy Act and all that is, it’s good to know and, and nice reiteration by the app.” — P8

Finding CX5.2

Concerns regarding control and data accuracy influenced consumer participants' preferences for how they shared their data, with conflicting views on whether sharing data via CDR or manually would be more accurate.

Some preferred to manually input their data for greater control and perceived accuracy, while others believed that automatic input via CDR was more likely to be accurate.

"I guess with the manual one, I've got more control over exactly what data I'm gonna be sharing." — P3

"I [would] get a more correct result if they do [it] automatically than if I would put it manually." — P7

Finding CX5.3

The presented experience had little effect on altering consumer participants' decision to share data via the CDR or via a manual method.

Consumer participants were asked about their preferred data sharing method (CDR or manual input) before and after going through the CDR data sharing prototype.

Five consumer participants preferred CDR data sharing both at the start and at the end, with two citing saving time was the value for them.

Four preferred the manual input option at both the start and the end.⁵⁵ Their reasons for this preference included: more control; discomfort in the CDR method; and too much data being required for the loan comparison.

One participant initially chose the manual input method but changed their mind after completing the CDR flow.

"I'd go automate it [CDR]. Just for the time saving. I don't think anyone wants to be doing anything longer than they have to nowadays." — P6

"Yeah, I think if I was to use this website, I would probably do manual input, but personally, I, I probably still wouldn't go through something like this. I would still always consider just a mortgage broker." — P10

"I do the automated [CDR] straight away now. That was such an easy, flowy experience. I would not spend that much time entering that when I can just click a few buttons." — P9

H6: How might improved consumer experiences for home loan applications lower barriers to mortgage refinancing and lead to increased switching?

Hypothesis: Consumer participants will be more inclined to seek out and refinance their home loans when the time and effort involved decreases. CDR data sharing will also reduce consumer drop off risk and errors, resulting in more reliable data supplied.

Finding CX6.1

Consumer participants showed a high likelihood of adopting this CDR-facilitated use case, but there were mixed opinions on whether the availability of this method would motivate them to seek out refinancing.

⁵⁵ Consumer participants P3 and P10 indicated a manual input preference during research, however [Fogg Model results](#) show they scored above the action line. This indicates they could be motivated enough to use the CDR method when prompted. See the [Fogg Model results](#) for further details.

Most participants found the process of using the CDR to refinance easier and smoother than expected. Participant ratings⁵⁶ also indicated the proposition was extremely beneficial, and that they'd definitely use it.

Half the consumer participants noted that the prototype presented a much easier process compared to their previous experience of applying for a home loan (either first loan or refinancing).

Half of the participants noted they would be inclined to refinance their home loans using CDR where possible, while a few were undecided. Regardless, our Fogg Behaviour Model⁵⁷ shows that for all but two participants, each had a high level of ability and motivation for this use case, signalling a high level of likelihood that it would be adopted by consumers if presented to them.

Those who were less inclined noted that their situation would be too complex for this method, that they would prefer to use a broker, or that they simply would not use the presented method.

One participant was concerned this process may alert their current bank to the fact that they were exploring other options.

"That's so much smoother. You don't have to deal with people who don't keep their word. You know, the, the steps are there, the data is there and the fact that, you know, they're going to reach out within 48 hours. So you have a timeframe and, and a process... So yeah much, much smoother." — P2

"It's probably 1000 times easier. [...] No paperwork. And I remember having to get bits and pieces of paper and information and downloading bank statements..." — P1

"I don't think it's impacted, I mean, there's other sites where you can compare your interest rates." — P10

Finding CX6.2

Participants were more open to using CDR for home loan refinancing compared to a first home loan use case. Some still desired human assistance as part of this process.

Refinancing was perceived by consumer participants as less nebulous and confusing, and requiring less assistance, when compared to applying for a new home loan.

Some participants expressed a preference for human intervention for new home loan applications, as first-time borrowers would require more guidance and assistance.

This sentiment was pronounced amongst participants who found their initial home loan process overwhelming or encountered difficulties.

About half of the participants mentioned they would still like to have human assistance available for refinancing as well.

Some preferred to deal with a broker at all times, while two participants were happy to not engage with anyone at all.

Human assistance was desired by those who wanted to ask questions, receive reassurance that they were making the right decisions, and receive help resolving any data or process errors.

⁵⁶ Refer to Appendix E for details on the [participant ratings](#) that outline consumer participant reactions to this use case.

⁵⁷ Refer to Appendix E to [view our Fogg Behaviour Model](#) that outlines consumer participant likelihood to adopt this use case.

“With refinancing [it] was a bit easier [than] to get the very first loan. Was it more frustrated because you didn't know what to expect. You feel like they're pushing you, they're giving you so much information and you feel like your head is about to explode.” — P4

“This is fairly soulless. I don't like AI, I prefer dealing with people. I prefer to be able to ask questions. There's no questions where I could ask, all I've got [are] drop down boxes. There's no way where I could say, you know, who, what, when, why, when.” — P5

“And I think I prefer to do it through a mortgage broker because they can do all those steps for you and they use trusted resources as opposed to some websites that I would be uncertain of the security on.” — P10

Technical Insights

The technical solution for the experiment was developed collaboratively with the participants and consisted of the following key characteristics:

- The solution was based on relevant, existing standards wherever possible, especially the current Consumer Data Standards and LIXI2
- The [extensibility model](#) for the Consumer Data Standards was used to define extensions that would support the experiment
- An [experimental standard](#) was defined to explicitly describe the proposed extensions to the Consumer Data Right
- This experimental standard included the following components:
 - An extension to the PRD APIs for banking that included the ability to specify a scheme for how an application for each product can be submitted
 - A new set of unauthenticated APIs that would allow a potential client to obtain and understand the supported schemes that could be used to submit an application. These APIs could be considered an extension of the PRD data cluster for banking
 - A new API that would be client-authenticated (ie. only a registered ADR could call it) to receive an application for one or more products on behalf of one or more applicants

Initially, it was assumed that each data holder participating in the experiment would build a simple, non-production implementation to support the experiment. However, during the course of the experiment, it became clear that it would be difficult to procure the resources required for this build in a reasonable timeframe and for a reasonable cost. As a result, the DSB provided the implementation for the participating data holders as an open-source project and hosted an instance of this code in Amazon Web Services (AWS).

The participating data recipients then built implementations using the DSB provided mock implementation to varying degrees of completeness utilising the CX artefacts developed by the DSB CX team as a basis for the consumer experience.

Based on this process the following key insights were identified:

Finding TC1

The current extensibility model was suitable for the use case experiment tested.

Prior to this experiment, the extensibility model defined in the Consumer Data Standards had not been tested. The use of this model was a technical hypothesis that was tested during the

experiment and was found to be easy to use within the scope of the experiment, did not impact existing implementations, and was easy for participants to understand.

Further analysis of extensibility model should be tested in future experiments to verify this.

Finding TC2

Product Reference Data can be used to discover application capabilities.

Product Reference Data for banking defines all of the aspects of a financial product from eligibility to pricing. It already contains information to help a consumer find an online application form. It is therefore a natural hypothesis that it would be a good point of discovery for defining the mechanisms for applying for a product programmatically. The experiment tested this hypothesis and found it to be valid.

Note: Some participants have raised that the quality of product reference data could be an issue in providing accurate definitions of submission mechanisms. Further research and consultation are required in this area.

Finding TC3

Support for multiple, different application paths are appropriate.

Discussion by participants highlighted that banks and non-bank lenders all use multiple channels for receiving product applications and that this is an area of investment by many industry participants. Based on these discussions, it would appear that a mechanism for defining a programmatic submission of an application would need to allow for multiple paths and evolve over time.

Finding TC4

Specific application requirements should be defined as structured data.

There is significant variability of application requirements between product types in a single bank and also between banks for the same type of product. While a standard mechanism for submitting an application can be defined, it is highly unlikely that all banks will use that mechanism the same way. Providing a way to detail the data a bank requires for a successful application is necessary for helping this use case succeed.

Finding TC5

The CDR should rely on LIXI2 and not define a specific application endpoint for this use case.

Initially, it was assumed that an endpoint to allow for the receipt of a basic application should be defined by the Data Standards Body as part of the experiment. In doing this it became clear that for this use case, the creation of such an endpoint would require a lot of effort and iteration. It also became clear that this has already been done in the development of the LIXI standard. Expending this same effort to develop a new standard that will never be as rich as the existing industry standard would appear to be a waste of investment. It would appear that for lending and transactional products LIXI2 should be used as a normative standard rather than creating an alternate standard.

Finding TC6

LIXI standards cannot currently be used as a binding normative standard as it is not public.

LIXI is only available to paid members of LIXI Limited. In the past it has been considered problematic for the Consumer Data Standards to rely on a normative standard that is behind a pay wall when the standard is binding. This would not be a barrier to a voluntary standard but would be problematic if the implementation of an account application action was ever made mandatory. This barrier would be lowered if LIXI Limited were to freely license a cut down version of LIXI2.

Testing Insights

The problem of implementation verification was discussed during the experiment but not investigated in detail. Nonetheless the following initial insights were identified:

Finding TS1

Testing tools designed for implementation of voluntary standards would be of value.

Additional analysis identified that, for data holders, the ability to verify that an implementation is standardised will reduce costs for all participants. This was confirmed by experiment participants.

It is assumed that the Conformance Test Suite managed by the Australian Competition and Consumer Commission (ACCC) would probably not be extended to cover voluntary standards. This means that test cases and testing tooling to support the validation of voluntary standards should be developed if this use case is pursued.

Discussions with the community and experiment participants suggest there is a growing reliance on PRD data quality. As such, there is a need to implement new testing processes before any data standards go live in this area.

Finding TS2

Curated tooling will reduce the implementation cost of voluntary standards.

While not an initial intention of the experiment, the decision to implement the mock APIs for the participating banks did demonstrate that the existing libraries maintained by the Data Standards Body can be used to fast track the implementation of voluntary standards. This is a useful insight that is independent of the use case the experiment was examining.

Note that some experiment participants indicated that pure open-source libraries would be difficult for them to leverage due to compliance policies already in place but a publicly available library curated by a federal entity would be acceptable.

Implementation Cost Insights

It was a primary objective of the experiment to assess the potential implementation costs of the selected use cases. The insights in this section were derived from discussions with experiment participants on this topic.

Finding IC1

Standardisation reduces cost while variation increases cost.

Feedback from experiment participants indicated that standardisation of the hypothetical account origination interface would reduce costs whilst higher variation across bank implementations would increase costs.

Whilst standardisation was seen as important for third-party initiation, any standardisation should not limit or reduce actual product variation. A standard for account application would need to accommodate the flexibility and variation in relation to the products offered to market.

Finding IC2

Complexity increases cost.

Both data recipients and data holders indicated that the more complex the use case the higher the implementation costs would be. For instance, a commercial property loan would be more costly to implement than a retail home loan, complex ownership structures would be more costly to implement than single account holder scenarios.

If a use case for account origination is pursued this insight would indicate it would be better to select a valuable, but relatively simple, use case as a starting point.

Finding IC3

CDR compliance costs are anticipated to be higher than technical implementation costs.

Based on the experience of implementing the experiment, the feedback from experiment participants was that the costs associated with ensuring compliance with risk and legal obligations regarding the CDR would be higher than the technical implementation costs.

One participant estimated that the CDR compliance costs would likely be four times the cost of technical implementation.

This insight would indicate that efforts to reduce implementation costs for the use case should focus on reducing the CDR compliance costs and uncertainty. This insight further supports a pathway for voluntary standards that encourage competitive market forces to drive adoption whilst allowing Data Holders the choice to adopt where offering the action initiation service is aligned to their business strategy.

Appendix D: Experiment Participant Comments

This section outlines additional comments written by several experiment participants, including elaborations and variations on the content in the body of the report.

LIXI

To support voluntary CDR standards, LIXI has offered to develop and maintain a LIXI2 CDR standard. This would almost entirely consist of a small subset of the existing LIXI2 Credit Application (CAL) Standard. This would be made available to any participants in the CDR under a zero-cost licence, using a sign-up model to access the relevant schema.

Since a large proportion of the industry already uses the LIXI2 standards in some capacity, this benefits the industry in several ways.

- The CDR standard would be entirely consistent with the existing CAL standard.
- Unnecessary data transformations are kept to an absolute minimum.
- Data consistency across different acquisition channels can be maintained - even for those outside the CDR.

- Unnecessary standards development effort is avoided by reusing existing standards for this purpose.

Further Background on the LIXI2 Standards

LIXI already manages a suite of LIXI2 standards that encompass the entire data set required for submitting a credit application to a lender.

These LIXI2 standards encompass:

- all credit products offered by banks in Australia (mortgages, credit cards, lines of credit, asset finance etc)
- most deposit products (transactional accounts, savings accounts and term deposits)
- all security types (residential real estate, commercial real estate, all securities covered by asset finance products such as vehicles, boats, office fit-outs, bulldozers, aircraft, mobile phones, etc)
- all customer types (retail, SME, SMSF, trusts, companies, and government entities).

Almost 25 years of collaborative effort from thousands of individuals across hundreds of companies within the lending industry have contributed to the resulting LIXI2 standards, which are currently licenced to almost 100 participating organisations.

Further Considerations

Change Management - LIXI has a robust and efficient change management process to ensure our standards evolve quickly enough to meet the industry's needs. Since the core items required for CDR Action Initiation have been key to the credit origination process for decades, it is likely that this standard would be highly stable, and require few if any breaking changes in the near future. In fact, the LIXI2 CAL standard has now had 71 releases (at a frequency of monthly for the past four years) without introducing breaking changes. Despite this, the process around standards updates, particularly for breaking changes needs to be considered and defined. In particular, who can raise change requests and through which mechanism would they be raised and actioned are important questions to answer.

Sustaining LIXI's funding model - LIXI2 standards are currently voluntary but their use in a production environment does require a paid licence. LIXI must retain the ability to maintain a robust funding model to ensure our long-term stability. Whilst LIXI is offering a subset of the CAL standard under a zero-cost licence for use under the CDR, LIXI needs to be able to maintain consistency with the other standards, and not allow the CDR standard to erode all of the revenue from paid licences. To ensure this, LIXI needs to be able to determine the extent to which functionality from the paid CAL standard is incorporated into the zero-cost version.

Basiq

The comments below were provided by representatives of Basiq:

Examining the hypotheses from a technical perspective showed the following findings.

Hypothesis 1: New Product Reference Data (PRD) fields describing product application requirements would reduce overheads for a service seeking to integrate with multiple banks.

- Using the existing Product Reference Data in order to drive selection of appropriate products for a customer showed a lack of detail in some areas - for example secured versus unsecured loans are not exposed directly via Product Reference Data at the moment.

- Providing additional data on the Product Reference Data to reduce the overhead of a service that wishes to integrate with different banks would not be sufficient by itself, given the proposed structure. The additional details provided would require a very detailed specification of the attributes and data structure needed for individual banks to accept an application. Mandating a set of entity structures - for example through the use of a free to use subset of LIXI - would assist with the integration burden by providing single sets of consistent attributes for certain data, but would not be sufficient by itself. In addition to the entities, business rules and validation of data is also needed and this differs substantially between banks and products, meaning a significant implementation burden would still be borne by the implementer to make a service that works with multiple banks.
- This burden could be further reduced by separating out a 'Warm Lead' or 'Straight To' origination vs a 'Straight Through' application. The former could be a mandated structure from the free to use LIXI subset. The latter could be partially standardised by again mandating an extended set of entity structures - for example through the use of a paid licence extended subset of LIXI. This would give an originator the choice of making simple 'Straight To' or more complicated but potentially higher value 'Straight Through' originations.

Hypothesis 2: *An account origination API that provides a "Warm Lead" to a bank would be relatively low risk and impose a relatively low regulatory burden while still supporting an acceptable consumer experience.*

- A warm lead does provide for an acceptable customer experience - up to the point of application. Beyond that point, there is still overhead to the customer in the application process.
- A warm lead without any previous regulatory or validation steps has a lower value due to the additional processes that need to be performed before the application can be accepted - for example identity verification or evaluating the acceptability of the product to the customer.

Hypothesis 3: *An account origination API that passes application data into existing business processes, without requiring ongoing ADR interaction with the consumer, would reduce implementation burden while supporting an acceptable consumer experience.*

- If banks already have existing business processes, especially driven by APIs and online channels, this would have a lower implementation burden for banks.
- The user experience is likely to be acceptable, assuming the user experience from the originator and the bank is acceptable - provided the hand-over between the two is clear and no rekeying or duplicate interaction is required by the bank to process the origination. A 'Straight Through' process with no additional interaction needed would be a superior customer experience though.
- The burden of the implementation would fall on the originator, especially given the disparity between banks processes and the need to develop custom processes and validation rules for each bank and product. As above, this burden could be reduced by the further adoption of a standard such as LIXI, this could however increase the burden on banks receiving these 'Straight Through' applications.

Hypothesis 4: *The initial use of LIXI data models will reduce implementation costs for participants.*

- Using LIXI data models as a starting point would reduce implementation costs for participants, especially for banks if they have already adopted LIXI.
- 'Straight To' processes, using the free version of the LIXI entities and a mandated structure and business rules that is consistent across participants would reduce implementation burden on the originators.

- For 'Straight Through' processes, allowing variation by product and bank, the LIXI entity data models would be useful, if broadly adopted, but would not be sufficient by themselves. Assuming the business rules and validation rules configurable via LIXI would not be available under the free model, that logic would still need to be implemented by participants - or licensed from LIXI. This would still require significant implementation burden and/or cost for LIXI licenses, outside of the reduced effort from having a shared entity data model. The shared entity model available under the free LIXI license is likely to save a small proportion of the full solution implementation time compared to the effort needed to implement the business rules and validation.
- Using LIXI would help bring consistency to the framework across participants, which would be an overall benefit to everyone.
- There were some concerns raised about the licensing of the LIXI model as well as the dependency on a single party for updates to the models - however the benefit to both LIXI and the participants makes this a viable option regardless, rather than introducing another new standard.

WeMoney

Common friction points in lending application flow that this experiment highlighted could assist consumers in increased consideration in assessing better options if the process became easier to consider and apply for products.

The experiment highlighted that an open standard would be long term beneficial for all industry participants as it allows for evolution by governing bodies such as the Data Standards Body to further increase the intended benefits of the CDR increasing consumer protections and promoting further competition.

Standardisation of common use case API end points is recognised to be a "starting point". Recognising this will be refined over time and noting that not all product use cases may be covered initially, but this experiment provides a framework of how an initial approach could be taken in the market initially.

Whilst the LIXI standard has adoption in some industry sectors, it may not be widely adopted by all participants in the market for a range of different uses such as in the intermediary space. The view is that the LIXI standard could be an important transitional standard, but ultimately a truly open standard may increase further CDR participant adoption in an open and free standard recognising different business models and approaches in market.

In Australia mortgage broker market share is 70% growing from approximately 45% over the last decade. There is a recognition that the complexity of a mortgage application extends past just the application, but there are other drivers for use of "human assisted" channels in which this experiment highlighted the concept of a "warm lead".

There is an observation that other simpler credit products such as credit cards, personal loans, asset finance may lend itself more to "self-serve" journeys where future experiments could explore. These types of credit products (excluding mortgages) could add benefit to multiple ADR's and DH alike in reducing friction for consideration and improve the consumer journey with increased transparency which may lead to increased visibility in understanding consumers likelihood of being approved for a product.

It is recognised that the experiment has uncovered an opportunity to alleviate the initial friction for the application of products and services. This could reduce the burden for consumers to evaluate

opportunities from a broad range of participants including brokers, comparison websites and other intermediates.

Frollo Australia

Frollo had suggested that the AI experiment focus on a simpler use case like credit card applications. It was hypothesised that if the more complex use case was chosen it would cover credit cards. Frollo is of the opinion that this may have resulted in a lesser need to validate the commercial and market assumptions.

The experiment though was a resounding success from a learning point of view. Allowing the DSB to obtain valuable insights before proposing standards.

Sharing CDR data with lenders was analysed and constraints or challenges with the CDR rules were highlighted. Disclosure consents but also derived data are problems for this use case that need to be overcome. This is not new knowledge but just taking a use case perspective helped to highlight the problems.

One of the biggest hurdles to CDR success is standardisation of banking data and key customer processes, along with accurate representation or quality of that data.

With the variations that occur in mortgage lending data and business rules amongst lenders, the accurate representation of mortgage data becomes paramount.

Frollo agrees with Basiq that providing additional PRD data will not be sufficient to reduce the overhead of a service that needs to integrate with different banks. The additional details provided would require a very detailed specification of the attributes and data structure required by individual banks to accept an application. Frollo also agrees with Basiq that whilst the use of a 'free to use' subset of Lixi would assist with integration, it would not be sufficient in itself. In addition to the data entities, supported enumerations, data rules and business rules differ substantially between banks and products even for the simplest of scenarios.

A large proportion (estimated at > 90%) of broker originated applications flow from NextGen's ApplyOnline system to lender provided endpoints using the prior standard. NextGen acknowledges there may be changes at lenders they have no sight of, supporting the comments that suggest "most lenders are converting" and that "LIXI2 e-lodgement flow is increasing". Regardless, if the current use of LIXI2 in home loan origination and its cost benefits to lenders is a key assumption underpinning a decision to use LIXI2 within CDR (versus developing a CDR Standard), then that should be validated. If the 'free to use' version of LIXI has been selected to reduce effort & iteration for DSB, then the 'free to use' LIXI option seems perfectly sensible.

For a broker to use the 'Simple Bank Account Origination' flow, we do not agree that passing the application into the bank with no further customer interaction via the initiating system represents an acceptable customer experience. In a broker situation the accepted norm is that the consumer is the client of the broker and most pre-settlement processes are managed by the broker. Since brokers now originate in excess of 70% of all new residential home loans, a better understanding of how the 'Simple bank account origination' flow will be used by the market is needed. Frollo acknowledges that the intended purpose of the use case in the experiment may only be for other channels rather than Brokers, but this is worth calling out.

In a direct channel scenario, a 'Straight To' model may be suitable as a warm lead albeit commercial models will still be required and value to industry determined.

ANZ

Notwithstanding that there are and will be varied levels of agreement in the value of the findings stated in this report, and that formal consultation with all industry participants as per standards change framework would still need to be performed, the process of collaborating on a particular area of standards change with a representative group of CDR participants was a worthwhile exercise. Whilst particular terms of engagement, scope and participation in this approach can and should be refined for future experiments, the collaborative nature is valuable as a precursor to formal consultations as currently undertaken via GitHub.

ANZ is supportive of mechanisms such as experiments being considered for future standards development. Levels of discussion and varied points of view were useful in understanding the value and complexity of different approaches.

ANZ is supportive of using existing standards wherever possible, as referenced in this use case by the use of LIXI for application submission.

Appendix E: Consumer Experience Research

This section outlines additional outputs derived from Consumer Experience (CX) research, including calculations to indicate Informed Consent and Comprehension, Behavioural Archetypes, and the Fogg Behaviour Model. The values for these calculations were collected prior to, during, and after the one-on-one consumer participant interviews, to gauge sentiment and comprehension. The specific details collected to calculate each section are outlined below.

I. Informed Consent and Comprehension

This round of testing included two consent flows throughout the prototype: the first a collect and use consent, the second a disclosure consent, which was the focus of the test. Directly after completing the simulated scenario with the prototype, participants were surveyed to recall their consent terms for the second consent (an adjusted AP disclosure consent to submit their loan application to the lender). Their answers, coupled with open ended responses, were used to assess how informed participants were.

Approach

Participants were asked to recall:

- What app/service they gave consent to (ADR/AAI),
- Which organisation they gave the app/service permission to access (DH/ASP),
- Which organisation they gave the app/service permission to disclose to (lender),
- Why they were sharing their data (purpose),
- What kind of data they elected to share (read/write),
- How long the consent will last (sharing period),
- What happens if they don't consent to the app/service (voluntary consent),
- When they could stop sharing their data and what would happen (stop sharing),
- What will happen when their data is no longer needed (redundant data)

Participants responded to these questions by providing open-ended responses to qualitative questions.

Participant comprehension of this use case

When asked to complete the post-task survey testing their comprehension of the consent, participants were asked to answer the survey based on the second disclosure consent only.

A review of survey responses indicated that participants had included details from both consents presented. Reasons for this could include:

- Participants may have conflated the two consents as a single permission.
- They missed any differences between the two consents.
- They followed the instructions incorrectly, filling out the survey with both the collect and use consents and the disclose consent in mind.
- The survey questions were unclear to them, especially in a scenario that consisted of two consents.

Because of this, further research is required to validate the following results.

Based on their ability to recall the consent terms, MOST participants were well informed when they provided consent to submit their loan application data to the lender.

However, participant recollection was lowest when it came to:

- the sharing period (most referred to the 3 months of the first consent, rather than the one time disclosure)
- when they could stop their data from being shared (also referred to the first consent's terms of anytime)
- what happens if they withdraw their consent (participants referred to data deletion from the first consent)
- what would happen when their data was no longer needed (again, participants referred to deletion instead of being held for 7 years per the financial institution's legal requirement)

Because the survey was testing recall of the disclosure consent, the answers correctly referring to the first consent could not be accepted.

<i>Criteria</i>	<i>Comprehension across 1 round</i>
Consented TO	MOST
Accessed FROM	MOST
Disclosed TO	ALL
Purpose	MOST
Datasets READ	ALL
Datasets WRITE	MOST
Sharing period	FEW
Voluntary consent	MOST
Stop sharing WHEN	ONE
Stop sharing WHAT HAPPENS	NONE
Redundant data	NONE

Comprehension definitions

- ALL - 100% of participants
- MOST - >66% of participants
- SOME - >33% of participants
- FEW - <33% of participants & >1
- ONE - a single participant
- NONE - zero participants

II. Behavioural Archetypes

User archetypes are useful tools to segment and succinctly describe the different drivers, behaviours and needs observed throughout research. The archetypes used here are representations of actions and general attitudes toward data sharing.

Participants were given questions to assess their attitude towards the CDR process and proposed use case.

Approach

Participants were asked:

- How *trustworthy* they deem the CDR and its actors to be
- How much *benefit* they see in using the CDR for this use case
- How much *risk* they feel exists sharing their data through the CDR
- How *willing* they would be to use the CDR for this use case
- How important the *privacy* of their data is when using a digital app or service
- How likely they are to *adopt* new services such as the CDR

Participants responded to these questions by:

1. Marking their response using the Likert scale with a score from 1 to 5. '1' being a negative indicator, '3' being a neutral indicator, and '5' being a positive indicator.
2. Providing open-ended responses for more qualitative questions.

Participant ratings of the CDR in this use case

While, in general, participants found the CDR automated data sharing value proposition to only be slightly risky, the privacy of their data in this context was seen to be extremely important. In general, participants were mostly willing to provide their consent for this use case and take up its offering but overall found the proposition and process extremely beneficial.

Criteria	Most common rating across 1 round
Trustworthiness	4 - Very trustworthy
Benefit	5 - Extremely beneficial
Risk	4 - Slightly risky
Willingness	5 - Extremely willing
Privacy	1 - Extremely important
Digital adoption	5 - I'd definitely use it

Archetypes

Their participant ratings, coupled with observed behaviours during the research session, were used to assign them to one of the [4 CDR behavioural archetypes](#).

Participant archetypes in and out of context

Prior to completing the research in the context of submitting a mortgage refinance application, participants were surveyed to understand their general attitudes and historical behaviours regarding data sharing. This included the same Trust, Benefit, Risk, Willingness, Privacy, and Digital Adoption categories to calculate a baseline archetype grounded in historical behaviours. This baseline archetype can then be compared against any changes to their behaviour in this specific context that may come about as a result.

Approach

Participants were asked:

- *Trust*
 - What digital Government resources/apps they have used
 - How much trust they place in Government services
 - What types of (industry) digital apps or services they use
 - How much trust they place in digital Industry/Commercial technology
- *Benefit*
 - Approximately how many times in the last year they shared data online
 - How much benefit they see in being able to share data online in general
- *Risk*
 - When they were required to verify their identity, how they went about doing it (online or in person).
 - How much risk they see in allowing their data to be accessed to streamline processes
- *Willingness*
 - When asked to share data to use a new service, whether they focused more on the advantages or disadvantages
 - How willing they are to adopt new technologies that involve some form of data sharing
- *Privacy*
 - What privacy-related actions they have taken on their digital devices
 - How important the privacy of their information and data is when using a digital app or service
- *Digital Adoption*
 - What technologies that require some form of data sharing they have adopted
 - What their thoughts are when new digital apps or services come out

Participants responded to these questions by:

1. Marking a Likert scale with a score from 1 to 5. '1' being a negative indicator, '3' being a neutral indicator, and '5' being a positive indicator.
 2. Selecting one or many of the options presented
 3. Providing open-ended responses for more qualitative questions.
-

While participants generally trust Government and Industry digital apps and services, there was a slight decline in levels of trust in the CDR mortgage refinance application context. There was also a significantly stronger importance placed on the privacy of the data required for refinancing. Participants perceived the value proposition to have the same levels of risk, but they were extremely willing to consent to share their data for this use case. They also expressed the highest level of perceived digital adoption if it were available today.

Criteria	Most common rating independent of context	Most common rating in refinance context
Trustworthiness	4.25 - Very trustworthy	4 - Very trustworthy
Benefit	4.5 - Very beneficial	(↑) 5 - Extremely beneficial
Risk	4 - Slightly risky	4 - Slightly risky
Willingness	3.5 - Moderately/Very willing	(↑) 5 - Extremely willing
Privacy	2.5 - Very/Moderately important	(↓) 1 - Extremely important
Digital adoption	3.5 - I may/I'd probably use it	(↑) 5 - I'd definitely use it

The following changes in behavioural archetypes can be observed on an individual level.

ID	Independent	Refinance	Change in context
P1	Sensemaker	Sensemaker	No change
P2	Sensemaker	Sensemaker	No change
P3	Sensemaker	Assurance seeker	(↓) Deteriorated*
P4	Sensemaker	N/A	N/A
P5	Sceptic	Sceptic	No change
P6	Sensemaker	Sensemaker	No change
P7	Sensemaker	Sensemaker	No change
P8	Sensemaker	Sceptic	(↓) Significantly deteriorated*
P9	Assurance seeker	Sensemaker	(↑) Increased
P10	Assurance seeker	Assurance seeker	No change

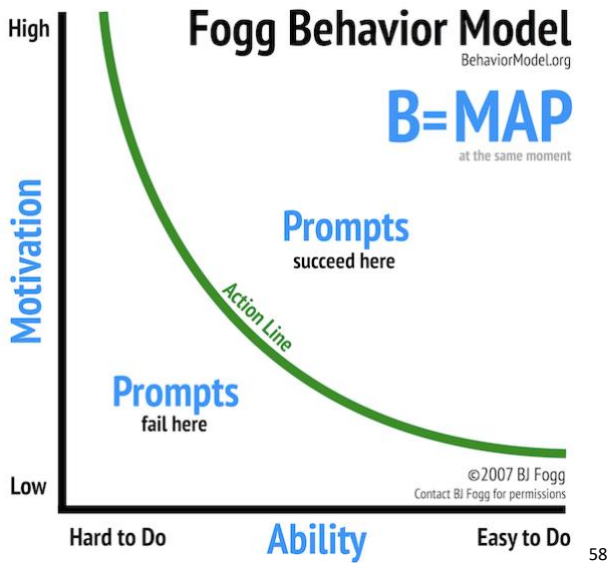
*The archetype changes were specifically due to this context and use case. P3's archetype deteriorated because they compared it with a simple comparison use case like Canstar, and therefore thought there was too much data being asked of them; P8 deteriorated because they work in finance and consider themselves an expert, and therefore would rather do it themselves.

For full details about criteria and metrics methods, read our [CX metrics](#).

III. Fogg Behaviour Model

In the discipline of Behaviour Design, the [Fogg Behaviour Model](#) suggests that a Behaviour (**B**) occurs when Motivation (**M**), Ability (**A**), and a Prompt (**P**) converge at the same moment. This can be summarised in the formula: **B=MAP**.

Fogg Behaviour Model Diagram



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Using a CDR value proposition as the Prompt (P), we wanted to understand how Motivated (M) and Able (A) participants were to adopt the process simulated in the prototype.

Ability criteria

The Fogg Behaviour model defines Ability as a function of the scarcest of the following resources at a moment:

- Time
- Money
- Physical effort
- Mental effort
- Non-routine

Motivation criteria

- Sensation
- Expectation
- Belonging

Participant questions

Participants were asked:

- How did you find the length of time it took you to find a lender and start a refinancing application using the CDR automated sharing method (Time)?
- In relation to applying to refinance your home loan at a new financial institution, how does your current financial situation factor in (Money)?
- How did you find the process of giving consent to the app/service (Physical effort)?
- How difficult/easy was it to understand the information presented throughout this new CDR automated sharing method (Mental effort)?
- How did you find this new CDR automated sharing process compared to typical manual processes to apply for refinancing at a new financial institution (Non-routine)?

⁵⁸ [Fogg Behaviour Model](#).

- How did using this new CDR automated sharing process to give consent and apply for refinancing compare with how you currently do this (Sensation)?
- How do you think this new CDR process will compare to current manual processes (Expectation)?
- If you learned that your friends and family were comfortable using the CDR automated sharing process to apply for refinancing at a new bank, would you personally accept, reject, or be neutral about this method (Belonging)?

Participants responded to these questions by:

1. Marking a Likert scale with a score from 1 to 5. '1' being a negative indicator, '3' being a neutral indicator, and '5' being a positive indicator.
2. Providing open-ended responses for more qualitative questions.

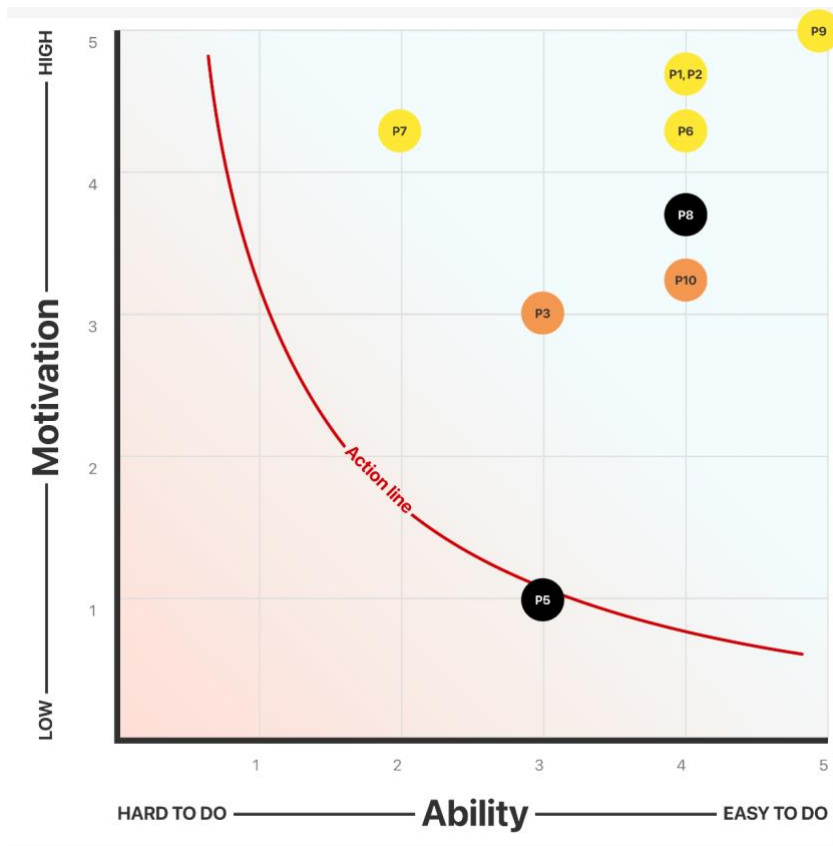
Participants rated the CDR in this use case

Prior to beginning the flow, consumer participants erred on the side of 'hopeful' about using CDR automated sharing for this use case. After sharing their initial data, they were even more positive about submitting their data to the lender. They noted that using the CDR was 'much easier' than the manual alternative, and when asked how they would feel if their family and friends were already comfortable using the CDR for this use case, they accepted it as the new way of doing things.

Criteria	Most common rating across 1 round
Time	4 - Very fast
Financial factor	5 - I can afford to keep paying my current mortgage repayments
Physical effort	4 - Very easy
Mental effort	4 - Very easy
Routine	5 - New CDR way is much easier
Sensation	5 - Pleasing
Anticipation	4 - Slightly hopeful
Belonging	4/5 - I somewhat/definitely accept it

We then calculated their individual Ability (A) using the lowest score provided for the ability criteria (the scarcest resource), and Motivation (M) using an average score based on their responses. We plotted the results below using their archetype colour to represent them.⁵⁹

⁵⁹Fogg mapping can be [viewed in detail on Figma](#).



Action line - Fogg Behaviour Model

The Fogg Behaviour Model suggests that if a participant scores below the line of action for both ability and motivation, then the combination is insufficient to change their behaviour and result in them acting on the prompt. This 'Action line' is indicated on the above model with the **red** action line. If the participant score passes the action line threshold, then the conditions are conducive to them acting on the prompt.

Participant ID	Ability score	Motivation score	Action line
P1	4	4.7	Above
P2	4	4.7	Above
P3	3	3.0	Above**
P4	N/A	N/A	N/A
P5	3	1.0	Below
P6	4	4.3	Above
P7	2	4.3	Above
P8	4	3.7	Above*
P9	5	5.0	Above
P10	4	3.3	Above**

Considerations

* Although **P8** passed the Fogg Behaviour Model's Action line, analysis of their behaviour and responses suggested that they may not in fact adopt this use case. **P8** works in the finance industry and changed from a baseline archetype of Sensemaker to Sceptic in the context of this use case. They strongly preferred to complete the refinancing process themselves rather than rely on the service presented in the research session. Even though they fell above Fogg's action line, we are quite certain they would NOT use the CDR for this use case when prompted.

** Consumer participants **P3** and **P10** indicated that they preferred the manual input option during research with the CDR data sharing prototype as noted in [CX5.3](#). However, their Fogg Model results above indicate they could be motivated enough to use the CDR method when prompted. The discrepancy in results for the two participants may be due to attitude versus behaviour, a contrast of "what people say" versus "what people do". The question related to preference asked alongside the prototype can be described as attitudinal, whereas the Fogg Behaviour Model uses tangential questions to predict someone's behaviour in a context when prompted. Additionally, research analysis has identified these two consumer participants as Assurance Seeker behavioural archetypes⁶⁰, who can be described as an archetype that is averse to trying new things, but feel assured when they can seek additional information from other sources. This means that even stating a manual entry preference, they still could end up motivated enough to use the CDR method when prompted.

⁶⁰ Refer to [Consumer Experience \(CX\) Behavioural archetypes](#) for more about the Assurance Seeker archetype.