



Department for
Business, Energy
& Industrial Strategy

Smart Data Research: Customer experience guidelines for Smart Data schemes in regulated industries

BEIS Research paper number: 2021/028

Author: Jeremy Swinfen Green, Obidos Consulting



June 2021



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Executive summary

What are customer experience guidelines for? And could the current set of Open Banking customer experience guidelines be repurposed for other UK industry sectors? These are the questions addressed in this report.

Based on a mix of depth interviews, desk research, and personal experience across many industries (including media, technology, retail, financial services and the public sector), this report explores the requirements for future customer experience guidelines in regulated industries where “Smart Data” initiatives are planned.

Smart Data is defined as “the secure and consented sharing of customer data with authorised third-parties”. Government initiatives around Smart Data are designed both to benefit consumers and to support markets. And for this report, customer experience guidelines (CEGs) are considered to be documents that have two main functions: they explain the regulatory requirements around the development of digital services that use Smart Data; and they also promote the design best practices that will allow those new Smart Data services to succeed by providing customers with a desirable and satisfying service.

The sharing of customer data is problematic. Customers need to understand the consequences of sharing their data and the benefit from doing so. Third parties using the data need to be guided towards using customer data fairly, but at the same time enabled to make a profit for themselves. The Open Banking CEGs were designed to encourage the development of Smart Data applications that met both of these requirements. In particular it was felt that they were needed because, in the banking sector, there was an initial reluctance on the part of banks to share customer data, causing friction in the market. The creation of CEGs, as part of the Open Banking Standards, helped to ease this friction.

The report starts by considering what best practice for CEGs would look like. The fundamental requirements are that they should provide assistance to third party developers, helping them to build usable websites. To be useful, the advice given needs to be practical and, importantly in regulated sectors, help developers create applications that are compliant with regulatory requirements. Helping to deliver usable websites involves providing advice on design best practice around issues such as layout, graphic design, accessible functionality and language used. These requirements are supplemented by the need for CEGs to stay up to date and offer a comprehensive set of advice.

The report goes on to consider how CEGs should incentivise users to be compliant with regulations and offer a good customer experience. In addition, the extent of an ideal set of CEGs is briefly considered. The conclusion is that they should go beyond the initial process of setting up accounts (the Open Banking CEGs are heavily focussed on users authenticating themselves with banks) and cover the whole of the user journey.

Next the report asks how the current Open Banking CEGs could be repurposed for other regulated areas. The answer is that the “spirit” behind them could, and should, be replicated

but that there are likely to be many differences that would need addressing. Potentially the user journeys would be fundamentally different in some cases. In addition, the frictions that prevent markets operating freely could well be different from those experienced in the Open Banking sector. In banking there are major security requirements given the importance of personal data to customers. Because of this there is a trade-off between security and ease of use. It is possible that this will be different in other sectors where sharing customer data is less risky for the customer. None of this is to say that the requirements for CEGs will be different in other sectors. However, answering questions about what repurposing (if any) is needed in different sectors will be an essential element of success.

The Open Banking CEGs were reviewed in detail as part of this report and some learnings from this review are suggested. The report examines the degree to which they are useful, up-to-date, and comprehensive. A detailed critique is available in Annex 1 but the main report concludes that while the Open Banking GEGs have many strengths, especially around defining regulatory requirements, they offer thinner advice on usability: this seems to be a missed opportunity.

While the detailed requirements of CEGs in different regulated sectors are hard to predict, it is easier to propose a “template” for CEGs. The report continues by describing such a template with the intention of making it easier for teams developing CEGs in other sectors to have a structure on which they can pin their particular requirements.

The conclusions of the report are that the Open Banking CEGs will make a useful template for other regulated sectors, but considerable work will be needed to ensure that the, often substantially different, needs of other sectors are reflected in future sets of CEGs. It will be very important to avoid being over-prescriptive, except where regulatory requirements (e.g. around language) are laid down. CEGs should be developed with the assistance of the sector ecosystem including developers and customer representatives. There should also be a greater focus on vulnerable consumers and, in particular, advice around accessibility should be given. A layered approach to advice should be taken with perhaps advice labelled as “required”, “advised” and “useful”. Importantly, it should be accepted that in any sector, the guidance needed will change as regulations, technology and social expectations alter over time.

Annex 1 provides a detailed review of the Open Banking guidelines and suggests a testing regime for developing applications. Annex 2 describes how customer experiences can be evaluated. Annex 3 outlines the purposes of smart data initiatives in the UK and describes the current initiatives. A short glossary can be found in Annex 4.

Introduction

This document is designed to provide a framework for the development of Customer Experience Guideline (CEGs) in regulated sectors of the UK economy where Smart Data initiatives are, or will be, under way. These sectors are currently: Energy; Retail telecoms and pay TV markets; and Financial services including banking and pensions.

The document may potentially be of use in other sectors of the economy where there are no current plans for formal, government sponsored Smart Data initiatives to be introduced. These sectors could include: Education; Transport; Healthcare; and Retail.

The document was written in response to a requirement to review Customer Experience Guidelines (CEGs) produced as part of a Smart Data initiative in the banking sector – Open Banking. The Open Banking CEGs address the processes a customer follows within an Open Banking enabled app or web service. They are intended to balance regulatory requirements and customer insights to optimise consumer satisfaction.

As Smart Data initiatives develop across other sectors of the UK economy, it is likely equivalent CEGs will be required. There is a lot that can be drawn from the Open Banking experience to inform the development of CEGs in other sectors.

The key questions that this document answers are:

- What does good look like for customer guidelines, who should they incentivise and what should they cover?
- How can the existing Open Banking customer experience guidelines be repurposed for and add value to other Smart Data initiatives? What remains relevant and can we modify this to apply across sectors (primarily energy, communications and finance)?

The key purpose of this document is therefore to explore the potential for the Open Banking CEGs to be used as a model for CEGs in other industry sectors.

The readership of this document will include:

- policy makers who wish to consider the extent to which CEGs should make up part of any proposed regulation or best practice;
- top management in relevant organisations (such as energy companies or third-party providers to energy companies), who wish to assure themselves that consumers are being adequately considered during the development and operation of services that use customer data;
- developers (including programmers and designers) of products and services within Smart Data initiatives who will benefit from guidance around ensuring that the customer experience is optimised.

Scope

Smart Data

For the purpose of this document, Smart Data is defined¹ as “the secure and consented sharing of customer data with authorised third-parties who then use this data to provide innovative services for the consumer or business, such as automatic switching and account management”.²

The Open Banking initiative

The most advanced Smart Data initiative in the UK is Open Banking which is being used in a range of settings, from budgeting for consumers, to cloud accounting for SMEs. In the UK there are now over three million individual and SME users of Open Banking, with new users being added at the rate of 1 million every 6 months. Hundreds of apps, aimed at consumers and businesses and ranging from debt advice to savings accounts are now available to consumers.³ A collection of these apps is available at the Open Banking App store:⁴

Part of the Open Banking initiative has been the development of the Open Banking Standards. These incorporate the CEGs which are “designed to facilitate widespread use of Open Banking-enabled products and services in a simple and secure manner by bringing together regulatory requirements and customer insight for both TPPs [Third Party Providers] and ASPSPs [Account Serving Payment Service Provider].⁵

Reasons for the Open Banking CEGs

Customers will only use Open Banking products and services if their experience matches or betters their expectations, and information is presented in an intuitive manner that allows them to make informed decisions. It is therefore important that the interplay between the TPP and the ASPSP is as seamless as possible, while providing customer control in a secure environment. It is essential that customers are clearly informed about the consent they are providing and the service they are receiving.⁶

¹ Definition from *Next steps for Smart Data* (BEIS, September 2020)

² Note that “Smart Data” can be defined in other contexts as data that is formatted at the point of collection and converted into information so that it can be acted upon before being sent on to an analytics platform. This definition is **not** used in this document.

³ <https://www.reuters.com/article/uk-britain-banks-idUSKBN2AX1EW>

⁴ <https://www.openbanking.org.uk/app-store/>

⁵ <https://www.openbanking.org.uk/wp-content/uploads/Customer-Experience-Guidelines.pdf>

⁶ <https://standards.openbanking.org.uk/customer-experience-guidelines/introduction/section-a/latest/>

Particular thanks should go to the OBIE who have been very helpful in the preparation of this document and have generously shared their learning for the benefit of other initiatives. Any suggestions that other sectors should take a slightly different approach to the development of CEGs are not intended as a criticism of the Open Banking guidelines but rather as an acknowledgement that what is right for one sector won't necessarily be right for another.

Customer Experience Guidelines

This document considers the purpose of Customer Experience Guidelines (CEGs), the use of CEGs in Open Banking, and the potential for the Open Banking CEGs to be used as a model for CEGs in other industry sectors. In addition, it provides a "model" outline for CEGs in other Smart Data sectors.

Ensuring customers have a good experience is vital if any commercial organisation is to survive. But the phrase "Customer Experience Guidelines" may need a little explanation.

- *Customers* are any people (or organisations) who use a service: however, when designing a set of customer experience guidelines, it is often sensible to think about other people who will be affected by it such as the people who will operate the service (and their managers) as well as the people who have used or may want to use it.
- *Experience* is what those people see, do, say and most importantly feel when they are engaged with the service, whatever channel is being used.⁷

If "customer experience" is given as wide a definition as possible when CEGs are being written, those CEGs are likely to be more effective. For example, if regulatory experts as well as developers are included in the intended audience, then it is more likely that the CEGs will promote flexibility and the avoidance of over-prescription, because there will be an understanding that regulations change.

The approach: Avoiding prescription

The document is not intended to be prescriptive: there are no detailed customer journeys given with tight definitions of what must and must not be done. It is true that it can be argued that standardisation across an industry is important.

"We don't expect people to learn how to drive each brand of car... The accelerator is always in the same place... Digital should be the same" (LinkedIn user commenting in an Open Banking group discussion).

However, detailed prescription would be problematic for developers who may have their own approaches to customer journeys that they feel comfortable with.

⁷ "Customer experience" is often used to denote all elements of a customer's experience including say calling a contact centre or receiving a parcel; in contrast "user experience" is generally limited to online activities (web and mobile). The scope of the OB CEGs is limited mainly to online activities.

For example, online banking authentication can as well take place with current account details and a “pin sentry” device (Barclays), as it can with a customer number and two passwords (Metro Bank). Both methods have advantages and disadvantages from a security perspective and ultimately there is no “right” way of doing it (although there are plenty of wrong ways). What is more, as technology moves on, so do regulations and consumer expectations. Too much prescription would cause any CEGs to date quickly.

In addition, because this document must be relevant for applications in a range of industries too much prescription would be likely to fail the end user⁸ in some circumstances.

Instead, the document provides a set of best practice that developers in any industry sector, regulated or not, can use to guide them and that regulators in a particular industry can use to lay down a set of requirements for the customer experience in that industry.

⁸ In this document the term “end user” means the person or organisation who has an account with a provider in a particular industry sector, such as a bank or energy supplier.

Best practice for Smart Data CEGs

This part of the document attempts to codify best practice for CEGs that are designed to support Smart Data schemes in regulated sectors of the UK economy.

The purpose of CEGs

CEGs help to enable the development of products and services that give customers as positive an experience as possible. Customers will only use Smart Data services if they feel informed, secure and in control – in other words, if they have a good experience.

Strengthening the market

The ultimate purpose of a set of Smart Data CEGs will be to improve the market in a particular sector. So CEGs in energy for instance might enable developers working for Third Party Providers (TPPs) to create innovative services for energy customers. Customers might share their data with the third party and get personalised results when they:

- search for different suppliers or a better deal with their current energy supplier;
- explore different options for, say, installing different types of insulation or heating.

An effective set of CEGs will support the development of services that deliver higher customer satisfaction, meaning that consumers will use these services more frequently, complete tasks on them more often, and even recommend them to others. And at the same time, the third parties developing these services will benefit from quicker development processes, lower costs, and the increased profits that come with a higher conversion rate.

Because CEGs are so important in supporting markets, it is suggested that the development of any CEGs designed to support future Smart Data initiatives is initiated right at the start of those initiatives, as part of the process of understanding the requirements of those markets. That way, the important customer journeys can be uncovered and ways of addressing the most significant market frictions and customer requirements can be considered.

Improving privacy

In the absence of more sophisticated authentication methods before the Open Banking CEGs were published, some TPPs were using “screen scraping” a process where they access bank accounts on the consumer’s behalf using their credentials. With screen scraping, the TPP can see all of the end user’s data. The end user does not have the ability to allow the TPP to see only a specific portion of their data, such as the last six months of transactional data.

If data is shared through an interface where the customer is more in control of what the TPP can see, then screen scraping is made redundant and the user’s privacy is better protected. By mandating this type of authentication process, the CEGs can protect the privacy of end users.

Increasing compliance

In addition, properly structured CEGs can drive compliance with:

- regulations in a particular industry sector, assuming the involvement of the appropriate regulator;
- regulations that apply across industry sectors such as data protection (regulated by the ICO), online harms (regulated by Ofcom), and consumer protection law (primarily regulated by the CMA and Trading Standards);
- industry best practice, for instance BSI/ISO standards on cyber security or the ethical use of artificial intelligence.

Providing insight to other sectors

If one industry develops a set of CEGs, then other industries may be able to benefit from these to create their own set of CEGs, because there are some clear benefits from coordination across sectors: customers can avoid unnecessarily different processes as they move between sectors, and suppliers can rely on similar processes in different sectors.

- For Open Banking, CEGs were produced as part of the Open Banking standard. The guidelines address the processes a customer follows within an Open Banking enabled service and balance regulatory requirements with advice on optimising consumer satisfaction.
- As Smart Data initiatives develop across sectors, equivalent CEGs may be required, and will certainly be beneficial. There is much that can be taken from the Open Banking CEGs to inform the development of these new guidelines.

A word about words

It's worth taking a moment to consider the meaning of "consent" in this context. In some cases the word will have a general meaning, along the lines of "permission". Elsewhere, the word will have the definition laid down in the UK GDPR. And in other places the word will be tied to a particular sector regulation.

In the case of the Open Banking CEGs, "consent" is generally tied to the wording in PSD2 where "consent" is required to be "explicit". For CEGs in other sectors, it is crucial that, for any significant words that have different meanings in different regulations, the relevant meaning at any point in the CEGs is defined.

What does "good" look like?

What makes a good set of Smart Data customer experience guidelines? The answer is relatively simple. They must deliver advice that helps the developers within TPPs and service provider organisations that use them (and other stakeholders such as Board members and regulatory experts) deliver Smart Data services that result in high levels of customer

satisfaction, compliance and business activity, and which as a result promote commercial activity in the relevant market.

This means that they should be:

- **Practical:** they should help the people who use them to develop digital services by providing advice that is usable and useful, not theoretical.
- **Usable:** they should support the delivery of easy to understand and easy to use services that end users find intuitive and satisfying to use.
- **Comprehensive:** they should deliver a set of advice that covers all key elements of the customer experience.
- **Up to date:** they should provide advice that reflects changes to regulations, technology or customer preferences.

Practical

If a set of CEGs are to work, they need to be appropriate for the customers they are intended to help. This means that they should ideally be developed in conjunction with end users as well as with regulators, service providers⁹ and third-party developers.

Some effort should be taken to test whether the CEGs are offering practical assistance by testing them on the target audiences and asking questions such as:

- Is the best advice being given? Is it comprehensive?
- Is the advice easy to understand and put into practice?
- Is there an over-prescription of the details of journeys? If prescription goes beyond using the language that is mandated by regulation, is this justifiable?

Part of being useful is striking the right balance between prescription and advice. In a regulated industry, there may be certain requirements made of online services and CEGs should prescribe some form of standardised treatment. Other things are merely advised and here CEGs should describe and justify best practice rather than prescribing approaches that may become dated or otherwise inappropriate over time. Often there will be a judgement call to be made as to the extent of prescription required. Any set of CEGs need to address this challenge.

In addition, the CEGs should themselves be usable for their audience of developers, providing practical advice not theory, using language and diagrams that can be understood, and making it clear how different parts of the guidelines link together.

⁹ The Open Banking Standard is aimed in part at “Account Servicing Payment Service Providers” which includes retail banks. In this document the term “service provider” is used as a catch all for the service providers in other regulated industries such as energy companies and ISPs

Usable

The CEGs should help to deliver “usable” websites and applications by providing advice on what types of design and functionality will deliver a good customer experience. This means that, while they probably don’t need to detail best practice, they should at least prompt developers to consider issues such as:

- the devices being used to access the service and the environment within which the service is likely to be accessed;
- the physical, cultural and mental requirements of potential end users (for example the particular needs of vulnerable consumers must be considered;)¹⁰
- the underpinning principles of good digital design (for example consistency, simplicity, responsiveness, forgiveness).

Comprehensive

CEGs cannot and should not attempt to map out every single possible user journey. However, the key journeys should be identified and described. These will vary from sector to sector but are likely to include:

- Setting up an account or registering as a guest
- Logging onto an account/user authentication
- Contacting the service provider
- Searching for information

In addition, “failure states” should be considered, for instance what the user sees when they try to navigate to a non-existent page or make a mistake when completing a form.

If obstacles to an efficiently operating market have been identified, then CEGs should focus on these. For example the OB CEGs paid great attention to the authentication journey as this was considered to be the main problem that needed solving for Open Banking to succeed. In other industries there may be a wider set of journeys that deserve to be considered in detail. The journeys they do focus on will in part at least depend on regulatory requirements of the sector they apply to, but also on the ecosystem and pressures within that sector.

CEGs should address all device types likely to be used. In particular design principles for PCs and mobile devices (especially smartphones) should be contrasted as there will be differences in screen size (and consequent differences in layout and usability), orientation, and even the environment of use.¹¹

¹⁰ In addition to vulnerable consumers, if children will be using the system, consideration should also be given to the ICO’s Age Appropriate Design Code, <https://ico.org.uk/for-organisations/childrens-code-hub/>)

¹¹ A useful summary of the differences between mobile and PC design is given here: <https://uxcam.com/blog/mobile-ux/>

Up to date

CEGs need to be kept up to date over time as regulatory requirements may change and as technological advances may mean a change to best practice (for instance the introduction of digital IDs would be likely to result in a requirement to completely alter authentication processes).

To enable flexibility, CEGs should avoid being prescriptive and instead describe points of principle and ways of working, rather than mandating solutions which may become outdated.

In order to ensure that documents are maintained there will be a need for regular proactive consideration of the CEGs, possibly using a team of reviewers. Version control will be important so that users are able to identify whether they are using the most up-to-date version, irrespective of how they have navigated to it.

It is worth noting that the OB CEGs are treated as a living document where extensive industry consultation is undertaken, prior to updating and releasing a new version of the CEGs.

Who should the CEGs incentivise?

The audience of the OB CEGs is described as “Open Banking Participants (ASPSPs, AISP, PISP and CBPIIs) and competent authorities with regulatory oversight of any Participant that adopts the Open Banking Standard. They should also be of use for Participants who build their own dedicated interface or adopt any other market initiative standard.” The audience for CEGs in other sectors could therefore be:

- service providers (e.g. energy companies) who wish to make certain that the TPPs they work with are using the data they share appropriately;
- third parties developing Smart Data applications; especially developers/architects, technical leads and top management in those organisations.
- competent authorities with regulatory oversight and people advising on regulatory compliance.

How should CEGs incentivise users?

CEGs should incentivise users to be compliant with regulations and offer a good customer experience.

Compliance

In order to encourage service providers and developers to comply with regulations, any set of CEGs should explain:

- what the relevant sector regulatory requirements are,
- why they exist,
- what the penalties for non-compliance are.

The Open Banking CEGs were designed to help banks and others comply with Open Banking regulations. But while the CEGs refer to regulations around Open Banking “they are not a complete list of the regulatory or legal obligations that apply to Participants. Although intended to be consistent with regulations and laws, in the event of any conflict with such regulations and laws, those regulations and laws will take priority”.

It would seem reasonable for the CEGs merely to point their audience to non-sector requirements such as those in the UK GDPR and the Equality Act 2010. In addition, while it is reasonable to point out that the CEGs do not constitute legal advice, it would also seem reasonable that they should offer regulatory assurance by covering off in a comprehensive manner all sector requirements such as, in the case of Open Banking, the PSD2¹² requirements.

In addition to explaining **what** the regulations are, it is generally more persuasive to explain **why** the regulations exist and what the penalties for non-compliance are and this information should be considered for inclusion in any set of CEGs.

Note that recent discussions within OBIE about the evolution of the CEGs have considered whether they should evolve into a Code of Conduct or be recognised by the FCA. Recognition of CEGs by the regulatory authority in other sectors would give them greater strength.

Branding and customer satisfaction

Good customer experience is an essential part of commercial success. It is by no means true that all web and app developers are strong in this area, as most people will have discovered at least once when dealing with online services. All too often they are focussed on delivering a particular technical outcome without a real feeling for what end users will want.

Advice on improving the customer experience will, if taken, improve customer engagement and strengthen brands. Of course, there is a difference between regulatory requirements (“You must do this, and you must not do that”) designed to overcome market imbalances and good advice designed to strengthen the market (“It will help you if you do this and don’t do that”).

The current set of Open Banking CEGs pay some attention to providing good advice (in the Introductory sections) although the main focus is on regulatory requirements. In other sectors there may be an opportunity to expand this advice.

What should they cover?

The ideal set of CEGs will cover the whole of the user journey, from when an end user decides to investigate and use a Smart Data service to when they decide to stop using it.

There are likely to be regulatory requirements at all stages of a Smart Data application. For example, in the banking sector, prior to using a new service there are rules about how it may

¹² PSD2 is the EU's revised Payment Services Directive which has largely been incorporated into UK law.

be described. Then while it is being used there are separate rules about how it is delivered. And there are rules about how banking services can be closed.

The same is likely to be true for other industry sectors. Privacy and personal data must be protected before, during and after a service is used and for as long as the personal data is processed. And there may be other regulations to comply with. The ideal structure then will cover use cases throughout the lifecycle of Smart Data services.

As well as regulations that affect each use case, there will be benefit in providing detailed advice about more general customer experience best practice.

An ideal structure for CEGs is given in the section “Ideal structure for Smart Data CEGs”.

Repurposing the OB CEGs

The degree to which the current set of Open Banking CEGs could be used in other industry sectors will to some extent depend on the sector, although some issues covered in the CEGs, such as data protection requirements, will apply across all sectors.

In financial services, the focus on authenticating users taken in the OB CEGs will no doubt be very useful, and it is possible that the advice can be directly transferred across from Open Banking because the FCA's requirements will be mirrored in banking and wider financial services. (However, an analysis of that would be out of the scope of this report).

There would still be a need to ensure that CEGs developed for financial services are sufficiently comprehensive.

For other sectors, the crossover may be far less. The OB CEGs will show the principles behind optimising customer experience and reducing friction in the sector but much of the detailed content, especially related to PSD2, will be irrelevant.

Looking for difference

Different journeys

Inevitably users will be undertaking different journeys with the Smart Data applications they use in different sectors. While a key journey will still be users authenticating themselves with service providers, there may be other important journeys that need consideration. For instance in the energy sector, there may be important journeys around smart meters or interactions with smart thermostats while in the telecommunications area there may be journeys around parental controls.

It is not suggested that these **are** the journeys that will need consideration; merely that thought should be given to what the key journeys are.

Different frictions

The key "friction" that the CEGs were designed to address was the propensity of banks to avoid sharing data if they can. Will there be similar friction to the same extent in other sectors?

- Banks have a great deal of data that is very sensitive and could be used for fraudulent purpose if shared inappropriately; other sectors may hold less sensitive data and therefore feel there is less risk when sharing data with third parties is.
- Banks can use the wealth of data they have about their customers to move into other areas of activity; other sectors may be more restricted in using their smaller data sets to do this and so be less motivated to "hoard" their customers' data.

- Friction in other sectors may be different in nature. The price bundling seen in the energy market (usage changes combined with per day charges) and the fact that energy bills are far greater than bank charges, may mean price comparison is a bigger issue for energy companies than it is for banks.

Different trade-offs

One particular issue to address when considering whether to repurpose the OB CEGs is the trade-off between usability and security: to what extent should the principle that “people should have their personal data protected” trump a good user experience?

There is often a trade-off between how secure a system is and how easy to use it is.¹³ A door that is reinforced with steel and covered in locks may be very secure, but not very easy to open and close. It will be appropriate for a bank vault but not for a garden shed. The same principle applies to digital applications: if a system contains things of value, then it should be more secure than a system that contains things only of trivial value. While this is inevitably a subjective judgement, consideration should be given to the security risk “appetite” of the application owner, based on the perceived value and sensitivity of the data in the application.

- A critical customer journey involving very important data, such as logging in to manage a pension account will need a substantial amount of testing. Data controllers should ask themselves: What could go wrong? The answer here is that a valuable resource such as a bank account could be taken over and funds stolen. Security will therefore be the appropriate to the risk, with ease of use subordinated to security, at least to a degree. Rigorous automated testing that looks for problems with functionality and speed is likely to be at the heart of this. However, it will also be important to test with human subjects to ensure that instructions are clear and, importantly, persuasive.
- A critical customer journey involving less important data, such as logging in to manage an energy provider account where there is no link to a customer’s bank details, will also need to be secure; but arguably in this case security and ease of use will be more evenly balanced. The emphasis is likely to be on ensuring that the customer gets the information they want in a timely and intuitive fashion and in a form they find credible and persuasive. In depth testing by humans is likely to be at the heart of this although some automated testing (e.g. around how fast pages load) will also be helpful.¹⁴

Asking the right questions

The key questions to answer when considering whether and how to use the OB CEGs in other sectors are therefore:

¹³ The UK GDPR’s Article 25 (data protection by design and default), Article 32 (security of processing) and Article 35 (data protection impact assessment) explain the security that is required for data protection purposes and which would have to be applied in the examples given below.

¹⁴ These are just two examples and not intended to be prescriptive.

- Are there other key journeys beyond authentication that will need addressing?
- Are there other frictions that will need addressing in other sectors; and
- Does the trade-off between security and usability differ?

But there are other questions too that will need investigating:

- What do end consumers really care about? Are they more or less worried by the theft of data about their energy use than the theft of data about bank transactions? And should they worry more about the security of their energy use data?
- Do consumers really expect the processes in one sector (banking) to be mirrored by the processes in other sectors? Do they expect similar design and layout or are they conditioned by the multiplicity of approaches in other sectors (e.g. retail) to expect different application designs in different sectors?

The answers to these questions will vary between sectors. For instance for other financial services, the preference of customers may be for security over usability but in areas such as energy and communications the preference may be usability over security. Assumptions about these issues should not be made without evidence to back them up.

Learning from the OB CEGs

A review of the Open Banking CEGs¹⁵ suggests a number of useful developments and additions that could be made when writing CEGs for other sectors.

As indicated earlier (pages 14 to 16), CEGs should be practical, usable, up to date, and comprehensive:

Practical

In many ways the OB CEGs are an excellent document with detailed advice around regulatory requirements provided. However, if they are to be used as a model for other industry sectors it's worth considering how they could be made even more useful.

The guidelines seem to be focussed very much on the needs of developers and designers. But it could be argued that it would be useful to have more content aimed at regulatory experts and product owners (senior managers). A brief discussion of the intent of the regulations and examples of good and bad practice would be helpful. In addition, some discussion of risk (financial and reputational) of non-compliance would help to persuade organisations to follow them, especially where they are voluntary (as they are to TPPs in the Open Banking sector).

In addition, the guidelines are aimed at explaining the regulatory requirements for any Open Banking applications. More content about customer requirements, and how to persuade customers, would be useful. While these are briefly mentioned (in a rather theoretical way)

¹⁵ A detailed review of the OB CEGs is given in Annex 1

there is a lot more that could be done in this area. Close involvement with customer representatives during the development of guidelines for other sectors might help here.

The purpose of any guidelines should be considered. For instance, in the Open Banking guidelines there is a brief section that discusses increasing the propensity of consumers to share their data. This is critical advice. Removing market friction provided by account providers is one thing. But even in a frictionless market there will still be a requirement to persuade customers to act – in this case, to share their data. There is an opportunity to provide a good deal more practical advice in this area.

One area where the Open Banking CEGs could be improved in is the discussion of the role of different regulators. In this particular case, there are two regulators – the FCA regulating Open Banking standards; and the ICO regulating the protection of personal data. While this duality of regulation is mentioned, its significance is not unpicked. The roles of the two regulators and how they overlap is not described. It would be very helpful to have had an explanation of the different requirements of the two regulators. For instance there are differences around language used (based on different regulations “explicit consent” is defined differently by the FCA and the ICO); the databases regulated by the two regulators are different; and the powers of the two regulators are also different.¹⁶

Usable

Any digital application needs to be as “usable” as possible if the intended end users are to engage with it. A service that is hard to use will probably languish unused, irrespective of how potentially useful it is.¹⁷

There are number of key elements to a usable digital service that should be considered, many of which are illustrated in the Open Banking GEGs.

Navigation: It must be easy to find content, and this requires several things: A good navigation structure that tells you where you are in a process; navigation labels that make sense to the user; a logical structure of navigation; good signposting to important content including links and search results.

In the OB CEGs, the main navigation is simple, but it is sometimes inconsistent and there is no way of knowing where you are on the site (no “breadcrumb trail”). In addition, it would be beneficial to have signposts to seemingly important pages.

Another navigation issue is that of document versions: while it is easy to find previous document versions it is also easy, using search engines, to find oneself on an outdated version of the guidelines with no hints that there are more up-to-date versions available. Perhaps old versions could be watermarked or given a URL that indicates they are out of date.

¹⁶ This issue is described in more detail on page 33 in the annex).

¹⁷ For people interested in the theory behind this concept, Stanford University academic BJ Fogg’s Behaviour Model is instructive; <https://behaviormodel.org/>

Structure. Content should be logically ordered and structured. In the section on customer experience principles (page 31) five principles of control, transparency, trust, speed and security, are highlighted. (The principle of usability is ignored.) However, in the subsequent text control is addressed in three separate places, transparency and trust are addressed in two places, and speed and security only in one place. This rather random structure is unhelpful.

Language. It's very easy to skip information on a computer screen, especially when there is a lot of it being displayed. That's why language needs to be concise, precise and jargon free. In the Open Banking guidelines the language used is reasonably concise, but it is not always precise. For example the statement "a journey should feel like an experience and not a contract" may be hard to interpret. It is important that ideas are explained clearly and simply. One thing that can get in the way of clarity is jargon, and especially acronyms. The Open Banking guidelines are littered with acronyms. These will be less helpful to people who are not banking specialists, and it is important to consider that the people designing and building Open Banking applications may well not be specialists. Using language that anyone can understand is always going to be helpful. The term "PSU" or Payment Service User is for example unnecessary jargon when the universally understood "customer" would do just as well.

Device type. People will access the guidelines on a variety of different devices using different screens and both portrait and landscape layouts. This needs careful consideration. For example, screen resolution isn't handled well. Because column width isn't regulated, there can be instances when line length is unreadably long (for comfortable reading line length should be confined to around 60 or 70 characters). Scrolling can also be affected and at some screen resolutions it becomes necessary to scroll horizontally, something that desktop computer users may find irritating.

Related to screen resolution is the problem that images are hard to enlarge and the text on them will be unreadably small in some screen resolutions. This is a particular problem with the wireframes which contain essential content (which would be better repeated as text in the main document).

Accessibility. Problems with screen resolution and image size are related to accessibility. The guidelines fail several accessibility tests, for instance the ability to change font size easily. More importantly, they don't explain accessibility requirements. The Open Banking guidelines could in future be improved by the addition of advice in this area, given that one of the intentions of the Smart Data initiative is to make services available for vulnerable consumers. Other sets of CEGs should also consider including accessibility advice.

Up to date

Customer experience guidelines must be kept up to date, especially when they are designed to reflect regulatory requirements. An omission in the Open Banking guidelines is that there is no reference to Brexit. It may be that Brexit made no difference to the regulatory requirements (because for example GDPR is embodied in post-Brexit UK law). However, telling people that there has been no change after a major event is just as important as telling them there has been a change.

Comprehensive

Customer experience guidelines must be as complete as possible. In the case of the Open Banking CEGs it can be argued that a number of important wireframes and user journeys are missing, and this detracts from their effectiveness. It will be necessary when other sets of CEGs are being developed to consider the sector's requirements as widely as possible. On example in the Open Banking CEGs is that no coverage is given to the important area of refunds.

Ideal structure for Smart Data CEGs

This section suggests an idealised structure for any CEGs designed for Smart Data applications in regulated industry sectors.

In any set of CEGs it will be important to differentiate between guidance that is mandatory and guidance that is merely good practice. In all cases, prescription should be avoided as much as possible as it is impossible to second guess all of the circumstances smart data application developers will be working under.

Introduction

Scope of the CEGs: Generally this is likely to be limited to online services; other elements of customer experience such as contact centre interactions will most probably be excluded.

Purpose of CEGs: The purpose should reflect the purpose of the smart data initiative, e.g. promoting smart data use in a particular sector; it can do this by ensuring any smart data applications developed are:

- compliant with relevant regulations;
- developed in such a way that end users find them simple and intuitive to use.

How to use the guidelines: Advice on how TPPs and service providers can use the guidelines can be given; this may include advice on how applications should be designed and tested.

Target audiences: While this may vary from sector to sector, typically target audiences will include regulatory specialists, senior managers in service providers and third-party developers, and development teams in organisations developing smart data applications either for themselves or for third parties.

Regulations: Any relevant regulations that would apply to smart data applications in the sector can be listed and the relationship between different regulations (and regulators) explained; in all cases data protection regulations (including UK GDPR/DPA¹⁸) will apply, and so may disability discrimination regulations (e.g. the Disability Discrimination Act 1995).

Customer experience design principles

The CEGs should outline good design practice that will support compliant development and the use of any applications by end users.

¹⁸ The Data Protection Act 2018 (DPA) is the UK's implementation of the General Data Protection Regulation (GDPR)

Utility: Advice on what information should be presented to help ensure that applications are and remain useful for their target audience, such as advice on testing designs and iterating online services as market requirements change.

Compliance for regulated industries: The requirements laid down in regulations should be explained; these may include: the required or preferred use of certain language at certain points; and principles such as parity of any authentication processes between the application and other (not Smart Data) authentication by end users.

Usability: advice on what constitutes good design from the end user perspective should be given. This will include considerations such as:

- Page layout for different screen sizes (especially between desktop and mobile applications) and graphic design
- Navigation and search
- Readability of text
- Use of imagery, diagrams and tables
- Form design
- Personalisation and what happens when a user is interrupted halfway through a process
- Failure states

Accessibility: Principles of accessibility (such as shown in W3.org's Web Accessibility Content guidelines) and advice on complying with appropriate levels of these should be outlined.

Principles of persuasion: Where the purpose of a Smart Data initiative is to support market growth, advice about how to persuade end users to engage with Smart Data applications should be included. This may include suggestions around language (especially calls to action), pricing (where appropriate), and social proof.

User personas

It is helpful for developers and designers if descriptions of the intended end users are created. These "personas" are short word pictures outlining typical demographics and psychographics, and the benefits the end user will be seeking. Personas help to bring end users to life for developers, making it easier to design and build systems that will satisfy them.

CEGs can usefully include advice on building personas, helping to answer question such as:

- What do they want to achieve/what problem are they trying to solve?
- How important is this? Are there conflicting priorities?
- What do they expect? How much knowledge/experience do they have?
- What will "good" look like for them?

Personas should be relatable, meaning that they should be simple to understand and contain (sometimes irrelevant, e.g. age of children) details that make them credible.

Customer journeys

CEGs may also contain descriptions of the most important customer journeys. In the Open Banking CEGs, the customer journeys are clustered around consent, authentication and the revocation of consent.¹⁹ This is because these are the journeys that are most affected by regulatory requirements. For other sectors, it may be necessary to illustrate other customer journeys to assist regulatory compliance.

The purpose of user journeys is not just to assist with compliance, they are also essential tools for achieving a good customer experience by illustrating user start and end states and the journey between them, and identifying potential pain points and ways of avoiding them.

If the CEG is genuinely designed to promote development of the market, there is an argument that a wider set of customer journey illustrations will be appropriate. These might include:

- Setting up an account with a new service provider and logging on
- Giving consent and revoking consent
- Authenticating with a service provider
- Contacting the new service provider

Design guidelines will never be enough to achieve an optimal user experience. The CEGs should also therefore offer advice on testing regime during and after development.

Managing the application over time

CEGs can also usefully offer advice about how applications can be kept up to date in the light of changes to regulations, technology, market pressures and user expectations. This might involve regular stakeholder meetings, the analysis of web traffic data, and user surveys.

The Open Banking standards offer this useful advice which could be replicated in other CEGs:

“There are very clear OBIE benchmarks for system availability... The need for robust and accurate system monitoring (across both applications and infrastructure) is critical for a bank to confidently operate and run a robust Open Banking service. Therefore, ensure monitoring is an inherent part of your technical solution, and is fully road tested before you launch into production.”

and

¹⁹ <https://standards.openbanking.org.uk/customer-experience-guidelines/authentication-methods/latest/>

“The Open Banking Standard is a moving target. Mitigate this by ensuring you build change management budget (and capability) into your forecasts, to ensure any updates required can be accommodated. Ensure development teams build code with change in mind, including robust configuration management and API versioning techniques.”

Conclusions

The Open Banking CEGs have proved to be one of the building blocks that have supported the UK's Open Banking market. Before they were published, the open banking market was not working as desired. But since their publication and their adoption by both banks and TPPs, the open banking market has expanded, and the UK is now a global leader in open banking. It is likely that the CEGs played at least a part in that expansion.

This document attempts to answer two key sets of questions:

- What does good look like for customer guidelines, who should they incentivise and what should they cover?
- How can the existing Open Banking customer experience guidelines be repurposed for and add value to other Smart Data initiatives? What remains relevant and can we modify this to apply across sectors (primarily energy, communications and finance)?

There is undoubtedly scope for the Open Banking CEGs to be used as a template for CEGs in other sectors. However for them to be effective, they must be substantially adapted to the requirements of those other sectors, both in terms of the regulatory requirements they reflect and in terms of the particular needs of those different sectors. For instance, the requirements of Open Banking were assumed to cluster around the need for slick and simple authentication. This may be true in other sectors (especially financial services), but it is perfectly possible that different market constraints will also exist: CEGs in other sectors will need to address these too.

In addition, it will be important that the guidelines are founded in practical experience and that requirements that are redundant for efficient market operation are not included in the requirements, even if they seem to be useful in theory.

As a general rule, for CEGs to succeed:

- They must not be too prescriptive – they should provide rules where required, but guidelines elsewhere.
- They must be developed alongside end users such as CX designers and TPP product owners, and tested on them, to ensure they are relevant and useful.

In addition, while the OB CEGs focus on authentication, it may be useful for other sets of CEGs to offer advice in other areas, especially around accessibility and vulnerable groups.

More guidance on general “usability” issues would also help the market to grow. One way of doing this would be to address best practice for the design and development of online application as a series of layers:

- Required: A description of wording and functionality that is required by regulations.

- Advised: A description of wording and functionality that is considered good practice, such as compliance with accessibility standards and the interaction design principles laid out in the US Government's usability website²⁰ and the UK Government's design principles.²¹
- Useful: Advice on design approaches that might be useful within a certain context of use (but without being prescriptive).

A key issue is how far CEGs should go in advising on regulations that are not specific to a particular sector, for instance data protection (as laid out in the UK GDPR and the DPA) and accessibility (as laid out in the Equality Act). And where different regulatory regimes intersect (such as with the data protection requirements of the UK GDPR and PSD2) this could be explained in much more detail than is available in the Open Banking CEGs.

And finally there should be acceptance that CEGs are aiming at a moving target and that they will need constant revision as regulation, technology and market expectations change.

²⁰ www.usability.gov/what-and-why/interaction-design.html

²¹ www.gov.uk/guidance/government-design-principles)

Annex 1. Review of the Open Banking CEGs

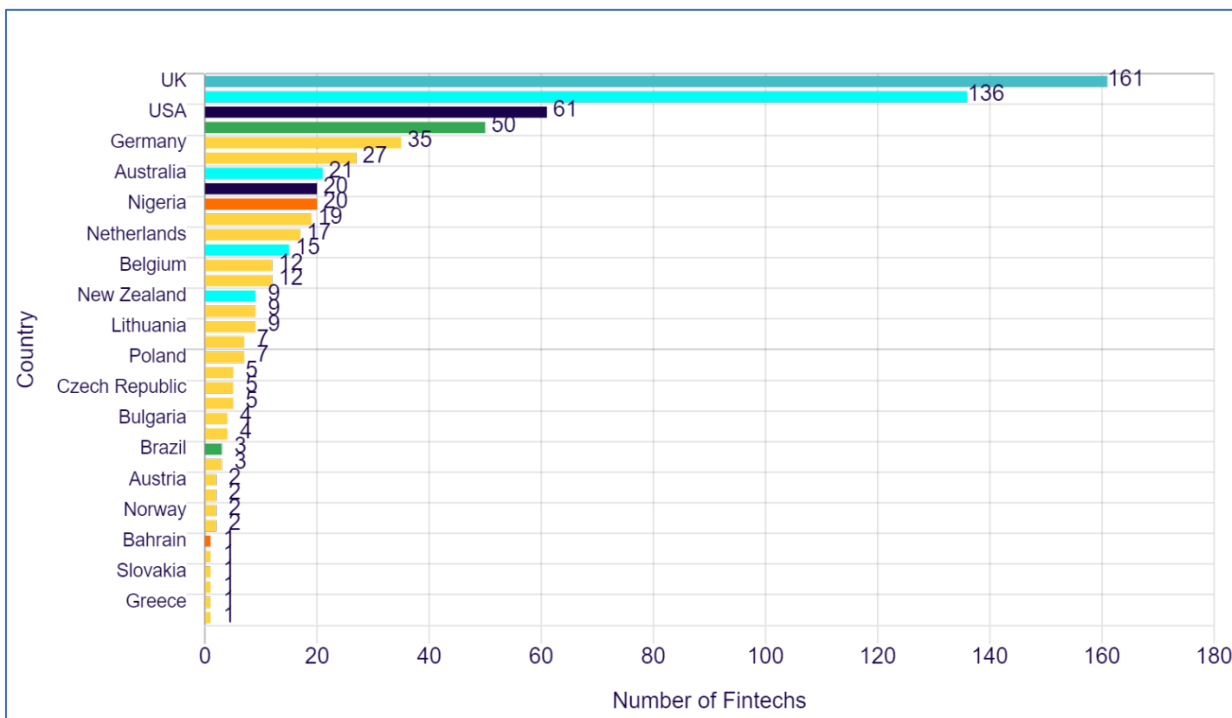
Meeting the requirements for Open Banking

In the report *Open Banking: preparing for lift off*²² the CMA’s reason for setting up the Open Banking initiative were described as:

- Giving customers more choice
- Creating more customer engagement with banking services
- Stimulating innovation across the financial sector
- Enabling the unbundling of current account and other retail banking products

These aims, with appropriate modifications, could be appropriate aims for any other Smart Data initiative. At this stage they are useful points against which the OB CEGs can be judged.

Creating a greater choice of engaging financial products was clearly the intention of the CEGs and in particular, as one research respondent put it, creating a “slick authentication process”. This has clearly worked because the UK is well ahead of other countries with implementing Open Banking and providing innovative services for consumers.



Number of FinTechs using Open Banking APIs by country of origin (N=690) Source: <https://platformable.com/blog/q4-2020-open-banking-api-trends-FinTech/>

²² <https://www.openbanking.org.uk/wp-content/uploads/open-banking-report-150719.pdf>

In the UK third party providers have been active developing payments and money management apps. But banks have embraced Open Banking too and there are a number of innovative partnerships between banks and FinTech companies where the banks are using Open Banking to extend their services and create new revenue streams.

Some commentators feel that innovation is too slow (“Where are the cashflow optimization apps for small business? Where are the products for adult family members caring for their ageing parents?”²³). But consumers are undoubtedly being well served by Open Banking, with 27% of FinTechs²⁴ using Open Banking APIs to focus on the needs of private consumers and with services including subscription payments, loans, investment management being launched alongside payments and money management apps.

From a state where it was felt that banks were incentivised to put obstacles in the way of FinTechs as a way of maintaining their close relationships with customers, it is felt by many in the Open Banking community that the Open Banking standards, and the CEGs as part of them, have helped to open the market up. If there are similar reasons for service providers in other sectors to place obstacles in the way of open data applications, it's likely that a high-quality set of CEGs will drive innovation in the market. However, to do this, those CEGs will need to be structured appropriately.

Meeting the requirements for an ideal set of CEGs

Practical: Are the OB CEGs helpful?

The audiences

The OB CEGs are aimed at multiple user types:

They can then be referenced in a number of ways according to individual priority e.g. whether the reader is, for example, a Regulatory Expert, Product Owner, Technical Lead or CX [Customer Experience] Designer.

However, it is debatable whether the format of the guidance meets the needs of different audiences. For any particular journey:

- A regulatory expert or a product owner looking to understand compliance requirements will want to understand ways in which the user journey might or might not comply with regulations such as UK GDPR or PSD2. For example, while the importance of data protection is stressed in the guidelines, a section outlining compliance requirements (and providing links to detailed information) for each journey, together with an illustration of what would be compliant and what would not, would be helpful here.

²³ <https://platformable.com/q4-2020-trends-report/>

²⁴ <https://platformable.com/blog/q4-2020-open-banking-api-trends-consumers/>

- A product owner might want to understand the risks associated with particular approaches. These might be compliance risks, brand risks or risks that a transaction is not completed.
- A technical lead might want to understand any technical requirements (such as programming languages, software or functionality such as search functionality) required.
- A customer experience (CX) designer will need to know what text and functionality is required by regulation at each stage. This information is generally made available.

CEGs developed for other sectors should consider the requirements of the different audiences and ensure they are met.

While different audiences are described in the Open Banking CEGs, the focus when writing them was very much on regulatory requirements. This may have been an error. As one respondent put it “In retrospect perhaps we could have looked at things from a demand-side perspective more rather than taking a purely regulatory perspective. For instance, some aspects of functionality were introduced that people thought it would be critical and yet haven’t been at all.”

If the CEGs are designed to help strengthen the market, then a focus on customer requirements as well as regulatory requirements would be very useful and CEGs developed for other industry sectors should address this.

One strong theme from the research was that to be successful CEGs must not be over-prescriptive. Our opinion is that the Open banking CEGs strike a good balance between stating regulatory requirements and the need to avoid prescribing solutions.

The advice given

The advice in the CEGs is in three main areas:

1. An introduction to the CEGs which includes advice on language and usability
2. A set of sample user journeys designed to illustrate some of the main journeys (generally those that involve authentication)
3. The Checklist

The introduction: Customer journey

The Introduction starts by setting the scene for the CEGs – explaining their purpose and scope. Naturally, this would be expected in any other set of CEGs.

The document then goes on to consider the customer journey and how it has been addressed in the document. Again, this is useful context. The primary customer journey is shown: this confirms the very strong focus of the document on consent and authentication:

At the core of all Open Banking customer journeys is the mechanism by which the PSU gives consent to a TPP (AISP or PISP or CBPII) to access account

information held at their ASPSP or to initiate payments from their ASPSP account.

This is no doubt appropriate for a document on Open Banking. However, it should be noted that there are several other lawful reasons for processing personal data described in the UK GDPR/DPA and consent may not always be appropriate in other Smart Data applications.²⁵ In addition, for any Smart Data service delivered by a public authority, it is difficult for consent to be used as a lawful reason for processing data if they are to remain compliant with the UK GDPR.

The Customer Journey around data sharing is described as having five stages: Set Up, Consent, Consent Management, Revocation and Off-Boarding. These are described briefly in a diagram and with accompanying text. (The explanation is extremely brief in the case of Consent & data sharing management, Revocation, and Off Boarding. There are also additional screens dedicated to these areas²⁶ but it is not easy to find a link to them and it is unclear whether the pages should be considered as part of the CEGs.) The journey described seems as though it would be appropriate for other sectors but of course that will depend on their exact requirements.

The introduction continues with a brief section on “the relationship between GDPR and PSD2”. In fact, there is little information about the relationship here. The key aspects of the regulations as they apply to data protection are described, but overall this section could be more useful if it were to:

- describe the different role of data protection regulation (core human rights) with smart data regulation (promoting policy, supporting the market);
- explain how the underlying data protection regulations (UK GDPR/DPA) differ from the specific requirements of regulations relating to the relevant industry sector (in this case banking and PSD2), with any overlap described;
- define the relationship between the data protection regulator and the sector regulator e.g. “The ICO is responsible for ensuring compliance with data protection legislation, such as upholding data subjects’ rights (e.g. data portability), maintaining the security of data and that controllers and processors including TPPs abide by their data protection requirements. The CMA/FCA are responsible for ensuring the specific requirements around data protection defined in PSD2, such as the way explicit consent is acquired, are followed by TPPs”.

Issues that could be explained here include:

²⁵ The ICO gives some excellent advice on lawful data processing here: <https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/lawful-basis-for-processing/>

²⁶ <https://standards.openbanking.org.uk/customer-experience-guidelines/introduction/customer-journey-offboarding/latest/>

- What additional data protection requirements do the sector regulations (e.g. PSD2) impose beyond UK GDPR/DPA?
- Are any specific terms defined differently in the two sets of regulation? (For example, the term “explicit consent” is defined differently in UK GDPR/DPA and PSD2.)
- Are any additional datasets beyond those covered by UK GDPR/DPA covered by the sector regulations? (For example UK GDPR/DPA covers personal data while PSD2 also covers company data and product data: exploring the intersection between data protection and the sector’s regulations would be useful.)
- What additional powers the sector regulator (e.g. CMA/FCA) has beyond those of the ICO (e.g. the CMS/FCA have the power to order consumer redress).

In the CEGs, reference is made to the ICO’s advice. But this may not be enough. From a data protection perspective, it is crucial that all organisations within the ecosystem, whether TPPs or otherwise, have clarity regarding their roles and responsibilities. This includes avoiding duplication of responsibilities and ensuring the appropriate documentation that underpins any roles and responsibilities e.g. a Data Sharing Agreement or a contract is in place.

Without this explanation, the danger is that TPPs may become confused about their responsibilities under the two different regulatory regimes. This might mean compliance failures.

In addition data subjects (the end users) will also need clarity and consistency of language to ensure they have sufficient privacy information and effective methods through which to exercise their rights. This means that TPPs should be helped to use language that does not confuse end users about their rights, methods of complaining and the potential for redress.

The introduction then gives more detail about the Set up and Consent parts of the customer journey (but nothing on the other three stages). This information is sometimes vague (it’s unclear what “the journey should feel like an experience and not a contract” means). But there is useful detail provided on essential wording. However, this information feels a little out of place: would it not be better included as part of relevant customer journeys, rather than in an introductory section? Some of this data would be useful for other industry sector although the material on “Purpose statements” would not.

Following this, the information then provides some rather more general advice around useful and unhelpful elements within a customer journey. Highlighting good and bad is a helpful approach. The points about navigation/redirection, easily consumable information and providing supplementary information would also be useful in other sets of CEGs. There is also welcome advice on what not to do, again material that could easily be used in other sectors.

The introduction: Customer experience principles

The next screen in the introduction is one on “Customer experience principles”²⁷ and the requirements for Open Banking services are laid out: Informed decision making; Simple and easy navigation; Parity of experience; and Familiarity and trust. It goes on to explain the five customer experience principles that underpin these requirements, listing them as: Control, Speed, Transparency, Security, and Trust.

There is excellent information here that in some ways is a model for other sets of CEGs, but it is muddled:

- The section “Customer experience principles” includes a text carousel where the five principles (including Control) are described.
- This is followed by short sections on transparency, trust and control.
- There is then a section on “The customer in control”.
- In other words, control is addressed in three separate places, with transparency and trust addressed in two places, and speed and security only one place.
- In addition, the essential principle of usability is ignored completely at this point.
- There is also a short section on Protection for vulnerable customers on this screen. This is an important section and will be equally important for CEGs in other sectors. Perhaps combined with advice on accessibility, this would be more appropriate as a higher-level section with its own screen.

The introduction: Customer communication

The next screen is a section on Customer communication. It might have been better to call this “Informing end users”. Generally this content would be applicable to other sectors, but it really needs better development. The main criticism is that it is very theoretical and only uses a random selection of theories with very little practical insight.

The statement that consumers have been told “not to share their personal information – now they are being encouraged to do so” is useful. The theoretical diagram on “progress forces” is rather less so.

Similarly the statement that people overvalue the way they do things may be useful, but the theoretical explanation of what this means is a distraction. The US academic BJ Fogg, an early proponent of persuasive computer technology, is briefly mentioned but no illustration of his work (which would be much more useful) is given.

Likewise there is a link to an article about the work of Daniel Kahneman in this area, but nothing about the important principles of persuasion he developed.

This part of the introduction expands into a section on “Increasing propensity to share data”. This would be important if treated well. However the content on “Fairer finance” is simply a repetition of principles that have been stated before, while columns on “maximise

²⁷ <https://standards.openbanking.org.uk/customer-experience-guidelines/introduction/design-and-experience-principles/latest/>

comprehension” and “Minimise time to comprehension” are irrelevant here (see the section just below this). There is, thankfully, a third column “Maximise customer propensity to share” that is relevant. However the advice it contains is very thin. More detail and some examples to bring it to life would help enormously.

The introduction: Improving comprehension

This section starts with a useful digest of research into techniques to increase customer understanding. The research quoted is focussed specifically on the understanding of terms and conditions. This is relevant for a document on consent and authentication but insufficient if wider requirements are to be addressed.

There are some very useful and universally applicable tips given accompanied by diagrams which are used to display data from the research rather than illustrate the points being made. (Some of the points made are slightly misleading: for some tips, document “open rates” are substituted for “comprehension rates” – the two are very different.)

The user journeys (Authentication methods, etc)

The largest part of the OB CEGs outlines a number of typical user journeys in the four areas of Authentication methods, Account information, Payment initiation, and CBPIIs). Each unique journey has been broken out and is generally described as follows:

1. A top-line user journey map and description
2. A more detailed set of wireframes illustrating the journey, with journey and detailed explanatory notes as required
3. A note of the CEG checklist requirements for the journey

The top line user journey information (1) is likely to be very useful to product owners and regulatory experts as it will (or should) describe the context and intent of the particular journey. However these descriptions are full of jargon and legalese-style syntax and not very easy to read.

Technical leads and CX designers will find the detailed wireframes (2) useful (although possibly insufficient). The CEG checklist requirements (3) will also be very welcome to CX designers. CX designers are also likely to use the top-line journey description (1) as a way of contextualising themselves. It will therefore be important that (1) and (2) are visually consistent and aligned. This is generally achieved, although it is not always easy to see them on the same screen.

However, this very useful set of content might be delivered more effectively, as is discussed in the next section “Are the OB CEGs usable?”

The journeys chosen are generally those that involve user authentication. This is because banks putting obstacles in the way of users trying to authenticate themselves was identified as the main issue hindering market growth. While authentication of users, especially where it

concerns granting a third-party access to personal information is important, there may be other issues that are equally or more important in other sectors. It will therefore be very important to consider the user journeys that are illustrated in CEGs aimed at those sectors.

The Checklist

The checklist offers practical help with ensuring that compliance with PSD2 and other regulatory requirements is achieved and is designed to be used as supporting evidence of compliance.

On respondent felt that “The checklist is useful [for testing conformance with PSD2] as lots of FinTechs might not have the bandwidth to understand the PSD2.” However the non-compulsory nature of the checklist may cause a problem: “If it is voluntary then many TPPs will ignore and do their own thing.”

The items within the checklist are made up of a series of questions that can be answered as “Yes” or “No”. The desired response to each question (Yes or No) is given and the answers are marked as either “Required” or “Recommended”. They are helpfully divided into the same four areas (Authentication Methods, Account Information, Payment Initiation, and CBPIIs) as the website.

The checklist is useful in its own right as a check against some regulatory requirements (specifically those around PSD2). It is not a check against other regulatory requirements such as the DPA. There might be an opportunity for the CEGs in other Smart Data sectors to cover regulation more widely.

The checklist is not a check against design best practice. That is appropriate as best practice is likely to vary depending on the application and generally speaking there is no such thing as “right and wrong” design, just “good and bad design”. Leaving individual design decisions to the service provider seems sensible.

Accuracy of advice

It is important that any assumptions that are made are accurate. For instance the guidelines state:

The design pattern for most Terms and Conditions and Privacy Notice experiences is: A link; A tick box, and A legal document (accessed by actively clicking the link)

This isn't completely true. There are plenty of Ts&Cs that the user has to scroll through to get to an “accept” button.

In addition, this approach might not be in line with the UK GDPR which indicates a requirement for an approach to privacy information that is designed to make it simple to understand.²⁸ This could (purely as an example) be along the lines of:

“We promise not to share your data with anyone else unless we are legally required to. And we won’t track you while you are using the internet. Click here for more details. If you accept these privacy terms you can revoke this permission anytime by simply [deleting the app].”

Of course, exactly how much information is given at each layer, and how many layers are provided, would be up to the individual service provider as this is not specified in the UK GDPR and the DPA.

Note that elsewhere in the guidelines research is quoted²⁹ that indicates that there is evidence that a layered approach does not increase the comprehension of terms and conditions. However the ICO recommends a layered approach to disclosing information as one way of making privacy notices more usable.³⁰ And that having been said, there is an obvious disconnect between what consumers want to know (e.g. Will I be in control of my data?) and what lawyers want to tell them.

Usable: are the OB CEGs simple and intuitive?

This section of the report looks at the degree to which the OC CEGs are “usable” (i.e. to what extent users of the CEGs find them intuitive and simple to use). Learnings here will help the developers of other sets of Smart Data CEGs create documents that are fit for purpose in terms of their design and functionality, rather than their content.

The document set

Document versions

The opening page of the CEGs has a link to previous versions of the document, making it clear that the reader is on the latest version. In addition the URL shows that the document is the latest version:

<https://standards.openbanking.org.uk/customer-experience-guidelines/authentication-methods/redirect/app-based-redirect-pis/latest/>

²⁸ “The principle of transparency requires that any information addressed to the public or to the data subject be concise, easily accessible and easy to understand, and that clear and plain language ... be used” Recital 58 of the GDPR

²⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831400/improving-consumer-understanding-contractual-terms-privacy-policies.pdf

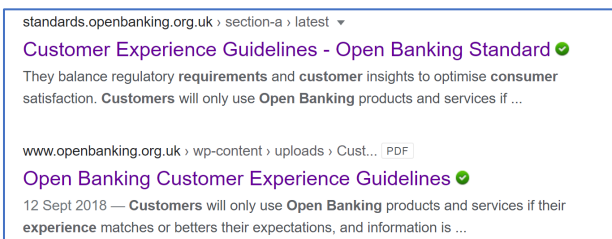
³⁰ <https://ico.org.uk/for-organisations/guide-to-data-protection/guide-to-the-general-data-protection-regulation-gdpr/the-right-to-be-informed/what-methods-can-we-use-to-provide-privacy-information/> The ICO points out that depending on the context, other techniques such as the use of dashboards, just-in-time notices, icons or indeed a blended approach may be more appropriate than a layered approach

A problem is that someone who finds an old version of the document won't necessarily know that they are not in the latest version if they do not know this convention. A change to URL conventions might help to solve this;

*<https://standards.openbanking.org.uk/customer-experience-guidelines/introduction/section-b/v3-1-5> **outdated version***

as would implementing a “no follow” instruction on all pages of old versions so that they don't appear so frequently in search results.

There appear to be (at least) two versions of the guidelines that can be found by search engines – a Word-style document and a PowerPoint-style document.

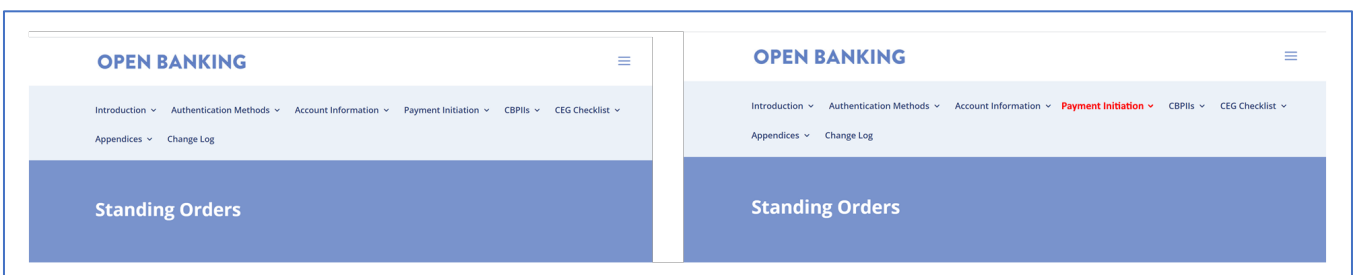


Two different versions of the OB CEGs with very similar names appear high up in search engine rankings

The reason for having two versions is unclear. The PowerPoint document may well be an obsolete version but if it is then it should either be identified as such and its relationship with search engines should be managed for instance the URL it sits on could be pointed at the latest version.

Navigation

There is no “breadcrumb trail” and no location clues in the navigation bar, making it hard to tell where you are on the site (unless you look at the URL). Some form of “You are here” signage would be useful.



Colour or font can be used to help people know where they are on a site. In this case, in the adapted screengrab on the right, red and bold font³¹ are used as a highlight

³¹ Colour alone should not be used as a way of signalling difference to users as some people may find it hard to see.

It is important that any website is internally consistent as far as possible as inconsistencies can confuse users. Navigation on the site is generally consistent. However, the main CEG navigation uses dropdowns:

- in the Authentication Methods dropdown, the items take you to an anchor link on the Authentication Methods page: user journeys are found from links on this page.
- in the Account Information dropdown, each item takes you to a user journey

In some cases the dropdown extends off the screen, meaning that users may not know what options they have. In such cases it might be sensible to have more than one column in the dropdown.

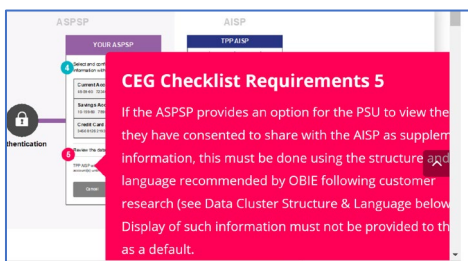
There is no search functionality on the site which is a major omission as many people rely on search to navigate around sites.

There are occasions where documents are referred to, but no reference link is given. At times this is frustrating. For example, Data cluster structure and language is referred to on one page³² (“...see Data Cluster Structure & Language below”) but no reference link is given.

Layout and graphic design

Scrolling

Under certain circumstances, horizontal scrolling is required. This is generally bad practice for text especially when read on a PC and should be avoided unless carefully designed.



Example of horizontal scrolling that creates a difficulty for the user

Text design

Line length is not managed well when screen resolution changes. This can lead to very long line lengths under some circumstances. For instance at the common screen resolution of 1920 x 1080 (the most common in the UK at the time of writing³³) the text at the top of the page extends to 180 characters (at x200 magnification) or 100 characters (at x100 magnification). Good readability is achieved with a line length of between 60 and 75 characters.

³² <https://standards.openbanking.org.uk/customer-experience-guidelines/ais-core-journeys/account-information-consent/v3-1-3/>

³³ <https://gs.statcounter.com/screen-resolution-stats/desktop/united-kingdom>

Right justification (where text is spaced so that it is aligned in a straight line at the right margin) is frequently used. This can make it harder to read text as it means word spacing is uneven. Centre justified text (which is only seen on occasion) is also harder to read. Using left justified text may not look so pretty at a distance but it is easier to read.

In addition, long paragraphs are also hard to read. For ease of reading text should be cut into short sentences and short paragraphs with bullets used to create variety and white space.



An example of a page that is very hard to read, with long lines at the top, right justified text and very long paragraphs

Language

The document is littered with acronyms, many of which remain unexplained. These may be very opaque to people who are not banking specialists (e.g. CX designers) tasked with designing customer journeys. For instance why is PSU (Payment Service User) used instead of "customer" which would more immediately be understood? "PSU" may be more precise than "customer" but is the precision necessary or useful?

At the very least acronyms should be explained the first time they are used and ideally the first time they are used on each screen. The first use of the term PSU is on page 3 of the introduction to the document.³⁴ However, the first definition of PSU is well into the document on an Account Information page.³⁵

Acronyms are not the only problem. The advice is often delivered using over-complicated language. As an example, the sentences:

³⁴ <https://standards.openbanking.org.uk/customer-experience-guidelines/introduction/customer-journey/latest/>

³⁵ <https://standards.openbanking.org.uk/customer-experience-guidelines/account-information-services/latest/>

In general, simplified terms, the consent request is initiated in the TPP domain (step 1). The PSU is then directed to the domain of its ASPSP for authentication (step 2).

could be re-written as:

Put simply, while they are in the TPP's website or app, the customer gives consent for their data to be shared (step 1). They are then directed to the bank for their identity to be confirmed (step 2).

On occasions the words used are ugly:

In particular, when the customer is in the Set-Up phase, if and how the TPP onward shares data with other parties...

What would be wrong with just “shares”?

And sometimes the words used are simple but not fully explained:

Set up. The journey should feel like an experience and not a contract.³⁶

This is pretty meaningless. What is an experience? And by “not a contract”, is the requirement to explain to users that they can revoke their permission at any time? If so, the document should say so.

These are just a few very small examples of a large problem that exists across the CEGs. One of the users interviewed was extremely critical of the language used, saying that it got in the way of understanding the advice.

Another small but important point is that terminology should be as consistent as possible, something that is not demonstrated in the example below:

“Customer Data Sharing Journey. The Data Sharing Customer Journey is outlined below...”

The authors of any new set of CEGs should remember that not all designers and developers will be familiar with industry terms, and perhaps more importantly that complex information must be presented as simply and logically as possible if it is to be understood easily.

Accessibility

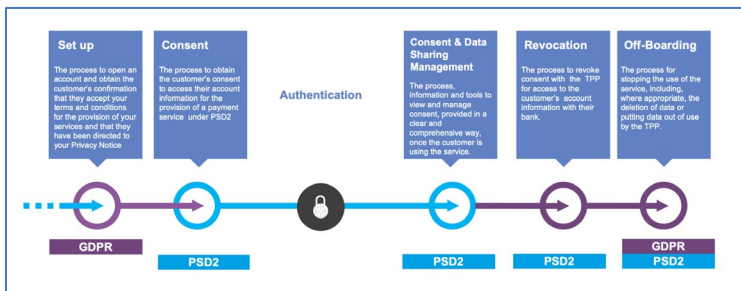
There are a number of errors in the CEGs that appear consistently including:

- contrast errors, where text is hard to read because it is too similar in colour to the background;

³⁶ <https://standards.openbanking.org.uk/customer-experience-guidelines/introduction/customer-journey/latest/>

- headers being used as design features meaning that header levels are skipped: this can cause confusion to people using screen readers;
- a failure to allow text size to be increased easily;
- including essential information in images but not repeating it in text: this is particularly irritating in the journey illustrations where the text can be hard to read.

As a general rule, explanatory text should not be included within illustrations as most screen readers will not be able to interpret “text-as-graphics”



An example of an illustration containing large amounts of text

Generally, accessible design is good design and will have benefits to all readers and not just people with visual or cognitive impairment. It would be good to think that accessibility is at the heart of any future CEGs, and the principles are followed both in the document itself and in the advice it gives.

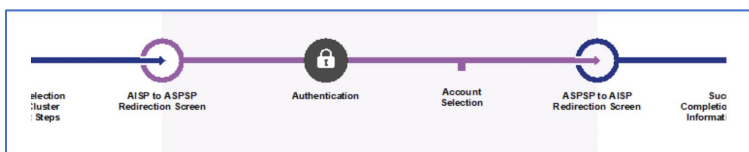
Personas

Personas (descriptions of typical users intended to bring design guidelines to life for the people who have to use them) have not been included in the CEGs. Authentication of user identity is probably a fairly universal requirement for banking applications, so there is probably little need to provide personas in the OB CEGs. However, there may be a need to provide personas for CEGs in other sectors, especially if different users have very different requirements.³⁷

Usability of the user journey pages

Top-line user journeys

There is a top-line description of the user journey provided at the top of each of the user journey pages supplemented by an illustration.



Screen grab of a typical user journey map

³⁷ Some useful advice on developing personas is given here: <https://www.usability.gov/how-to-and-tools/methods/personas.html>

The illustrations clearly show the different stages of the journeys (apart from, in the case shown above, some faulty cropping that has deleted some of the text). However, as shown in the example below, the description ignores the different stages and relies on the illustration to deliver this.

PSU Authentication with the ASPSP using browser-based redirection from an AISP for an AIS request. This enables a PSU to authenticate with their ASPSP while using an AISP for an AIS service, using the same web-based authentication method which the PSU uses when accessing the ASPSP web channel directly. This model works when the PSU is consuming the AISP service on a device that does not have the ASPSP app, or the PSU does not have the ASPSP mobile app.

Because the illustration is not the best way of delivering the stage-by-stage journey information for all readers, it would be better to add the text along the lines shown in bold below:

PSU Authentication with the ASPSP using browser-based redirection from an AISP for an AIS request.

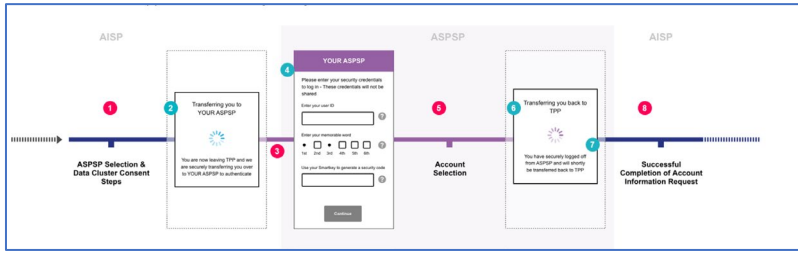
*This enables a PSU to authenticate with their ASPSP while using an AISP for an AIS service, using the same web-based authentication method which the PSU uses when accessing the ASPSP web channel directly. **The user journey is as follows:***

- **The user informs the TPP that they would like a service from them and that they would therefore like their bank to share their data with them (consent is given).**
- **The user is shown a screen indicating that they are about to be redirected to the bank's website or app**
- **The user confirms their identity with their bank (authentication)**
- **The user selects the account they want the TPP to be able to monitor**
- **The user is shown a screen indicating that they are about to be redirected to the TPP's website or app**
- **Confirmation that data sharing will be enabled is shown to the user (Account Information Request completed)**

This model works when the PSU is consuming the AISP service on a device that does not have the ASPSP app, or the PSU does not have the ASPSP mobile app.

Wireframes

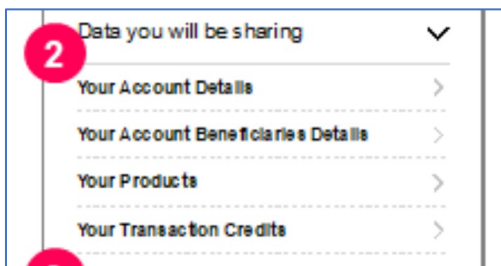
Normally wireframes would be presented as a set of separate illustrations, one per screen. In the OB CEGs they are presented as a linked set to illustrate a particular journey.



Screen grab of a typical set of wireframes

While the wireframes in the OB CEGs are simple, this approach is unnecessary given the previous information (the top-line user journey). It would be problematic should more complex wireframes be needed in a different set of CEGs. In addition there are a number of other problems with the wireframes:

The wireframe images are quite small and do not expand well, making the text hard to read.



Expanded part of a wireframe showing the illegibility of text when expanded

It is helpful that the wireframes use “real” text. However, any text that must be included for compliance or customer experience reasons should be detailed in the text for people who cannot read the illustration.

Some wireframes appear to be incomplete. This is no doubt because:

All wireframes have been created to illustrate the key principles of the customer journey and illustrate important regulatory points only.³⁸

This limitation to “key principles” is hardly helpful. “Important regulatory points only” seems particularly frustrating.

The important elements missing in the wireframes include:

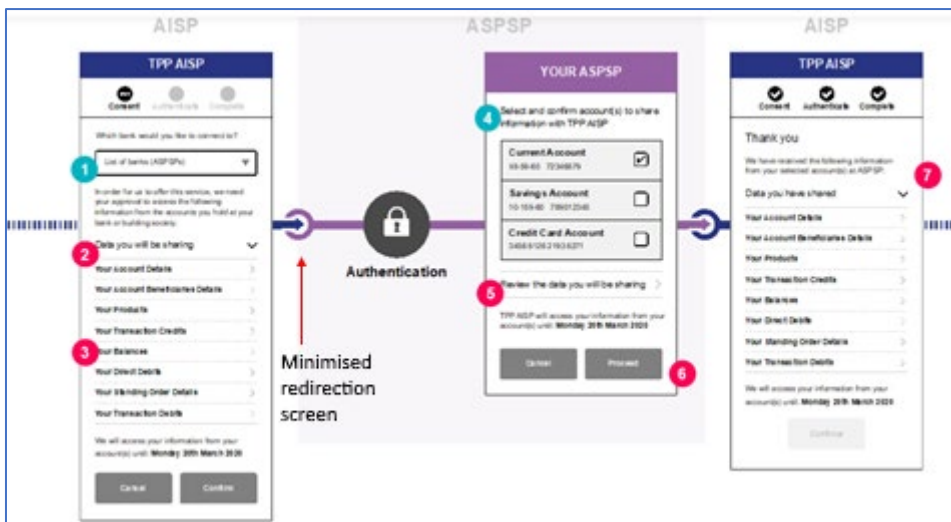
- a button to take you back to the previous screen;
- a button to say “No” or “Do not continue” and a note to say what happens if this is clicked;
- a description of what could happen when buttons are clicked (it would be helpful to have some advice on including some form of feedback such as a change of colour, shape or size);

³⁸ <https://standards.openbanking.org.uk/customer-experience-guidelines/introduction/customer-journey/latest/>

- whether the way the screen would appear differently on a smartphone and a pc (orientation and size will be factors);
- information on how scrolling should be handled;
- where the users have to input text or check boxes etc, information on what happens when no text or unacceptable text is input.

At least two types of authentication are demonstrated in different wireframes: one with text input used for authentication and one with a biometric authenticator. The user of this document might infer that the different methods are mandated for different journeys. Using a standard method of illustrating authentication would avoid this possibility, perhaps with a separate section of the CEGs that explains the different types of authentication that might be used, and how they would fit into the wider journey.

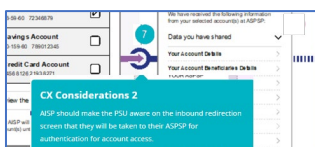
On occasion the redirection screens were omitted from the sets of wireframes (or rather, minimised), presumably for the sake of simplicity.



Screen grab of wireframes showing how redirection screens are sometimes minimised

This would be appropriate if:

- it is certain that the reader has already been exposed to a set of wireframes that include the redirection screens (remembering that interactive content is not always accessed in a linear fashion); and
- a note is added to the wireframe explaining that the redirection screen has been minimised (see example below).



Adapted screen grab from a wireframe showing how minimised redirection screen could be signalled by a note

The wireframes point out individual elements of the Checklist. However there doesn't always seem to be a direct relationship between the Checklist and the advice given in the user journey pages. For instance:

*AISPs **must** present a high-level summary of the data that is being requested and make it clear that this data and the purpose for which it will be used are the same as when originally requested. This should be done using the structure and language recommended by OBIE following customer research (see Data Cluster Structure & Language below). AISPs **must** ensure that this request is specific to only the information required for the provision of their account information service to the PSU.*

*AISPs **should** only present those data clusters relevant to the product type in question. Where the request is for multiple product types then the detail shown in the data cluster should explain to the customer the product type to which it applies or state that it is shared across multiple product types.³⁹*

The question in the Checklist is rather simpler:

Do you use the OBIE language shown under the Customer Experience Guidelines Section Permissions & Data Cluster to describe the data clusters when communicating with the PSU and ensure to only request the data necessary for the provision of your account information service to the PSU?

The answer required is "Yes". However there are discrepancies between the two documents:

- There is a supplementary "should" comment on the wireframe page ("AISPs **should** only present those data clusters relevant...").
- The first "must" on the wireframe page ("AISPs **must** present a high-level summary...") is not reflected in the Checklist.
- The instruction about using "the structure and language recommended by OBIE" is marked as "should" on the wireframe page but is a requirement in the Checklist.

For the wireframes and the Checklist to work together effectively they need to deliver the same information.

It is perhaps a shame that there is no way of linking from the user journey pages to the Checklist; however if the exact wording of the checklist was given on the user journey pages this would be unnecessary.

Are the OB CEGs up to date?

There have been a number of versions of the OB CEGs over time. Frequent reissuing indicates that work on keeping the guidelines up to date has happened. Version 3.1.6 was released in June 2020 and version 3.1.7 was released on 14 December 2020. This is

³⁹ <https://standards.openbanking.org.uk/customer-experience-guidelines/ais-core-journeys/refreshing-aisp-access/latest/>

described as a “minor update”⁴⁰) which is perhaps why the CEGs still show version 3.1.6 as the latest version.

However in the current version, reference to the DPA could not be found (GDPR seems to be used as a proxy for this, so perhaps that is deliberate). Also there seems to be no mention of Brexit or any changes to requirements caused by Brexit. Even if Brexit has no implications for Open Banking, a note to that effect would be useful for people developing new applications.

A draft of version 3.1.8 is available online.⁴¹ It is open to question whether drafts should be available to public inspection especially if they are not watermarked with the word “draft”.

Are the OB CEGs comprehensive?

The CEGs state that:

*“These guidelines cover the core use cases that support market propositions”.*⁴²

Four use cases are given – primary authentication, account information services, payment information services and card-based payment instrument issuers. All of these are focussed on authentication.

This may be reasonable. It is felt that the CEGs are at their most useful when they are mandatory and are focussed on what the banks were doing badly. According to one respondent “They helped correct misaligned incentives.” Authentication was seen as the main area that needed correction.

So if authentication is the only core case to “support market propositions” it may be true that the CEGs cover the core use cases. However, it seems unlikely that there are no other core use cases that couldn’t benefit from advice about the customer experience. One example is the absence of any advice about refunds which is apparently missing from the guidelines because it is missing from the regulations. It is however an important use case.

One research respondent explained this as follows: “There were issues that weren’t addressed. For instance PSD2 doesn’t address refunds –from a practical consumer perspective these are obviously fundamental. There is a danger that activity is on the scope of the regulation rather than the real use of Smart Data opportunities.”

If customer experience guidelines are developed for other industry sectors, ensuring that a comprehensive selection of use cases is developed will be essential.

⁴⁰ <https://www.openbanking.org.uk/about-us/latest-news/obie-publishes-version-3-1-7-of-the-open-banking-standard/>

⁴¹ <https://standards.openbanking.org.uk/customer-experience-guidelines/pis-core-journeys/vrp/vrp-consent-dashboard-revocation/v3-1-8-draft/>

⁴² <https://standards.openbanking.org.uk/customer-experience-guidelines/introduction/section-b/latest/>

Annex 2. Testing and CEGs

Any Smart Data system is likely to be very complex with many different journeys through it possible, some without a fixed end point. Testing and monitoring are therefore very important throughout the development process and ideally after it has launched.

Because the testing of any digital application is so important, it may be sensible for CEGs in other regulated sectors to mandate that testing is undertaken throughout the development process. CEGs should make it easy for first- and third-party providers to test their products as they are developed and used by providing appropriate links to testing tools.

The precise form and amount of testing required will depend on the application and the journeys within the application.

Within the Operational Guidelines, Open Banking provides some information about testing and gives access to a number of testing tools.⁴³ The aim is:

supporting TPPs with the ability to test their products and services (both at initial launch and also through subsequent changes) by providing a number of key tools and infrastructure to ensure that their products have been sufficiently tested prior to go-live.

The tools provided by openbanking.org include functional conformance and security conformance testing tools designed to provide certified assurance that apps, websites and APIs conform to the latest Open Banking standards. This is useful of course but limited. There is no real discussion of the wider set of testing that digital systems should be put through, beyond a suggestion that the comprehension of important text should be tested against typical users.

CEGs should make it easy for first- and third-party providers to test their products as they are developed and used by providing information and where appropriate links to testing tools.

Technology or user?

A testing regime should be designed to do two separate things: to evaluate the technology; and to explore how people are able to use the technology.

- **Test the technology:** Testing should be used to check that the technology is working as anticipated, that the website or app is functioning as it should be. Do all the links work, is the site/app properly integrated with any APIs, is it secure, how does it perform in terms of speed? Automating this type of testing is likely to be more cost effective, faster and more accurate than using humans to do it.

⁴³ <https://standards.openbanking.org.uk/tpp-operational-guidelines/testing/latest/>

- **Test the user:** Testing should be used to ensure that anyone using the system will be able to complete tasks without undue difficulty and in a satisfying manner. Can people find their way to the end of a task, is the completion of forms unnecessarily burdensome, do they understand what they are signing up for? While this type of testing can be automated, it is likely to require human insight and exploration if an appropriate level of useful understanding is to be delivered.

Testing the technology

Because of the importance of testing, especially around security and privacy, it will be important for developers to build a testing plan right at the start of any project. Testing should not be left to the end of the development process. Principles such as privacy by design and security by design should be followed, and the degree to which they have been delivered should be tested throughout the development process.

Projects should therefore include detailed plans to test technology and functionality. Where automated testing is used, time should be allowed to enable testers to get up to speed and write the coding required.

Testing is likely to focus on key elements of the systems such as:

- Performance and load tests
- Security conformance and penetration tests
- End to end integration with APIs

Technology can't be tested properly until systems have been built. So while the potential outputs of technical testing should be considered throughout the development process (Will this page load rapidly? Will we be insisting on a strong password at this point?) most of the focus will inevitably be at stages where coding has happened and where software is available for testing.

Testing the user experience

Testing the technology can only do so much. It's good to know that a system is operating smoothly. But that doesn't mean it is simple to use from a user's perspective, even if the people who built it think that it is quite obvious how you should use it. That's why a programme of user testing is important.

Purpose of user tests

User testing should be designed to test consumer reactions to and perceptions of the utility, the usability, and the persuasiveness of a particular system.

- The utility of a system refers to the degree to which it is useful for the audience the system is designed for. Does it allow people to complete tasks they want to complete? Are the outcomes that the system delivers of an appropriate quality?
- The usability of a system refers to the degree to which the audience it is designed for find it simple and intuitive to use it. Are they able to complete the tasks they want to

complete easily and without frustrations or obstacles? Do they have all the information they need when working through tasks?

- The persuasiveness of the system is focussed on the objectives of the system owner and refers to the degree to which the target audience is persuaded to complete the tasks that the system is for. Do they believe the system will give them the results they require? Do users trust the system to be fair to them? Are they encouraged to complete task that they have started?

Timing of user tests

User testing should ideally take place throughout the development process:

- at the initial concept stage, when target users can be questioned about the likely utility of the system;
- at wireframe stage or prototype stage, when target users can be shown possible journeys through the system and asked about the sort of functionality that is intended to be on offer;
- prior to launch, when target users are given tasks to do on a completed (or almost finished) version of the system, so that their ability to complete tasks can be measured;
- during any subsequent major changes to the system when regression testing of the user interface can be undertaken.

The amount of testing at each stage will of course depend on budgets and timescales but the principle is that the more user testing that is done during the development, the better the system is likely to serve the end user (and hence the system owner).

Note that user testing isn't *always* designed to take all the friction out of a system. In some cases friction can be used to stop people abandoning a task: if people invest time in it, they may be less likely to abandon it on a whim. In addition friction may play a very important role in slowing the user down and ensuring that they understand what they are agreeing to. And in some cases friction may be a necessary consequence of the objectives or resources of the system owner. In both cases there is a fine line to be drawn between system efficiency (costs and returns to the system owner) and the willingness of users to persevere with the system.

User testing should focus on:

- whether people are able to complete a set of tasks in the system, and how simple and intuitive they find it to do so;
- what potential obstacles there are to completing tasks, such as unclear instructions and navigation labels;
- how people are able to progress with tasks in the event of an unexpected occurrence such as a failure to complete a form fully or when clicking on a link that leads nowhere (testing of “failure states” is often ignored in user tests);
- why and how people are motivated to start and complete tasks, and how they feel when they have done so.

Nature of user testing

User tests are generally performed by recruiting a small number of potential users from the target group who are invited to a laboratory setting where they are asked to undertake a set of tasks on the system under review. They will generally do this as individuals, although sometimes small groups of people may work together.

Research participants are observed as they complete the tasks, often with the researcher asking them questions as they do so, or encouraging them to talk about how they feel. Sometimes the movement of their eyes around the screen will be tracked to find out which areas of the screen are getting most attention, and on occasion their facial expressions will be monitored as a way of tracking their emotions.

Generally around six to eight research participants will be recruited and then tested for 60 to 90 minutes (longer and they are likely to lose interest and focus). While this may seem like a small number, a handful of tests is usually enough to uncover all or most of the major flaws in a system. Of course if the system is a large one and all the key journeys can't be explored in a 90-minute session, a second set of user tests may be required.

Sometimes, especially at the earlier, conceptual stages of system development, user tests may involve small groups of people discussing the proposed system and making suggestions about how it might be improved. Testing utility, rather than usability, will be the intent of these user focus groups.

The limitations of user testing

Because you could never test a system against all the people who use it, in all the situations they will find themselves when using it, user testing can never more be a sampling exercise. However it should be able to uncover the main user-related problems with a system. And it can be supplemented by a thorough review by one or more design and functionality experts.

Those problems that are missed during testing and uncovered later, perhaps as a result of calls to a help desk, should be recorded and addressed in future iterations of the system.

Accessibility tests

An important consideration is whether people with physical or cognitive disabilities or other disadvantages can use the system easily. Accessibility testing helps to ensure that everyone can use a site, in particular:

- People who find difficulty in reading text on a screen and may want to change font size
- People who use a screen reader because they are visually impaired
- People who are physically impaired and find small mouse movements difficult
- People who cannot hear well and so rely on captions

In addition accessibility testing should consider people who find it difficult to absorb written information including:

- People with dyslexia
- People whose first language isn't English
- People with low education levels or difficulty with literacy
- People with learning difficulties

Undertaking accessibility is a specialist skill, as is designing accessible sites and indeed using accessible language. But making sure that a digital system works well for all the people who need to use it is important. If you added up all the people described by the eight bullet points above, you would find that you were talking about at least a quarter of the population!

Expert reviews

Because user tests only involve a limited number of people, it can also be useful to conduct a system review by an expert who will evaluate whether the system conforms to accepted best practice and design heuristics (rules of thumb as to what is likely to work best). In this sort of review, the expert will dig down into the way a system works, trying lots of different options and actively trying to “break” the system, something that simply wouldn't be practical for reasons of time in a user test.

As well as reviewing the usability of the site, the language used on it can be analysed to assess whether it is likely to be understood and persuasive. And important governance aspects can be reviewed, such as default privacy options, the presence of wording required by regulations, and the number of clicks to achieve certain tasks or locate certain information.

Testing over time

Automated user tests

Once a system has been launched, it is sensible to monitor its effectiveness. One useful method is to conduct automated “A/B” and “multivariate” tests. These involve making subtle changes to a system (changing the layout of the home page, changing the navigation labels, or the wording of a call-to-action etc) and then directing a small number of users to the changed system. Their success or otherwise on the system can then be compared with users on the original unchanged system. If improvements are seen with a particular change this can be incorporated in the original system.

These sorts of tests can deliver some very useful insights, especially if they are conducted continuously and with imagination. There is one caveat though: with any of these tests you will simply be comparing a set of options you have chosen with the original. If the ideal option isn't included in test you have run, then you may be making decisions based on a sub-optimal experiment.

Regression testing

A system regression is a defect that appears after a change to that system. Regression testing ensures that any such defects can be identified and addressed. This concept is generally associated with writing software, but it is just as important for online services, where a change

to the design may alter the user's experience, changing the journey flow perhaps or making certain items less visible.

Ideally regression testing will be undertaken after any major change to an online system, either using manual or automated processes.

Annex 3. Smart data

Smart Data will support industry sectors by enabling the development of innovative services and helping to develop a trusted ecosystem where consumers can be sure that services provided are compliant, fair and secure - a place where they would understand their rights and be able to find compensation if they needed to.

Smart Data has a number of potential benefits including:

- saving time, money and effort for consumers who can more easily find and choose deals that are better suited to their personal circumstances;
- enabling consumers to share their data with third parties in the knowledge that it will be held securely and used fairly and appropriately;
- enabling service providers such as energy companies to gain consented access to customers' data thus enabling them to develop and profit from innovative services that use this data.

Smart Data initiatives

Smart Data initiatives are sector-specific initiatives aiming to facilitate the use of Smart Data within a particular sector, with the intention of:

- increasing competition in the sector, for the benefit of consumers;
- increasing innovation and commercial activity in the sector;
- reducing the cost of developing new services for the benefit of service providers and customers

Initiatives in the energy sector

As part of the “Midata in energy” project, which is designed to help use their energy data to confidently engage with new types of tariffs and energy products, Ofgem undertook user research in 2020, designed to provide insight into consumers' experiences of the current tariff comparison journey, and understand their requirements for the Midata service. A proof-of-concept document was issued in October 2020.⁴⁴ The initiative is currently paused because Ofgem “recognise that there are a number of programmes in train across the industry that will also impact industry data availability and quality.”

⁴⁴ https://www.ofgem.gov.uk/system/files/docs/2020/10/midata_in_energy_-_user_research_outputs_0.pdf

Initiatives in the telecommunications sector

Ofcom has launched work on the Open Communications initiative, with a consultation that closed in November 2020.⁴⁵ This initiative is focussed on the retail telecoms and pay TV markets and explores the potential benefits of enabling consumers to share their data (for instance on what products they use, the price they pay and how much data they use) with comparison sites or other providers, in order to receive recommendations about the best products for their needs.

Initiatives in the financial services sector

The Open Finance Smart Data initiative refers to the extension of data portability and third-party access seen within Open Banking to a wider range of financial sectors and products, always with explicit consumer consent. The scope could include savings, mortgages, consumer credit, investments, pensions, and insurance. The FCA has recently (October 2020) closed a Call for Input consultation.⁴⁶

In the area of pensions, the UK Government published *Pensions Dashboards: working together for the consumer* in April 2019.⁴⁷ Primary legislation has now been passed as part of the Pensions Schemes Act 2021 and the Department for Work and Pensions are working on secondary legislation. The Money and Pensions Service are running the Pensions Dashboard Programme.⁴⁸

⁴⁵ <https://www.ofcom.org.uk/consultations-and-statements/category-1/open-communications>

⁴⁶ <https://www.fca.org.uk/publications/calls-input/call-input-open-finance>

⁴⁷ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/792303/government-response-pensions-dashboards.pdf

⁴⁸ <https://www.pensionsdashboardsprogramme.org.uk/>

Annex 4. Glossary

AISP	Account Information Service Provider. In Open Banking, a company authorised to access an individual or SME's account data held by their financial institutions, with their explicit consent
API	Application Programming Interface. A set of routines, protocols, and tools for building software applications. An API specifies how software components should interact.
ASPSP	Account Servicing Payment Service Providers. A company providing and maintaining payment accounts for payment service users (PSUs, qv). Traditionally, ASPSPs are banks and similar institutions
Authentication	A step in the provision of financial (and other) services where a customer can prove that they are who they say they are. Typically this involves logging in with a password or with a more complex technique like biometric authentication
CBPII	Card Based Payment Instrument Issuer. A company that gives its customers the option to initiate card-based payments from payment accounts held by an ASPSP (qv) such as a credit card provider that allows you to pay from your bank account
CEG	Customer experience guidelines. A set of guidance designed to help developers optimise the customer experience and in the case of the Open Banking CEGs comply with appropriate regulations
CMA	Competition and Market Authority. A UK regulatory authority that works to promote competition for the benefit of consumers
CX	Customer Experience. The experience that users are given on a digital platform and which affects their ability to complete desired tasks in an intuitive and timely fashion
DDA	Disability Discrimination Act 1995. An Act designed to protect the right of people with disabilities to be treated equally; its provisions are now subsumed into the Equality Act
DPA	Data Protection Act 2018. An Act designed to control how your personal information is used by organisations, businesses or the government
FCA	The Financial Conduct Authority is the conduct regulator for nearly 60,000 financial services firms and financial markets in the UK with the remit of

	ensuring that financial markets are honest, fair and effective so that consumers get a fair deal.
GDPR	General Data Protection Regulation. The EU's regulation on the regulation of personal data which was implemented in the UK via the DPA
ICO	Information Commissioner's Office. The UK's independent authority set up to uphold information rights in the public interest, promoting openness by public bodies and data privacy for individuals.
Ofcom	The Office of Communications. The UK's communications regulator, regulating the TV, radio and video on demand sectors, fixed line telecoms, mobiles and postal services.
Open Banking (OB)	The use of open APIs (qv) that enable third-party developers or TPPs (qv) to build applications and services based on access to customer data.
OBIE	Open Banking Implementation Entity. The delivery organisation helping to define and develop the required APIs, security and messaging standards that underpin Open Banking.
Open Data	Data that is freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control
PISP	Payment Initiation Service Provider. A company authorised to initiate payments into or out of a user's account
PSD2	Payments Services Directive. An EU regulation for electronic payment services. It seeks to make payments more secure in Europe, boost innovation and help banking services adapt to new technologies.
PSP	Payment Services Provider. A company that carries out regulated payment services, including AISPs, PISPs, CBPIIs and ASPSPs (qv)
PSU	Payment Service User. A natural or legal person making use of a payment service as a payee, payer or both.
Smart Data	The secure and consented sharing of customer data with authorised third parties who then use this data to provide innovative services for the consumer or business, such as automatic switching and account management.
TPP	Third Party Provider. A company that uses APIs developed to standards (e.g. the Open Banking Standards) to access customer's accounts, in order to provide account information services and/or to initiate payments. In banking TPPs are Payment Initiation Service Providers (PISPs) and/or Account Information Service Providers (AISPs).

UK GDPR	The manifestation of the GDPR in UK law
Usability	The degree to which a digital service is usable by end users in a way that is intuitive and satisfying.

Acknowledgements

The following people have been very helpful in the preparation of this report.

Josh Addario, Open Data Institute (ODI)

Sean Kelly, Cosnetics Ltd

Richard Koch, Open Banking Ltd

Will Pinkney, Office of Communications (Ofcom)

Faith Reynolds, Open Banking Ltd

Ian Searle, Financial Conduct Authority (FCA)

Michael Solomon, Profit through Ethics Ltd

Rajeev Walia, Open Banking Ltd

Jack Wilson, TrueLayer Ltd

This publication is available from: www.gov.uk/government/publications/smart-data-accreditation-and-customer-experience-guidelines

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