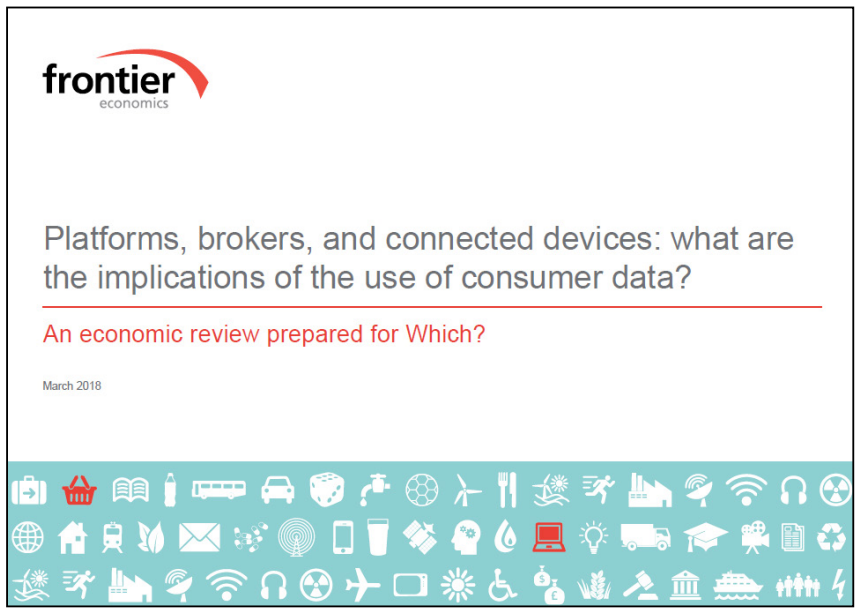
Platforms, brokers and connected devices

What are the implications of the use of consumer data?

Introduction

- Which? have been looking into the implications for consumers of the increasing use of data about individuals. As part of our wider work on this project, we wanted to understand the economics and ecosystem of companies that share and use consumer data.
- Individual consumer data is information collected from and about consumers which is used for a wide range of commercial activities. This data can be given directly and actively by consumers to a company (e.g. when registering for a service), or indirectly and passively (e.g. observed activity such as social media "likes" or internet browsing history).
- We commissioned Frontier Economics to conduct a review of the relevant literature on the topic. The following slides set out the key high-level findings from Frontier's review, both from their initial review, and then more detailed focus on four key topic are.



Initial findings

An initial review of the literature found the following:

- There aren't (as yet) comprehensive statistics on the scale of commercial use of consumer data, although we know that in 2016 UK adults spent on average over three hours per day online, 80% of the top-500 websites in 2014 had third-party data trackers, and one of the companies most heavily reliant on consumer data for revenue (Alphabet, parent company of Google) has the highest market value of any publicly traded company in the world.
- Analysis of consumer data can result in benefits to consumers, such as: more innovative services and products; better targeting of products so consumers spend less time looking for ones that meet their needs; and more accurate risk assessments (e.g. in credit scores/lending) meaning risk is allocated proportionately, saving many consumers money.
- However there can also be significant downsides, such as consumers' data being sold on to third-parties that then target them with ads for products that they no longer need or want. Companies could also use data to target prices specifically to individual consumers based on their perceived willingness to pay; this kind of price discrimination could lead to some consumers facing much higher prices for products that companies know they need.

Following this initial review, we asked Frontier to conduct an in-depth review of four topics that were considered of most direct interest and relevance to consumers, as well as providing sufficient material. The findings on these four areas are set out in the next slides...

Competition in consumer data-intensive markets

What did we find?

- Data intensive markets are often digital "platforms", where a company (e.g. LinkedIn) provides a connection between two different groups of users, increasing the value to both (e.g. recruiters find an increased candidate base more valuable, and vice versa).
- Platform markets can lead to concentration as the value of a platform depends on the amount of users; therefore once a platform has a large enough user base, it tends to keep adding users. This also means that platforms with smaller user bases will struggle to compete.
- Consumer data can be highly important to platform companies as it enables them to offer targeted services (e.g. more accurate matching of candidates to roles) and can impede other firms entering the market, as established companies have access to more customer data than new entrants.
- The literature suggests that these impediments are most likely when data is critical to a product or service (e.g. info on job seeker's past experience); useful for predicting consumer preferences (e.g. what degree the candidate holds); and unique (cannot be collected from other sources).
- However platform markets can be competitive when consumers use multiple platforms for the same purposes, e.g. using both Google and Amazon to search for products, or platforms face competition on one side, e.g. messenger app developers can build for Facebook or build for another platform like Android.

What does this mean for consumers?

- There's not been much analysis of concentration in online platform markets, and whether this has led to less innovation or higher prices for consumers (as traditional economic theory would suggest); for example sizeable players like Facebook and Google subsidise services to users (and even offer them for free) to encourage sign-up and so gain access to their data which is then used to sell targeted adverts.
- Competition could result in better privacy and security outcomes if consumers are able to exercise choice about use and security of their data, but indication is that they don't. Firms therefore don't compete on privacy, possibly resulting in worsening of data usage and security policies. Privacy regulation may be answer.
- Privacy regulation can take different forms, such as website-specific consents and portability rights (giving consumers rights to transfer their data).
- These regulations can have positive and negative effects for competition; in terms of specific consents the cost of obtaining these from consumers adds to firms' entry costs (**negative**), but can also allow smaller firms an opportunity to compete in terms of the privacy offering, such as providing better protections and requiring less information (**positive**).

What isn't in the literature?

- What innovative and cost-efficient services are consumers currently getting from companies that use their data, and would this be improved through increasing competition and/or regulation? This would help in understanding the extent to which competition and/or regulation in these markets is necessary for positive consumer outcomes.

Data brokers

What did we find?

- Data brokers are companies that collect personal information about consumers and then either sell the data to companies, or analyse it themselves and sell the insights (e.g. for marketing and credit rating services).
- They gather data on consumers from lots of sources, such as website cookies, social media activity, even offline sources like the electoral register. This "data linking" across different sources seems to be the USP of brokers.
- There's a big knowledge gap about data brokers as their activities have only recently come under scrutiny.

What does this mean for consumers?

- Data brokers are still a relatively unknown entity in the digital space; there is limited work by lawmakers and regulators on their use of consumer data (e.g. how they harvest and hold the data, who are their main clients).
  - *But current (limited) evidence suggests data brokers mainly sell services for targeted advertising which is not substantially different from Facebook or Google's revenue model, that consumers regularly give their data over to.*
- Data brokers are also directly used by consumers for services such as credit matching and ID theft protection.
- They could also be good for consumers in an indirect sense. Consumer data is highly valuable, meaning established firms could use incumbent advantage (e.g. proprietary access to huge amounts of consumer data) to shut out innovative new entrants and stifle competition; new entrants could however overcome this by purchasing the services of data brokers, allowing innovative services to develop.
- Brokers have strong incentives to avoid disclosing their activities (e.g. data collection and sales), and extent of data held; these will be driven by commercial considerations (don't want competitors or clients to copy their services) rather than nefarious reasons, but consumers may not see it this way...

What isn't in the literature?

- There is very little analysis of the role of data brokers (e.g. what specific data they collect and how it is used) and specifically whether they help to foster competition and so lead to positive consumer outcomes (e.g. lower prices, better service choice).

Connected devices: Smart meters case study

What did we find?

- Connected devices are internet-linked appliances that gather data from consumers (e.g. smart TVs; electronic assistants like Alexa); this is used to tailor services and products as well as encourage efficient use of resources by consumers by offering near-instant feedback on cost of services.
- Smart meters are one of the most well-known connected devices widely-available to consumers, and are being heavily promoted by the UK government as a way to reduce energy consumption at peak times by giving consumers real-time information on the cost of their usage.
- Main barriers to adoption for connected devices is concern over privacy and data security; in smart meters government has tried to allay concerns by routing data via a secure central "hub", with consumers deciding who can access data (although it's not clear whether this has been sufficient to convert more risk-averse consumers, let alone whether it could be replicated for other connected devices). Smart meters also have a long installation time which acts as a disincentive for take-up (unlikely to be the case for most other connected devices.

What does this mean for consumers?

- Whilst consumers can access benefits from connected devices, it appears they have difficulty weighing these against the costs, meaning they may not use devices like smart meters (because costs like "time taken to install" are immediate, but benefits like lower bills will only come gradually in the future). This can work the other way too, when consumers rapidly adopt devices where benefits are more immediate than costs, e.g. electronic "virtual assistants", where novelty/convenience (**benefit**) could outweigh proper consideration about giving over personal data (**cost**).
- Consumers will probably not want to constantly interact with their devices to get benefits (e.g. switching off appliances in line with smart meter readings), so increasing automation could lead to better consumer outcomes such as appliances automatically switching off when not being used. However, this could increase privacy concerns if it leads to consumers needing to hand over more of their personal data.
- Consumers' ability to withhold data from connected devices may provide reassurance around privacy, but can lead to benefits from use of these devices not being realised; for example, suppliers could use smart meter data to better plan for demand peaks and so keep costs lower.
- Evidence from smart meters show trust is key for consumers; they will be more willing to use devices and give up data to companies they believe will use it responsibly; given the importance of data for connected device services, this will require industry to think about how to increase trust.

What isn't in the literature?

- There's yet to be a proper review of costs and benefits for consumers of different connected devices; knowing more about these would help us to understand how much consumers are gaining by adopting these devices (and perhaps how much data they should hand over to access them).

Privacy behaviour

What did we find?

- There is a rich and growing literature describing how privacy decisions are made and the implications for consumers.
- Consumers making choices around how much, and what, data they hand over face significant uncertainty over how the data will be used; this complicates their ability to make informed decisions.
- Privacy decisions are also influenced by context, such as: the choices others have made, the perception of the organisation the consumer is interacting with, and how the choices are framed (e.g. evidence suggests that the mere presence of a privacy policy can soothe consumer concerns, regardless of what it actually says!).

What does this mean for consumers?

- Given the significant uncertainty that surrounds the use of data, providing information that helps remove this uncertainty (for example, making benefits and costs of handing over certain data tangible) could assist consumers in making better decisions.
- However, there is also evidence that even when consumers have access to better information about privacy and the use of their data, they don't always make rational decisions, instead relying on shortcuts which can then be influenced by design choices (such as impressive-looking but ultimately meaningless privacy policies).
- There could be a need for closer monitoring of website design choices, and how different approaches affect privacy decisions, to ensure that consumers truly understand what information they are handing over to companies and what this could mean for them.

What isn't in the literature?

- There doesn't appear to be much in the literature on the type of information most valued by consumers to support privacy decisions and the most effective way this can be delivered; this could be useful for guiding policy interventions and educational campaigns to help consumers make more informed choices around their privacy.