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1 Introduction

This submission responds to the ACCC's draft determination proposing to deny authorisation to ihail Pty Ltd (**ihail**) in relation to a taxi booking app for use by domestic and international taxi companies (**Draft Determination**).

A proper assessment of ihail's authorisation application needs to take full account of the broader commercial context to which the development of the ihail app responds. To assist the ACCC, this commercial context is described in section 2.

After explaining the commercial context, this submission responds to the ACCC's Draft Determination and explains why the emergence of ihail is a positive development in an industry undergoing rapid technological change.

2 Commercial context

The supply of point-to-point transport services, which includes taxis, hire cars and ride sharing, has changed significantly in recent times. Most notably, technology has seen the rapid growth of ride sharing services like Uber, which provide attractive alternatives for consumers who have traditionally relied on taxis and hire cars.

Uber is a classic example of the development of the sharing economy. Driven by technological advances, including high rates of smartphone ownership and widespread internet access, Uber and other ride sharing services have emerged to offer a platform which allows drivers to more easily deal directly with consumers. In this new world, traditional intermediaries like taxi networks are increasingly being bypassed. For example, in England, there are reported to be two private hire vehicles for each taxi, notwithstanding that private hire vehicles cannot use the traditional hail/rank method of obtaining passengers¹.

The taxi industry is not unique. Technological developments are leading to disruption in a number of industries. Disruption allows smaller companies with fewer resources to successfully challenge established incumbent businesses.² Businesses that successfully leverage the power of technology can expand very rapidly.³ In industries facing disruption, like point-to-point transport, accommodation and television, it is very difficult to predict the future. Success is not guaranteed for anyone. Even players with perceived traditional advantages are rapidly overtaken. It is a constant battle for survival, which requires rapid innovation. As noted by Downes in the Harvard Business Review, the success of disruptive innovators often inspires incumbents to implement long-overdue innovations of their own.⁴

¹ Department of Transport, Taxi and Private Hire Vehicle Statistics: England 2015, 25 August 2015, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/456733/taxi-private-hire-vehicles-statistics-2015.pdf.

² Clayton M. Christensen, Michael E. Raynor and Rory McDonald, 'What is Disruptive Innovation?', Harvard Business Review, December 2015.

³ For instance, Didi Kuaidi, which was created through the merger of Didi Dache and Kuaidi Dache in 2015, arranged 1.4 billion rides in China in 2015, with additional global operations; see 'Car-hailing apps in China: More than mobility', The Economist, 30 January 2016.

⁴ Larry Downes, 'Airbnb: A Spare Room for Debate', Harvard Business Review, 26 June 2013.

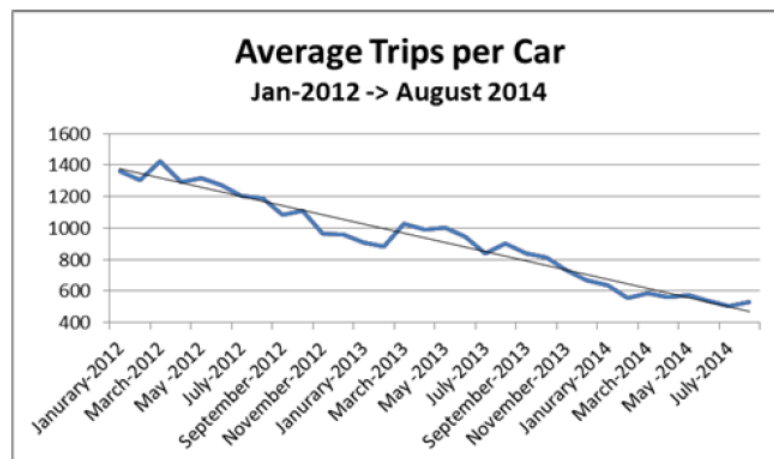
The emergence and success of Uber has had a profound effect in Australia. In 2015, it is reported that taxi owners lost more than \$31m in revenue as consumers switched from taxi services to Uber.⁵ This level of demand-side substitutability demonstrates that Uber and other ride sharing platforms can and do compete head to head with taxis, including by offering a more timely service. For example, a report recently commissioned by Uber found that the average waiting time for an UberX ride was substantially lower than for a booked taxi (4.46 minutes, compared to 7.79 minutes).⁶ The growth of ride sharing in Australia seems set to continue, especially given recent developments regarding greater certainty around the legality of such services and a renewed focus on reform in the taxi industry (refer to section 4.4(b) below).

Technology is transforming the consumer experience. Technology has facilitated the development of tools which can greatly improve the manner in which point-to-point transport services are booked and supplied.

There are significant benefits for suppliers and consumers. Technology has fostered benefits which cannot be provided by traditional booking methods, including real-time GPS tracking, user ratings and in-app payment. From the perspective of the providers of point-to-point services, these benefits allow for more efficient supply of bookings to drivers and a platform for higher quality suppliers to differentiate themselves in the market. From the perspective of users, the benefits include enhanced safety and convenience as well as reduced waiting times.

The experience in the United States, where ride sharing services have been operating for some time, highlights the challenges facing traditional taxi companies in this dynamic world and provides a useful insight into the future in Australia.

Kate Toran, the director of the Taxi and Accessible Service Unit of the San Francisco Municipal Transportation Agency has studied the impact of ride sharing. Ms Toran noted that average trips per taxi dropped from 1,424 per month in March 2012 to 504 per month in July 2014. A graph from Ms Toran's report (extracted below) shows this decline.⁷ Consistent with this downward trend, earlier this year, the largest taxi company in San Francisco (Yellow Cab Co-operative) announced that it had filed for bankruptcy.⁸



⁵ Adam Creighton, 'Uber pushes growth in journeys', The Australian, dated 1 February 2016.

⁶ Deloitte Access Economics media release dated 1 February 2016 regarding the report 'Economic effects of ride sharing in Australia', <http://www2.deloitte.com/au/en/pages/media-releases/articles/uberx-delivering-80m-in-consumer-benefits-010216.html>.

⁷ Jessica Kwong, 'Report says SF taxis suffering greatly' dated 16 September 2014, <http://archives.sfoxaminer.com/sanfrancisco/report-says-sf-taxis-suffering-greatly/Content?oid=2899618>.

⁸ Heather Kelly, 'San Francisco's Yellow Cab files for bankruptcy' dated 25 January 2016, <http://money.cnn.com/2016/01/25/technology/yellow-cab-bankruptcy/>.

The City of Chicago has recently recognised the significant benefits of bringing together multiple taxi networks on a single platform. Earlier this year, Chicago gave official approval for two universal taxi hailing apps to be used by drivers.⁹

Finally, regulatory reform is likely to change the taxi industry. The Final Report of the Harper Review identified taxis and ride sharing as one of three areas for priority review. In commenting on emerging technologies that compete with traditional taxi booking services, the Panel concluded that ‘..[a]ny regulation of such services should be consumer-focused, flexible enough to accommodate technical solutions to the problem being regulated and not inhibit innovation or protect existing business models.’¹⁰ If adopted, the Harper Review’s recommendation has the potential to deliver significant de-regulation and increased competition to the taxi industry.

It is in this dynamic environment that ihail is seeking to use existing taxi booking infrastructure to improve the supply of transport services. ihail will need to provide a compelling product and a superior service offering in order to succeed in an industry undergoing significant change where the threat of new entry is very real.

3 Addressing the ACCC’s Draft Determination

A key element of the ACCC’s reasoning was a concern that ihail could emerge as the dominant taxi booking app.¹¹ In the context of this rapidly evolving world, it is unlikely that ihail will become the dominant taxi app (let alone the dominant supplier of hailing / booking services to point-to-point transport service providers) for a number of reasons, including:

- 1 **No exclusivity:** ihail taxi networks (both ihail shareholders and non-shareholders), as well as taxi drivers who opt-in through their network to access ihail, will remain free to use other booking services, including other apps. As neither ihail taxi networks nor their drivers will be required to exclusively use ihail under the relevant commercial arrangements, they will continue to be able to use booking services (including apps) which compete with ihail (i.e. ‘multi-home’).
- 2 **Multi-homing:** It is rational for taxi networks, taxi drivers and customers to use multiple taxi booking services – or multi-home – provided the value offered by the services exceeds the cost of using them. This is particularly likely to be the case for taxi apps, which are provided free of charge.
- 3 **Apps require both drivers and consumers:** Apps are platforms that bring together user groups in a two sided market. It is well-established that success in two-sided markets requires effective interaction between both the supply side (here, taxi drivers and networks) and the demand side (here, taxi passengers). Even if a high number of drivers opt-in to access ihail (which is not guaranteed), there are a number of reasons why this might not translate into success on the consumer side where multi-homing is common and costless and drivers are offered a range of incentives to use a particular service.
- 4 **Strong and increasing competition:** ihail will face strong competition from alternative booking services including other apps, which will constrain its ability

⁹ Jim Dallke, ‘Chicago Officially Selects Two Taxi Apps to Help Cabs Take on Uber’ dated 4 January 2016, <http://chicago.inno.streetwise.co/2016/01/04/chicago-officially-selects-two-taxi-apps-to-help-cabs-take-on-uber/>; City of Chicago, ‘CHICABS’, http://www.cityofchicago.org/city/en/depts/bacp/supp_info/chicabs.html.

¹⁰ Competition Policy Review – Final Report, March 2015, p 135.

¹¹ Draft Determination, [188].

to become the dominant taxi booking app. Specifically, ihail will face competitive pressure from:

- **other taxi booking apps**, such as goCatch and ingogo. goCatch has 35,000 registered taxi drivers, which accounts for more than 50% of all taxi drivers in Australia.¹² Even if all of the drivers on ihail's shareholders' networks opt-into the app, ihail will only have access to ~42,000 drivers.¹³ It cannot be assumed that the number of drivers with access to ihail will lead to ihail becoming the dominant taxi app, particularly where goCatch has failed to do so with a similar number of drivers;
- **ride sharing services**, such as Uber and Lyft. Uber in particular is growing rapidly in Australia and ride sharing is now legal in a number of Australian jurisdictions, including NSW which is the state with the largest number of taxis (~34% of all taxis in Australia),¹⁴ and
- **traditional methods of booking a taxi**, such as street hail and telephone. Critically, street hail remains the most common way of catching a taxi in Australia, accounting for almost 70% of all taxi rides.¹⁵ Of the remaining 30% of rides, ihail management estimates that the majority are arranged through telephone bookings.

The ACCC also identified a number of public detriments. As explained in section 5 below, ihail is proposing to alter its business model to address the perceived detriments, including:

- **Allowing an in-car payment option:** By allowing in-car payments (in addition to in-app payment), ihail will directly address the ACCC's concerns that competition between taxi payment processing providers would be foreclosed. Consumers will be given the ultimate choice as to how to pay for their ride in a taxi booked through ihail, whether that be in-car or in-app. If the consumer chooses to pay in-car, the driver will select which payment processing terminal is used to process payment, whether that be a Cabcharge terminal or an alternative terminal provided by a third party, such as ingogo;
- **Enabling network selection:** By allowing customers to choose a particular taxi network, ihail will directly address the ACCC's concerns that any competition between taxis on price and/or service will be limited by the ihail app.¹⁶ That is, to the extent that taxi networks are differentiated to consumers (on price and/or service), taxi networks will be incentivised to compete aggressively (on price and/or service) to be the network of choice for their target customers; and
- **Driver opt-in:** In order to access and then use ihail, taxi drivers will need to opt-in to ihail. Giving drivers the ability to opt-in to ihail through their network will

¹² Patrick Durkin, 'Taxi war hits the streets as goCatch grabs for hailing revenue' dated 8 September 2015, http://www.brw.com.au/p/tech-gadgets/taxi_war_hits_the_streets_revenue_c7eZd56dVAobrZ9FgNiPmN; as at 31 December 2014, there were 68,000 taxi drivers in Australia (2014 ATIA State and Territory Taxi Statistics, <http://www.atia.com.au/wp-content/uploads/2014-State-Territory-Taxi-Statistics.pdf>).

¹³ ihail has estimated the number of drivers to which it will have access by calculating the ratio of taxis owned by networks that are ihail shareholders (13,159) to the total number of taxis in Australia (21,344), then multiplying the total number of taxi drivers in Australia (68,000) by that ratio. Taxi and driver numbers in Australia are sourced from the 2014 ATIA State and Territory Taxi Statistics (as at 31 December 2014), <http://www.atia.com.au/wp-content/uploads/2014-State-Territory-Taxi-Statistics.pdf>.

¹⁴ 2014 State and Territory Taxi Statistics (as at 31 December 2014), <http://www.atia.com.au/wp-content/uploads/2014-State-Territory-Taxi-Statistics.pdf>.

¹⁵ 2014 State and Territory Taxi Statistics (as at 31 December 2014), <http://www.atia.com.au/wp-content/uploads/2014-State-Territory-Taxi-Statistics.pdf>.

¹⁶ Draft Determination, [113]-[122].

ensure that ihail has to compete to secure drivers by offering a superior service offering. While ihail may have access to a number of taxi networks on launch, each driver in the relevant network will have the choice of whether to opt-in to access the ihail service. As noted above, even if all drivers in the ihail networks were to opt-in, ihail would only have slightly more drivers than goCatch (42,000 drivers compared to 35,000 drivers). Therefore, it cannot be presumed that ihail will become a dominant booking app based on the potential number of ihail drivers, particularly where goCatch has failed to do so with a similar number of drivers.

Overall, as this submission explains, ihail's proposed conduct does not give rise to competition concerns, especially given that ihail (i) is unlikely to become the dominant taxi app (let alone the dominant supplier of hailing / booking services to point-to-point transport service providers) and (ii) has modified its business model to address a number of the detriments identified by the ACCC. As a result, the public benefits of the arrangements for which authorisation is sought outweigh any minimal detriments to the public and the ACCC should grant authorisation.

4 ihail unlikely to dominate

4.1 Networks and drivers have choice

The proposed ihail commercial arrangements do not impose any exclusivity obligations on ihail's taxi networks (both ihail shareholders and non-shareholders) or taxi drivers accessing ihail. As a result, competition between taxi booking services, including apps, will not be adversely affected by the proposed ihail arrangements.

(a) ihail's taxi shareholders

The ihail Holdings Limited Shareholders' Deed and Constitution do not restrict shareholders from using other booking services in each shareholder's individual network (including telephone and internet) and shareholders are free to maintain their own individual taxi booking apps. Taxi networks and their drivers will also continue to have incentives to collect passengers from street hail and rank.

There are, however, some restrictions placed on the sale of shares by existing shareholders and the admission of new shareholders.¹⁷

In addition and as discussed in section 3.3 of ihail's submission dated 4 August 2015, there is a greater incentive for shareholder taxi networks to favour their own white label apps over ihail. In particular:

- the variable cost to the network of a booking through ihail is greater than a booking through a white label app. A shareholder taxi network will be required to pay ihail [REDACTED] (a proportion of which may be returned as profit). Networks do not pay for bookings through their white label apps on a per booking basis; and
- a shareholder network has greater certainty that it will get a booking when a user books through the network's white label app than when a user books a taxi using ihail. This is because, when using ihail, a user may select a different

¹⁷ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

network as a preferred network or ihail may allocate a job to a different taxi network.

Given networks compete on their ability to generate bookings for drivers, it is likely that they will continue to favour their own white label apps over ihail. This will particularly be the case for networks that have the scale to be able to offer users sufficiently short waiting times through their white label booking apps.

(b) ihail's taxi networks

In order to use the ihail technology, taxi networks (whether they are shareholders of ihail or not) will be required to enter into a Licence and Services Agreement (**LSA**). Importantly, the LSA does not oblige a taxi network to exclusively use ihail to obtain taxi bookings.

In addition, under the LSA, ihail does not provide any guarantee regarding the number of ride requests that will be made available to a taxi network through the ihail app under the LSA. Therefore, there is no incentive for taxi networks to encourage their drivers to use ihail over other means of obtaining a job (including through other apps), as there is no guarantee that ihail will deliver a set volume of booking requests. To the contrary, where fares are available from sources other than ihail (e.g. rank, hail and white label apps), networks are effectively disincentivised from accepting bookings through ihail as a result of the fee that is charged by ihail on a per booking basis. Since the LSA does not impose a requirement on networks to perform a minimum number of jobs, a network suffers no detriment by accepting jobs from these other sources.

(c) ihail taxi drivers

Taxi drivers whose networks are part of ihail will not be required to use ihail exclusively.

Drivers will need to complete an opt-in process before they are able to access the ihail service (see section 5.3 below) and, therefore, even if networks sign up, there is no guarantee that ihail will have a large network of drivers on launch.

Even if drivers opt-in to ihail, they already do and will continue to multi-home (i.e. use a variety of booking services/apps) following the launch of the ihail app. That is, taxi drivers can and will obtain bookings through the taxi's dispatch terminal or via apps, such as Uber Taxi, ingogo and goCatch, which are available on their smartphone. Today, it is not uncommon to see taxi drivers with a number of smartphones or apps running in their taxi. Ultimately, drivers will need to be satisfied with the service and incentivised to use the app (see section 4.3(c) below).

4.2 Multi-homing is the norm

(a) App costs are small for drivers and consumers

ihail understands that all taxi booking and ride sharing apps are provided to consumers free of charge. As noted by Frontier Economics, there are few physical or digital storage limits on modern smartphones which would prevent consumers from downloading and using multiple taxi booking apps. Consumers' preferences for variety in using apps come from features such as:

- promotional fares or credits;
- the ability to tip for priority dispatch;
- the ability to pay by card or cash;
- guaranteed bookings (and penalties for no-shows);
- the ability to rate drivers;
- itemised, visual receipts; and

- the ability to earn frequent flyer points.¹⁸

In addition, by accessing a number of apps, consumers have the potential to access the greatest number of taxis.

Similarly on the driver side, ihail understands that the majority of booking apps are provided at no cost to drivers. Therefore, drivers will often have and use multiple booking apps. As discussed in section 4.3(c) below, a number of apps use mechanisms to incentivise driver loyalty and therefore, beyond the costs of the app, there are other reasons why taxi drivers will use multiple apps. Further, certain incentives, such as surge pricing and tipping, only occur at specific times, so drivers need to use multiple apps to increase their chances of accessing incentives at any given time of day.

Given that there is no meaningful cost barrier to consumers and drivers downloading, using and, if they wish, discarding multiple apps, it is unlikely that ihail would emerge as the dominant taxi booking app, (let alone the dominant supplier of hailing / booking services to point-to-point transport service providers).

(b) Taxi networks will maintain white label apps

Taxi companies will have every incentive to continue to compete for consumers.

Some consumers are likely to continue to favour the app of a particular taxi network over an app that provides access to a number of networks in different locations, such as ihail.

As explained by Frontier Economics:

Consumers' preference for variety can offset the value of network effects and reduce market tipping, even where consumers single home (use only a single app or other method of purchase). For taxi services, for example, some passengers will prefer the benefits that ihail may offer in terms of its faster dispatch times, while other customers may place a greater emphasis on other kinds of benefits offered by other apps operated by individual taxi networks or other competitors such as lower prices or higher quality of services.¹⁹

Taxi drivers may also have reasons for favouring a particular app, including a white label taxi app, over ihail. According to Frontier Economics:

... drivers may single home but the choice of app may differ. For example, apps may be able to deliver more profitable kinds of customers to drivers (such as corporate users) but with less frequency than ihail. This will appeal to some drivers who already operate informal networks, and do not heavily rely on pre-bookings from the major networks.²⁰

As a consequence, it is likely that white label apps will continue to be used and supported by taxi networks following the launch of ihail.

Overseas experience shows that networks continue to maintain their own white label apps following the launch of apps like ihail. For example, Curb (USA) and E-cab (Canada, India and Europe) continue to face competition from white label apps in the cities in which they operate. Importantly, this includes taxi networks that are 'signed up' to Curb and E-cab. For example, while the four major taxi companies in Vancouver (Black Top Checker Cabs, MacLures Cabs, Vancouver Taxi and Yellow Cab) are part of E-cab, they each maintain their own white label app.

¹⁸ Frontier Economics Report, section 3.3.1, p 19.

¹⁹ Frontier Economics Report, section 3.3.1, p 19-20.

²⁰ Frontier Economics Report, section 3.3.1, p 20.

4.3 Apps require both drivers and consumers

(a) Getting one side on board is not enough

Apps are often used to bring together user groups in what is known as a two-sided market. The ihail app brings together taxi drivers on one side and consumers on the other.

While the app provides the platform for interactions between the groups, the benefit of the app to any given user is largely dependent on the number of users on the other side of the platform. Accordingly, for the app to be successful, it is essential that both taxi service providers and consumers come along for the ride.

While ihail may have access to a potentially large fleet of taxis across Australia, it is by no means certain that drivers will opt-in to ihail. In any event, given consumers can multi-home, successfully attracting an initial network of supply side users will not be sufficient to ensure the success of the app.

There are a number of reasons why one cannot leap to the conclusion that ihail will attract a high number of consumers. As outlined by Frontier Economics:

- Consumers may simply not like the ihail app due to its design or usability, and will prefer to use other existing apps, the taxi networks' own apps, or new apps.
- Consumers may not value the additional benefits offered by ihail over existing apps; for example, of having connected taxi networks, which includes faster response times, and interstate or international connectivity.
- Individual taxi networks may be able to match or improve on some or all of ihail's perceived advantages; for example, by having the necessary economies of scale and/or density to provide for rapid dispatch, and being able to differentiate themselves on the basis of price or quality using their own booking mechanisms (including apps).²¹

Therefore, in order to succeed, ihail would need to:

- establish loyalty with consumers; and
- incentivise networks/drivers to continue to accept bookings through ihail in a market where there are other options, such as white label apps and other third party apps.

(b) Establishing customer loyalty through app design

Following the launch of ihail, customers will continue to be free to use or have access to more than one app. Unlike subscribers to, say, telecommunications networks, it is costless for them to multi-home.

The fundamental point of competition between apps is attracting customers to download and then continue to use the app. ihail's success will be determined by its ability to design and market an app that customers are able to use easily. Failure to provide a quality user experience will mean that customers are unlikely to use the app. For example, customers may:

- download ihail but have a technical issue and immediately delete the app;
- try the app a few times but decide to return to individual apps which, in their view, provide a better service or customer experience; or
- not be convinced that ihail offers a service which they require and may decide to continue with the alternative apps which they currently use.

²¹ Frontier Economics Report, section 3.3.1, p 18.

The ability for ihail to achieve customer loyalty will be particularly challenging in a dynamic environment where there are a number of existing booking apps that are constantly improving their user interface. In the dynamic technology industry where the barriers to entry in app design and roll out are relatively low, there is always the threat of new entrants whose apps may offer different features.

Ultimately, the number of drivers accessing an app is an unreliable measure of the app's likelihood of success. Although customers will value the network coverage provided by an app, customers will also be attracted to apps based on quality, functionality, price and perceived brand equity. This is shown by the experiences of Uber and goCatch in Australia. goCatch has 35,000 registered taxi drivers,²² which accounts for approximately 50% of all taxi drivers in Australia.²³ However, as at August 2015, goCatch had only secured approximately 2 million rides through its app despite launching in 2011.²⁴ In contrast, Uber has approximately 20,000 part time or casual drivers²⁵ who secured 14.5 million rides in calendar 2015 alone.²⁶ If a large fleet size would necessarily lead to a position of dominance, then goCatch should have already achieved a dominant position.

A further example of the challenges that apps can face is the Australia Wide Taxi app, which is an app that services a number of taxi networks and which is owned by a number of ihail's proposed shareholders.

Example: Australia Wide Taxi Pty Ltd

Australia Wide Taxis is owned by a number of taxi companies, including Silvertop Taxis, Black and White, Cabcharge and Suburban Taxis.

[REDACTED]

This is a real world example of the difficulty that an app will face if it is not effectively promoted and widely downloaded by customers despite the significant networks, which the owners of Australia Wide Taxis operate.

ihail understands that the Australia Wide Taxis app has not been actively marketed due to limited funding as well as the fact that taxis networks are reluctant to invest in a shareholder held app when they could invest in their own app. While the app has not been actively marketed, Australia Wide Taxis does regularly update the app and has invested in a new user interface.

(c) Attracting drivers via incentive mechanisms

Even on the supply side, drivers must be incentivised to use an app like ihail.

As with customers, taxi drivers may decide to continue with current alternative apps (e.g. goCatch, ingogo) and/or adopt new apps as they become available. This is highly likely in the case of ihail and the taxi industry where there is no cost associated with drivers using

²² Patrick Durkin, 'Taxi war hits the streets as goCatch grabs for hailing revenue' dated 8 September 2015, <http://www.brw.com.au/p/tech-gadgets/taxi-war-hits-the-streets-revenue-c7eZd56dVAobrZ9FgNjPmN>.

²³ As at 31 December 2014, there were 68,000 taxi drivers in Australia (2014 ATIA State and Territory Taxi Statistics (as at 31 December 2014), <http://www.atia.com.au/wp-content/uploads/2014-State-Territory-Taxi-Statistics.pdf>).

²⁴ John McDuling, 'How Aussie start-up goCatch plans survival against Uber' dated 25 August 2015, <http://www.gocatch.com/how-aussie-start-up-gocatch-plans-survival-against-uber/>.

²⁵ Deloitte Access Economics media release dated 1 February 2016 regarding the report 'Economic effects of ride sharing in Australia', <http://www2.deloitte.com/au/en/pages/media-releases/articles/uberx-delivering-80m-in-consumer-benefits-010216.html>.

²⁶ Adam Creighton, 'Uber pushes growth in journeys' dated 1 February 2016.

multiple platforms to obtain access to as many bookings as possible. For example, taxi networks do not need to spend money adapting their service to suit multiple platforms and ihail will not be paying exclusivity fees to taxi networks to discourage them from using multiple platforms.

Therefore, the success of the app will depend on ihail's ability to provide a platform that is able to engage and retain its networks of drivers. A number of ihail's competitors already have established driver fleets.

- **goCatch:** The importance of achieving driver incentivisation was acknowledged by the CEO of goCatch, who credits the 'gamification' of the goCatch app with boosting driver engagement and improving the user experience.²⁷ Drivers who accept jobs through the goCatch app receive points that feed into a ranking system that is used to reward productive drivers with cash bonuses and priority access to bookings. The system has proved to be an effective strategy for ensuring the driver network remains engaged with the goCatch app.
- **ingogo:** ingogo uses incentives for drivers to foster greater engagement. Drivers receive a monthly commission based on fares accepted through the ingogo app or payments made through the ingogo payment terminal (regardless of booking method). In addition, drivers are given a start-up bonus, free equipment and bonuses for accepting short trips / jobs at changeover times.
- **Uber:** Uber's business model uses surge pricing to encourage more drivers on to the road during peak periods of demand (i.e. drivers are paid more when demand is high).

Even if ihail were to achieve access to a large network of drivers on launch (which is not guaranteed given driver opt-in), there will be little benefit if taxi drivers are not incentivised to accept ihail jobs. Drivers will continue to receive bookings from multiple platforms and are likely to accept bookings from ihail's competitors if there are additional incentives for them to do so (e.g. obtaining tips and extra payments).

As a result, a booking app like ihail needs to be able to offer priority dispatch payments in order to compete effectively in the battle to win drivers, especially against existing taxi booking apps like ingogo and goCatch who offer such incentives. ihail would be at a serious disadvantage if it were not able to offer such incentives.

The ACCC consulted on the issue of priority dispatch and in the Draft Determination identified potential concerns with this function.²⁸ ihail does not agree with these concerns and believes that, in order to compete with other apps, it may from time to time need to consider offering driver incentive measures, such as a priority dispatch/tipping. In doing so, ihail will act in accordance with the laws and regulations of each relevant jurisdiction, including all relevant competition laws. Importantly, ihail is not seeking authorisation for priority dispatch/tipping because offering such a service does not contravene any relevant competition laws.

4.4 ihail will face strong competition

There are a whole range of alternatives to ihail. These alternatives include other taxi booking apps (both third party apps and white label apps), as well as more traditional booking services like street hail/rank, telephone and internet booking. In addition, Uber and other ride sharing services have already achieved rapid success and are likely to only go from strength to strength as reform is pursued and certainty increases around the legality of ride sharing services.

²⁷ Street Hawk, '2-sided market tips from goCatch App CEO' dated 13 April 2015, <http://www.streethawk.com/blog/2015/04/2-sided-market-tips-from-gocatch-app/>.

²⁸ Draft Determination, [177]-[187].

As shown by the following hypothetical example, all of these alternatives are likely to compete with one another for passengers.

Take the hypothetical consumer in the Melbourne CBD looking for a ride home on a Friday evening. After a dinner at one of the city's restaurants, the customer asks the host to telephone a cab. Because of the busy period, the phone is engaged and the host suggests hailing a cab. The customer tries to hail a cab outside the restaurant. Not having any luck they walk to the Flinders Street station cab rank, which is nearby. While lining up at the rank, they access their smartphone which has the ihail, goCatch and Uber apps. Using the GPS tracking features, the customer determines that, on this occasion, Uber offers a marginally shorter waiting time than ihail and goCatch.

(a) Competition from other taxi booking apps

There are a number of existing apps (both white label taxi apps and third party apps) that provide taxi booking services to consumers. The key third party booking apps are ingogo and goCatch. These two services have built strong driver networks; goCatch is said to have 35,000 registered drivers,²⁹ while ingogo is reported to have 5,000 active drivers.³⁰ Since the ACCC made its Draft Determination, another taxi booking app, 'Ticktoc', has launched in Victoria with a network of 750 drivers.³¹ The emergence of these and other apps demonstrates the ongoing competitive pressure that ihail will face as a result of low barriers to entry.

These rival apps will impose a significant competitive constraint on ihail going forward. As noted above, both consumers and drivers will continue to multi-home as a result of unique incentives provided by each of the apps. Further, the competitive position of these rival service providers is strengthened by their first mover advantage in the development of taxi booking apps.

(b) Competition from ride sharing apps

The taxi industry is experiencing increasing competition from ride sharing services. In 2015, it is reported that taxi owners lost more than \$31m in revenue as consumers switched from taxi services to Uber.³² This highlights that, from the consumer perspective, ride sharing services provided by Uber and Lyft are substitutable for taxis. This creates a further challenge to ihail obtaining a large and loyal customer base on launch, as the app supplies only one of the options available to consumers seeking personal transport services.

In its Draft Determination, the ACCC acknowledged '[a]lternative transport options such as Uber and other ridesharing services may also place a competitive constraint on taxis more broadly, which could lead to better outcomes for consumers in terms of price and service.'³³ However, the ACCC ultimately concluded that '...the legality of these [ridesharing services] in many jurisdictions is an unresolved issue and accordingly, until there is greater regulatory certainty around the operation of ride-sharing services the extent of the competition constraint they may impose is also uncertain.'³⁴

²⁹ Patrick Durkin, 'goCatch hitches a ride with Mint Payments as taxi wars heat up' dated 6 September 2015, <http://www.afr.com/news/economy/gocatch-hitches-a-ride-with-mint-payments-as-taxi-wars-heat-up-20150904-qif5yq>.

³⁰ Rose Powell, 'Ingogo smashes Australia's equity crowdfunding record' dated 30 May 2015, <http://www.brw.com.au/p/entrepreneurs/ingogo-smashes-australia-equity-EgieYlc3Maqoly7hICz7BO>.

³¹ Hamish Barwick, 'Ticktoc taxi app launches in Victoria' dated 13 October 2015, <http://www.computerworld.com.au/article/586591/ticktoc-taxi-app-launches-victoria/>.

³² Adam Creighton, 'Uber pushes growth in journeys' dated 1 February 2016.

³³ Draft Determination, [125].

³⁴ Draft Determination, [125].

Regulatory certainty has increased markedly since the ACCC Draft Determination. The Australian Capital Territory,³⁵ New South Wales³⁶ and Western Australia³⁷ have legalised ride sharing services, such as UberX.

In relation to other Australian jurisdictions, it has been announced or reported that:

- Victoria's Government is reviewing laws regarding ride sharing and other new forms of transport.³⁸
- South Australia's Government has set up a three person panel to review the entire taxi industry, including 'innovation, new technologies and competition', although there is no mention of ride sharing in the terms of reference.³⁹
- Queensland's Government has commissioned an independent review of taxi, limousine and ride share services in Queensland, but the findings will not be handed down until August 2016.⁴⁰
- Tasmanian Premier Will Hodgman will introduce legislation in the first half of 2016 to cover transport operations, including Uber.⁴¹
- the Northern Territory Chief Minister Adam Giles said in October 2015 that there were no plans to have Uber start in the Northern Territory.⁴²

Uber has already developed substantial operations throughout Australia, despite regulatory uncertainty in some jurisdictions. With the legalisation of ride sharing in a number of jurisdictions, most notably NSW, the competitive constraint imposed on ihail by these services is likely to continue to increase in the future.

(c) Competition from alternative booking sources

In addition to apps, a customer may obtain a taxi via hail/rank, phone or internet. Customers can also obtain taxis through secondary networks (e.g. direct dialling of drivers or using informal mobile networks).

In Australia, the overwhelming majority of taxi rides are obtained via hail/rank. In 2014, the percentage of booked taxi jobs across Australia was 32% and across New South Wales was 20%, implying that hail/rank was used in 68% and 80% of cases respectively.⁴³

³⁵ ACT Government, 'Ridesharing to improve transport in Canberra' dated 30 September 2015, http://www.cmd.act.gov.au/open_government/inform/act_government_media_releases/barr/2015/ridesharing-to-improve-transport-in-canberra.

³⁶ Roads & Maritime NSW, 'A new transport economy: consumer choice, competition and downward pressure on fares' dated 17 December 2015, <http://www.rms.nsw.gov.au/about/news-events/news/ministerial/2015/151217-ride-sharing.html>.

³⁷ John McDuling, 'Uber is winning its war with the Australian taxi lobby' dated 21 December 2015, <http://www.afr.com/technology/uber-is-winning-its-war-with-the-australian-taxi-lobby-20151218-glqy8p>.

³⁸ John McDuling, 'Uber is winning its war with the Australian taxi lobby' dated 21 December 2015, <http://www.afr.com/technology/uber-is-winning-its-war-with-the-australian-taxi-lobby-20151218-glqy8p>.

³⁹ South Australia Government, 'Review of taxi and chauffeur vehicle industry set to commence' dated 9 June 2015, <http://dpti.sa.gov.au/news/?a=167434>.

⁴⁰ Queensland Government, 'Industry review', <http://www.tmr.qld.gov.au/business-industry/Taxi-and-limousine/Industry-review.aspx>.

⁴¹ ABC News, 'Tasmania Premier wants to embrace sharing-economy ventures Uber, Airbnb' dated 30 October 2015, <http://www.abc.net.au/news/2015-10-30/tas-premier-hodgman-wants-to-embrace-uber-and-airbnb/6898956>.

⁴² Matt Garrick, 'Chief Minister Giles opposes Uber bid for Northern Territory presence' dated 12 January 2016, <http://www.ntnews.com.au/news/centralian-advocate/chief-minister-giles-opposes-uber-bid-for-northern-territory-presence/news-story/ca3d54c4cc82e1b7bcb461c70c290eba>.

⁴³ 2014 ATIA State and Territory Taxi Statistics (as at 31 December 2014), <http://www.atia.com.au/wp-content/uploads/2014-State-Territory-Taxi-Statistics.pdf>.

Hail/rank will impose a competitive constraint on ihail. As noted by the Victorian Taxi Industry Inquiry (Final Report, September 2012):

*... mobile communications are likely to increasingly blur the distinction between hailing and pre-booking taxis and between taxis and hire cars. By using GPS technology to identify, select, track and directly communicate with drivers in their vicinity, customers can obtain an almost instant service, comparable to hailing a cab. In addition, passenger choice is likely to be enhanced by the ability to compare multiple drivers/operators at a glance.*⁴⁴

Therefore, to view hail/rank (which is a non-booked service) as wholly distinct from booked services, such as apps, fails to recognise the profound impact of technology in this area.

In addition, ihail management understands that most booked taxi services are made via telephone. Given that telephone booking is a well-established and understood method of obtaining a taxi, ihail will need to deliver a superior service offering if consumers are to be persuaded to switch from phone booking to booking through the ihail service.

In any event, it is not clear that smartphone apps will become the dominant form of taxi booking service in the longer term. As noted by Frontier Economics, while smartphone apps have a number of important advantages over other forms of bookings (e.g. GPS tracking), it is essential that booking services provide customer value.⁴⁵ Given the range of booking services available to consumers, if apps were to become the main method of booking point-to-point transport, it is more likely to be as a result of the creation of consumer value rather than due to perceived supply-side advantages, such as access to a larger taxi fleet.⁴⁶

4.5 ihail's entry is a public benefit

The ACCC has accepted in its Draft Determination that the ihail app provides important public benefits in respect of its geographic reach and the ease with which customers are able to book a taxi from a large network of drivers.⁴⁷ ihail agrees with this view.

Further, Frontier Economics considers that the most obvious benefit of the ihail app is that it has the potential to deliver service improvements of three kinds:⁴⁸

- It facilitates lower search costs and increases convenience for travellers who are out of their 'home market' (whether interstate or overseas).
- By allowing for feedback on individual networks and drivers, the app facilitates competition and improvements in network and driver quality. In turn, this should increase passenger confidence in the quality of service available from taxis using the ihail app and encourage greater use of taxis.
- By allocating taxis according to proximity and drawing from a larger pool of taxis than through individual networks (assuming no network selection), there is an increased probability that consumers will benefit from lower waiting times. Frontier Economics has sought to quantify this benefit in section 4.1.2 of its report and conclude that the potential gains are likely to be material.⁴⁹

⁴⁴ Taxi Industry Inquiry, 'Final Report, Customers First: Service, Safety, Choice' dated September 2012, p 195.

⁴⁵ Frontier Economics Report, section 3.3.2, p 21-22.

⁴⁶ Frontier Economics Report, section 3.3.2, p 22.

⁴⁷ Draft Determination, [192].

⁴⁸ Frontier Economics Report, Section 4.1, p 28.

⁴⁹ Frontier Economics Report, Section 4.1.2, p 29-30.

An important additional benefit provided by the ihail app is the improved ability of customers to compare taxi networks in real-time using a single platform. Users will be able to compare networks based on service delivery time as well as service quality (which will be reflected in user ratings). This feature will enhance competition between taxi networks as they strive to outperform their rivals, delivering a substantial benefit to the public.

4.6 Conclusion

ihail is unlikely to dominate because:

- neither ihail's taxi networks nor their drivers are required to exclusively use ihail under the relevant commercial arrangements;
- it is rational for taxi networks, taxi drivers and customers to use multiple taxi booking services, and in particular apps, where the value offered by multi-homing exceeds the costs of using them;
- there is no guarantee that ihail will have a large network of drivers on launch, due to driver opt-in. In any event, apps require both the supply side and consumer side to interact effectively and there are challenges to success on the consumer side which are unrelated to the size of the driver network; and
- on launch, ihail will face competitive pressure from newer and expanding booking services, such as ride sharing and other taxi booking apps, as well as from popular and established methods of obtaining taxis, such as phone booking and rank/hail.

Overall, ihail is a positive development in an industry that is undergoing rapid technological change. Real care needs to be taken before making any assumptions about dominance in such a dynamic environment. As discussed throughout this submission, the growth of Uber and ride sharing services demonstrates the speed of change and the power of innovation. ihail is a competitive response to the intense pressure and disruption which taxi networks are facing.

If, however, the ACCC remains concerned about the possible dominance of the ihail app, ihail has made important modifications to the design of the app which are outlined in section 5 below.

These modifications mitigate the ACCC's concerns about alleged public detriments. In particular:

- enabling network selection ensures that any competition between taxis on price and/or service will not be adversely affected by the ihail app; and
- allowing an in-car payment option means that alternative taxi payment processors will not be foreclosed.

Furthermore, driver opt-in makes any prospect of ihail establishing a position of dominance more remote. In these circumstances, the alleged public detriments are reduced to a level where the public benefits of the arrangements for which authorisation is sought would outweigh any minimal remaining public detriments.

5 Improvements to business model

5.1 In-car payment option

ihail will enable in-car payment processing for users of the ihail application.

By enabling in-car payment, ihail will address the ACCC concern of foreclosure of opportunities for payment processing providers, other than Cabcharge, to supply services to customers using the ihail app. The ACCC's concern regarding the impact on competition between taxi payment processing providers is also addressed by this modification. ihail maintains that the ACCC's concern is overstated, particularly in instances where the concern is predicated on ihail becoming dominant (which is unlikely to occur for the reasons outlined in section 4).

Nevertheless, ihail will allow consumers to choose to pay in-car, using cash or any chosen credit or debit card (and using any of the installed payment systems in the car), or through the ihail app payment system. During the ride request stage, customers will also be prompted to answer 'How would you like to pay?'. Therefore, each time a customer books through the ihail app, they will be given a choice regarding payment method.

Where a customer chooses in-car payment, the driver will also have the choice as to which payment processing system to use. For example, a customer may use ihail to book a taxi and select the in-car payment option. At the time of payment, the driver may use, for example, the payment terminal provided by ingogo (rather than the Cabcharge terminal), although the booking was not made through ingogo.⁵⁰ A driver may do this due to the incentives ingogo offers to drivers for using the ingogo payment terminal regardless of the source of the booking.

Allowing both in-car and in-app payment is a public benefit, because:

- it increases consumer choice by providing an additional payment option (i.e. ihail's in-app payment option); and
- it increases driver safety by reducing the amount of cash that is in the car.

In-app payment also provides convenience for the consumer by allowing for the person booking the taxi to pay for the taxi without actually being in the car. This may be useful if, for example, a parent wishes for a taxi to transport a child, but is not able to physically travel with the child or meet the child at the destination.

5.2 Network selection

In ihail's view, there is unlikely to be any reduction in competition between taxi companies in the supply of services to app users because:

- at present there is little price competition between taxi networks because, as the ACCC accepts, taxi fares or maximum taxi fares, are regulated in most jurisdictions and, even in jurisdictions where price competition is allowed up to a maximum regulated charge, taxi operators generally charge the maximum allowed price;⁵¹
- ihail's rating system increases the opportunity for drivers to benefit from the delivery of better service;

⁵⁰ Ingogo Driver Network Training Manual, p 21-23, https://www.ingogo.mobi/wp-content/uploads/2015/04/ingogo0064_Manual_v11_LR.pdf.

⁵¹ Draft Determination, [118].

- vehicle location is one of the few ways drivers can compete and enhances allocative efficiency where there are no price/service differences; and
- Uber's success relates more to competition on service quality rather than price. According to a report by Deloitte Access Economics (referred to in *The Australian*), while Uber fares are on average 20 per cent cheaper than taxis, the bigger benefit to consumers stems from non-price factors such as cashless payments, reduced waiting times, greater availability and the user-friendly operating system.⁵²

In any event, ihail will amend its booking process so that users of the app are able to choose which taxi network they are booking when they submit a booking request (or alternatively whether they prefer to select the closest option) – this is described in further detail in section 2.2(d) of ihail's response to the ACCC's letter dated 2 December 2015. At the network selection screen, each network's user rating will be shown. Further, the network selection screen will display the weighted average waiting time for each available network at the customer's location. If a network does not have a vacant car inside ihail's predetermined GPS parameters, an 'N/A' will appear on the screen and the user will not be able to select that network.

By enabling network selection, ihail will address the ACCC's concerns regarding a reduction in competition between taxi companies in supplying services to customers using the app. That is, to the extent that networks are differentiated to consumers on grounds such as price and/or service (which ihail considers they are not), network selection allows that differentiation to influence consumer choice.

Network selection promotes competition between taxi companies using the ihail app. To the extent that pricing and service quality will be reflected in user ratings, customers will be able to make an informed decision about which taxi company to choose. This is a substantial benefit to the public that is not currently offered through any alternative service.

5.3 Driver opt-in

Drivers will have the ability to opt-in to ihail through their network and will therefore be able to choose to use ihail based on the quality of the service. As a consequence, while ihail may have a number of taxi networks on board at launch, each taxi driver in those networks will ultimately have the choice of whether to opt-in to access the ihail service. Therefore, as noted earlier in this submission, it cannot be assumed that any perceived 'kick start' which ihail may obtain due to its ownership structure will translate to a large network of drivers, let alone loyal drivers, especially given multi-homing and incentives offered by other third party apps.

At present, ihail intends that the driver opt-in process will involve the following key steps.

- 1 Taxi networks will sign an LSA to participate in ihail.
- 2 ihail will send drivers that are part of the 'signed up' taxi networks an information pack that explains the ihail service. The pack will explain that a driver can opt-in through their taxi network if they wish to participate in ihail and receive bookings made through the ihail app and dispatched through the network's existing dispatch system.
- 3 If a driver indicates to its taxi network that it does wish to participate (opt-in), the network will notify ihail of the driver's details and ihail will add the driver to its fleet for that network. The driver will then be a participant in ihail and be eligible to receive jobs through the ihail fleet. ihail will be solely responsible for the administration of the ihail fleet for each participating network, including the

⁵² Adam Creighton, 'Uber pushes growth in journeys', *The Australian*, dated 1 February 2016.

addition and removal of drivers from the fleet and enforcement of disciplinary procedures.

Drivers will be able to participate in ihail if the taxi network to which the driver belongs has signed an LSA with ihail. Due to significant regulatory, technical and commercial barriers, ihail does not propose to initially offer ihail to drivers that are not part of a network that has signed up to use ihail (refer to section 2.3 of ihail's response to the ACCC's letter dated 2 December 2015).

While the taxi networks are independent and ihail is therefore not in a position to regulate their behaviour, ihail expects that all taxi networks that are signed up to ihail will encourage drivers to opt-in to ihail to the extent that it provides a quality taxi booking service.

Drivers will continue to be part of ihail's fleet unless they fail to satisfy ihail's performance requirements. While ihail jobs will appear on the network's existing dispatch system, ihail jobs will be distinguishable from jobs that are booked through other means. Drivers who choose not to accept ihail bookings and who fall below the ihail performance criteria will be removed from the ihail fleet.



Restriction of Publication Part Claimed

Confidential information on pages 2, 3, 7-11

1 Original business model

1. A detailed and complete description of how the original model of the ihail app was proposed to operate.

ihail's original business model is described in its previous submissions to the ACCC, and is summarised in paragraphs [43]-[59] of the Draft Determination.

In particular, ihail's original business model contained the following features:

- taxi networks would be able to sign up to ihail. When a network signed up, all the drivers on that network would automatically be signed up and be able to access ihail bookings;
- drivers who were not part of a network that had signed up would also be able to sign up directly to ihail through the ihail smartphone application;
- customers could use the ihail app to book a taxi;
- if the customer chose to, they could include a tip to incentivise a driver to accept a booking;
- when allocating bookings, ihail would send bookings out on the basis of the nearest available participating taxi, regardless of the network to which the taxi belonged; and
- customers would be required to pay for the taxi using the in-app payment function, which would be provided by Cabcharge.

In your response, please include:

- i. How drivers affiliated with ihail's shareholder taxi networks (affiliated drivers) would be 'signed up' to use the ihail app.

If a shareholder's network joins ihail, all drivers affiliated with that network would automatically be 'signed up' to use the ihail app (provided the driver and car meet ihail's quality standards).

- ii. Would the ihail shareholder taxi networks require or encourage their drivers to 'sign up' to the app?

No, driver sign up was not required as part of the original model. If a shareholder taxi network were to choose to acquire services from the app (which is entirely at the discretion of each network), then the drivers of that network would be signed up automatically.

If a driver were to fall below ihail's performance criteria, the driver would be removed from the ihail fleet.

Networks would not be directly financially disadvantaged by drivers being removed from the ihail network.

Networks would be required to pay ihail on a per booking basis for any bookings made through ihail. As such, while a participating network could offer bookings through ihail, its preference would be for drivers to accept bookings through network-owned booking systems (including white label apps), which would be more profitable for the networks.

iii. How unaffiliated taxi drivers would be able to 'sign up' to use the ihail app.

An unaffiliated driver (i.e. a driver that does not belong to a network operated by one of ihail's shareholders) whose network had signed up to ihail would be signed up in the same way as a driver from a shareholder's network.

In addition, drivers that were not part of a network that had signed up to ihail would be able to participate in ihail without the driver's network needing to first sign up.

- Such drivers could participate in ihail by downloading the ihail app onto their phone and registering as a driver through the app.
- Once registered, the driver could then receive and accept bookings directly through the ihail app. This process would not require the driver to use a network dispatch system. The driver would then pay ihail for each completed booking. If the passenger chose to pay the fare through the app, ihail would then remit the fare to the driver. [REDACTED]
- From a passenger perspective, the process for booking a taxi in this way would be identical to booking a taxi from a network participating in ihail.

iv. How taxi jobs would be dispatched for both affiliated drivers and unaffiliated drivers.

Dispatch was intended to occur on the basis of nearest available cab. The app would direct the user to the nearest accessible vacant taxi cab that had signed up to the ihail app, regardless of the brand or ownership of that taxi cab. ihail had established the following GPS dispatch parameters for the app (with vacant cars in the first radius being offered jobs first because of their proximity to the customer):

- within the CBD: all vacant cars within a 200, 400 and 600 metre radius would be available;
- within the inner suburbs: all vacant cars within a one, two and four kilometre radius would be available;
- within the outer suburbs: all vacant cars within a two, four and six kilometre radius would be available; and
- within rural areas: all vacant cars within a three, six and nine kilometre radius would be available.

v. Any driver rating scheme proposed by ihail

At the end of each completed trip, users would be requested to rate the trip out of 5 stars. [REDACTED]



- vi. What, if any, quality control standards ihail intends to impose on drivers participating in the ihail app, including details of processes for removing drivers from ihail, as relevant

ihail intended to impose some quality control measures on drivers. [REDACTED]

- i. [REDACTED]
 - ii. [REDACTED]
 - iii. [REDACTED]
 - iv. [REDACTED]
 - v. [REDACTED]
 - vi. [REDACTED]
 - vii. [REDACTED]
- ii. [REDACTED]
- iii. [REDACTED]
- iv. [REDACTED]
- v. [REDACTED]
- vi. [REDACTED]
- vii. [REDACTED]

2 Revised business model

2. A detailed and complete description of how the revised ihail app (outlined in your submission of 6 November 2015) is proposed to operate.

Sections 2.1 to 2.4 contain a detailed description of ihail's revised business model. Items 2(i)-(vii) are addressed from page 8 of this response.

2.1 Changes to ihail business model

The main changes between the original business model and revised business model are as follows:

- 1 enabling of network selection;
- 2 enabling of in-car payment;
- 3 enabling of a driver 'opt-in' process; and

4 removal of a direct-to-driver service.

Section 2.2 contains a detailed description of ihail's revised business model.

The changes described in numbered items 1-3 above are discussed in section 5 of the submission accompanying this response. In addition, the removal of the direct-to-driver service is discussed in section 2.3 below.

In section 9 of ihail's submission accompanying its application dated 26 May 2015, ihail stated that it intended to allow customers to offer drivers a tip to incentivise the driver to accept a booking. Following concerns raised by the ACCC, ihail is not seeking authorisation for priority dispatch functionality (see section 2.4 below).

2.2 Description of revised business model

(a) Customer download and registration

Before a customer can book a taxi using ihail, the customer must:

- download the ihail app;
- register using the app, including providing the following details:
 - name;
 - email address;
 - phone number;
 - credit card details; and
- verify their phone number.

The user interfaces for these steps can be seen in screenshots 1 to 5 in Attachment 1.

(b) ihail fleet

The process by which drivers may utilise the app is as follows:

- 1 For taxi companies to sign up and use the app, the taxi company will be required to enter into an LSA with ihail Pty Ltd.
- 2 ihail will then set up a fleet for each participating taxi company. The fleet will comprise the collection of cars that have opted in to ihail and are approved by ihail to accept ihail work (in accordance with ihail's quality standards). ihail will be solely responsible for the administration of the ihail fleet for each participating network, including the addition and removal of drivers from the fleet and enforcement of disciplinary procedures.
- 3 A driver will only be added to the fleet if the driver has opted in. It is proposed that each taxi company will manage the opt-in process for its drivers, which will involve:
 - ihail sending drivers that are part of the 'signed up' taxi networks an information pack that explains the ihail service. This will clearly explain that a driver must opt-in through their taxi network if they wish to participate in ihail and receive bookings through the ihail app and dispatched through the network's existing dispatch system;
 - if a driver indicates to its taxi company that they wish to participate (opt-in) then the taxi company will notify ihail of the driver's details and ihail will add the driver to its fleet for that network.

Drivers will only be able to participate in ihail if the driver meets ihail's quality standards and the driver's taxi company has signed an LSA with ihail. The process for a taxi

company to sign up to ihail through an LSA will be identical regardless of whether or not the taxi company is an ihail shareholder.

(c) Booking a taxi using the app

To book a taxi using the ihail app, the customer must go through the 'Request' screen and the 'Book Now' screen.

Request screen

To request a booking, the customer will:

- 1 enter the pick-up location and destination location. After these details are entered, the app will provide a fee estimate; and
- 2 select booking details, including:
 - the taxi type; and
 - time of pick-up.

All of the booking details can be entered by tapping through the relevant tabs. Customers may also choose to enter default settings.

The user interfaces for these steps can be seen in screenshots 6 to 17 in Attachment 1.

Book Now screen

After a customer taps the 'Request' button, they will then go to the Book Now screen. On this screen, the customer can select the following options:

- 1 **Taxi company selection:** a customer may choose to select a taxi from a particular company or choose to book the 'closest' taxi (if the customer selects the closest taxi, ihail will dispatch the closest vacant car, irrespective of the network that the taxi belongs to). If the customer wants to choose a taxi network, they will go to the company selection screen, where they can select a taxi network. This screen will include the following information for each taxi company:
 - the name of each taxi company;
 - the average customer rating of each taxi company, which is calculated on the basis of customer feedback (see below); and
 - the weighted average waiting time for each taxi company, which is calculated on the basis of the number of vacant cars that the taxi company has located near the passenger's location (the GPS parameters set out in paragraph 46 of the Draft Determination are used to determine whether a car is near the passenger's location).

A customer will only be able to select a taxi company if that company has at least one vacant car located near the passenger's location.
- 2 **Payment method:** a customer then selects the payment method. The two possible payment methods are in-app payment or in-car payment. In-app payment details can be entered in the settings area of the app. If the user chooses in-car payment, then the user can pay using any of the payment options that the driver has available.
- 3 **Notes for driver:** a customer may also choose to add a note for the driver. This may include details such as requesting a horn upon arrival or assistance at the door.

After these options have been set, the customer then taps the 'Book Now' button to book a taxi. The customer will then be notified that a taxi is being dispatched.

The user interfaces for these steps can be seen in screenshots 18 to 23 in Attachment 1.

(d) Taxi dispatch

The manner in which ihail dispatches a taxi job to a driver varies depending on whether the customer selects a preferred taxi company or chooses to book the closest vacant car:

- 1 **Preferred taxi company:** if the customer has selected a preferred taxi network, the job will be dispatched in the following manner:
 - ihail, via the cloud, places a booking request in the taxi dispatch system of the selected taxi company;
 - according to ihail's dispatch rules (described in paragraph 46 of the Draft Determination), the booking is then dispatched by the taxi network to the closest vacant car in that network's ihail fleet;
 - the car either accepts or declines the job. If the job is declined, the next closest car is offered the job;
 - once a car accepts the work, the network sends ihail, via the cloud, a response saying a car has accepted the work; and
 - ihail then connects the customer with the allocated car from their chosen network.
- 2 **Closest vacant car:** if the customer elects to book the closest vacant car, ihail will dispatch the taxi job in the following manner:
 - ihail, via the cloud, places a booking request in the taxi dispatch system of each taxi company that has at least one vacant car located near the customer (the GPS parameters are set out in paragraph 46 of the Draft Determination);
 - according to ihail's dispatch rules (described in paragraph 46 of the Draft Determination), the booking is then dispatched by each taxi network to the closest available car in each network's ihail fleet;
 - the car either accepts or declines the job. If the job is declined, the next closest car is offered the job through the taxi network's dispatch system;
 - once a car accepts the work, the network sends ihail, via the cloud, a response saying a car has accepted the work; and
 - if it is the first car to accept the job, then ihail connects the customer with that car.

After the job has been successfully dispatched, the customer will be taken to a screen showing the driver's GPS location and driver details. The customer also has the option of calling or messaging the driver or cancelling the booking. The user interfaces for these steps are shown in screenshots 24 and 25 of Attachment 1.

(e) Customer feedback

At the conclusion of a trip, a customer will be provided with trip details and be asked to provide feedback on the trip. The user interfaces for this step can be seen in screenshots 26 to 28 of Attachment 1.

(f) In-car booking

Customers will also have the option of using the ihail app to pay for a taxi that was not booked through the ihail app (e.g. if the taxi was hailed from the street). This function will only be available in ihail participating taxis.

The user interfaces for this step can be seen in screenshots 32 to 34 of Attachment 1.

2.3 Direct-to-driver Service

Under the original model, drivers that were not part of a network that had signed up to ihail were able to 'sign up' and access ihail bookings through their phone (see response to item 1(iii) above) (**Direct-to-driver Service**). However, due to significant regulatory, technical and commercial barriers, ihail does not propose to initially offer a Direct-to-driver Service.

While requirements vary between jurisdictions, ihail considers that it would be required to be accredited as a taxi network in some, if not all, Australian jurisdictions to be able to dispatch work directly to drivers.¹

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

As a result of the above, it is not commercially feasible to offer a Direct-to-driver Service. In particular:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

¹ ihail has only recently become aware of this requirement.

2.4 Priority dispatch not part of conduct sought to be authorised

ihail does not agree with the concerns raised by the ACCC in the Draft Determination relating to tipping/priority dispatch. In particular:

- at its highest, the ACCC's concern relates to a perceived detriment regarding the potential to disadvantage consumer groups who cannot participate in priority dispatch. This is not a public detriment constituted by a lessening of competition. In addition, access to taxi services for vulnerable consumers is currently managed through appropriate regulation;
- ihail will operate its business in a manner that is consistent with the existing legal and regulatory framework in each jurisdiction in which ihail operates;
- the removal of the ihail priority dispatch mechanism would place ihail at a competitive disadvantage against other apps that adopt driver incentives (e.g. Uber's surge pricing); and
- the priority dispatch function improves allocative efficiency, which is a substantial public benefit. As this benefit relates to economic efficiency, it should be afforded significant weight in a public benefits analysis.² This benefit is discussed in further detail in section 4.2 of the Frontier Report.

ihail wishes to retain the ability to implement the priority dispatch function in response to competitive pressure or consumer demand in the future. ihail is not seeking authorisation for priority dispatch/tipping because offering such a service does not contravene any relevant competition laws. In deciding whether or not to implement a priority dispatch function, ihail will act in accordance with the laws and regulations of each relevant jurisdiction, including competition laws.

In your response, please include:

- i. How affiliated drivers would be 'signed up' to the use the ihail app.

Section 2.2(b) describes the manner in which an affiliated driver will be signed up to ihail.

- ii. Would the ihail shareholder taxi networks require or encourage their drivers to sign up to the app?

If an ihail shareholder chooses to participate in ihail and signs an LSA (which is entirely at the discretion of each shareholder), the process for driver sign up to ihail is set out in section 2.2(b).

ihail expects that all ihail taxi networks (including ihail shareholder taxi networks) will encourage drivers to opt-in to ihail to the extent that ihail provides a quality taxi booking service.

- iii. How unaffiliated taxi drivers would be able to 'sign up' to use the ihail app.

A driver from a non-shareholder network will be able to sign up to ihail if the network that the driver is a member of signs an LSA with ihail. [REDACTED]

² *Queensland Co-operative Milling Association Ltd; re Defiance Holdings Ltd* (1976) 8 ALR 481 at 510; *Application for Authorisation of Acquisition of Macquarie Generation by AGL Energy Limited* [2014] ACompT 1, [161].



[REDACTED]

For the reasons set out in section 2.3 above, ihail does not initially propose to offer a Direct-to-driver Service.

- iv. The steps involved for users to make their selection of a preferred taxi network, including whether there will be a default setting if a selection is not made, and whether multiple networks can be selected.

Taxi company selection is described in section 2.2(c) above.

The user will be given the choice to make a network selection each time the user books a taxi. The user interfaces for this step can be seen in screenshots 18 to 20 in Attachment 1.

- v. The steps involved for users to make their payment method selection, including whether there will be a default setting if the user does not select a payment method.

Payment method selection is described in section 2.2(c) above.

The user will be given the choice to select a payment method (either 'in-app' or pay in-car) each time the user books a taxi. The user interfaces for this step can be seen in screenshots 20 and 21 in Attachment 1.

- vi. How taxi jobs will be dispatched for both affiliated drivers and unaffiliated drivers.

Taxi dispatch is described in section 2.2(d) above.

- vii. What, if any, quality control standards ihail intends to impose on networks and/or drivers participating in the ihail app, including details of processes for removing drivers from ihail, as relevant.

Drivers will be rated on a 'thumbs up' or 'thumbs down' basis (see user interface screenshots 26 to 28 in Attachment 1).

The ihail terms and conditions will apply to individual taxi drivers and operators.

- [REDACTED]
- [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

3 Market share and 'dominance'

3. At page 7 of ihail's submission of 6 November 2015, it states that it expects the ihail app would have a 1 per cent market share in the early days of its operation.
- i. Please explain how ihail calculated this market share figure.

ihail's estimated market share of 1 per cent in its early days of operation is based on the following calculation:

- 1 The total number of taxi rides completed in Australia in 2014 was approximately 227 million.³
- 2 68% of these rides were street hailed (which is approximately 154 million rides). Therefore the total number of booked rides is approximately 73 million rides.
- 3 Taxis are booked through three channels: telephone, internet and app bookings.
- 4 Customers predominately use the telephone to book taxis, with internet bookings a distant second and app bookings third. Leading companies dispatch at most 12% of their bookings via app. Therefore, ihail management estimates that the total number of rides booked through an app is currently approximately 8.5 million rides annually.
- 5 In its first 4 years of operation, GoCatch booked approximately 2 million rides.⁴ ihail must acquire customers and build its brand in the same manner as its competitors have.

[REDACTED]

[REDACTED]

[REDACTED]

- ii. Please explain why ihail considers its structure of taxi network shareholders would not result in it becoming a dominant taxi booking app.

The response to question 3(ii) is contained in the accompanying submission.

³ 2014 ATIA State and Territory Taxi Statistics (as at 31 December 2014), <http://www.atia.com.au/wp-content/uploads/2014-State-Territory-Taxi-Statistics.pdf>.

⁴ John McDuling, 'How Aussie start-up goCatch plans survival against Uber' dated 25 August 2015, <http://www.gocatch.com/how-aussie-start-up-gocatch-plans-survival-against-uber/>.

In summary, the ihail app is not likely to become dominant because:

- taxi networks and drivers will not be exclusive to ihail;
- taxi networks, drivers and passengers are likely to use multiple booking services;
- to be successful, ihail will be required to develop *both* its driver base and consumer base. ihail will only be able to develop and maintain a consumer base if it is competitive in terms of price and service; and
- on entry, ihail will face strong competition from other booking services, including from a number of booking apps, with established customer and driver bases.

4 Number of affiliated taxis in each shareholder's network

4. For each of ihail's shareholder taxi networks, including those networks operated by Cabcharge, please provide the current total number of affiliated taxis in each location of operation.

ihail has estimated the approximate number of cabs in the networks of each of its shareholders based on publically available information and management estimates.

ihail shareholders		Number of taxis	Total
Cabcharge	Total		7,259 ⁵
Black & White			
Yellow Cabs			
Silvertop			
Suburban			

⁵ Cabcharge 2015 Annual Report. ihail is not aware of the number of affiliated Cabcharge taxis per location for the 2015 financial year. However, ihail notes that for the number of Cabcharge taxis by location for the 2014 financial year was contained in paragraph 66 of the Draft Determination (Sydney – 3931; Melbourne – 2247; Adelaide – 299; Newcastle – 173).



ihail authorisation application

A REPORT PREPARED FOR IHAIL AND HSF

February 2016

ihail authorisation application

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Summary

The Australian Competition and Consumer Commission (ACCC) rejected ihail's application for authorisation of a joint venture arrangement in October 2015. It did so on a number of grounds relating to public detriments, and in particular reductions in competition, that would arise from the arrangement.

Frontier Economics has been asked for its opinion on both the ACCC's Draft Determination, and whether subsequent changes by ihail to its operating arrangements are sufficient that the arrangements are likely to create a net public benefit.

In this report, we set out our analysis and reasoning for why the arrangements produce net public benefits and should therefore be authorised. We address the ACCC's four elements of public detriment, relating to:

- Short term competitive impacts
- Longer term competitive impacts (ihail dominance)
- Competition between payments providers
- The tipping and priority dispatch functionality

We also address the potential value of the public benefits from the authorisation.

A summary of our conclusions on public benefit and detriment is as follows:

- **Short term:** The ACCC understates the relevant field of competitors and competitive constraints on ihail and taxis networks more generally. We find the ihail app is likely to have a neutral to positive impact on competition in the short term between taxi apps, taxi networks, and between taxi networks and other forms of point-to-point transport. This effect is enhanced by ihail's proposed app changes to facilitate consumer network choice within the app.
- **Longer term:** It is unlikely that the ihail app will invariably become dominant in the long term due to ihail's ownership structure or its access to a large number of taxis. As we explain in the report, there are three kinds of market characteristics which are likely to prevent any one taxi app from becoming dominant: (a) consumers and drivers will likely multi-home and not restrict the number of apps they use, (b) differentiation of network services appears valuable and (c) marginal network effects are not as important to market success once a certain size is reached. If a dominant position is to be reached, it is more likely that the app will need to perform useful functions for consumers and provide sufficient incentives for drivers to accept ihail bookings. Such an outcome would be consistent with economic efficiency and public benefit.

- **Payments competition:** The ACCC's primary concern about competition between payments processors hinges on ihail becoming dominant, which we think is unlikely. However, the revised operating model should address the ACCC's concerns in any event as it allows payment processing service providers (other than Cabcharge) to offer their services to customers that book with ihail. As such, it could no longer be likely that competition in the provision of these services could be reduced significantly.
- **Tipping and priority dispatch:** The ACCC's Draft Determination findings in relation to the use of the tipping functionality in ihail understate the potential benefits of the functionality. Allowing for differential pricing should improve the way that taxi trips are allocated and improve the availability of taxis at peak times. These benefits would seem to more than offset concerns about detriment regarding vulnerable consumers and breaches of maximum fare regulation, particularly as these issues could be more appropriately addressed by the state jurisdictions that regulate taxi fares and implement policy relating to service and affordability.
- **Benefits from higher quality and reduced waiting times:** We identify three main benefits from the arrangements:
 - ihail facilitates lower search costs and increases convenience for travellers that are out of their 'home market' (whether interstate or overseas).
 - By allowing for feedback on individual networks and drivers, the app facilitates competition and improvements in network and driver quality. In turn, this should increase passenger confidence in the quality of service available from taxis using the ihail app and encourage greater use of taxis.
 - By allocating taxis according to proximity and drawing from a larger pool of taxis than through individual networks, there is an increased probability that consumers will benefit from lower waiting times.

The quantitative significance of these benefits is difficult to estimate. Nonetheless, our estimates of the benefits to consumers from reductions in waiting time alone could credibly be of the order of several hundred million dollars. It is also plausible that the gains from higher quality of taxi services could be even greater than this.

1 Introduction

1.1 Background

1.1.1 The initial application and the draft decision

In May 2015, ihail Pty Ltd (ihail) lodged an application with the ACCC seeking authorisation, for and on behalf of itself, ihail Holdings Limited and the existing shareholders of ihail Holdings Limited to make and give effect to joint venture arrangements. The proposed joint venture is between a number of taxi companies and other participants to develop and operate a smartphone taxi booking application for use by domestic and international taxi companies.

In ihail's initial application, it applied for authorisation of a joint venture between taxi booking companies to supply a new taxi booking app for use on smartphones with following features:

- The app provides potential availability for consumers to a large pool of taxis, given that taxis connected to the various participating networks constitute a significant proportion of total taxis.
- The app allocates jobs based on driver/vehicle proximity to the requesting passenger, regardless of network or operator affiliation.
- Payments are authorised through details held by the ihail app, which allows payments to be charged to credit or Cabcharge cards.
- Passengers would be allowed to pay an extra 'tipping' fee at the time of booking.
- ihail would take a fee on each booking, plus a share of the payment fee on each credit card transaction.
- The app incorporates feedback mechanisms to allow for driver ratings, and removal of drivers from the app to maintain standards. Further, consumers may be penalised for failing to show for a booking, without cancelling the booking request¹.

The ACCC rejected the application in a Draft Determination in October 2015.² The ACCC claims significant public detriment is likely to result from the proposed arrangements. This detriment is said to arise from four sources:

¹ ACCC, *Draft Determination A91501*, October 2015, p. 13. (Draft Determination)

² Ibid.

- (reduced) competition between taxi networks and between taxi operators
- (reduced) competition between ihail and third party apps
- (reduced) competition between taxi payment processing providers and
- allowing customers to offer an additional payment when booking to incentivise priority pickup.³

This detriment is said to arise in three markets; these are not defined formally as such but referred to as areas of competition. The relevant areas of competition are said to be: competition between taxi networks and between taxi operators; competition between ihail and third party apps; and competition between taxi payment processing providers.

1.1.2 Subsequent changes to ihail's application

After the ACCC's Draft Determination to reject the authorisation, we are instructed that some revisions have been made to the ihail app to address some of the ACCC's concerns around public detriment and competition. In particular, we understand these changes to be:

- The app also takes into account any expressed preferences for a particular booking network prior to the proximity-based allocation.
- In-taxi payments with alternative suppliers of payment services will be allowed. This includes payment by credit card or Cabcharge's charge card, or with cash.

We take these changes into account in our report.

1.2 This report

We have been instructed to prepare an expert report on the following issues that are raised in the ihail application, and discussed in the ACCC's Draft Determination:

- The extent of any public detriments from the ihail app joint venture, including in relation to:
 - competition between taxi networks and operators
 - competition between apps and other forms of booking
 - payments processing for taxi fares
 - the use of a priority-dispatch payment for taxis.

³ Draft Determination

- The extent of any public benefits from the ihail app joint venture, including in relation to:
 - better quality service for passengers (including lower waiting times)
 - a more efficient allocation of taxi trips to passengers
 - improvements in productive efficiency.

Our instructions are that we should assess the issues as discussed in the ACCC Draft Determination, and then also to take into account the revisions to ihail's business model including changes put to the ACCC since the time of the Draft Determination.

Our instructions are that we should form an independent view as to the matters in respect of which our opinion is sought, and our advice should give details of our qualifications, and of the literature, documents and other material used in reaching your opinion. All facts and assumptions on which our opinion is based should be clearly and fully stated, and we should not omit to consider material facts which could detract from our concluded opinion.

1.2.1 Authorship

This report has been prepared by Warwick Davis, with the assistance of Simone Wong.

Warwick Davis leads Frontier Economics' Transport Group and also works on broader competition and regulatory matters. His primary role at Frontier Economics has been to advise policy makers, regulators (including the ACCC and state regulators), regulated firms and access seekers on matters of economic regulation.

Warwick has worked extensively on taxi regulation issues, including in his role as the lead economist in the 2012 Victorian Taxi Industry Inquiry (the Fels Review). He has also advised entities on regulation of telecommunications network, rail, airports, electricity distribution, post and heavy vehicles.

Warwick has worked for Frontier Economics since 2006. Prior to that he was a Director in the Telecommunications Group in the ACCC. He has also worked at the UK's telecommunications regulator, Ofcom, on competition cases. He has an M.Com in Economics from the University of Melbourne.

By reason of the above, Warwick has particular expertise in two sub-fields of economics: (i) regulatory economics; and (ii) law and economics.

Simone Wong is a consultant with Frontier Economics and works across multiple practice areas. She primarily advises for Frontier Economics' Transport Group and has recently worked with their Energy Practice and their London based Financial Services Practice. She has advised on regulatory and competition issues across a range of industries, including AGL's proposed acquisition of Macquarie

Generation in 2014. She also has extensive experience in energy market modelling and forecasting.

Simone joined Frontier Economics in January 2010 following the completion of her Bachelor of Engineering (Chemical) and Bachelor of Commerce degrees at the University of Melbourne. Prior to joining Frontier Economics, she was a tutor and research assistant for the Department of Economics at the University of Melbourne.

By reason of the above, Simone has particular expertise in two sub-fields of economics: (i) regulatory economics; and (ii) law and economics.

2 Principles relating to assessing competition in taxi and related markets

Before one can attempt to analyse the effect of the ihail app on patterns of competition, one must have some understanding of the relevant market setting. In particular, we argue that to understand the effect of ihail's app, it is necessary to understand the kind of market in which ihail operates and the problems that its booking platform needs to solve to be successful.

This section addresses:

- General considerations regarding the assessment of competition and economic efficiency
- The challenge of operating as a two-sided platform, particularly at business inception
- The forms of competition that can occur between platforms and in what circumstances markets are prone to monopoly.

2.1 Competition, market power and economic efficiency

A key category of public detriment is reduced competition. The ACCC analyses detriments (in line with jurisprudence) by comparing competition 'with' the proposed arrangements to 'without' the arrangements.

Determining what reduced competition means is not straightforward, requiring an examination of the features of the particular market or markets that are likely to be affected by the conduct or arrangement. Economists usually classify the features of a market under the headings of the market's structure, its conduct and its performance.

When making judgments about the effect of conduct on competition, one will look to the effects of those changes on the structure, conduct and performance of the relevant market(s). As Professor Fisher has noted:

Often an examination of the actual activity of firms in the market and the results of their interaction can reveal whether the market is effectively competitive. Economists, however, have traditionally undertaken the analysis of the competitiveness of a market by an examination of indicia of competition and monopoly categorized under the headings of market structure, market conduct, and market performance.⁴

⁴ Franklin M Fisher, John J McGowan and Joen E Greenwood, *Folded, Spindled, and Mutilated, Economic Analysis and U.S. v. IBM*, MIT Press, 1983, p 39.

The academic writing of Professor Brunt stresses the links between competitive conduct and the performance of the market in terms of efficiency and progress. For example, she quotes the High Court in *Queensland Wire Industries* referring to competition as a process that operates to ‘protect the interest of consumers’ and continues:

‘What we have been discussing is a concept of competition which is profound and goes to the heart of its role as the engine of efficiency and progress.’⁵

Competition is said to be an engine of efficiency and progress because, in chasing profit opportunities, competing firms innovate and thereby create value. Economics defines value as the difference between the willingness to pay of purchasers and the opportunity cost of production. So an innovation can create value by: (i) creating some difference in a product that consumers value more highly than its predecessor; (ii) decreasing the cost of producing a product; or (iii) some combination of (i) and (ii). Conduct that creates value is said to promote economic efficiency.

The principle that competition needs to be considered in conjunction with considerations of efficiency is discussed in the seminal paper by Professor Fisher, ‘Diagnosing Monopoly’.⁶ He discusses how conduct that leads to a high market share may be justified within the context of the monopolisation provision of the Sherman Act. His answer is that it can be justified if the high market share has been gained by competitive conduct rather than by monopolistic restriction.

Professor Fisher proposes two tests for distinguishing between competitive conduct and monopolistic restriction. The first is that the conduct, to be suspect, should at least be more restrictive than necessary. The second points to the link between competition and efficiency:

The second principle (and the one the overlooking of which leads to confusion) is that conduct should not be condemned if it is precisely the conduct which competition would lead us to expect. One has to be careful to distinguish between cases in which competition is forcing firms to react and cases in which firms are taking unnecessary action to forestall competition. The competitive model itself points to situations in which firms, faced with competition, will be forced to do certain things or lose business. Firms observed to be doing those things in those situations should not be regarded as monopolizing. They are engaging in conduct which competition makes ‘economically inevitable’.⁷

⁵ M. Brunt, “Market Definition” Issues in Australian and New Zealand Trade Practices Legislation”, in *Economist Essays on Australian and New Zealand Competition Law*, 2003., p 201.

⁶ F M Fisher, “Diagnosing Monopoly”, reprinted in *Industrial Organization, Economics, and the Law: Collected Papers of Franklin M Fisher*, edited by John Monz (1990) pp 3-32.

⁷ *ibid.*, p 27. A further treatment of the relationship between competition and efficiency is Joseph Farrell and Carl Shapiro, “Horizontal Mergers: An Equilibrium Analysis”, *American Economic Review* (1990) Vol. 80, March, pp 106-126.

These observations of Professor Fisher have gained wide currency among economists when considering (in the context of behaviour that is alleged to substantially lessen competition or constitute monopolisation) the effect of conduct on competition.

In summary, competition can generally be thought of as rivalrous behaviour; and competition will be lessened if that rivalry has been lessened and the constraints imposed by that rivalry have been decreased. However, competition should only be said to be lessened if the rivalry that is lessened by the conduct at issue is of a socially-beneficial kind.

These principles are pertinent to the assessment of the proposed ihail arrangements on competition and so public benefit. As we shall discuss, the taxi industry is facing waves of technology-led innovation and competition which are driving fundamental changes to existing business models. It is important not to confuse competitive responses which strive for greater efficiencies and create value (such as capturing network effects) with behaviour or arrangements that are truly designed to forestall competition.

2.2 Competition in two-sided platform markets

Taxi networks and taxi apps operate in what are known in the economics literature as two-sided platform markets (or just two-sided markets).

The key characteristic of two-sided markets is the presence of two types of consumers and interdependence between them: value is created for consumers or producers on one side from having more consumers or producers on the other.⁸ Canonical examples of two-sided platform markets include matchmaking services and credit cards. For credit cards, the card platform (e.g. Visa, MasterCard) needs to ensure that cards are both accepted by many merchants and held by many cardholders, otherwise the platform has little value. A card that is widely accepted holds greater value for customers, and a card held by many cardholders has greater value for merchants.

For taxi networks and taxi apps, the primary function of these entities is to create transactions by bringing together taxis and passengers. The value of a network or app platform increases to both taxi drivers and operators and to passengers the more drivers and passengers are connected to and use the platform.

⁸ Evans and Schmalensee (2007) propose a definition for a multi-sided platform as (a) has two or more groups of consumers; (b) who need each other in some way; (c) but who cannot capture the value from their mutual attraction on their own; and (d) rely on the (platform as a) catalyst to facilitate value-creating transactions between them.

2.2.1 Success means getting both sides on board

The major challenge for any platform operator is to get the two agents on board and using its platform. By securing critical mass, the operator can achieve the requisite network effects for the platform to be a success.

Sometimes different kinds of strategies can be effective at getting both sides on board. For example, in some cases it can be effective to ‘get one side on board’ with the hope of later getting the other side on board. This tactic is sometimes used by media companies; for example, by creating a blog at no charge to readers, and then later selling advertising once there is a critical mass of readers.

In contrast, for transactions to occur on a taxi network or app, there must be both drivers willing to take the passenger and passengers wishing to take a journey. For a new entrant, this implies a need to at the outset establish a critical mass, particularly as there are already market competitors with such mass.

In ihail’s case, it must use incentives (most obviously prices, but also other inducements such as service quality) to attract taxi drivers and taxi customers to use the app. As we shall explain, ihail’s proposed arrangements with taxi networks far from guarantee high rates of usage by either taxi drivers or consumers.

2.2.2 Competition in two-sided markets can take different forms

Competition in the provision of services provided by multi-sided platforms can take a variety of forms:

- Competition between platforms
- Competition on one side of the platform
- Competition on both sides of the platform.

Examples of these kinds of competition are prevalent in credit card and payment card markets. Competition occurs between Visa and MasterCard. Competition occurs on one side of the platform – for example, competition with store issued credit cards. And competition also occurs between card issuers of Visa and MasterCard, and card acquirers of Visa and MasterCard.

Note that in some instances there is no competition on either side of the platform (a ‘closed’ system) but there is competition between competing platforms. American Express is an example of such a platform; it both acquires transactions and issues cards in competition with other parties that only issue cards or acquire transactions.

Relating this to taxi networks and apps, it is evident that the analysis of competition between networks and apps can take different forms. Competition could be between competing platforms (e.g. apps) and within one side of the platform (e.g. for

networks, taxi operators and/or for drivers to compete). Uber would also be capture as a ‘closed system’ platform which also competes to the extent that the underlying taxi-like services Uber offers are competitive.

2.2.3 Rules may be required to promote the success of the platform

Platforms often adopt market rules to promote the success of their platform. These rules may appear anti-competitive on their face, but often have a coherent objective business rationale which is consistent with promoting economic efficiency and the value of transactions on the platform. An example is rules adopted by securities exchanges to prevent off-market transactions; by promoting trade on the (transparent) central exchange, the exchange more efficiently facilitates price discovery and so enhances the value of the platform to all users increases.

The rules adopted by taxi networks and apps should be considered with this in mind. Rules that improve incentives and promote economic efficiency should not be said to lessen competition.

2.3 Competition in the presence of network effects, technological change and market tipping

In simple models of network effects, network industries consolidate around a single platform: once a market begins to develop in a particular direction, there is a tendency for later market participants to follow this same direction.⁹

Although network effects in *certain* multi-sided markets may tend to tip them towards single monopoly platforms, this need not be the case with *all* multi-sided markets. Credit cards are an obvious example of competition among multiple multi-sided platforms. More generally, Evans and Schmalensee note:

It is relatively uncommon for industries based on two-sided platforms to be monopolies or near monopolies. Some industries based on two-sided platforms have several large differentiated platforms, while others have many small platforms that are differentiated by location as well as along other dimensions.¹⁰

⁹ See Joseph Farrell and Paul Klemperer, “Co-ordination and Lock-In: Competition with Switching Costs and Network Effects”, *Handbook of Industrial Organization*, Part III, p 11.

¹⁰ Schmalensee, Richard and Evans, David S., “Industrial Organization of Markets with Two-Sided Platforms”, *Competition Policy International*, Vol. 3, No. 1, Spring 2007. Available at SSRN: <http://ssrn.com/abstract=987341>, p. 166.

There are (at least) three reasons why two-sided platform markets often do not tip to monopoly¹¹:

- Competing platforms typically offer differentiated products, so that users may prefer different platforms because they value different aspects of the platform differently. Computer operating systems are an example of where there are competing platforms in spite of strong indirect network effects (more users increases the value of the operating system to software developers) and consumers only using one system. Consumers have sufficiently strong preferences for Mac or Windows-based computers for the market not to tip.
- Consumers may wish to purchase services from each of a number of platforms in order to satisfy their preferences for a variety of services. Rochet and Tirole have labelled this behaviour ‘multi-homing’.¹² Again, credit cards provide an example of multi-homing. An individual cardholder may hold two or more kinds of credit cards.
- Network effects can be negligible before monopoly is reached. Network effects may be large when the installed user base is small, but can become less significant as the network grows. Taxi networks in many metropolitan markets in Australia already experience this, as once passengers can be responded to in a reasonable time the incremental gains from adding more taxis to the network for passengers may be small. Consolidation may then occur around a small number of providers.

Even if network effects are inclined to cause tipping towards monopoly multi-sided platforms at particular points in time, it may be that competition over time causes one monopoly platform to be displaced by another multi-sided platform after a period. A well-known example of this form of competition is to be found in the history of video games. A video-game platform has at least two groups of consumers: the purchasers of the games and the purchasers of the rights to write software for the machines. At any one time, one platform tends to dominate (although this effect has declined in recent years with two predominant platforms). However, platforms come and go over time.¹³

¹¹ Evans and Schmalensee, *ibid*, also note that congestion in networks can prevent tipping. This does not seem applicable to taxi booking networks.

¹² Jean-Charles Rochet and Jean Tirole, “Two-Sided Markets: An Overview”, Working Paper, 12 March 2004.

¹³ For a discussion of the rise of Nintendo, see Barry J Nalebuff and Adam M Brandenburger, *Co-opetition*, HarperCollins, 1996, 108-114.

3 Analysis of public detriments

The ACCC's analysis of public detriments identifies a number of related detriments:

- by reducing competition between taxi companies in supplying services to customers using the app
- by reducing competition between taxi companies and between taxi networks more broadly, through ihail becoming the dominant taxi booking app
- by foreclosing opportunities for payment processing providers other than Cabcharge to supply services to customers using the ihail app
- by adversely impacting access to taxis for financially disadvantaged sections of the community in periods of peak demand.

In this section of this report we analyse whether authorisation of the joint venture would bring about these detriments, and how material these detriments are likely to be.

3.1 Competition in taxi and related markets

The ACCC's Draft Determination provides an overview of the relevant market context within which ihail will operate.¹⁴ While we do not repeat that full market context, as the first three detriments highlighted by the ACCC relate to reduced competition, we offer some further analysis and commentary on some of the key market features which affect how firms compete in taxi and related markets.

3.1.1 The value chain and participants

The relevant 'value chain' for taxis and other kinds of competing small commercial passenger vehicles (point-to-point) includes:

- **Drivers:** provide the transportation service
- **Taxi operators:** provide the vehicle and other related services
- **Taxi networks:** provide booking services to consumers and taxi operators
- **Taxi payments providers** (non-cash payments): provide non-cash payments services to customers and taxi networks, operators or drivers
- **Taxi apps:** provide smartphone-based booking services to consumers and taxi networks, operators or drivers

¹⁴ Draft Determination, p. 20.

There are also relevant entities which supply services that are functionally equivalent to pre-booked taxi services, such as hire car or limousine services. This also includes services provided by Uber, which operates in many of the markets covered by the ihail app.

There are various degrees of vertical integration which also apply to the provision of services to passengers. For example:

- A taxi operator may also be a taxi driver
- The taxi network and taxi payments processing provider may be the same entity
- Taxis networks may also provide their own taxi app
- Taxi apps can provide payments processing

3.1.2 Which entities compete?

The ACCC indicates that the key areas of competition relevant to the application are:

- competition between taxi networks and between taxi operators
- competition between ihail and third party apps
- competition between taxi payment processing providers.

Competition between taxi networks, ihail, third party apps, and other means of procuring taxis

The ACCC's views on the key areas of competition seem to understate the relevant field of competitors and competitive constraints on ihail and taxis more generally. In particular, our view is that ihail will compete with a number of other booking platforms, not just compete with 'third party' apps (which are not affiliated with any particular taxi networks), but also with:

- apps and phone bookings supplied by individual taxi networks, as the incentives of individual networks are not completely aligned with those of ihail¹⁵
- direct dialling of drivers or using informal mobile networks (secondary networks)

¹⁵ As the ACCC notes, these incentives are not fully aligned as ihail charges fees which could otherwise be captured by individual networks, plus individual networks can differentiate themselves through price or service quality competition using their own apps or other means of booking.

In addition, there is competition for the platform through bypass: there are other forms of procuring taxis which do not require the use of a booking service, such as going to a taxi rank or hailing a taxi in the street.

Clearly, these alternative platforms and bypass opportunities will not be fully substitutable for all types of customers in all situations. However, the relevant question for the analysis of competition is how behaviour is affected *at the margin*. For example, some customers will have no choice but to pre-book a taxi because there are no taxi ranks nearby. However, for those customers that *can* use a rank as a substitute, or can directly dial a driver, an attempt by ihail to raise prices will cause substitution. If ihail (and other apps) cannot price discriminate between customers according to their ability to substitute, then apps will be constrained by the actions of those that can substitute.

In this context, it is important to note that procuring taxis by hailing or from ranks is still the most common way that taxis are caught; most estimates put the rank and hail segment of the market at around 70 per cent.¹⁶ This figure may be high as, in our understanding, bookings through third party apps are recorded as part of the 'rank and hail' market. Further, hails may decline in future as apps become more popular and become a better substitute for certain kinds of journeys where hails currently predominate. However, apps and pre-booking are not likely to dominate the market as taxi demand is highly peaked, and it tends to be more efficient to hail or use ranks when there is both high demand and supply.¹⁷

In our opinion, the ACCC's approach of not defining the relevant market has led it to conclusions on the field of competition that seem inconsistent with the facts. This conclusion is that booking networks or apps can be 'dominant' or be able to 'give less and charge more' without considering the ability of consumers to substitute other forms of procuring a taxi to booking networks or apps.

A further consideration is that, even if we limit our analysis to the pre-booked market segment relevant to this application, taxis compete with other forms of pre-booked point-to-point, including existing hire cars as well as (either presently or in the near-future) Uber. This means ihail will also compete with the Uber app and similar apps.

Competition between payments providers

The analysis of competition between payments processing providers is complicated by the different vertical relationships between suppliers; these services are provided by independent companies providing in-vehicle terminals to drivers

¹⁶ ihail application, 26 May 2015, p. 13.

¹⁷ This may be observed, for example, at most metropolitan airports and at large hotels or casinos. On the peakedness of taxi demand, see for example Victorian Taxi Industry Inquiry, *Customers First: Service, Safety, Choice, Draft Report*, May 2012, Figure 5.9., p. 76.

or operators, by entities which own taxi networks, and by third party apps. In analysing competition between providers, it is important to be aware of the structural changes that may be occurring in this market due to technological change; in particular, there appear to be advantages of in-app payments compared to in-vehicle payments. At the most simple level, when using apps there is no requirement for each vehicle to install in-car equipment to process transactions. There are further advantages in relation to reductions in credit card fraud. Some care must therefore be taken between behaviour which competition makes economically inevitable and behaviour that lessens competition.

3.1.3 Competition is already forcing changes

As we explained in Section 2, it is important to distinguish between competitive reactions to changing business circumstances from conduct designed to enhance market power or lessen competition.

We consider that there is a great deal of factual evidence to support the proposition that taxi networks and the entire taxi value chain are facing substantially changed competitive environments. The two key factors are:

- General deregulatory pressure from governments, including from the Australian Government's Competition Policy Review (Harper Review) which identified taxis as one of three areas for "priority review"¹⁸
- Changing technology, which has lowered the cost of alternative dispatch systems and increased the ability of consumers to access it (through smartphones)

A combination of both factors can be seen behind the immediate success of Uber in Australia, and of other apps already in the market (most prominently, goCatch and ingogo).

Overseas precedents are an indication of the kinds of problems faced by taxis. For example, in New York:

Uber is crushing the taxi industry that has dominated New York City — and other cities — for so many years.

Data from the Taxi and Limousine Commission analysed by the New York Daily News shows total trips in the first half of 2015 were down 10 per cent to 77 million, compared to same period last year. Revenues from yellow cab fares have

¹⁸ Competition Policy Review Final Report March 2015, <http://competitionpolicyreview.gov.au/final-report/>, p. 44 accessed February 2016.

declined as well. And in July, there were 100,000 Uber trips in New York City per day, a 4x increase from last summer.¹⁹

In other cities, such as San Francisco, the effects appear to have been even more dramatic:

The San Francisco Examiner reports on testimony by Kate Toran, director of taxis for San Francisco's transportation authority, who revealed that average monthly trips per city taxi have plummeted from 1,424 in 2012 to 504 in July of this year—a drop of almost 65%. Uber added San Francisco taxi service in October of 2012.²⁰

This has undoubtedly been a factor in the largest taxi company, Yellow Cabs, filing for bankruptcy in January 2015, with Yellow Cabs pointing to weaknesses in it being able to attract *drivers*, not passengers, to its network of taxis.²¹

Further, there are global trends encouraging the integration of networks across borders, with Uber promoting a global platform and other competitors seeking tie ups to better respond to Uber's perceived advantages.²²

3.2 Will ihail reduce competition between taxi networks?

In the Draft Determination, the ACCC notes that the ihail operating model did not allow for any preferencing of a participating network. Rather, taxis would be allocated based on a combination of vehicle proximity and speed of driver acceptance (where more than one driver qualifies for the allocation).

This is said to create limited detriment in the short term (118), because the ACCC (correctly) notes that competition on prices is generally limited at the present time. However, the ACCC notes that it would limit price competition emerging where it might otherwise emerge due to increasing deregulatory pressures (119 to 120). Equally, and as the ACCC also notes, consumers will still be able to book taxis through other means. Hence, if price competition is only affected for consumers using the ihail app, there may be other options for price sensitive consumers if the app does not impact competition between taxis more broadly.

¹⁹ Business Insider Australia, <http://www.businessinsider.com.au/taxis-are-getting-vaporized-by-uber-so-a-new-startup-just-raised-250-million-to-help-cabs-compete-2015-10>, accessed February 2016.

²⁰ Time Money, "Uber Has Pretty Much Destroyed Regular Taxis in San Francisco", <http://time.com/money/3397919/uber-taxis-san-francisco/>, access February 2016.

²¹ Gizmodo Australia, "Uber (and Lyft) Finally Bankrupted San Francisco's Favourite Taxi Company", <http://www.gizmodo.com.au/2016/01/uber-and-lyft-finally-bankrupted-san-franciscos-favorite-taxi-company/>, accessed February 2016.

²² CNN Money, "Uber rivals get more powerful", <http://money.cnn.com/2015/12/03/technology/uber-rivals-lyft-didi-kuadi/?iid=EL>, accessed February 2016.

3.2.1 Allowing network selection via the app addresses potential detriment

In our opinion, the primary competitive effect of the app (at least in the short term) is that it offers an additional competitive constraint in the market that is differentiated from other offers. This differentiation relates to the speed at which taxis are dispatched, the ability to use the app in many different markets, and the potential for ihail to encourage better driver quality. If, however, consumers do not value these advantages, then it is difficult to see how the app will create value and the app is likely to fail. For example, if consumers value price or other service advantages more highly, then consumers will use (or continue to use) individual network apps or phone booking networks.

The ACCC's analysis of competitive detriment described above appears conditional and (to some degree) speculative. We accept that it is difficult to avoid such judgements given the fluid nature of technological and regulatory change in taxi and point-to-point transport markets. Nonetheless, it is worth emphasising that the ACCC did not find material detriment was likely in the short term.

With that said, we understand that the ACCC's concern is that the ihail app provides insufficient ability to choose particular networks within the app:

[116.] That is, consumers using the ihail app have no ability to choose between drivers or networks; they are simply allocated the driver that first accepts the job, regardless of the taxi operator or network...Hence, it would appear that taxi operators' and networks' incentives to compete on price and quality, in respect of customers booking through the ihail app, is limited.

We have been instructed that ihail has now proposed to amend its booking process so that users of the app are required to either choose which taxi network services they are booking when they submit a request, or to select the closest available taxi.²³ In our opinion, even if the ACCC's initial concerns were valid, the proposed changes must address any perceived short-term detriment from the introduction of the app. Individual networks are identified and able to be chosen, therefore providing greater incentives to differentiate their services from other suppliers also using the app.

ihail's revised proposal to the ACCC now includes the function whereby consumers can choose to preference particular networks. A consumer in Melbourne could, for example, choose to preference one of the two competing networks should it have a preference for the prices or quality of service offered by that taxi network. This allows consumers to trade off the benefits from proximity (in that more taxis would be available) with the benefits of other forms of competition.

²³ ihail submission to the ACCC, 6 November 2015, pp. 3-4.

In our opinion, this change to the operating arrangements makes the prospect of any lessening of competition between taxi networks in the short term (and associated public detriment) unlikely.

3.3 Prospects of market dominance

The ACCC's finding that the arrangements would lead to public detriment appear to rely much more on the prospective longer-term effects of the arrangements. In particular, the ACCC appears to have extrapolated from the ability of ihail to get many taxi networks agreeing to use the app (to 'get one side on board') to conclude that consumers will invariably use the ihail app and that ihail will become the dominant app in the market:

[140] The extent of the public detriment resulting from a lessening of competition between taxi companies and networks more broadly will depend on how prominent a means of booking taxis the proposed ihail app becomes. In this respect, while taxi companies have incentives to continue to operate their own apps, due to network effects, ihail may become the main means of booking taxi fares (through smartphone apps). This would impact the viability of taxi companies' own apps which may further reduce competition. Such dominance would likely result from the conduct the subject of the application for authorisation which gives ihail a larger starting network and allows the entire fleets of taxi operators and networks in any area who are not ihail shareholders to also join their network, rather than through it gaining market share slowly by offering a better app.²⁴

The weakness in this conclusion is that the ACCC does not offer a credible explanation for how the combination of established taxi networks on the supply side of the platform market and network effects will support ihail's dominance. As we shall discuss, 'getting one side on board' does not necessarily mean that consumers (the 'other side') will use the app, or that the app will create network effects due to the strong supply side position, or that the network effects will be sufficient to create market dominance. This applies in the short and long term.

3.3.1 Getting 'one side on board' in a two-sided market is not enough for dominance

As discussed in the section 2, the major economic function of any platform is to get both sides on board through pricing and strategic decisions (such as platform rules). Platforms are of little value if, for example, they attract many buyers but few sellers, or many sellers but few buyers. The implication of the ACCC's analysis in the Draft Determination is that many sellers (taxis) will invariably attract many buyers (passengers).

²⁴ Draft Determination, pp. 31-32.

There are many reasons why the ability to get suppliers on board will not necessarily prove compelling to consumers. This includes that:

- Consumers may simply not like the ihail app due to its design or usability, and will prefer to use other existing apps, the taxi networks' own apps, or new apps.
- Consumers may not value the additional benefits offered by ihail over existing apps; for example, of having connected taxi networks, which includes faster response times, and interstate or international connectivity.
- Individual taxi networks may be able to match or better some or all of ihail's perceived advantages; for example, by having the necessary economies of scale and/or density to provide for rapid dispatch, and may be able to differentiate themselves using price or quality using their own booking mechanisms (including apps)

The evidence in many industries indicates that the competitive position of a strong platform with a large numbers of suppliers can be eroded if consumer's preferences change, and the platform is not able to successfully adapt to meet those preferences. A pertinent example is Yellow Pages. Yellow Pages' 'platform' had captured a large numbers of suppliers; however, it was unable to transition this dominance into a digital world where consumers' preferences for classified directory services fundamentally changed.²⁵

Even if the app does manage to attract a significant number of consumers, the ACCC's analysis also does not address how network effects will reinforce ihail's supposed dominant position and 'tip' the market to monopoly. As discussed in section 2, there is a strong conclusion from the economic literature that markets are not prone to 'tipping' in favour of a single supplier if consumers or producers are able to multi-home, or if consumers value differentiation, or if marginal network effects (from adding another user) weaken before monopoly occurs.

'Multi-homing' is low cost and highly likely

Multi-homing is the practice of using multiple platforms. In this case, the platforms include both apps as well as more traditional booking platforms (phone-based booking).

Consumers are likely to multi-home if the costs of using multiple platforms is low, or if they value the variety offered by different platforms.

²⁵ The rapid of fall of Yellow Pages in Australia is briefly described here: <http://www.abc.net.au/news/2014-01-13/ryan-the-fall-of-a-search-giant/5197090>

With respect to taxi-booking apps, these apps are supplied for free to consumers. There are few physical or space limits using modern smartphones; realistically, there is little to stop a consumer using many different taxi apps.

Consumers' preferences for variety in using apps comes from features such as:

- promotional fares or credits
- the ability to tip for priority dispatch
- ability to pay by card or cash
- guaranteed bookings (and penalties for no-shows)²⁶
- the ability to rate drivers
- itemised, visual receipts
- the ability to earn frequent flyer points.²⁷

On the other side of the market, **drivers** are likely to multi-home for much the same reasons as consumers – because it is low-cost to do so and different apps provide drivers with different incentives. Our understanding is that drivers pay nothing for joining other apps in the Australian market, such as goCatch, ingogo or Uber. This extends to providing drivers with guaranteed bookings, payments for doing certain kinds of trips, or a share of electronic payment commissions. For example, ingogo offers drivers the following inducements to use its app:

Earn additional income

ingogo is the easiest way for you to make additional income and score more jobs. We provide you with monthly commissions on all payments, a start-up bonus, free equipment, plus ongoing bonuses for accepting short trips and jobs at changeover times.²⁸

Given the low costs to drivers of multi-homing, we can expect to see drivers using multiple apps at the same time. Drivers would preference the app or apps that provide the best deal for the driver – for example, the app that has the best customers, the lowest fees, and the highest driver incentives. This may vary over the time of day and week.

Consumers value differentiation

Consumers' preference for variety can offset the value of network effects and reduce market tipping, even where consumers single home (use only a single app or other method of purchase). For taxi services, for example, some passengers will

²⁶ Offered by ingogo.

²⁷ Offered by goCatch.

²⁸ www.ingogo.com.au

prefer the benefits that ihail may offer in terms of its faster dispatch times, while other customers may place a greater emphasis on other kinds of benefits offered by other apps operated by individual taxi networks or other competitors such as lower prices or higher quality of services.

Similarly, drivers may single home but the choice of app may differ. For example, apps may be able to deliver more profitable kinds of customers to drivers (such as corporate users) but with less frequency than ihail. This will appeal, for example, to drivers who already operate informal networks, and do not heavily rely on pre-bookings from the major taxi networks. As an example, we understand that goCatch has been pursuing a strategy focused on corporate users and has signed up large corporate users who are likely to be less price sensitive than other market segments.²⁹

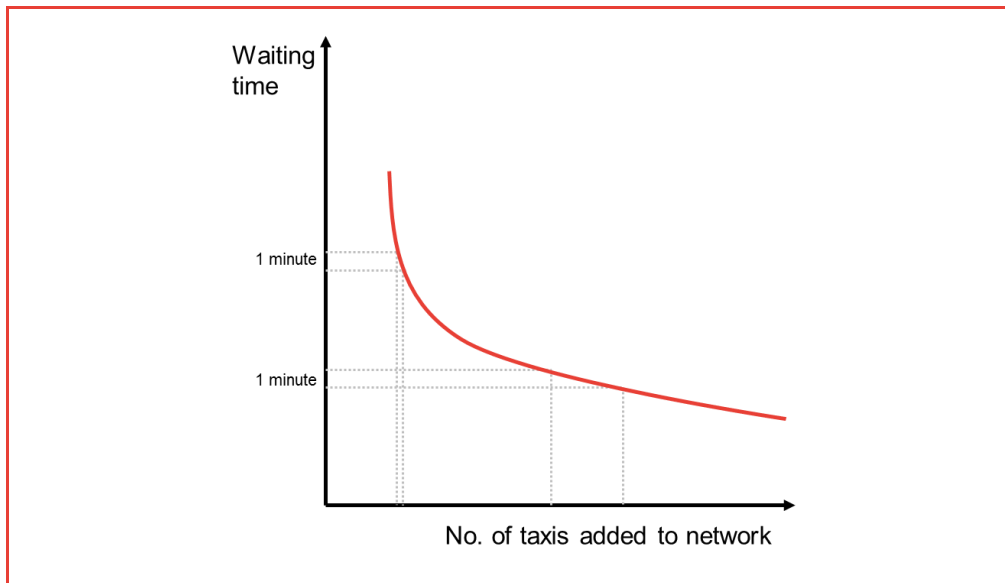
Marginal network effects diminish in importance as the network grows

We noted in section 2 that existing taxi networks offer a good example of how marginal network effects (adding another taxi to the network) become less important the more vehicles are added to the network. We can see this in most Metropolitan markets in Australia, which invariably have more than one booking network but not more than a few. This pattern suggests that network effects are particularly important for smaller networks, but become less significant once a critical mass of taxis is reached. This can be explained through the relationship between waiting times and taxis; more taxis will lower waiting times but at a decreasing rate, as shown in Figure 1. To reduce waiting times by an additional minute will require a far larger number of taxis when there are a large number of taxis already available.³⁰

²⁹ *Australian Financial Review*, “Uber fight: How Aussie start-up goCatch plans survival against a global juggernaut”, August 24, 2015.

³⁰ Note that this relationship is followed in theoretical and empirical work on taxi markets, for example, economic modelling used in the Victorian Taxi Industry Inquiry, following work by Glaister and Beesley, uses an inverse relationship waiting times and taxi availability. See Glaister, S. and Beesley, M.E. (1983), ‘Information for Regulating: the Case of Taxis’, *Economic Journal*, Vol 93, pp. 594-615.

Figure 1: Relationship between passenger waiting time and taxis added to a network



Source: Frontier Economics

At some point, however, the gains from differentiation between the networks become more important than the gains from network effects.

The consequence of this underlying economics is clear: there may be gains to taxi apps from increasing network size, but as the size increases, these gains may become small and less significant than other elements of service provided by apps.

If network effects matter, is ihail at an advantage?

A final matter relating to dominance is that ihail would be entering into a market where it faces competitors that have already established the benefits of network effects. goCatch claims 35,000 drivers are signed up to its app – more than 50 per cent of the 68,000 estimated drivers in Australia³¹, while Uber claims 20,000 more. With declining marginal network effects, these networks appear more than sufficient to effectively compete with the ihail app – assuming ihail is able to get both drivers and passengers to use its app.

3.3.2 The longer term role of smartphone apps is uncertain

The ACCC's analysis of detriment is conditional on smartphone apps becoming the dominant form of taxi booking. Smartphone apps do have some important advantages over other forms of booking, including better information regarding the location of taxis and the ability to rate drivers. It is, however, far from certain

³¹ BRW, "Taxi war hits the streets as goCatch grabs for hailing revenue" <http://www.brw.com.au/p/tech-gadgets/taxi-war-hits-the-streets-revenue-c7eZd56dVAobrZ9FgNjPmN>, accessed February 2015.

that apps will achieve market dominance unless there is substantial consumer value created by these apps. In other words, we would expect that apps would be constrained from taking actions that harm consumers (such as raising prices) due to the proliferation of substitute ways in which consumers can procure both taxis and other point-to-point transport. This includes procuring taxis from ranks, phone bookings, street hails and direct dialling drivers. It is implausible that consumers would not use these alternatives if charges to consumers from using apps were to rise. If dominance arises, it is far more likely to be a result of the creation of consumer value than due to supply-side advantages from access to a larger taxi fleet.

3.3.3 Competition with Uber and other ride sharing services

A final point of contention with the ACCC's decision is its assessment of the competitive threat posed by Uber to both underlying taxi services and to apps and payments services. The ACCC's initial assessment was undertaken at the time when only Canberra (of the major Australian cities) had formally approved Uber's use. However, since the time of the ACCC's decision, New South Wales and Western Australia³² have also allowed Uber to legally operate, and there is a strong sense that other states are likely to follow.

While there is no question that any assessment of Uber's impact must be to some degree speculative, there is also little doubt that the weight of empirical evidence suggests that Uber's services do compete with those of taxis. For example, in New York (which is one of the few jurisdictions where data on taxis and Uber trips exists):

...the figures also suggest that the majority of Uber's growth has come from substituting for taxis rather than from complementing them. While Uber expanded approximately tenfold over the past two years, from a bit over an estimated 300,000 rides in June 2013 to 3.5m in June 2015, yellow cabs' hail volume has fallen by 2.1m during the same period. As a first approximation, this implies that just 35% of the growth in Uber rides during this 24-month period has been in addition to the pre-existing market demand, leaving 65% that has replaced trips that would otherwise have gone to taxis.³³

Again, this degree of substitution in a start-up phase suggest it is unlikely that apps (even if supported by large numbers of taxi networks and drivers) could act without constraint in the longer term.

³² <http://www.abc.net.au/news/2015-12-18/uber-ride-sharing-service-to-become-legal-in-wa/7039654>, accessed February 2015

³³ The Economist, "Taxis vs Uber: Substitutes or Complements?" 10 August 2015. Available at: <http://www.economist.com/blogs/graphicdetail/2015/08/taxis-v-uber>, accessed January 2015.

3.3.4 Conclusion on competitive detriment

It is unlikely that public detriment will arise from a lessening of competition between taxi app suppliers, or between taxi networks. This is because:

- The ACCC understates the relevant field of competitors and competitive constraints on ihail and taxis networks more generally. We find the ihail app is likely to have a neutral to positive impact on competition in the short term between taxi apps, taxi networks, and between taxi networks and other forms of point-to-point transport. This effect is enhanced by ihail's proposed app changes to facilitate consumer network choice within the app.
- It is unlikely that the ihail app will invariably become dominant in the long term due to the ownership structure or access to a large number of taxi suppliers. It is likely that consumers and drivers will multi-home and not restrict the number of apps they use, and differentiation of service does appear valuable. Nor is it obvious that network effects are critical to success once a certain size is reached, and, indeed, other apps may have already succeeded in achieving the majority of network economies. In these circumstances, no single app is likely to become dominant. For a dominant position to be reached, it is more likely that the app will need to perform useful functions for consumers and provide sufficient incentives for drivers to accept ihail bookings. Such an outcome would be consistent with economic efficiency.

3.4 In-app payments

At the time of the Draft Determination, the proposed ihail app required passengers to pay for their trip through the ihail app's payment processing system with a credit card or a Cabcharge card. It did not allow customers to pay for ihail trips with any other method, such as in-taxi payment options.

In its Draft Determination, the ACCC stated that this arrangement could be to the detriment of consumers because, should the ihail app become dominant, the viability of alternative payment processing services could be reduced to the point that competition in payment processing services is significantly impacted:

In June this year, the ACCC accepted a court enforceable undertaking from Cabcharge under which rival payment processors will be able to process Cabcharge cards on their own taxi payment terminals. This means taxis will now be able to have an alternative payment terminal instead of a Cabcharge terminal, rather than in addition to a Cabcharge terminal.

The ACCC considers the relevant question in respect of the proposed arrangements therefore, is the extent to which ihail only offering an in-app payment option, and Cabcharge processing these payments, will impact on emerging competition between Cabcharge and other providers of taxi payment processing services.

...if customers booking taxis through ihail ultimately constitute a significant proportion of all taxi bookings, this is also likely to affect the ability of other providers of taxi payment processing services to provide this service to other customers.

...there is a chance that the market will tend towards ihail becoming the dominant provider of smartphone app taxi booking services. If this were the case, the ACCC considers that foreclosure of access to these customers for providers of taxi payment processing services (other than Cabcharge) could significantly impact competition in the provision of these services, which would be to the detriment of consumers.³⁴

In our opinion, the ACCC overstates the potential detriment to consumers (passengers). As indicated above we do not agree with the ACCC's assessment of likely market dominance. Further, and as noted in the Victorian Taxi Industry Inquiry, competition between in-taxi payments processors offers no discernible benefits to consumers. This is because the benefits of competition between payments processors accrue to taxi drivers or operators, not to taxi passengers:

The competitive practices that disburse the proceeds of the 10 per cent surcharge do not benefit consumers in any way...CabFare, Taxi LiveEpay and GM Cabs all provide rebates or commissions to operators and/or drivers who use their facilities. This can be up to a five per cent rebate on the surcharge.³⁵

Further, if apps do become the predominant form of booking taxis, these in-vehicle payments providers will be at risk of displacement by both other apps with whom ihail will compete and with alternative service providers (such as Uber) that offer their own payment methods. goCatch and ingogo both allow payments through their own apps, and in goCatch's case does not offer payments through alternative competitive in-taxi terminals.

Notwithstanding these views, we note that in response to the ACCC's concerns, ihail has revised its proposed operating model to allow for in-car payments. Consumers will be able to pay using cash, in-car non-cash options made available by the driver's installed third-party payment system, or through the ihail app.³⁶

The revised operating model would address the ACCC's concerns as it allows payment processing service providers (other than Cabcharge) to offer their services to customers that book with ihail. As such, it could no longer be likely that competition in the provision of these services could be impacted significantly to the detriment of customers, in the manner described by the ACCC in its Draft Determination.

³⁴ Draft Determination, para 171-176

³⁵ Victorian Taxi Industry Inquiry, *Draft Report*, May 2012, p. 259. This quote emphasises the two-sided nature of the payments processing market. Third party processors have historically charged negative prices to one side (drivers and operators) and high prices to the other side (passengers).

³⁶ ihail submission, 6 November 2015, p. 2

3.5 Tipping and priority dispatch

The Draft Determination sets out the ACCC's view that the priority dispatch payment function (the "tipping" function) is likely to generate significant public detriment.

The tipping allows passengers of the ihail app to offer drivers a "tip" to incentivise priority pickup. The tipping function is only available to the user before the job is accepted. Drivers will see the message when the fare is dispatched, and they can choose to accept the fare in preference to other fares.

The reasons the ACCC gives for its view that tipping gives rise to public detriments include:

- that the tipping function could adversely affect vulnerable customers who are dependent on taxi services:

The ACCC notes that for some sections of the community, for example, persons with disabilities, older persons or those with limited mobility, taxis are an important, and in some case the only, transport option. The ACCC also notes that affordability is often a major concern for these sections of the community. Arrangements whereby in peak times scarce taxis could be allocated based on capacity or willingness to pay above regulated maximum prices may adversely impact on access to taxis for these sections of the community.³⁷

- that there would be a significant difference in outcomes between ihail and other apps that offer similar tipping functions as a result of the ownership structure of ihail:

Further, while some third party taxi booking apps contain a priority dispatch payment function, the ACCC considers that there is a significant difference between individual taxi drivers deciding to use a third party app that has such a function and most, potentially all, major taxi companies in a region collectively agreeing to such an arrangement.³⁸

- and, that the tipping function is potentially in breach of maximum fare regulation:

...interested parties have raised concerns that a priority dispatch payment function such as those operated by some third party apps, and as proposed by ihail, is arguably in breach of regulations governing maximum fares in some jurisdictions and/or at the very least the intent of such regulations.³⁹

³⁷ Draft Determination, p. 38.

³⁸ Ibid.

³⁹ Ibid.

In our opinion, these detriments are either irrelevant to the ACCC's decision, or unclear. Further, the ACCC overlooks important public benefits arising from the proposal, which are discussed in the following section.

Regarding the ACCC's concern for vulnerable customer groups, it is unclear that a ban on ihail's tipping function would be a suitable measure to address this concern. A ban would be poorly targeted and prevent the realisation of any potential welfare gains to other customer groups who might value the prioritisation of their trip highly. In net terms, the result of the tipping function is much more likely to be a public benefit than a detriment, as we discuss Section 4.

Moreover, such a ban would not apply to other apps and so it would offer no guarantee that it would improve avoid the issues that the ACCC identifies. In situations of excess demand, taxi drivers will be incentivised to use platforms which offer the potential for higher returns, including through 'ride sharing' apps. Any perceived consumer protections through preventing ihail from using this function are likely to be illusory.

Similarly, a ban on the tipping function due to concerns about whether this might cause breaches of maximum fare regulations is a blunt instrument and arguably prevents behaviour that would be entirely legal in some jurisdictions.

In our view, the issues identified by the ACCC regarding vulnerable consumers and breaches of maximum fare regulation are issues more appropriately addressed by the state jurisdictions that regulate taxi fares and implement policy relating to service and affordability. For example:

- Taxi affordability can be addressed using targeted subsidies to these vulnerable customer groups could be used to ensure affordability of taxi services whilst retaining the tipping function for other customers. Alternatively, jurisdictions could elect to lessen supply constraints so that peak demands can be better satisfied at lower prices.
- If individual jurisdictions consider that ihail is likely to lead to breaches of maximum fare regulation, then this can be appropriately dealt with in that jurisdiction. ihail has indicated that they have a working relationship with the various state governments on this matter and is committed to removing the function where it has been requested to do so. To date, ihail has removed the function from the Queensland market at the request of the Queensland Government.

The ACCC's final argument that ihail's ownership structure makes a difference to the effect of the function is puzzling. It suggests that 'most, potentially all, major taxi companies in a region collectively agreeing to such an arrangement' is worse than if individual taxi drivers decide to use a third party app that has such a function. However, the ACCC provides no explanation of why it would be worse. Ultimately, it is up to consumers whether they wish to use the tipping function and to nominate amounts, and it is drivers (not networks) that accept individual fares,

and it is drivers that benefit from tips and respond to the incentives that tips send. Nor is it obvious how such arrangements could lead to collusive behaviour. It is clear that *drivers* could benefit from withholding supply at peak times to create scarcity, but there seems to be little incentive or ability for *networks* to withhold supply to create that scarcity.

We conclude that the tipping function in the ihail app is unlikely to cause any public detriment. In section 4 we consider public benefits that may arise from its use.

4 Analysis of public benefits

It follows from our analysis in section 3 that we do not consider there will be material public detriments from the proposed ihail arrangements. In this section, we consider whether there are likely to be benefits to the public generated from the arrangements, focusing here more on efficiency benefits rather than direct competition benefits (which might also arise).

4.1 Service improvements

The most obvious benefit of the ihail app is that it has the potential to deliver service improvements of three kinds:

- It facilitates lower search costs and increases convenience for travellers that are out of their 'home market' (whether interstate or overseas).
- By allowing for feedback on individual networks and drivers, the app facilitates competition and improvements in network and driver quality. In turn, this should increase passenger confidence in the quality of service available from taxis using the ihail app and encourage greater use of taxis.
- By allocating taxis according to proximity and drawing from a larger pool of taxis than through individual networks, there is an increased probability that consumers will benefit from lower waiting times.

4.1.1 Reducing search costs and higher quality

The first of the benefits is difficult to quantify with there being few available studies of taxi demand in Australia. We may note, however, that it is well recognised that business travellers and tourists are important sources of taxi demand, particularly during the day, and these are likely to be major beneficiaries of the ability to use the app in different markets.⁴⁰

The second benefit is also difficult to quantify. There is, however, no question that consumers value taxi and driver quality. This may be explained with reference to the success of Uber. A key part of Uber's success in getting consumers to use its platform is the promise of a better quality network experience and drivers, as indicated in a recent report prepared for Uber:

⁴⁰ See, for example, Deloitte Access Economics, *The economic and social contribution of the NSW taxi industry*, NSW Taxi Council 12 December 2013, p. 10:

"Business commuters and tourists are thought to be those most likely to account for a large proportion of rides during the day, while taxi usage spikes on Friday and Saturday nights where other transport options are limited."

uberX, as a ridesharing platform, offers a different service to that of the taxi industry. In particular, the technology used to drive the platform means that a range of quality benefits can be enjoyed by consumers.⁴¹

All of the benefits listed in the report relating to quality⁴², including better availability, a ratings system for drivers, technology and an integrated payment system, are features of the ihail app.

It is also pertinent to note that Deloitte valued these increased quality benefits from uberX at \$49.6 million per annum, out of a total of \$81 million of consumer benefits.⁴³ This indicates that the benefits that might be expected if ihail was successful in increasing taxi driver and service quality are both (a) material, and (b) a significant share of the total benefit that might be expected.

4.1.2 Reductions in waiting time

In the Draft Determination, the ACCC accepted that ihail was likely to reduce passenger waiting times, particularly in busy periods.⁴⁴ It did not provide (and nor has ihail previously) an indication of the potential size of this benefit to consumers.

In our opinion, the potential gains are material. In part, they will depend on the strength of marginal network effects which we discussed in Section 3. If the marginal networks are weak, and lower waiting times are not realised, then it also seems highly likely that the app itself will have trouble attracting users, and so smaller benefit will be associated with a smaller competitive impact. If, however, we assume there is some positive marginal value from network size such that ihail is sustainable, we can quantify the expected gains to consumers using publically-available estimates of the value of passenger waiting time.

A key input into this estimate is the proportion of trips that benefit from a reduced waiting time. In our calculations, we assume that pre-booked trips are between 30 per cent and 50 per cent of the available trips⁴⁵, and that ihail might be able to obtain 50 per cent of those trips (meaning 20 per cent of taxi trips use the app).

Table 1 presents a range of estimates of the prospective Australia-wide consumer benefit from reduced waiting time.⁴⁶ It presents the estimates for a range of waiting time reductions across two different assumptions on the value of waiting time. It also presents the annual value of the benefit as well as the net present value (NPV)

⁴¹ Deloitte Access Economics, *Economic benefits of ridesharing*, Prepared for Uber, 2016, p. 5.

⁴² Except the benefit of being part of the 'sharing economy'.

⁴³ Ibid., p. 4.

⁴⁴ Draft determination, para 92.

⁴⁵ On the basis that there is some substitution from hailing taxis to pre-booking taxis.

⁴⁶ Details of the calculations of these estimates are provided in the Appendix to this report.

of all future annual benefits, which assumes that consumers get the same benefit in every future year and a discount rate of 7%.

We estimate that the consumer benefits are likely to be in the range of \$7m to \$60m per year (or \$101m to \$861m in NPV terms). At the higher end of our range we estimate that consumers are better off by \$60m, assuming that passengers experience a two minute reduction in average waiting time and value waiting time at \$61/hr⁴⁷. At the lower end of our range we estimate that consumers are better off by \$7m, assuming that passengers reduce average waiting time by 30 seconds and value waiting time at \$30/hr.⁴⁸

Table 1: Estimated increase in consumer surplus resulting from reduced wait time

Reduction in average waiting time per trip	Increase in consumer surplus (\$m per year)		Increase in consumer surplus (\$m NPV)	
	Assumed value of waiting time: \$61/hr	Assumed value of waiting time: \$30/hr	Assumed value of waiting time: \$61/hr	Assumed value of waiting time: \$30/hr
30 seconds	\$15m	\$7m	\$208m	\$101m
1 minute	\$29m	\$14m	\$421m	\$204m
2 minutes	\$60m	\$29m	\$861m	\$413m

Source: Frontier Economics

While there is no doubt a degree of uncertainty is associated with these estimates of the consumer benefit from reduced waiting times, these estimates do indicate that there is a significant potential benefit to consumers stemming from reduced waiting times that are possible with the ihail app.

4.2 More efficient allocation of taxis at supply-constrained times

In the Draft Determination, the ACCC does not consider the public benefit from improvements in allocative efficiency resulting from the tipping function.

A tipping function can improve allocative efficiency in two ways.

Firstly, when there is a shortage of taxis, the tipping function it allows passengers with a higher willingness to pay than the advertised price to communicate their willingness to pay to the taxi drivers. This leads to the available taxis being allocated

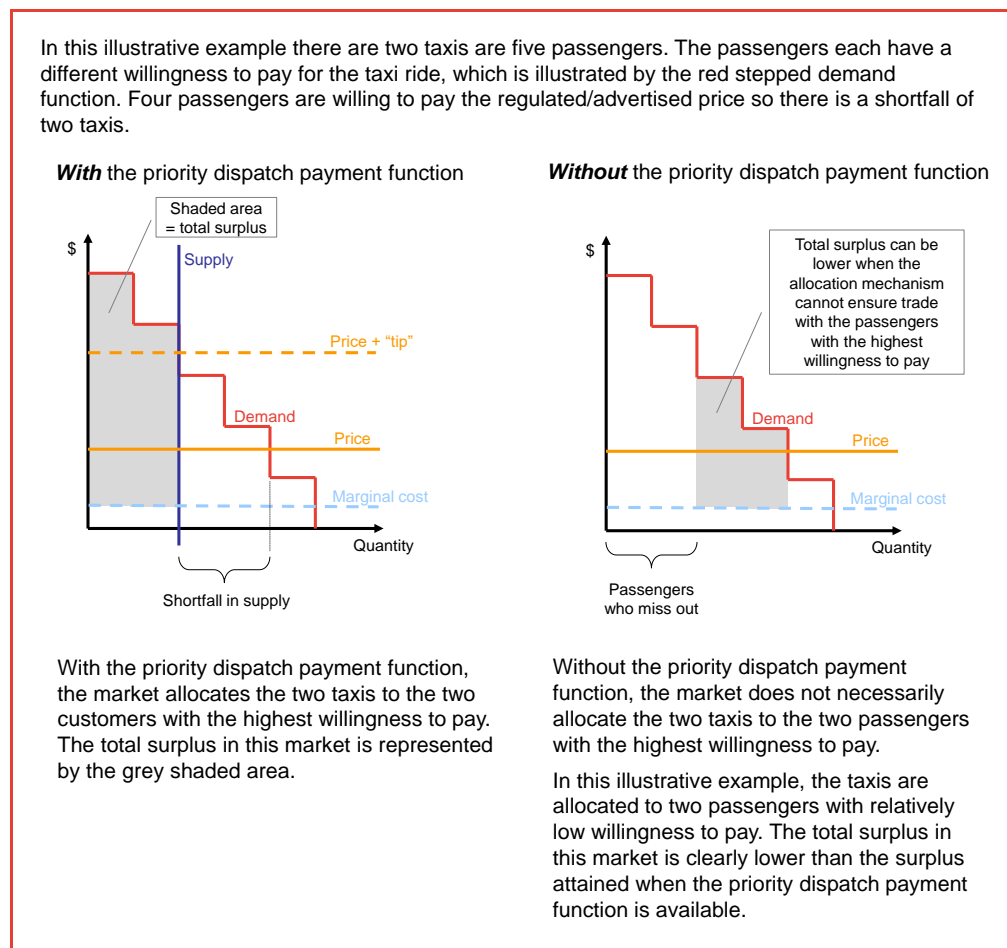
⁴⁷ Calculated from elasticities published in the Victorian Taxi Industry Inquiry, “*Final Report*”, September 2012. See the Appendix for details on the calculations.

⁴⁸ Source of waiting time value: IPART, “*Guide to the taxi industry model*”, April 2014.

to the passengers with the highest willingness to pay. Without the tipping function, taxis would be rationed in other ways that may not necessarily allocate the taxis to the passengers with the highest willingness to pay. For example, queues are a commonly used to allocate taxis when they are in short supply, and the taxis are allocated to the passengers at the front of the queue. These welfare impacts are illustrated graphically in Figure 2.

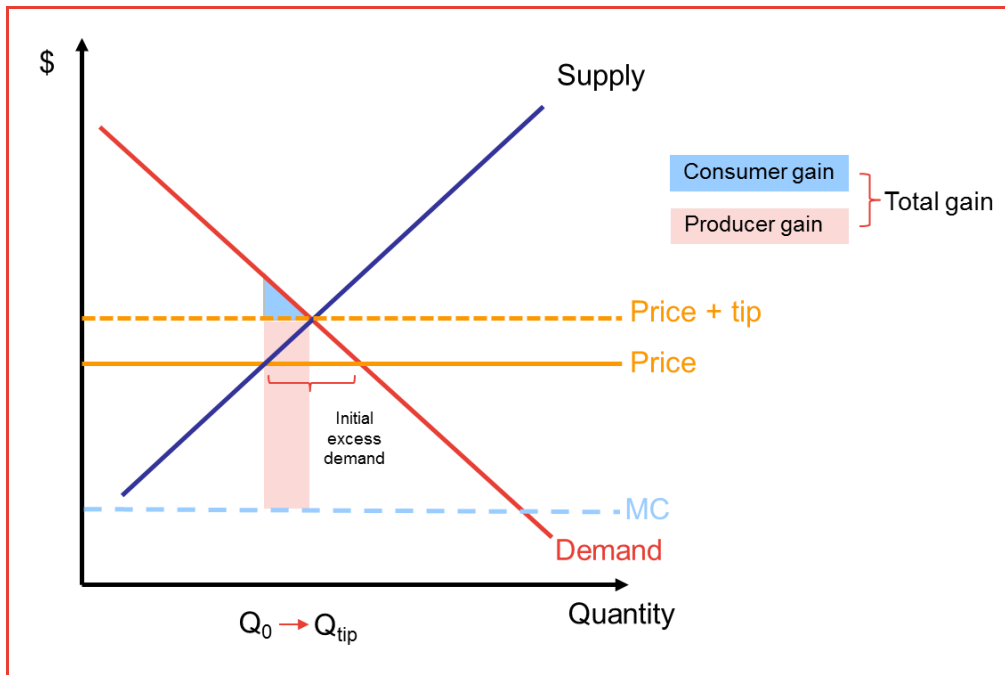
Secondly, the tipping function will provide incentives for more taxis to enter the market at times of high demand. Such an increase in the supply of taxis will increase total surplus and the quantity of trips will increase; this benefit will be split between taxis through increased profits and consumers through increased consumer surplus. This is illustrated graphically in Figure 3.

Figure 2: Allocating taxis to customers with the highest willingness to pay with the priority dispatch payment function



Source: Frontier Economics

Figure 3: Welfare impact of an increase in the supply of taxis during taxi shortfall periods



Source: Frontier Economics

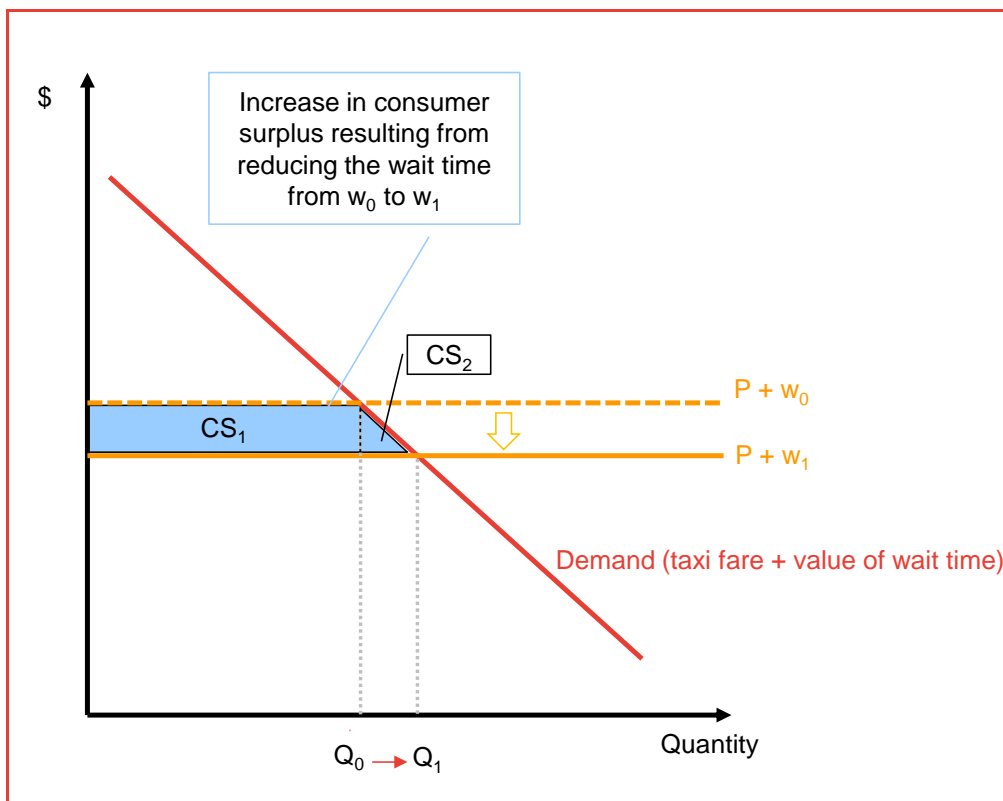
Again, these benefits are not amenable to ready quantification. Nonetheless, we can expect where there are supply constraints and significant excess demand these benefits will be greater. This situation appears to characterise many markets in metropolitan Australia; Uber's frequent use of surge pricing would appear to support the hypothesis that there are excess demand situations occurring with some regularity.

5 Appendix: Estimating gains in consumer surplus from reduced waiting time

The estimated gains in consumer surplus from reduced waiting time is illustrated graphically in Figure 4. This shows the demand and price curves in terms of the “total” or generalised price for taxis, which is the taxi fare plus the implied price of waiting time (in \$/km). The slope of the demand curve incorporates both the relationship between total price – the level of the taxi fare and the value of waiting time – with demand.

The reduction in the wait time (from w_0 to w_1) is illustrated as a downwards shift of the orange price curve. It is associated with an increase in output, which we measure in passenger kilometres (from Q_0 to Q_1). The increase in consumer surplus is represented by the area shaded in light blue. The increase in consumer surplus is comprised of two parts: the benefit to existing consumers (the light blue rectangle CS_1) and the benefit from new trips because the “total” price of taking a taxi has fallen (the light blue triangle CS_2).

Figure 4: Welfare impact of a reduction in the taxi waiting-time



Source: Frontier Economics

The input data for our calculation of the estimated benefit from reduced waiting times are summarised below in Table 2. We have elected to use data for the

Melbourne Metropolitan market rather than existing aggregated data, due to concerns about the consistency and reliability of the national data. In contrast, data used in the Victorian Taxi Industry Inquiry went through an exhaustive checking process with networks, lending these data greater credence. We have then extrapolated the results from Melbourne to other markets in Australia using data on taxi numbers, as we consider this number is more reliable in each jurisdiction than available usage data. We note that since Melbourne's usage figures are notably lower than in other major States our results are conservative.⁵⁰

Table 2: Input data for estimating gains in consumer surplus from reduced waiting time (based on Melbourne data for the 2012 calendar year)

Input data	Value	Units	Denoted by
Average fare per km (excludes the value of waiting time)	2.43	\$/km	\bar{p}_T
Number of taxis	4,085		N_T
Passenger kms per taxi	62,530	km / taxi	-
Time taken per trip	17	minutes / trip	-
Time taken per km	1.80	minutes / km	-
Average wait time / response time	8.60	minutes	\bar{w}
Average trip distance (calculated)	9.44	km	\bar{q}
Total trips (calculated)	27m	trips	
Own-price elasticity of demand for taxi service	-1.02		ϵ_p
Waiting-time elasticity of demand for taxi service	-0.39		ϵ_w

Source: Victorian Taxi Industry Inquiry, Final Report, September 2012

The first step in our calculations is to calculate the value change in the generalised price for taxis associated with a one minute reduction in the average waiting time per trip, denoted by Δp . This is calculated using the following expression⁵¹:

⁵⁰ For example, the implied total number of trips using our data is 141 million, whereas ATIA data estimates 227 million.

⁵¹ We note that elasticities represent the relative percentage changes in the two variables in consideration. ϵ_p is the percentage change in the average fare with respect to a 1% change in demand and ϵ_w is the percentage change in the average waiting time with respect to a 1% change in demand. Using algebraic

Appendix: Estimating gains in consumer surplus from reduced waiting time

$$\Delta p = \frac{\epsilon_w}{\epsilon_p} \times \frac{\bar{p}_T}{\bar{w}} \times \Delta w = \frac{-0.39}{-1.02} \times \frac{2.43 \text{ \$/km}}{8.60 \text{ min}} \times -1 \text{ min} = -0.11 \text{ \$/km}$$

In other words, the value of a one minute reduction in the average waiting time is equivalent to a \$0.11/km reduction in the average taxi fare.

This can be converted into a value for the waiting time in \$/hr. We multiply \$0.11/km by the average trip length, 9.44 km, to get the value of the one minute wait saved per trip: $0.11 \times 9.44 = 1.02$; in other words consumers save \$1.02 per minute of reduced waiting time per trip. We then multiply this by 60 minutes/hr to get the hourly value of waiting time: $1.02 \times 60 = \$61/\text{hr}$.

We estimate the total demand for taxi services in Australia by scaling up the 2012 Melbourne demand by the ratio of total taxis in Australia in 2014⁵² to the number of taxis in Melbourne in 2014:

$$\begin{aligned} & \frac{21,344 \text{ taxis (Australia)}}{4,085 \text{ taxis (Melbourne)}} \times 27 \text{ m trips (Melbourne)} \\ & = 141 \text{ m trips (Australia)} \end{aligned}$$

As discussed in Section 4.1.2 we assume that 20% of trips benefit from a reduction waiting time. As such we assume that 28m trips benefit from a reduction in waiting time. A one minute reduction in waiting time for each of these trips results in a total reduction of 0.47 m hours of waiting time. At a value of waiting time of \$61/hr, the benefit to consumers of this reduction in waiting time is (denoted by CS_1):

$$CS_1 = 0.47 \text{ m hours} \times \$61/\text{hr} = \$28.8 \text{ m}$$

This CS_1 is represented as the light blue rectangle labelled CS_1 in Figure 4.

There is also an increase in demand, and subsequently consumer surplus, resulting from the reduction in waiting time by one minute. The increase in demand is calculated as:

$$\Delta q = \epsilon_w \times \frac{\bar{q}}{\bar{w}} \times (\Delta w \times \text{trips})$$

notation these elasticities can be expressed as: $\epsilon_p = \frac{\Delta q/q}{\Delta p/p}$, where q denotes the quantity demanded, and $\epsilon_w = \frac{\Delta q/q}{\Delta w/w}$.

The ratio of these two elasticities gives: $\frac{\epsilon_w}{\epsilon_p} = \frac{\Delta w/w}{\Delta p/p}$. We can calculate the change in price associated with a one minute reduction in wait time by rearranging this last relationship and inputting the average waiting time and average price per trip.

⁵² 2014 State and Territory Taxi Statistics (as at 31 December 2014), <http://www.atia.com.au/wp-content/uploads/2014-State-Territory-Taxi-Statistics.pdf>

$$= -0.39 \times \frac{9.44 \text{ km/trip}}{8.60 \text{ min/trip}} \times -1 \text{ min} \times 28.3 \text{ trips} = 12.1 \text{ m km}$$

The increase in consumer surplus associated with this extra demand, also is represented as the light blue triangle labelled CS_2 in Figure 4, is calculated as:

$$CS_2 = \Delta q \times |\Delta p| \times 0.5 = \$0.7 \text{ m}$$

The total increase in consumer surplus, $CS_1 + CS_2$, is \$29.5m (which rounds to \$29m). Assuming that this increase is realised in all future years, at a discount rate of 7% results in an NPV of all future benefits of \$421m.

In Section 4.1.2 we also present sensitivities on the value of waiting time and the average reduction in waiting time. To calculate the estimated benefits for a value of waiting time of \$30/hr, we adjust ϵ_w to -0.19. At this value, the calculated value of waiting time using the equations above is \$30/hr. To calculate the estimated benefits at different reductions to average waiting time, we adjust the Δw in the above calculations to the sensitivity value (i.e. we set $\Delta w = 0.5$ for the estimation of the change in consumer surplus resulting from a 30 second reduction in waiting time).

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