

The impact of tableside ordering technologies on alcohol sales to the intoxicated

Technological innovations in hospitality include measures such as social media platform advertising, online ordering and delivery services, and automation processes [1, 2]. While the alcohol industry's adoption of social media advertising [3–6] and online delivery services of alcohol [7] have garnered international research and regulatory interest [3–8], the introduction of table side ordering technologies [9] has been overlooked within alcohol policy circles to date. Tableside ordering technology entered the hospitality business in the United States as early as 2017 [10]. Global adoption of this technology was slow to start but was hastened by the COVID-19 pandemic [11].

Australian hospitality venues that implemented tableside ordering offer the following experience: patrons scan a QR code that is displayed on their table. The QR code directs the patron to the webpage portal of an ordering application. The menu opens with a pop-up that asks, 'are you over 18?' The patron can select 'yes' and proceed to scroll through the menu. Patrons add the food and drinks they would like to order to their cart. When patrons proceed to payment, they are asked to provide further demographic information for their registration. Patrons pay in-app and then wait for staff to deliver the orders to the table. Venue employees circulate to clear glassware and dishes. Patrons are free to go back to the online menu and continue ordering for as long as they like [12]. The venue and the app operator [13, 14] have access to all the ordering information. This information is retained in order to account for ordering trends and data optimisation. For instance, *Goodfood* published a list of the most ordered drinks in Melbourne in 2021: espresso martini, Carlton Draught, Aperol spritz, Coburg Lager and Balter XPA [11].

Retail and hospitality studies described business concerns regarding a loss of connection between the patron and venue staff that used to be facilitated during the ordering process [15]. This loss of connection between a venue's staff and their patrons also raises concerns from a public health perspective. Prohibition of service to intoxicated patrons is a standard element of liquor regulation in nearly all jurisdictions. Interaction with the

patron at the point of sale is often how a staff member will determine whether a patron is intoxicated. Signs of intoxication are defined in policies as the behavioural cues staff are to look for in order to determine a patron's state of intoxication [16]. These include: speech, balance, coordination and if behaviour is noticeably affected, and it is reasonable in the circumstances that these are affected as the result of the consumption of alcohol [16]. None of these behavioural cues are likely to be detectable by staff when drinks are ordered from a patron's own phone. Reports of an increase in online shopping while intoxicated [17] suggest that intoxication is not a barrier to operating online shopping apps and webpages such as those used in tableside ordering.

Tableside ordering challenges the service dynamics on which the Responsible Service of Alcohol policy [16] is predicated. Traditionally, staff would refuse service before pouring a drink and accepting payment for the patron's order. However, an order placed using tableside ordering has been poured and paid for by the time a staff member could even begin contemplating enacting a refusal of service. This new ordering format also shifts the power dynamics involved in the service interaction. In a traditional interaction an individual patron would stand at a bar which is staffed by multiple staff members (in which staff may have felt supported in carrying out a refusal of service). Tableside ordering shifts this dynamic to an interaction involving a lone server offloading drinks amongst tables of patrons (in which staff may feel a lack of institutional support in carrying out a refusal of service).

Shifting the ordering interaction from the bar to the table may also be cutting into biological feedback mechanisms which are engaged when we stand up. One of the ways patrons can gauge how intoxicated they are is by standing up and seeing how they feel. There are some early indications that tableside ordering may increase the consumption of alcohol. According to tableside ordering companies marketing information, customers spend more per person when their technology is implemented

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[11, 18]. This increased spend may be translated into increased consumption of alcohol. When considered together with the ordering technology sidestepping biological feedback mechanisms used to gauge sobriety, customers may not only be consuming more alcohol than previously, they may be consuming more alcohol than they would like.

We have very little evidence to suggest that restricting the service of alcohol to intoxicated people is working particularly well [19, 20]. Although this measure follows a seemingly intuitive logic, it is difficult to implement and unpopular with the alcohol industry and licensees [21] (the very people who are responsible for implementing it). Responsible service of alcohol pilots in controlled environments [22, 23] showed promising results but despite widespread implementation in community settings, these programs have not delivered their intended results [19]. The lack of observed efficacy is often attributed to poor implementation [19]. The technological innovation of tableside ordering introduces new barriers to the implementation of responsible service of alcohol. It also presents a timely opportunity to rethink policies targeting service in licensed premises.

There may be four potential opportunities for public health benefits associated with the introduction of tableside ordering technologies. Firstly, it may restrict access to alcohol for minors. Alcohol policies which enforce widespread identity checks of all patrons are associated with reductions of service to minors [24]. If tableside ordering technologies were to integrate stringent identity checks, their usage could reduce the burden of in-person identity checks, while reducing instances of serving alcohol to minors. Second, it may provide an opportunity to present alcohol content information and health warnings [25] for non-packaged alcohol. Tableside ordering technologies could present this information next to the drink item in app [26]. Alcohol labelling has not been particularly effective at moderating drinking behaviours [27], however, providing the information allows consumers to make informed choices and may lead to gradual changes over time [28]. Third, it may decrease the ordering of rounds, by encouraging individualised consumption instead [29]. Drinking in rounds is considered a risky drinking practice, as it prolongs the duration of the drinking session and sets a (fast) rate of consumption in said drinking session [30]. Tableside ordering could potentially encourage each patron to order individually, especially if the menus remove multiple-serve sizes such as jugs or bottles. Finally, individuals could set an upper limit on the number of drinks they can order for their own consumption. Pre-commitment systems, reliant on nudge theory [31] and technological capabilities [32], have been trialled for behaviours such as gambling [33]

and saving commitments [34], although there is limited evidence of their effectiveness [32, 33].

These opportunities may be marred by technological adaptations to local drinking culture norms, such as group tables [35], setting up multiple accounts or other evasive tactics, and the potential for increased surveillance [36]. Previous research on the alcohol industry's interest in automated advertising [2] and social media's continued data mining for the purposes of advertising [37], suggest that social media companies may be tracking patron's tableside ordering purchases. In theory, a patron's ordering behaviour could create a pernicious feedback cycle in which ordering alcohol triggers their exposure to alcohol-related content on social media, which in turn is associated with increased consumption of alcohol [3].

Tableside ordering technologies also present a research opportunity. The companies administering this technology are collecting a treasure trove of individual drinking session consumption data alongside patrons' demographic data [12–14]. In Australia, alcohol sales data are collected in the Australian Capital Territory, Western Australia, Victoria, Queensland and the Northern Territory [38]. Sales data represents wholesale beer, wine and spirits sales, and are used to measure per capita consumption [38]. Tableside ordering apps on the other hand, are collecting the 'big data' equivalent of consumption from each individual's alcohol purchases per drinking session. While regulation is needed to ensure that patrons' data is safeguarded from automated encouragement of excessive consumption, it could also ensure access for public health researchers to de-identified consumption data. If public health researchers were to access this data, it could be used to better understand drinking patterns and practices in licensed venues, with the potential to promote public health via appropriate interventions.

In summary, the introduction of tableside ordering technologies represents a regulatory challenge, alongside a research opportunity. Tableside ordering technologies as currently implemented in licensed premises may be circumventing policies that ban the service of alcohol to intoxicated people. Close ethnographic research is needed to study how policy and technologies can be adapted to better meet public health goals. In short, tableside ordering technologies pose both new threats and new opportunities to public health interventions. A new program of research, alongside regulatory attention, will be needed to begin to address them.

AUTHOR CONTRIBUTIONS





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CONFLICT OF INTEREST STATEMENT

None to declare.

Michala Kowalski¹ 
 Michael Livingston^{2,3} 
 Claire Wilkinson^{1,3} 
 Alison Ritter¹ 

¹*Drug Policy Modelling Program, Social Policy Research Centre, UNSW Sydney, Sydney, Australia*

²*National Drug Research Institute and enAble Institute, Faculty of Health Sciences, Curtin University, Perth, Australia*

³*Centre for Alcohol Policy Research, La Trobe University, Melbourne, Australia*

Correspondence

Michala Kowalski, Social Policy Research Centre, UNSW Sydney, NSW 2052, Australia.
 Email: m.kowalski@unsw.edu.au

ORCID

Michala Kowalski  <https://orcid.org/0000-0002-3175-808X>

Michael Livingston  <https://orcid.org/0000-0002-8995-9386>

Claire Wilkinson  <https://orcid.org/0000-0002-4815-5840>

Alison Ritter  <https://orcid.org/0000-0001-9540-1920>

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