DIGITAL TICKETING ~ TRANSFORMING THE USER EXPERIENCE

Whitepaper

FINTECH & PAYMENTS

JUNIPER RESEARCH

1.1 Introduction

A digital ticket can be described as a virtual representation of a ticket; encompassing digitisation of rights to claim goods or services that such ticket holds. Therefore, digital ticketing is the means by which such digitalisation takes place, often in the form of mobile tickets purchased online (ie, via online platforms) and associated access control systems in event venues and/or transport stations/platforms to check ticket validity. Digital tickets can also be presented as files for download (ie, a PDF or a file including a scannable QR code or barcode generated through the transaction) and take different forms such as mobile, online, and wearable tickets.

The transition from paper tickets to digital tickets has largely been driven by security concerns; providing transferability of the latter with little to no oversight. Industries with strict regulations, such as travel, had pioneered digital ticketing, and more recently mobile ticketing adoption, with related solutions. As with all digital transitions, enhancing customer experience is also an important consideration, with service providers looking to balance security with convenience. This is especially true for industries where customer experience lies at the centre. With the advent of smartphones, mobile access control technologies utilising NFC (Near-field Communication) and Bluetooth became the two key enablers of mobile ticketing. Coupled with additional functions such as interactive features, journey planning, navigation, order processing, and further marketing offers, digital tickets are no longer mere secure passes.

Security, however, remains the overarching centre of attention and catalyst in digital ticketing. Enhanced features in digital and mobile ticketing provide much improved control over distribution, as well as identification of ticket holders, by allowing oversight of the full chain of custody. Fraudulent ticket sales, which can take the forms of ticket reselling (ie, black market sales either physically outside event venues or online) and issuance of counterfeit tickets by unauthorised sellers (ie, through fake websites and/or social media channels), erode customer trust and have critical financial implications for organisers.

Ticketing fraud can be considered as a type of phishing, whereby fraudsters steal users' money and, in some cases, credit card details. Ticket touting, also referred to as ticket scalping, is the act of reselling tickets at inflated prices and often via improperly regulated or completely unregulated platforms, and is illegal in the UK. This practice can lead to ticket mismatches and denied customer entry. At present, digital/mobile ticketing vendors offer solutions that capture and manage ticket holder information in real-time; leading to prevention of fake tickets and/or ticket touting, better data analytics, and seamless venue access.

On the other hand, digital ticketing's use cases are mostly prevalent in the travel/transport industry. The fastest adopter of mobile ticketing, airlines, led the way for the emergence of solutions in public transport, such as bus and rail ticketing, in an effort to maximise customer outreach and convenience. With minimisation of the friction between customer touchpoints and underlying ticketing infrastructure, the airline industry enjoyed considerable growth in mobile ticketing in recent years, only considerably slowed down throughout the last two, due to the impact of COVID-19. In some other industries, however, digital ticketing thrived amidst the pandemic, owing to the rise in contactless payments and growing third-party integrations. Changes in customer preferences in ticketing pushed transport authorities to rethink their digital transformation strategies.

The pandemic also shifted customer perceptions and increased the demand for contactless ticketing and payments. Driving mobile ticketing adoption in the post-pandemic era will, therefore, be a priority for businesses. As such, market vendors increasingly focus on modernisation of legacy systems, event ticketing deployments, and booking app development to engage with end users. Although it can be argued that digital tickets had been gaining momentum prior to the pandemic, especially with the interconnectivity between different modes of transport/travel and penetration level of smartphones and contactless payments, mobile ticket purchases have increasingly become the norm in the transport industry across developed markets.

1.1.1 Online and Mobile Ticketing Adoption

Online and mobile ticketing adoption is a key consideration driving the growth of the digital ticketing market, and the former has become the primary method in the events industry, but more notably in transport, especially when airline tickets are concerned. As mentioned previously, airlines have driven the adoption of online ticketing, while also assisting the transition from online to mobile, partly owing to the launch of mobile boarding passes along with the increase in smartphone penetration.

Mobile ticketing has become the preferred method of ticketing in numerous industries, such as events and industry segments, including bus, rail, and underground/subway; marked by convenience, speed, and ease of validation. For vendors and providers in the sport and entertainment industries, the integration of mobile ticketing to more sophisticated CRM (Customer Relations Management) programs/software, marketing apps, and in-venue experience offers creates multiple revenue opportunities. Similarly, in transport, mobile ticketing has been poised for growth post-pandemic, as uses of QR codes, NFC, and biometric technology continue to accelerate, and the rise of MaaS (Mobility-as-a-Service) accentuates the role of mobile ticketing as a facilitator of seamless customer journeys.

1.1.2 Account-based Ticketing

ABT (Account-based Ticketing) refers to a smart ticketing system where ticketing information and fare calculation are done and stored to a linked account, rather than on a physical ticket. Ticketing processes, such as fare calculation, are executed in real-time in the cloud and each passenger is assigned a unique identity, which links to the background account. Fares are automatically calculated based on a number of factors, for instance, number of taps, location, and mode of transport, during a given time window, ie, many transport authorities cap fares across modes of travel daily or in between transits for an hour. Charges are usually reflected post-journey and customers no longer need to purchase tickets or check fares. In addition, passengers' right to travel is managed by the back office and the ticket acts a token and identifier of a passenger account. Therefore, nearly any electronically readable mechanism can be used as a form of verification, with the most common forms being payment cards, digital wallets, wearable devices, and biometric devices. ABT, thereby offers a flexible and passenger-convenient solution and becomes a great enabler of contactless and open-loop payments.

ABT is increasingly popular among transport providers and vendors enabling these systems through implementing new or at least, upgraded, hardware and software infrastructure. For instance, in May 2022, the Central Puget Sound Regional Transit Authority, along with six regional transit partners has launched its new account-based electronic fare system from INIT in the metropolitan area of Seattle, Washington. The system utilises INIT's back-office management and processing software, MOBILEvario. Another example is San Diego's MTS (Metropolitan Transit System) in California, US, that rolled out a new account-based contactless ticketing system in August 2021. The new system replaced existing smartcard and was made available on services run by the NCTD (North County Transit District).

Juniper Research's View: ABT will become increasingly disruptive in transport ticketing, thanks to its enabling features which facilitate open-loop solutions, where the same device/token or payment mechanism can be used for multiple ticketing systems. Thereby, it will allow for interoperability of major transport verticals, such as rail, metro, and bus, and become a crucial enabler of MaaS solutions; permitting the use of a single account for payment of multimodal transit. ABT also provides many more benefits for customer journeys, including seamless transfers, and payment and concession flexibility.

1.1.3 Contactless Ticketing

Contactless payments in travel ticketing are more popular than ever, largely assisted by the uptake of contactless cards during the pandemic and the applications of transit providers, mostly in developed markets, supporting use cases in its immediate aftermath. The adoption of contactless technology on a large scale in some markets has been held back, in part by required changes to the payment infrastructure and a lack of standardisation regarding guidelines and criteria within the transit sector. Some implementations were also postponed due to the pandemic and the subsequent decline in ridership numbers.

There is, however, considerable progress in terms of vendor and transit authority collaborations to implement contactless ticketing. INIT collaborated with the

Nottingham contactless multi-operator Tap&Go in April 2022 to launch contactless payments across Nottingham City Transport buses, Nottingham Express Transit trams and Linkbus operated by CT4N. Similarly, passengers in Chicago and the surrounding metropolitan area have contactless payment options when using CTA (Chicago Transit Authority) trains and buses and Pace buses, thanks to a collaboration between Cubic Transportation Systems and CTA.

Another point for consideration for contactless ticketing is the markets that QR code payments have been dominant in. For instance, in China, QR code payments are supported by the two most popular apps, Alipay and WeChat Pay. Similarly, in India, QR codes are commonplace, thanks to the proliferation of mobile wallets (ie, Paytm) and lower barriers for market entry for ecosystem actors. In such markets, NFC ticketing has very little to contribute to the ticketing practices, as the investment costs in system upgrades will be higher as opposed to QR code payments.

Juniper Research's View: Juniper Research anticipates seeing more contactless ticketing use cases and deployments in the transit space, as already proven by the rise in the number of transport authorities around the world looking to roll out contactless payments across their networks. The role that vendors play in such deployments is crucial, especially in providing the quickest and most efficient solutions minimising service disruptions. However, NFC ticketing adoption may be much slower in markets in which QR codes and QR code payments are already well established.

1.1.4 Combining Loyalty with Ticketing Using Apps

Combining loyalty with ticketing by using apps is not a novel phenomenon for the events/entertainment space, but the opposite can be stated for the transport market. As with any digital system, and for transport, loyalty is a concept that is integrated into a wider ecosystem of information gathering from interaction touchpoints, as well as tailoring offerings according to customer preferences and choices. For public transport operators, there are several stages to grow loyalty through interactions on the customer journey and these are pre-booking, booking, pre-travel, travel, and post-travel. Capturing customer data through a mobile app allows operators to not only to build customer profiles by collecting transactional or location data, but also incentivise, for instance, the use of transport schemes. As such, the concept of loyalty in transit is also intrinsically linked to MaaS and multi-modal travel, in the sense that these apps can provide information that enriches customer journeys (ie, by providing travel updates or offering in-journey discounts on selected operators, etc).

Loyalty and rewards schemes are often deployed at the roll-outs of fare collection and/or ticketing system upgrades (ie, switching to contactless or open-loop payments) by transport authorities to increase customer uptake. However, we now see movement towards loyalty and reward schemes being used as part of the mobile ticketing apps deployed with ticketing vendors. For instance, Cubic Transportation Systems' new mobility platform launched in 2021, Umo Mobility Platform, offers passengers loyalty rewards; enabling transport providers to launch schemes quickly. Similarly, in July 2020, Vix partnered with Valley Metro and Unwire to implement a new AFC system for its public transit, as well as developing a complementing mobile app to enable passengers to pay fares, check balances, and top-up account values from their smartphones and plan their trips and save their favourite stops.

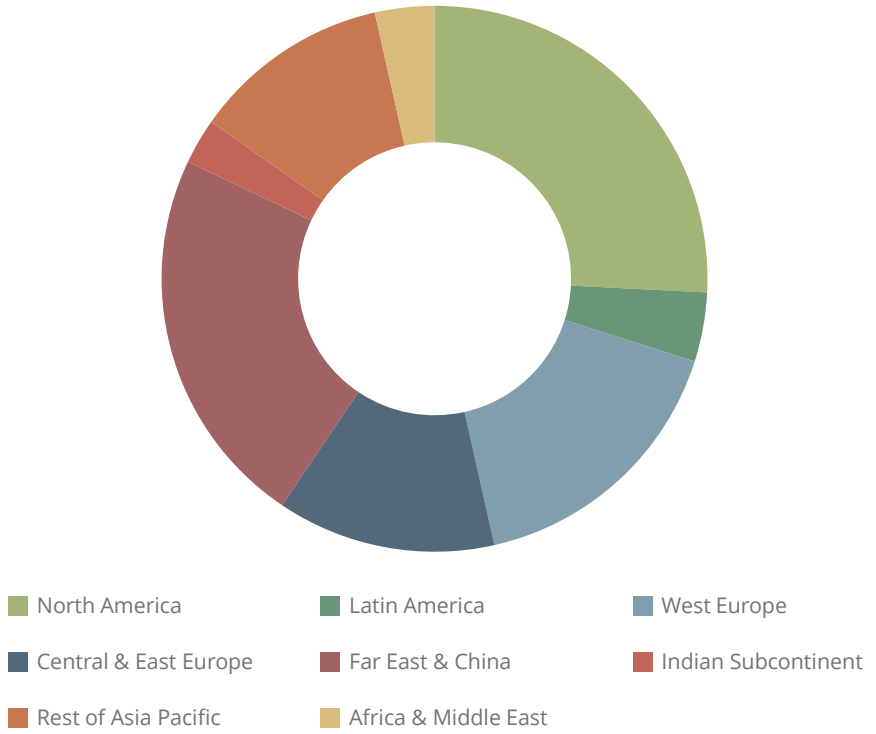
Juniper Research's View: The relatively new introduction of loyalty and rewards in transit ticketing through transit/transport authority-owned apps is a crucial tool in creating customer familiarity. Juniper Research believes that loyalty schemes will proliferate in line with both the increase in the number of mobile apps deployed by transport authorities and MaaS implementations.

1.2 Forecast Summary

The global digital ticketing transaction value will reach $1.4 trillion in 2027, up from $768 billion in 2022. This growth of 78% over the next five years represents a strong recovery from the heavy impact of the COVID-19 pandemic, driven by the ongoing success of contactless payments. However, current market fragmentation, where users cannot use the same payment method across different transit and events areas, as a factor limiting growth and user experience quality.

- Metro and bus ticketing is the fastest-growing digital ticketing segment, with transaction value in this segment set to rise by over 200% over the next five years. Vendors must focus on developing integrated contactless systems for different transit scenarios, such as bus, train and micromobility, in order to break down the fragmentation inherent to the current market.
- Ticketing vendors must pursue strategies, such as account-based ticketing, where any payment type can be linked to a back-office account. By removing barriers, vendors will accelerate the digital transition in ticketing and hasten the onset of Mobility-as-a-Service.
- Additionally, the value of digital events ticketing will exceed $230 billion in 2027, from just under $100 billion in 2022; representing rapid growth of 137%, as events move to contactless entry to improve the on-the-day experience and reduce costs. Vendors must offer added incentives, such as collectable digital ticket stubs minted as NFTs, to enhance the fan experience.

Figure 1: Total Digital (Mobile, Online, Wearable) Ticketing Transaction Value ($m) in 2027: $1.4 Trillion



Source: Juniper Research

Order the Full Research

Juniper Research's comprehensive Digital Ticketing report delivers an independent analysis of the future evolution of the digital ticketing market across transport and events ticketing. Discover the ongoing impact of the COVID-19 pandemic, as well as new developments and key trends. Featuring our new Competitor Leaderboard, the report positions 15 digital ticketing vendors; providing an invaluable resource for stakeholders seeking to understand the competitive landscape in the market.

Key Features

- **Market Dynamics:** A detailed assessment of the impact of the ongoing COVID-19 pandemic on the ticketing ecosystem and how it will recover, as well as an in-depth evaluation of the digital ticketing landscape; analysing the development and readiness for further disruption across key global regions and covering the following segments:
    - Air Ticketing
    - Entertainment Events Ticketing
    - Metro & Bus Ticketing
    - Rail Ticketing
    - Sports Ticketing
- **Future Outlook Analysis:** Future outlook and comprehensive analysis of the key trends and market disruptions including:
    - Contactless Ticketing
    - IoT and Ticketing
    - Mobile Ticketing
    - Voice Assistant Ticketing
    - Wearables Ticketing
- **Juniper Research Competitor Leaderboard:** Key player capability and capacity assessment for 15 digital ticketing technology vendors including:
    - Ridango
    - Thales
    - Visa (Rambus)
    - Vix Technology
    - Wizway Solutions

What's in this Research?

1. **Benchmark Industry Forecasts:** Forecasts for digital ticketing users, volume and value across airline, rail, metro/bus, sports and entertainment, split by mobile, online, as well as splits by our 8 key regions and 25 countries.

2. **Market Trends & Opportunities:** Detailed analysis and strategic recommendations for the expansion of digital ticketing schemes, including evaluation of elements, such as the role of NFC in ticketing and the impact of COVID-19. This also includes analysis of the potential of 8 major instant payments vendors.

3. **Strategic Analysis:** Examines the future outlook for digital ticketing and provides comprehensive analysis of the key trends and market disruptions. The report also provides an assessment of 15 major players within the digital ticketing market and their positioning on our Competitor Leaderboard.

4. **Interactive Forecast Excel:** Highly granular dataset comprising of over 42,800 datapoints; allied to regional and sector analysis tools. Includes regional and country-level analysis, together with five-year forecasts for the digital ticketing market, including users, transaction volume and value.

5. **harvest Digital Markets Intelligence Centre:** Visualises all the data in easy to use and exportable graphs, tables and charts, and features continuous data updates for 12 months.

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