

A nighttime photograph of a city street featuring a public transportation system. In the foreground, a green and white bus is stopped at a station. A blurred light trail from a car is visible on the road to the left. In the background, a multi-level transit structure with stairs and walkways is illuminated, set against a backdrop of tall, lit-up buildings.

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Mobile Ticketing for Public Transportation: Convenience, Efficiency, and Revenue

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Introduction

Today's consumers perform a wide array of transactions and tasks using their Web-enabled mobile phones, from checking email and downloading videos, to obtaining GPS-powered driving directions and monitoring the performance of their investment portfolios.

In fact, because the adoption of mobile phones (especially smartphones) has become so widespread and mobile Internet access affordable to the masses, today's public transportation providers have an opportunity to help enable citizens to purchase and carry electronic tickets for public transportation using their mobile phones, at the exact place and time at which transportation is needed. Beyond potentially improving the ease with which these citizens can access public transportation, these new mobile ticketing systems are also designed to simplify and add efficiency to providers' operations.

With customers helping themselves to a greater extent and eliminating the need for paper tickets to be printed and distributed, the potential for cost savings for transportation agencies is obvious. However, such mobile ticketing systems are not yet in widespread use among public transportation providers because of three major concerns: (1) providing a satisfactory return on taxpayers' investments in such systems, (2) avoiding investing funds in technology that will be outdated in a short period of time, and (3) preventing customers from finding ways to avoid paying for their tickets.

In this paper, we explore why now is, in fact, the right time for transportation agencies to consider implementing mobile ticketing systems. We also discuss the key capabilities required to implement mobile ticketing and how several transportation agencies have collaborated with Accenture to put these and related foundational capabilities in place.

As of the end of 2010, there were 5 billion mobile subscriptions in a world containing 7 billion people.¹ This means more people will have mobile phones than running water, and within three years more people will have mobile phones than electricity.² By the end of 2011, more smartphones will be sold each year than laptops.³ And two years later, according to Gartner, the installed base of Web-ready mobile phones will reach 1.8 billion units, permanently surpassing the installed base of PCs.⁴

The Business Case for Mobile Ticketing

As consumers channel an increasing portion of their lives and spending through their mobile phones, global companies are scrambling to keep pace, offering a host of innovative applications and mobile-ready content.

Likewise, a growing number of public transportation providers are identifying the enormous potential to improve the customer experience—and to boost revenue and profit—that mobile capabilities represent. From a customer perspective, mobile ticketing is designed to enable a vastly more convenient public transportation experience. In cities where mobile ticketing is in place, citizens can avoid long lines for ticket booths and kiosks, as well as the hassle of holding on to a token or paper ticket as they navigate streets and stations. Instead, these passengers can purchase tickets via their mobile phones and use barcodes or text messages to gain access to trains, buses, ferries, and other modes of transportation, as well as easily switch among these modes. In addition to being one fewer item to carry, mobile tickets residing on cell phones are much less likely than paper tickets to be dropped or stolen. Mobile ticketing systems also can be used to broadcast delays or disruptions to mobile devices, and facilitate the planning of alternate arrangements.

In addition to these benefits for customers, public transportation providers could benefit from mobile ticketing in terms of greater operational speed and efficiency. Mobile ticketing is designed to allow public transportation providers to avoid the costs of ticket printing and distribution, whether that distribution occurs via mail, customer service agents, or kiosks. As such, mobile ticketing can reduce a public transportation provider's infrastructure costs and the cost of sales by eliminating commissions paid to distributors. It also stands to reason

that mobile ticketing can improve a public transportation provider's environmental footprint by reducing the amount of material and energy required to do business. And for the most innovative transportation providers, mobile ticketing systems can allow the sale of seating upgrades and other high-profit ancillary services.

In short, mobile ticketing is designed to give innovative public transportation providers an unprecedented opportunity to provide the mobile-enabled services that customers value while improving their bottom lines.

Getting Started with Mobile Ticketing

However, launching a mobile ticketing capability can be a complex undertaking. It requires transportation providers to build new systems and infrastructure, train staff and, of course, use public funds as sparingly as possible and provide satisfactory returns on investment—all while keeping customers happy.

Where should transportation providers begin? An important step is identifying which features and functionalities should be emphasized. In Accenture's experience, a mobile ticketing platform that will add value for several years, and thus justify its initial investment, typically has several key attributes.

First, it must allow passengers to book travel through their choice of electronic channels. These channels include short message service (SMS)—which allows passengers to book travel on the go without having to pre-register or download a mobile application—as well as mobile-ready branded websites, and traditional PC-accessed sites.

Once the passenger has requested tickets, these channels must coordinate with the provider's existing ticketing system to confirm availability and pricing. The system should be able to manage a wide range of ticket

types, zones, and rates, including single-ride and multi-ride tickets with either immediate or triggered validity, as well as period passes (weekly, monthly, weekend, tourist, etc.) and multi-operator transit. Regardless of the complexity or simplicity of the passenger's request, the mobile ticketing system must quickly and accurately calculate a price that is aligned with the transportation provider's itinerary zone and price table system.

The system also must allow passengers to pay for their tickets in the most convenient way possible, including via premium SMS, pre-paid wallet, direct debit, personal or employee invoices, or credit/debit cards. Once the mobile ticketing system secures payment, it should be able to deliver the mobile ticket in a wide variety of ways, including alphanumeric codes that are visually inspected, conventional or two-dimensional barcodes read by scanners, and near-field communication (NFC). As with any system that will be used by large volumes of people on a daily basis, fraud and theft must be addressed. Both alphanumeric codes and barcodes must be designed to thwart abuse, and should be encrypted with data that confirms the passenger's identity and the fact that they have paid for their ticket.

Of course, these features require a robust yet flexible technology platform. Such a platform should enable the development of new mobile applications and services using a common set of interfaces which, in turn, allows new functionalities to be developed rapidly and cost-effectively. It also should feature built-in business and technical administration systems to monitor and manage capacity and performance continually, and connect with in-house business support systems such as billing, CRM, ERP, and travel planning systems. Such connectivity enables

public transportation companies to provide fast and seamless customer service, attain a holistic view of customers' purchase behaviors and service usage, use that information to improve billing and customer relationship management processes, and make better decisions regarding routes, schedules, fleets and fares.

Finally, as with any new technology or practice, mobile ticketing requires new processes and extensive training of the people involved in managing it to help build the skills necessary for effective operations.

One way transportation providers can minimize the costs of such a system is by taking advantage of the managed services model, in which a third party provides all the capabilities necessary to operate mobile ticketing effectively—including the technology platform, business processes and people. In addition to eliminating the need to invest in in-house infrastructure and capabilities, this model gives transportation providers the opportunity to link the amount that they spend to use a mobile ticketing platform to the number of tickets they issue and the volume of subscribers they support, thus eliminating the risk of paying for unneeded infrastructure and overhead. A managed services arrangement also provides flexibility, enabling a transportation provider to cost-effectively scale its mobile ticketing operations as demand grows.

With these capabilities in place, transportation providers could be on their way to providing a mobile ticketing service that coordinates and connects passengers, payment issuers, mobile network operators and public transportation providers across a multi-step process—all within seconds on the passenger's mobile phone.

Mobile Ticketing in the Real World

For leading transportation providers around the world, capabilities such as these are becoming increasingly central to business strategy and operations. One such provider is Finnish Rail. As Finland's primary passenger rail company, Finnish Rail is always in the public eye and constantly challenged to develop ways to provide the best services possible. As such, the railway set out to explore new ways of issuing tickets—including via the mobile channel—and has taken the first step toward that end by implementing online ticketing capabilities.

This goal required a new system that could accommodate the speed, power and flexibility necessary to handle multiple distribution channels for ticket sales. Additionally, the work needed to be completed within an aggressive six-month timeframe to meet promises made to the public.

Finnish Rail considered various solutions to make its online ticket store a reality, and ultimately chose to work with Accenture. The key reason: Accenture's solution would meet the railway's objectives of closely connecting all entities related to the process of buying tickets, such as Finnish Rail ticket offices, vending machines, banks and the Finnish Post.

To create its new online ticket sales system, Finnish Rail worked with Accenture to create a modular and flexible Java-based application that was aligned with the railway's electronic architectures and standards, and that would run on a Web-based infrastructure. Because Finnish Rail highly valued connections between members of the ticketing value chain, it dedicated significant attention to integrating its online ticketing capability with various internal

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Finnish Rail systems, as well as with external systems belonging to banks, credit card companies and the Finnish Post.

The new system ultimately was implemented on time, and it is now among the industry's most advanced, spanning the entire country and all distribution channels. The solution supports the entire customer service process, from ticket ordering through sales service to customer billing and accounting. "Customers have responded favorably," noted Antti Jaatinen, Finnish Rail marketing manager. "They now have an easy way to buy tickets." Indeed, with online access Finnish Rail customers now can compare various alternatives at their leisure, and make a purchase easily.

With this cutting-edge platform in place, Finnish Rail has experienced greater profitability, improved customer service, lower training costs and a 50 percent reduction in sales processing time. Even more importantly, by working with Accenture to successfully build online ticketing capabilities, Finnish Rail is better positioned to adopt mobile ticketing as consumer demand for it grows.

Finnish Rail is not the only transportation provider that has recognized the value of mobile ticketing. Accenture's view of the marketplace also reveals that Lignes D'Azur is capitalizing on the capabilities enabled by a consortium of banks, handset manufacturers and mobile telephony service providers to facilitate travel on the public transportation system it operates in Nice, France. Using a special application, passengers can load credits onto their mobile phones for travel on Lignes D'Azur buses and trams. Credits are charged directly to the passenger's mobile phone bills (Lignes D'Azur and the mobile operators share the revenue) and are redeemed by passengers at the point of boarding simply by their passing the mobile

phone across a contactless reader.

Also available at Lignes D'Azur boarding stations are electronic "tags," linked to mobile phone browsers, which direct passengers' phones to a Web page that provides tram and bus schedules.

Conclusion

As today's public transportation providers assess the wireless ticketing technologies available to them, they must proceed with caution. It is far too easy to invest substantial amounts of time, effort, and money in trendy new technologies that fail to improve the customer experience or deliver a satisfactory return on investment. In addition, public transportation providers must ensure that the mobile ticketing systems they implement are adaptable, reliable and scalable, and can be adjusted over time to meet continually shifting demands.

Yet the opportunities inherent in mobile ticketing are very real. Implemented correctly, such systems can revolutionize the ways in which customers use public transportation, adding significant amounts of convenience, efficiency and flexibility. These same technologies also have the potential to cut providers' costs, grow their revenue, and boost their margins.

The key to success is integration: mobile ticketing systems must integrate their customers' preferred communication channels into a cohesive customer experience, and further integrate those channels with the existing systems and processes that support the ticketing process. And while such systems often require new technology, there is value to be found in taking advantage of the expertise and infrastructure resident in the managed services model. In sum, by cost-effectively keeping pace with rapid advances in mobile technology, today's public transportation providers can meet customers' need for greater convenience while accelerating their pursuit of high performance.



About Accenture

Accenture is a global management consulting, technology services and outsourcing company, with approximately 211,000 people serving clients in more than 120 countries. Combining unparalleled experience, comprehensive capabilities across all industries and business functions, and extensive research on the world's most successful companies, Accenture collaborates with clients to help them become high-performance businesses and governments. The company generated net revenues of US\$21.6 billion for the fiscal year ended Aug. 31, 2010. Its home page is www.accenture.com.

¹ http://reviews.cnet.com/8301-13970_7-10454065-78.html

² http://www.childinfo.org/water_status_trends.html

³ <http://www.businessinsider.com/chart-of-the-day-smartphone-sales-to-beat-pc-sales-by-2011-2009-8>

⁴ http://www.gartner.com/it/content/1260200/1260215/january_14_top_predictions_2010dplummer.pdf

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