



# METRO DE MADRID

## METROPOLITAN METRO



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*The Madrid underground is the fastest and most efficient and affordable way of moving around Madrid. The city boasts one of the largest networks in Europe, serving most of the capital city and a good part of the suburbs*

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Part of Metro de Madrid's investment strategy is aimed at improving its current services

The first line on Madrid's underground railway network, the Metro de Madrid, was inaugurated on the 17th October 1919 by King Alfonso XIII. It had eight stations along 3.3 kilometres of track. Ever since that date the Metro has experienced progressive growth, which has made access possible to the majority of the capital's districts and to some of the most important municipalities in the metropolitan area. Today it is the sixth longest metro system in the world, with 300 stations and 292 kilometres of track, 90 percent of it underground. In 2011 Metro de Madrid carried 635 million passengers at an average speed of nearly 31 kilometres per hour, with a high degree of automation and with state of the art rail signalling, safety and access systems.

Their security is very important to Madrid's travelling public. "In a survey of the expectations of our customers, safety was the second most important factor, only surpassed by speed," says CEO Ignacio González Velayos. The safety systems installed throughout Metro de Madrid are all best of breed and are monitored permanently from the Command Post, the nerve centre of the system. Safety is inseparable from environmental performance, he believes. "Society is not content merely with meeting the need for mobility, but it demands that this should be achieved in a way that is sustainable in economic, social and environmental terms."

One of the largest engineering projects was completed a decade ago in 2003 when the Metro expanded its network into the satellite towns of Móstoles, Fuenlabrada, Alcorcón, Leganés and Getafe, bringing the service to a



# Ticketless technology can drive public transport uptake, survey reveals

Public transport providers know they need to attract and retain riders to help offset operating costs, increase revenue and grow profitability. But what will get drivers out of their cars and onto public transport?

Respondents to a global Accenture survey on public transport indicate that ticketless journeys, aided by new technology, could be a key motivator. What's more, the majority said they are willing to pay for the convenience.

Survey respondents globally (76 percent average) believe a ticketless system—using contactless payments or proof of purchase on mobile devices—would encourage some drivers to start using public transport. The majority of respondents (69 percent) also believe that having a one-ticket-for-all system would help increase riders. The figures were even higher in Europe, with passengers in London (70 percent), Paris (78 percent) and Barcelona (78 percent) emphasizing the importance of a single ticket for multiple modes of transport. Of the other cities around the world, only New York ranked above average.

This is hardly surprising. Consumers, aided by mobile technology, expect easy, efficient customer transactions in all spheres of their lives. They want their door-to-door public transport journey to run as smoothly as if they had driven there themselves—and expect technology to pave the way.

Transport agencies ignore these trends at their peril. Although it may be difficult to integrate new technology into existing operations, customers expect it. And they want it fast: 77 percent of global respondents expect to purchase tickets on their mobiles/smartphones in the next two years, particularly those in Los Angeles, New York, Sao Paulo and London.

Survey respondents clearly see a cost-benefit trade-off for ticketless travel. Only 10 percent (on average) of respondents said they would be unwilling to countenance any price increase to pay for new technology. Travelers' willingness to pay for the technology can help defray implementation costs—plus generate

revenue by attracting and retaining riders over the long term.

These are just a few of the survey findings suggesting that consumers expect transport agencies to employ technology to deliver a more convenient travel experience. Through technology, public transport providers have an opportunity to address ridership and revenue challenges that continue to impact performance. But doing so means developing technology-driven strategies that offer consumers the kind of superior travel experience they will increasingly come to expect.

For more information on this research please visit [www.accenture.com/publictransportation](http://www.accenture.com/publictransportation)

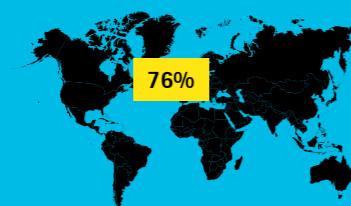
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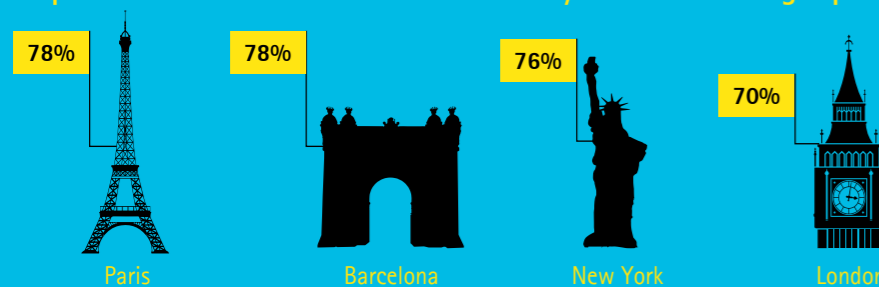
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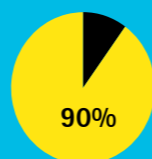
Globally, respondents believe a ticketless system will encourage uptake



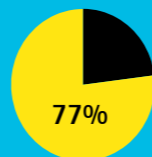
Respondents also believe a one-ticket-for-all system will encourage uptake



90% willing to pay to introduce new technology for ticketless travel



77% will purchase tickets via mobile devices in the next two years



The consumer survey was conducted by Coleman Parkes Research on behalf of Accenture. It was carried out online in September 2012 in multiple languages in Korea, Brazil, the United States, Germany, Spain and the United Kingdom. All 4,500 respondents were 18 years or older. Modes of transport surveyed include subways, taxis, boats, cars, trains, trams and buses.

To learn more, visit: [www.accenture.com/publictransportation](http://www.accenture.com/publictransportation)

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Improving innovation, efficiency and customer service are the main challenges companies now face in many industrial sectors.

Metro de Madrid is meeting these challenges through the ambitious expansion of its rail infrastructure and technology, which will boost its rail network size by 61 percent and the number of installations by 38 percent. To help achieve its expansion goals, Metro de Madrid asked Accenture to transform its infrastructure maintenance operations.

The Center of Operations for Maintenance and Monitoring of Installations and Telecommunications (COMMIT) formed the basis of a new infrastructure maintenance operating model, revamping Metro de Madrid's technologies, processes and organizational structure.

COMMIT, with its advanced management processes, remote monitoring and telemaintenance capabilities, is able to efficiently manage more than 200,000 installation incidents per year.

Thanks to this pioneering model, Metro de Madrid has saved €7 million a year in maintenance costs and improved the service quality for its clients.

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- Metro de Madrid: Telecom, IT & Security: Line 2, Line 4, Line 7, Line 9; Line 10; Metrosur; 30 % of the total fiber optics network; RFID access control on stations

- and trains; IP Intercom in Metrosur, Radiant network for CBTC (Line 1, Line 6, Metronorte, Metroeste, Line 11), Main Control Center Alto Arenal and Redundant at P. Sur
- Metros: IT, Telecom & Security: Metro Bilbao, Metro Barcelona, Metro Valencia, SFM, FGC, ETS, FEVE
- Tramways: IT, Telecom & Security Barcelona Tramway, Tranvía Parla (Madrid), Tranvía Vélez-Málaga; Antalya Tramway (Turkey); Tranvía Alicante; Tranvía Vitoria, Tranvía Bilbao, TROLE (Ecuador), Metro Ligero de Madrid
- High Speed and Railways: Telecom, GSM-R, IT: High Speed Zaragoza-Huesca, IT & Telephony: Qalib-Shabin ENR (Egypt), 1.450 Km f.o. network ADIF; Safety: Point Heaters High Speed Ankara-Istanbul, Railway inspection systems and Point Heaters Ankara-Konya; Point Heaters and Railway inspection systems Marmaray (undergoing); Level Crossings ADIF; Point Heaters and Hot Box ADIF.

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million additional people and providing a direct connection to Madrid Airport. In all this added 50 kilometres of tunnel to the system. Nevertheless the company has continued to invest, spending €40 million in 2012 and budgeting the same amount for 2013.

This money is not being used for further extension of the network at present according to Velayos: “We are not immune from the austerity that the Community of Madrid has to exercise in its budget. But let’s not forget that thanks to the very important efforts by our authorities over the last decade we have been able to almost double our network and give the people of Madrid access to a suburban train network, known throughout the world. At the moment our investment strategy is not aimed at further expansion of the network but at the services and features requested by our customers. Today’s travellers are not content to simply go from one point to another: they want to do it quickly, safely, and with access to high quality complementary services.”

**GRUPO REVENGA**

Grupo Revenga -GR Technologies-, provides end-to-end solutions to Metro de Madrid since it was created in 1972. The company has participated in all of the expansion plans deployed by Metro de Madrid and the Government of Madrid, having equipped with a wide range of solutions its 293 Km, 276 stations and 2 control centers.

The strength of the capabilities and the success of the technologies of this R&D focused company are apparent in view of the number of its solutions currently deployed in cutting-edge telecom, IT and security projects in Metro de Madrid.

In the own words of Grupo Revenga, “Metro de Madrid is a key customer with whom we are proud to partner with in the deployment of one of the most important metro networks in the world, with one of the best quality/cost ratios”.

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**€40 MILLION**

Investment in 2013



Ignacio González Velayos, CEO



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**INECO**  
Ineco, company leader in transport engineering and consultancy, has maintained a close relationship for years with Metro de Madrid, to whom it has provided its services in several occasions. Both companies collaborate in the development of international projects aiming at reinforcing its leadership abroad. Its experience in the application of new technologies and management practices for the construction and the commissioning of new railway lines in several countries demonstrate its capacity to face challenges and to develop international land transport projects.  
[www.ineco.com](http://www.ineco.com)

Minds are being concentrated in the municipality by the Madrid 2020 project, Spain's bid for the next but one Olympic Games. We won't know till September 2013 whether that will come off but meanwhile Metro de Madrid continues its programme aimed at adapting its infrastructure to meet the needs of its customers. In recent

years this has seen a programme to improve travel times and the introduction of a new technological platform to support contactless card payment and extend that system to the entire network.

Metro de Madrid's recently established Interactive Customer Support Centre (CIAC or Centro Interactivo de Atención al Cliente) has already dealt with 1,755,000 enquiries. "The centre," says Velayos, "deals directly and personally, all year round between the hours of 8am and 10:00pm, with all information requests received, not only in relation to the service provided by the company but also to any other information about events and socio-cultural activities in Greater Madrid, as well as lost property. There are also face to



Metro de Madrid continues to streamline its infrastructure

**635 MILLION**

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**Journeys on Madrid Metro in 2011**

face Customer Service Centres at the airport and major stations, which deal with enquiries in a more personal manner.”

Metro de Madrid is a major job creator, at a time when Spain needs all the jobs it can get. Apart from the 7,500 people on its direct payroll, Ignacio González Velayos points out, Metro de Madrid has agreements and contracts with other companies, public and private, which in turn have their own employees, which multiplies the creation of job roles. “Our public sector contracting law obliges us to put out our projects for tender, and many of these tenders are won by local companies.”

Each year Metro de Madrid rolls out its programme of continuous improvement in technology, innovation and research. “We are always looking for ways to improve our business model as a public service transport provider. Metro de Madrid wants nothing less than to be looked to as a global benchmark in every aspect of urban passenger rail.” Its commitment to quality, he adds, is demonstrated by the certificates received by Metro de Madrid over the last year for, among others, the Management of Quality Service within Public Transport, Environmental Management, and Health and Safety Management.

The company holds an ISO-14001 certificate in Environmental Management



A metro train passes through a station

and invests in renewable energy sources. In 2009 it commissioned its first geothermal air conditioning system at Pacifico station. This system offers many advantages compared to traditional systems, such as energy savings and greater independence from the electrical supply. Geothermal energy savings reduce CO2 emissions by 50 percent while also reducing noise pollution, since the heat pumps operate quietly. Other advantages of

this system include low maintenance costs and increased useful life of equipment and installation. “Rail in general, and in particular the Metro, is one of the most efficient and sustainable modes of transport,” says Velayos. “Metro de Madrid has always supported all aspects of sustainability, including those concerning the environment.”

Two years ago the company decided to launch itself across the social networks as an alternative way to interact with its customers – today it has more than 35,000 followers. And the company makes great efforts to engage with the social programmes that matter to its customers. It helped publicise Twelve paths for living after cancer, a campaign organized by the Madrid Institute of Oncology, through a photographic exhibition spread over twelve

stations, in which twelve people who have survived cancer delivered messages of hope. More than 3,000 people took part in You’re just a metro away from saving many lives a campaign organized by the Spanish Red Cross, Coca Cola and Metro de Madrid, which turned four stations into blood donation centres run by the Red Cross. And Metro de Madrid supports overseas projects too: every year it runs a Cinema in Concert initiative, for Fundación Padre Arrupe’s grant fund, which covers the cost of schooling of the children at Colegio Español Padre Arrupe in El Salvador. **BE**

“THERE ARE FACE TO FACE CUSTOMER SERVICE CENTRES AT THE AIRPORT AND MAJOR STATIONS, WHICH DEAL WITH ENQUIRIES IN A MORE PERSONAL MANNER”

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