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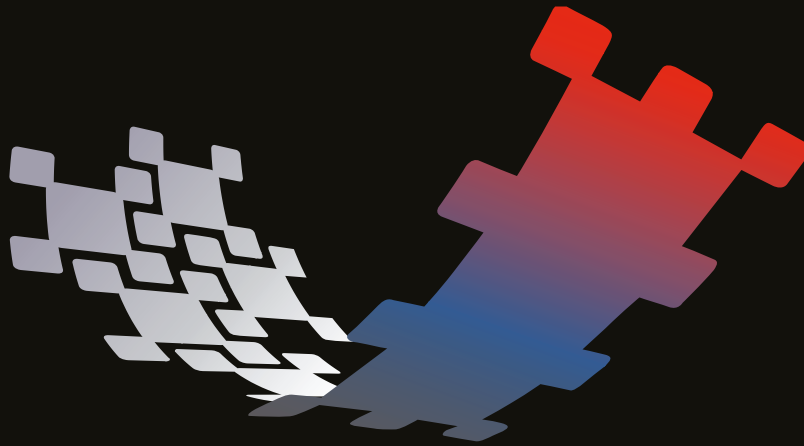
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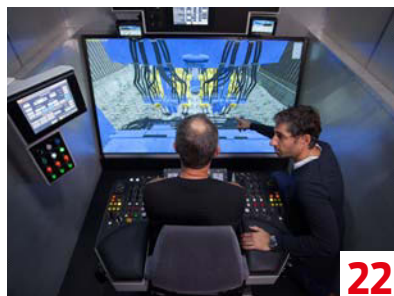
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PO Box 803
1233 Janesville Ave
Fort Atkinson, WI 53538
920-563-6388 800-547-7377

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Publisher Emily Guill
(847) 454-2730
emily.guill@MassTransitmag.com

EDITORIAL
Executive Editor Mischa Wanek-Libman
(224)-324-8532
mwaneke@masstransitmag.com

Assistant Editor Maile Rudebusch
(800) 547-7377 Ext. 1626
maile.bucher@MassTransitmag.com

SALES
Multimedia Account Manager Barb Szatko
(800) 547-7377 Ext. 1344
bszatko@MassTransitmag.com

Sales Representative Ben Preuss
(800) 547-7377 Ext. 1627
ben.preuss@MassTransitmag.com

List Rentals Elizabeth Jackson
(847) 492-1350 Ext. 18
ejackson@meritdirect.com

PRODUCTION
Production Manager Barb Evenson
Art Director Erin Brown
Audience Development Manager Debbie Dumke

ENDEAVOR BUSINESS MEDIA, LLC

CEO Chris Ferrell
CRO Scott Bieda
COO Patrick Rains
CTO Eric Kammerzelt
Controller Angela Mitchell
Director of Finance Jessica Klug
VP, Group Publisher Larry Greenberger
VP, Production Operations Curt Pordes
General Counsel Tracy Kane

SUBSCRIPTION CUSTOMER SERVICE

877-382-9187; 847-559-7598
Circ.masstransit@omeda.com
PO Box 3257 • Northbrook IL 60065-3257

ARTICLE REPRINTS

Brett Pettilo, Wright's Media 877-652-5295, ext. 118
bpettilo@wrightsmedia.com



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ONLINE EXCLUSIVES

Digital Twins - the secret to safe training?

► Digital twins go beyond mere simulations by providing up-to-date, real-world scenarios.

➔ MassTransitmag.com/13000009

Q'Straint and Sun Metro empower mobility passengers to secure themselves

► Mobility passengers liken the new securement system as jumping from the Flintstones to the Jetsons.

➔ MassTransitmag.com/21044366

Metra Board greenlights new GPS tracking and passenger information system contract

► The new system will improve train tracking and allow the railroad to provide timely and accurate information to its passengers.

➔ MassTransitmag.com/21036752

NYC looks to improve bus service by reducing illegal bus lane parking

► Seven NYPD tow truck teams will tow vehicles that block dedicated bus lanes in all five boroughs.

➔ MassTransitmag.com/21044670

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Transit's role as a community service

Many transit agencies go above and beyond to serve their communities during the shutdown, despite facing their own uncertainties.

My hope is that by the time you read this column, the record-making partial government shutdown in the U.S. will be a fading memory. I am writing this with the shutdown approaching the 30-day mark. It's hard to play prognosticator when it seems as if the two sides are stuck in a primitive form of conflict — like a game of chicken.

The shutdown has been an annoyance for most of us, but for those furloughed or working without pay, the shutdown's impact has been very real.

Transit agencies across the U.S. have felt a very real impact, as well. A survey by the American Public Transportation Association (APTA) of its membership found that 36 percent of transit agencies reported a substantial impact from the shutdown. The U.S. Department of Transportation was part of the 25 percent of the federal government that Congress failed to fund prior to Dec. 21, which prompted the partial shutdown. Grants, cooperative agreements and contracts with the Federal Transportation Administration ceased during the shutdown, which also halted reimbursements to transit agencies with existing agreements.

The Washington Metropolitan Area Transit Authority (WMATA) estimated the cost of the shutdown to be an average of \$400,000 per weekday in lost fare and parking revenue. Should the shutdown continue, WMATA said it would consider staff and service reductions, as well as request additional funds from its state partners. Those operational considerations are not limited to WMATA. APTA's survey found agencies reported cutting back service, delaying hiring, transferring capital funds to operations, using reserve funds and other direct impacts.

Even during this time of upheaval, transit agencies have been able to tap into a spirit of altruism.



However, even during this time of upheaval, transit agencies have been able to tap into a spirit of altruism. Many have offered reduced or free fares to federal employees impacted by the shutdown. Agencies in Kansas City, Austin, Texas, Houston, San Antonio, Las Vegas and passenger rail operator Virgin Trains USA all offered free service. The Hillsborough Area Regional Transit Authority (HART) in Tampa, Fla., donated 500 31-day farecards to provide transportation and to support workers of the Transportation Security Administration, Federal Aviation Administration and U.S. Customs and Border Protection at Tampa International Airport.

In a statement HART said, "Giving back for us is about identifying a need in our community and making sure we are there to provide the help needed."

It is heartening that many agencies, facing their own uncertainties during the shutdown, could offer a break to their local federal workers. It also provides the latest example of the positive role transit has within a community.



Mischa Wanek-Libman, Editor

✉ mwanek@masstransitmag.com ☎ 224-324-8532 🔗 [linkedin.com/in/mischawaneklibman](https://www.linkedin.com/in/mischawaneklibman)

Editorial Advisory Board

Andrew Johnson
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The Rapid

Gary Thomas
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METROLINK IS one of four railroads to have fully implemented PTC.

All railroads make PTC statutory deadline

Train commuters across the U.S. can breathe a sigh of relief. All passenger trains are running following a statement by the Federal Railroad Administration (FRA) on Dec. 31 that all railroads required by Congress to implement positive train control (PTC) by the end of 2018 have either done so or submitted documentation to qualify for an alternative schedule, which extends the deadline to Dec. 31, 2020.

FRA says four railroads, including the Port Authority Trans-Hudson (PATH), North County Transit District, Portland & Western Railroad and the Southern California Regional Rail Authority (Metrolink), have self-reported full implementation of an FRA-certified and interoperable PTC system.

FRA says another 33 railroads and three tenant-only commuter railroads have submitted a written notification requesting FRA's review and approval of an alternative schedule.

➔ MassTransitMag.com/21039112

Parker recognized that service drives ridership and he promised a renewed commitment to world-class customer service and expanding MARTA as a catalyst for economic growth, innovative approaches to mobility and community revitalization.

➔ MassTransitMag.com/21041352

One "L" of a save

► A Metropolitan Transportation Authority (MTA) plan to close the L Train Tunnel for a 15-month renewal project has been cancelled following a review by an expert engineering panel. The panel determined a complete closure of the L Train tunnel is unnecessary and that work could be completed on nights and weekends only, with a single tube providing continued service in both directions during work periods. The work to repair and fortify the tunnel is achievable within a 15- to 20-month timeframe.

MTA convened an emergency meeting on Jan. 15 to discuss the alternative schedule for the tunnel work and agreed to take four actions to ensure the project is delivered. MTA Capital Construction, led by MTA Chief Development Officer Janno Lieber, will take responsibility for construction of the project and MTA Managing Director Veronique Hakim will be directly responsible for supervision of the priority project.

➔ MassTransitMag.com/21043295

California plans to have fully electric bus fleets in the next 22 years

► California transit agencies have until 2040 to go all electric with buses following the California Air Resources Board's (CARB) approval of a regulation Dec. 14, which sets a statewide goal for public transit agencies to gradually transition to 100-percent zero-emission bus fleets.

CARB notes that public transit agencies operate about 12,000 buses throughout the state of which 153 are zero-emission. The number of zero-emission buses is expected to increase to 1,000 by 2020 based on the number of buses either on order or planned for purchase.

To successfully transition to an all zero-emission bus fleet by 2040, each transit agency will submit a rollout plan under the regulation demonstrating how it plans to purchase clean buses, build out necessary infrastructure and train the required workforce.

➔ MassTransitMag.com/21037262



Jeffrey Parker, MARTA general manager and CEO, delivering his first State of MARTA address.

MARTA's \$100-billion "moonshot" for transit

► Metropolitan Atlanta Rapid Transit Authority (MARTA) General Manager and CEO Jeffrey Parker delivered his first State of MARTA address at the 6th Annual State of MARTA Breakfast where he reported that the agency is healthy, financially stable and ready for expansion.

Parker then detailed what he called a "moonshot for transit" and urged the crowd to support a \$100-billion, 40-year investment in transit and technology that rivals long-term capital plans in peer cities such as Los Angeles, Seattle and Washington, D.C., but will also ensure metro Atlanta's growth as a world-class region.



THE INAUGURAL ride for TEXRail took place on New Year's Eve.

TEXRail opens for passenger service

►TEXRail, the new 27-mile commuter rail line connecting downtown Fort Worth to Dallas Fort Worth International Airport's Terminal B, entered service Jan. 10, after equipment issues pushed the opening of service back five days.

An inaugural ride was performed New Year's Eve a few days ahead of the scheduled Jan. 5 start of service. However, a signal issue that interrupted train

operations was discovered the afternoon of Jan. 4. Trinity Metro determined the issue was caused by a hardware installation problem by the project's signal contractor. Trinity Metro then set to work testing each piece of hardware to make sure that all components were working properly before the start of passenger service. The agency gained clearance from the Federal Railroad Administration (FRA) on Jan. 7 with service commencing on Jan. 10.

"We believe TEXRail is going to be a game changer for this region," President/CEO Paul Ballard said. "Our new commuter rail line will give travelers the ease and convenience of taking the train to the airport and arriving on time. TEXRail will be a great option for airport workers and other people who work along the route."

Ballard credited the FRA for continuing to work with Trinity Metro during a time when they are short-handed.

➔ MassTransitMag.com/21043293

MORE NEWS AT A GLANCE

► Archer Western Herzog JV has secured a \$783-million design-build contract for Dallas Area Rapid Transit's (DART) Cotton Belt commuter rail line. Jacobs Engineering will be the project's lead designer.

➔ MassTransitMag.com/21037626

► Amtrak and Siemens Mobility have finalized a €744 million (US\$847.86 million) contract for 75 Charger diesel-electric locomotives that will replace and supplement Amtrak's aging national network diesel locomotive fleet used on long-distance and state-supported routes.

➔ MassTransitMag.com/21038351

► EllisDon Infrastructure Transit achieved financial close in mid-December on the C\$239-million (US\$174.47-million) contract to design, build and finance the Regional Express Rail (RER) - Rutherford Station Project.

➔ MassTransitMag.com/21038539

People in the News



Taulby Roach

Bi-State Development

Taulby Roach has been named the president and CEO of Bi-State Development, effective Jan. 1, 2019. Roach has served as the chief financial officer at St. Clair County Transit District for the past 18 months and is a frequent Metro Transit rider, as well as public transit advocate. He has contributed to a wide range of projects over the years including securing transit vehicle purchases and maintenance improvements with Metro Transit and the Illinois Department of Transportation.

➔ MassTransitmag.com/21038344



Robert Baulsir

Trinity Metro

Robert Baulsir will take the helm of Trinity Metro as the agency's president and chief executive officer. Baulsir has more than three decades of transportation experience, including overseeing rail development, construction, rail facilities and bus rapid transit. He has managed transit system procurement, operations and maintenance facilities and safety and security. Baulsir joined Trinity Metro in 2014 as TEXRail project manager and succeeds Paul Ballard.

➔ MassTransitmag.com/21037751



Stephanie Wiggins

MetroLink

Stephanie Wiggins has been named the CEO of MetroLink.

Wiggins comes from the LA Metro where she served as deputy chief executive officer and replaces Art Leahy. Wiggins brings 24 years of transportation management experience and will lead MetroLink's 261 employees as they embark on a \$10 billion plan to improve rail safety and service in time for the 2028 Los Angeles Olympic Games known as the Southern California Optimized Rail Expansion (SCORE) Program.

➔ MassTransitmag.com/21037264



Wes Kooistra

Metro Transit

Wes Kooistra has been named the next Metro Transit general manager.

Kooistra has served as the Metropolitan Council's regional administrator since 2015; prior to that he was the deputy regional administrator and chief financial officer. Kooistra has served in executive leadership roles at public agencies for more than 20 years, most notably with the Met Council and the Minnesota Department of Human Services. His leadership spans policy, finance and budget operations.

➔ MassTransitmag.com/21041350



Steve Poftak

MBTA

The Massachusetts Bay Transportation Authority (MBTA) has named MBTA Fiscal and Management Control Board (FCMB) Vice Chair Steve Poftak as general manager.

MBTA says Poftak brings a passion for public transportation, as well as 16 years of public policy experience and a deep knowledge of MBTA operations and finances to the role. His previous position was executive director of the Rappaport Institute for Greater Boston at the Harvard Kennedy School.

➔ MassTransitmag.com/21036574

Sun Metro

brings the heat
to El Paso

Sun Metro and its partners long envisioned and planned for a world-class transit system. They are now able to deliver it.

By **Mischa Wanek-Libman**,
executive editor



WHEN YOU PLAN TO BUILD A WORLD-class transit system, at some point, things are bound to get a little dusty.

"Sometimes I think we're a construction company more than a public transit system with as much construction as we've had in the past several years," said Jay Banasiak, director of Sun Metro in El Paso, Texas.

After pulling itself away from the brink of crisis in 2005, the transit agency, with the support of the city of El Paso and the hiring of First Transit, began a long-term planning effort and eventual

system build out that is ramping down as projects reach completion and services come online.

"Hopefully, I can start thinking about public transit again and not construction, which is a good thing," said Banasiak.

The transit construction activities in El Paso the past several years include three bus routes for a rapid transit system (RTS) and planning for a fourth, a major transit-oriented development project and the re-establishment of streetcar service.

A STATION
along Sun
Metro's
Alameda
Brio route.
Sun Metro/Alameda
Topcoat



“We’re trying to give [riders] as many options as we can,” said Banasiak. “We’ve done pretty well in our operations and the construction is providing better amenities to El Paso and giving different options for [residents and visitors] to use.”

Providing accessible, attractive and viable travel options are key factors in assisting the economic development movement growing in El Paso now.

History of the build out

Sun Metro had a high profile opening of its streetcar line in late Fall of 2018, but as Banasiak explains, before the streetcar was even a glimmer, Sun Metro developed a plan for its \$145-million Brio RTS, which is designed to reach all four corners of the El Paso area. The Mesa Brio opened in 2014 and connects the Downtown Transit Center to the Westside Transfer Center through 8.6 miles and 22 stations. Two more routes, the Alameda and Dyer will add a combined 24.7 miles to the RTS with a fourth route, Montana, the longest route, adding another 16.8 miles.

The Alameda Brio is scheduled to open in April 2019 with the Dyer Brio following in May. Banasiak says the Montana Brio design is finished and he anticipates going out to bid sometime this summer on the project.

The Mesa, Dyer and Montana routes are funded through the Federal Transit Administration Capi-

tal Investment Grant program and the Alameda route is funded 100 percent by the city of El Paso.

As Banasiak recalls, Sun Metro was well into the process of building and planning the Brio routes when Sun Metro caught wind of a rumor: The state of Texas was going to make funds available to build transit projects, a move it doesn’t usually make.

“We got on the stick and decided if we ever wanted to do a streetcar project, that we need to do some planning, get a specification made and, should money ever become available, we would have a kind of shovel ready project,” said Banasiak.

Once the specification for the streetcar project was written, it

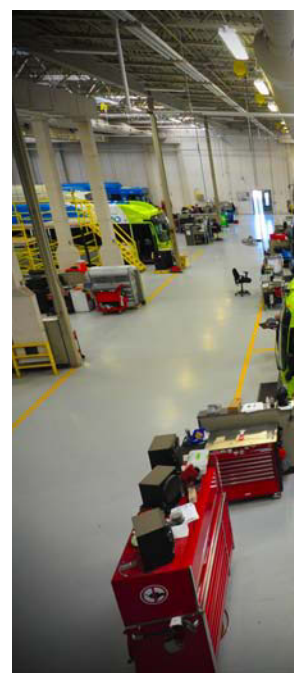
THE NORTHGATE Transit Center is a transit-oriented development that opened in May 2018.

became a waiting game of when the state of Texas would take the plunge into transit funding. In 2014, the state issued \$250 million in transportation funds with projects in Dallas, San Antonio, Houston and Austin receiving grants. Additionally, \$97 million was awarded to the project that would return streetcar service to El Paso.

Camino Real Regional Mobility Authority was tasked with building the streetcar project, which began in November 2016 and turned the keys over to Sun Metro upon completion.



Sun Metro/Lonnie Tapscott



Streetcars had once been a familiar site in El Paso from the 1950s until 1974 when service ceased. Some of the streetcars were sold while others were stored in the desert, where the hot dry environment preserved their shells and trucks.

Banasiak shared that when Sun Metro was analyzing streetcar vehicle options, everything was considered from purchasing modern streetcars to purchasing replicas to refurbishing the vintage cars. A modern streetcar can run upwards of \$5 million while refurbishing the existing cars was estimated to cost less than \$3 million per car.

“The city council made the decision to go the refurbishing route, not only because it was less expensive, but also because it brought a bit of nostalgia to have these vintage streetcars back running service in downtown El Paso,” said Banasiak.

Brookville Corporation was awarded the contract to rebuild six Presidents’ Conference Committee (PCC) streetcars originally manufactured in 1937 for the 4.8-mile streetcar line after the

original cars were, literally, dug out of the sand.

“One of the cool things about the refurbished cars is that if car 1511 ran back in 1970, we kept the same number. If someone rode car 1511 back in 1955, that same car, car 1511, is now running on the streets of El Paso,” Banasiak said.

While the streetcars boast a vintage look, they returned to service with many modern amenities. Banasiak explains that the interiors of the cars have been restored with new materials, but with a look that matches the interiors of the past. The streetcars also have better suspension systems, air conditioning, driver comfort features, more electrical elements to the trucks, modern fareboxes, which are used throughout Sun Metro’s system for seamless travel, WiFi on board, interior bike racks and ADA accessible features.

“We also have more analysis features of the streetcar, very similar to your car where you can analyze things a lot faster, a lot quicker,” Banasiak said. “With troubleshooting, we already have an idea of what the problem is before we even start digging into it.”

Following two years of construction, the streetcar line opened for service in November 2018. Banasiak explains the opening of the streetcar line brought extra relief to the residents of El Paso. They had to contend with the construction of the streetcar line and maintenance facility, as well as a large Texas Department of Transportation project all within the same area.

“There were a lot of improvements going on that people had to live through and not only do we have a great streetcar system now, but we don’t have construction anymore,” said Banasiak. “It was like a double whammy of ‘thank goodness.’”

The start of streetcar service was well received with Banasiak

reporting that the opening weekend saw streetcars constantly full of people. El Paso’s largest event, Winterfest, began shortly after the streetcar opening and the service helped move the thousands of attendees to various activities around downtown.

The third major project to come online in 2018 was the Northgate Transit Center, a \$15.5-million transit-oriented development (TOD). The project was a recipient of a \$13.2-million Transportation Investment Generating Economic Recovery (TIGER) grant in 2013. Sun Metro, partnering with Hunt Companies and the city of El Paso, redeveloped six acres that was part of an old mall into a transit center serving one of the fastest growing areas of El Paso. The transit center not only has bus space and a parking deck for 170 cars, but the TOD, known as Metro 31, is redeveloping the additional 24 acres into apartments, condos and retail space.

Training and outreach

With a massive system build out and many projects coming online at the same time, Sun Metro took steps to educate the public about safety around the new transit services.

Banasiak says Sun Metro’s efforts to get the word out about how to co-exist and be safe around streetcars were more than a year in the making and included several safety-focused videos, outreach to local businesses, their patrons, TV commercials and presentations at schools, associations and other community locations.

“I think the effort paid off. People are seeing the streetcar and they know a little bit about the safety of it, maybe they read it on a flier or saw it on TV or saw a presentation, but they know there are certain things that you have to be careful on with the streetcar,” Banasiak said. “Our

More online

Sun Metro provides travel options to all riders; read how a new wheelchair securement system is boosting mobility passenger autonomy.

➔ MassTransitMag.com/21044366

SUN METRO
vehicle
maintenance
facility.



Sun Metro/Lonnie Tapscott

marketing and staff have done a good job, along with our streetcar team, in getting the word out and addressing all the problems in a very quick manner.”

When it came to training operators, Banasiak says Sun Metro combined knowledge shared from peer agencies together with individuals who had streetcar experience.

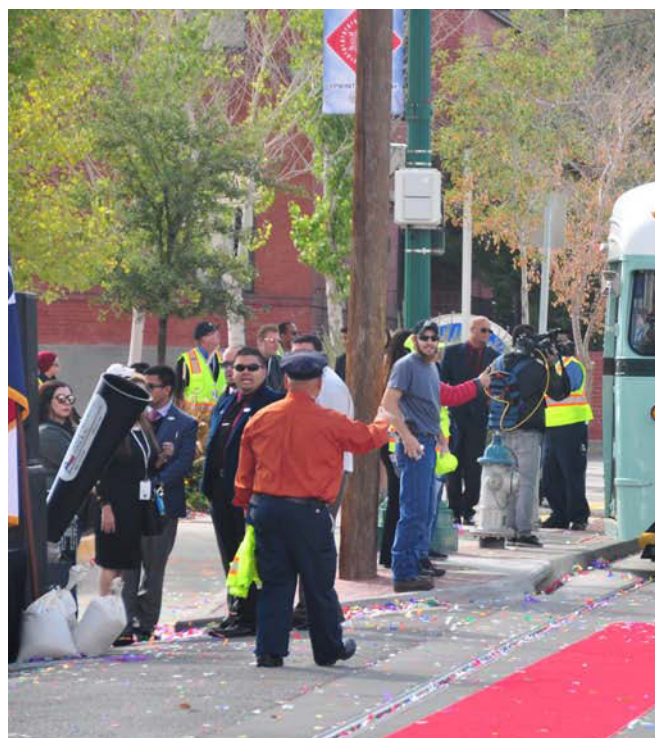
“We visited several transit or streetcar agencies, but also we hired a couple people like Assistant Director of Streetcar Operations Carl Jackson and Mass Transit Department Chief Safety Officer Jose Marquez, who have had a lot of experience in building a streetcar system, running a streetcar and maintaining it. We put that all together,” said Banasiak. “We had a nice mixture on the management end of it. Then

SUN METRO’S streetcars have a vintage look, but were rebuilt with many modern amenities.

“One of the cool things about the refurbished cars is that if car 1511 ran back in 1970, we kept the same number. If someone rode car 1511 back in 1955, that same car, car 1511, is now running on the streets of El Paso.”

-JAY BANASIAK, director of Sun Metro

for the operator end of it and the maintenance end of it, most of the people came from our Sun Metro fixed route area.”



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For more information, visit www.MassTransitmag.com/21044676



Sun Metro/Lonnie Tapscott

Sun Metro offered drivers, as well as maintenance personnel, an opportunity to train and transition to the streetcar system.

"We came up with a pretty aggressive safety training program. We took our time with them. We didn't rush them. They slowly got into it, they got trained into it and they became certified as operators for a streetcar," explained Banasiak. "So far, so good. The people that really wanted to do it have become experts and they'll continue to get better as they gain more experience."

Measure of success

As Banasiak looks forward to construction wrapping up and returning his focus to public transit, he also has a vision of what he wants to see in Sun Metro's future.

"People using the rapid transit system to get around town quickly, I think that is what success looks like," Banasiak said. "Hopefully, they'll use the Brio system and the streetcar system all as a seamless system. That's exactly what the city council envisioned and that's where we're going. And then, in the next couple years after that, I would love to see the system continue to grow."

Banasiak believes all good things begin with a plan. The plan to expand and build Sun Metro's network had total stakeholder buy-in with backing from city council members, city residents and transit employees.

"We had a plan and not only were we able to accomplish that plan, but we were also able to build on that plan," Banasiak said. "Stick to the plan and good things happen." **MT**

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A CAPTIVE audience: Location-based ads allow the delivery of hyper-targeted messages to commuters.

Mark(et) on the move

Location-based messages are designed to reach commuters at the right time and place.

By **Mischa Wanek-Libman**, executive editor

LOCATION-BASED ADVERTISING allows marketers to target their message and audience based on location using mobile technology and, in a growing segment, using audio in rail vehicles and buses. A 2018 U.S. SAM™ survey by BIA

found that, overall, U.S. businesses invest about two-thirds of their total marketing budgets (promotions plus advertising spending) in advertising on local media ad channels. BIA Kelsey also estimates geotargeted ad sales could reach more than \$32 billion by 2021.

For non-professional marketers, location-based advertising can be framed using the perennial conundrum of “what’s for dinner.” In this scenario, you’re on a train or bus and as you approach your stop, you hear an announcement or receive a notification on your phone that a pizzeria is promoting half-price pizza night. If this restaurant is across town, it probably doesn’t help solve the issue of dinner. However, if the pizzeria is a block away, dinner is more likely to be served.

A 2015 article published in the *International Journal of Engineering Research & Technology* determined that consumers who were served a geo-fenced, or location-based ad, near the advertiser’s store were 3.9 times more likely to check in at the store than those who were not exposed to the ad. Additionally, the article reported that these consumers were also 23 percent less likely to visit a competitor.¹

Location-based ad service providers offer low risk partnerships that, not only allow transit agencies another avenue to access revenue, but also offer additional value by enhancing an agency’s communication tools.

Revenue not biggest advantage

Additional revenue is one advantage to running location-based ads on a transit system and for those agencies that have integrated the service, the revenue is a nice addition, but they note to temper expectations.

Cindy Baker, chief external affairs officer at Kansas City Area Transportation Authority (KCATA), says the agency was an early adopter of location-based ads. She explains that while the revenue received isn’t huge, she notes KCATA’s vendor did not stoke false expectations and, more importantly notes, that any extra revenue is appreciated.

Erin Hockman, marketing and communications manager with Des Moines Area Regional Transit (DART), says the location-based audio advertising revenue isn't comparable to that generated from traditional print ads. She explains print advertising has been an option for much longer, with audio advertising only being offered as an option for the past year and a half.

"I believe there is room for continued growth given we're very early on and it probably takes some time to generate awareness that it's available. I think there's still a lot of opportunity from a revenue standpoint. With that being said, the way our contract is structured, we don't pay anything, so any revenue that we generate is additional revenue," said Hockman.

Wendy Williams, director of marketing and planning at OmniTrans, explains revenue generation has been 10 to 18 percent of what was expected, but the agency isn't willing to give up on the concept of location-based ads. She says a request for proposals will be issued when OmniTrans' current contract has ended.

While revenue is a single advantage, vendors are delivering services that provide value beyond revenue.

"[The] biggest advantage to OmniTrans are the messages recorded to inform/educate passengers. It's a great way to reach all customers," added Williams.

OmniTrans has utilized the professionally produced recordings provided by its vendor to announce upcoming service changes, holiday closures, promotions and rider education spots, such as reminders to keep aisles clear.

Hockman notes that DART was producing its own public service announcements before partnering with its location-based ad vendor, but be-

lieves the professional quality of the announcements, along with the added ability to produce announcements in other languages, such as Spanish, gives these announcements a boost.

"We are able to take advantage of the time-based and the location-based functionality, which has been helpful to be really hyper targeted in our messaging to our riders," said Hockman.

Baker adds that location-based ads have also brought value to small, local advertisers that may have a lot to gain from KCATA riders, but may otherwise be priced out of other advertising avenues.

Hockman agrees that there are additional benefits in the ability to offer more options at

By the Numbers

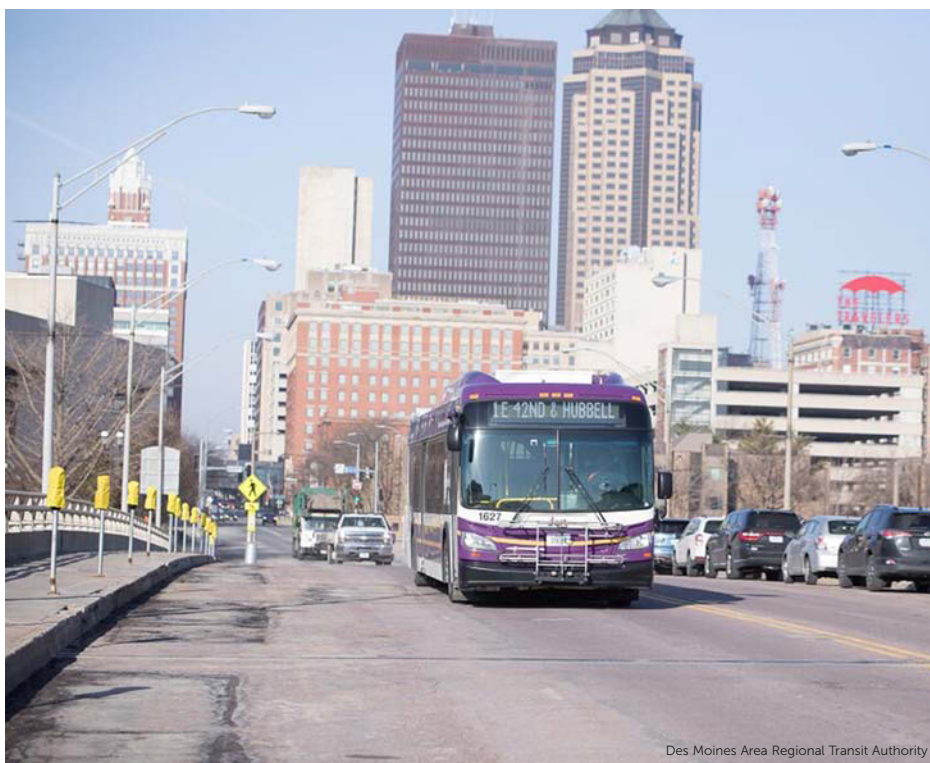
A person is **3.9 times** more likely to check in at a store than those who were not exposed to the ad.¹

23%

The percentage that these same consumers were less likely to visit a competitor.¹

more price ranges in order to meet more organization's needs from an advertising perspective.

"As someone in marketing and [with DART doing] our own advertising, I think we're always looking at how we can be more targeted in who we're trying to reach. I think the audio advertising is a way that people can [accomplish this]. If you're a business that's located along a certain route, it may not make sense for you to buy a full bus route that travels throughout the entire region when you can target people riding a route that's driving by your business. There certainly are benefits in being able to be much more targeted in who you're reaching with your message," said Hockman. **MT**



Des Moines Area Regional Transit Authority

"[The] biggest advantage...are the messages recorded to inform/educate passengers."

-WENDY WILLIAMS, OmniTrans

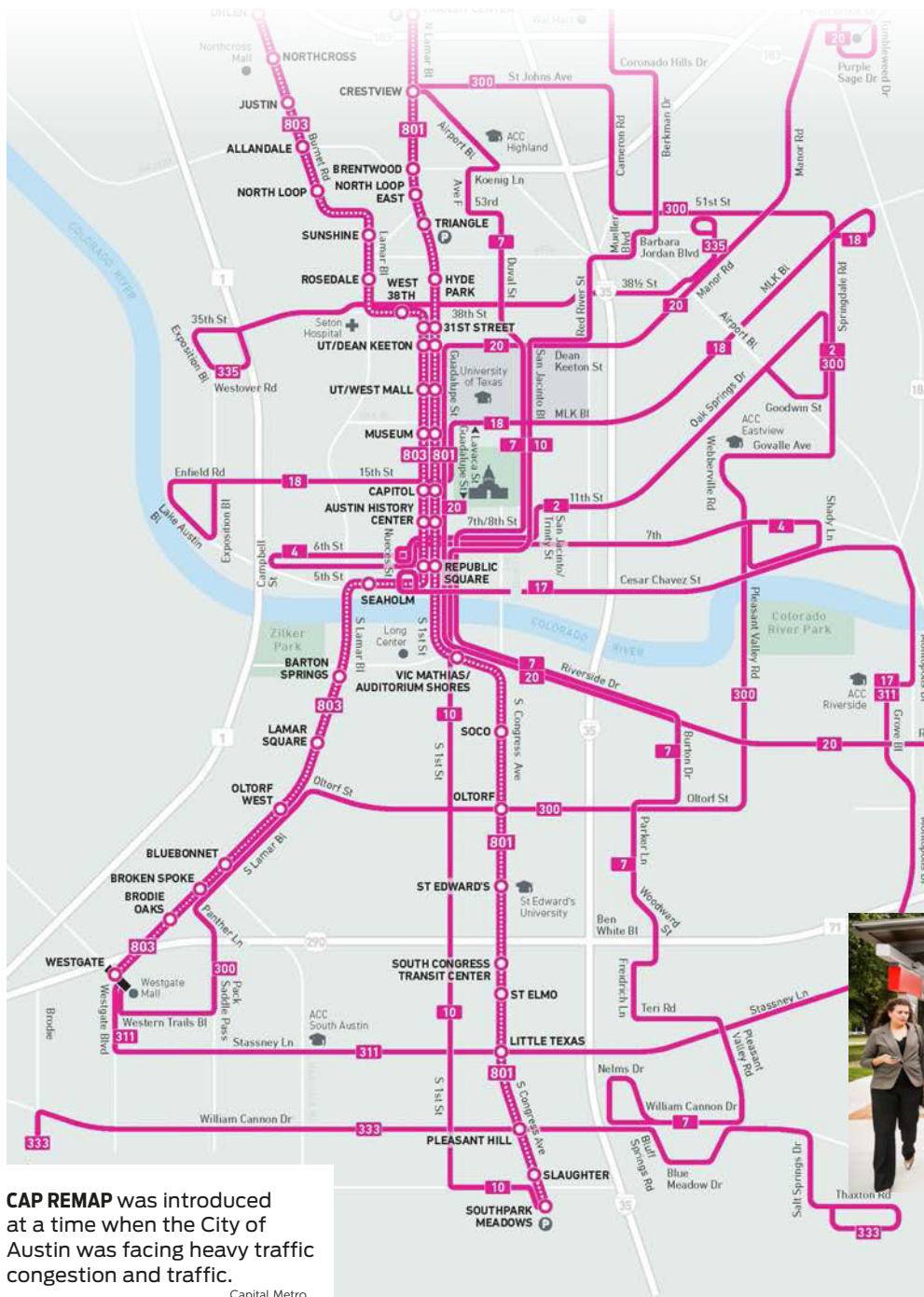
DART HAS been using location-based audio ads on its bus system for the past year and a half.

1. Shinde, S., Shaikh, T., Vandha, A. and Sheth, H. March 2015. "Location-based Dynamic Advertisements Structure for Public Transit Systems." *International Journal of Engineering & Technology*, Vol. 4, Issue 3.

Capital Metro Alters its Transport Redesign of its

Capital Metro and the city of Austin implemented a redesign of the bus network, branded as the Cap Remap, the project offered riders more options with increased routes and service areas.

By **Maile Rudebusch**,
assistant editor



CAP REMAP was introduced at a time when the City of Austin was facing heavy traffic congestion and traffic.

Capital Metro

CAPITAL METRO EXECUTED THE momentous process of redesigning its bus network. The plan resulted in Capital Metro riders gaining access to extended routes, more direct routing and more frequent service. Dubbed the Cap Remap, the redesigned network launched in June 2018, and was born out of several different factors to improve Capital Metro's service.

"We try to do a systematic and comprehensive look at our network every five to seven years. In part it was just time to do it and in part we, like many other transit agencies across the country, had declining ridership," explained Todd Hemingson, vice president strategic planning & development, Capital Metro. "The third main reason was that we are one of the fastest growing cities in a metro area in the country and change was just happening so fast. We had concerns that our system and our network weren't keeping up with what changing network commutes for the community."

Capital Metro worked closely with the City of Austin Transportation Department during the planning process,

Transportation Landscape with a Bus Network

allowing them to address the issues plaguing the city's transportation problems.

"Our traffic congestion and traffic and mobility challenges were getting pretty extreme. In 2016, our policy makers coined it the 'year of mobility.' So, we really mobilized the transit work and the work was actually inspired by work in Seattle," explained Annick Beaudet, assistant director for long-range planning City of Austin Transportation Department. "We were scouring the nation looking for practices and how can we really accelerate and move faster on transit improvement."

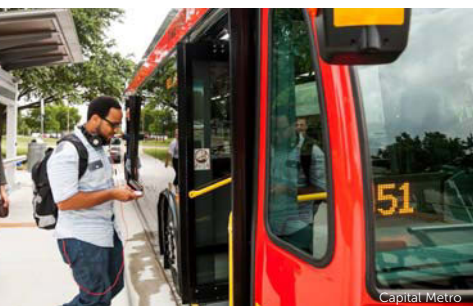
The idea of revamping a bus system on such a large scale can come across as intimidating. Hemingson says that Capital Metro approached the process evaluating which method of implementation would be the most successful.

"We had long discussions about the pros and cons about doing it incrementally or really trying to do the bulk of the changes in one big system restructure. We ultimately chose the latter because we felt like it was a better outcome overall. If we're going to be disruptive to the community and to our riders it made sense to do it in a comprehensive change, because as we

dug into it all the pieces kind of fit together like a spider web. If you tug at one piece in one section it really affected the whole network, so we really wanted to focus on the network and less on the individual routes," said Hemingson. "That was a point that we made in our design efforts as well as communicating it to the public. We really tried to make it a useful network, meaning in part that you may need to make connections between routes as opposed to, in some cases, people who were able to just use one route in the past."

The process of rolling out the route strengthened the partnership between the two agencies. Beaudet explains that the two agencies have continued to develop their partnership in the lead up the Cap Remap. Beaudet added that the city of Austin put a transit priority working group into place to analyze the project.

Once Cap Remap rolled out, it offered increased service from six to 14 of the high-frequency routes, having buses arrive every 15 minutes. It was the most significant change that the agency has



AS A booming metropolitan city, Austin found the need to increase its bus network, offering more options for riders.

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undergone. The number of local routes operating every 15 minutes tripled and that frequency was extended to weekends, as well.

Introducing the route to the public

"[Capital Metro's] preliminary data shows that ridership is up, which was really ex-

citing for the staff working in the transit program, I know from our end at the city that it is. The transit program allows the transit agency and the city to partner on operational changes and make them happen more exponentially and smoothly and I know that has to correlate to an uptick in ridership," Beaudet explained. "I know when you look at the transit advocacy or-

ganizations that they are definitely aware that the city and the transit agency are working together, which is why they're seeing more improvements."

As many transit agencies know, even the best plan can be met with some criticism from its riders and the community.

"It's easy and understandable for someone who just rides one route on a regular basis to wonder why in the world you would make it so they had to take two routes instead of one. There were some messaging challenges. I think our focus was on one of the key things that we tried to convey, that with our network, we're also bringing frequent service, so we're basically tripling the number of routes that run every 15 minutes or better," said Hemingson. "Part of the rationale behind that was if we're going to set up the system with a focus on the network, we need to minimize the delay when a connection is required."

Hemingson explains that when doing early outreach to the public they heard a similar request from those who were surveyed.

"We really put emphasis on frequency and we messaged that, as one famous consultant says, frequency equals freedom. The idea being that you don't have to schedule your life around the bus," Hemingson said.

Successful implantation for the community

Since Cap Remap launched, Capital Metro has seen positive changes.

"The good news is that we basically reversed our declining ridership over the first six months. We had been seeing year over year decreases typically on a monthly basis. We were down two to six percent, which is not good. Now, over the first six months, we've been up 2.8 percent over the prior year, so rather than continued decreases we're seeing increasing ridership," explained Hemingson.

Capital Metro communicated with the City of Austin Transportation Department to work to create awareness within the community and planners as to how the changes would be implemented.



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"They definitely were talking to us in their best practice of speed and reliability and really taking that focus and the time to educate our planners and engineers at the city of Austin on new approaches on transit services," said Beaudet. "They brought in speakers through the local chapter of local urbanism and through other avenues to educate not only the city, but the public in this new direction that they wanted to take on 2024 and Cap Remap on speed and reliability. I think that they did a really good job on rolling that out and bringing us along on the concept."

Hemingson says that Capital Metro has seen a mix in the feedback from customers.

"We've had a lot of people say that the frequency has been transformative and made it so much easier to use. We've had new customers try it because they heard about frequent service and that you can just walk out and catch a bus without scheduling your life around it. Then we've had some folks that honestly didn't like the changes," Hemingson said. "One of the things that we measured during the process was what percent of our riders would still be within a five- and 10-minute walk of service. We knew that 98 percent of customers were still within a five-minute walk. We felt that there was a very small percentage that was adversely impacted."

A portion of the riders who experienced changes that they were less than happy with voiced their feelings directly to the agency.

"For some people initially they were very unhappy, we had people complaining at the board and then a few months later in some cases they came back and said 'my early take was wrong, it's actually working better for me now'. [It's] rewarding when you hear those kinds of stories," Hemingson said. "To be fair, there are still some people [who] are not happy with it."

Looking towards the future

As a growing metropolitan city, Austin continues to develop and with it the transit system is furthering its development, as well. When looking towards new projects, the agency has

identified what steps that they would take in the future, which they have learned from past experiences.

Hemingson explained that the Cap Remap project, like others, has brought light to practices for future projects. "I think from a transit planner perspective, we would have done things differently that would have upset more people, by

listening to the community verses our data and what it tells us to do. There's no perfect service change, but all in all, I think that we did really well."

With the positive feedback, Capital Metro has additional transit lines that it is looking to roll out over the next few years – making Austin an easier city to move through. **MT**

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More than a mirror image

Utilizing digital twins can boost the management and monitoring of rail assets.

By **Mischa Wanek-Libman**, executive editor

DIGITAL TWIN TECHNOLOGY, AS A CONCEPT, has been around since the early 2000s, but the rapid evolution of data gathering and digitization of information has brought the concept into the realm of reality.

Transit agencies and firms tasked with rail asset management and construction can benefit from the concept of digital twins as a way of understanding the systemwide health of assets and how those assets can support operations most efficiently.

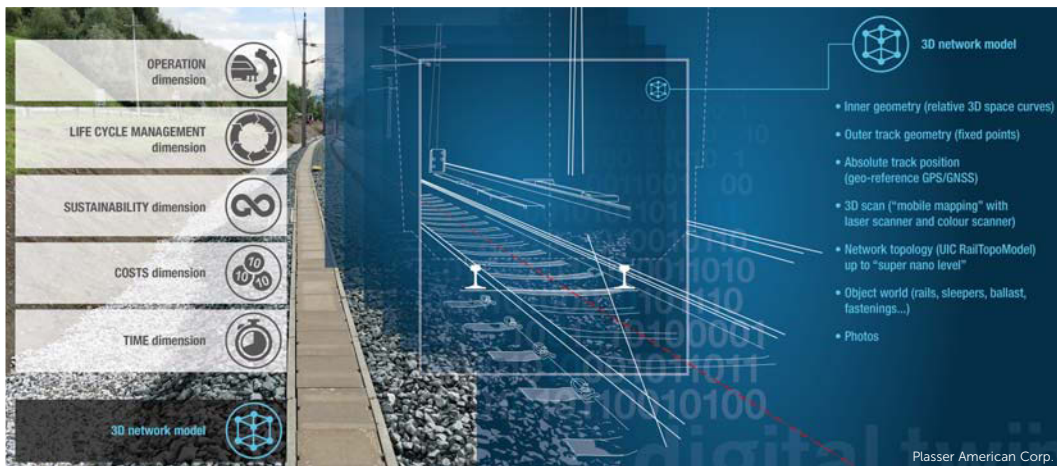
Chris Lund, a partner in Digital Industry Consulting, DXC Technology said, “The digital twin provides information about an asset’s current design, state, condition and its history that inform better decisions about how to manage the current infrastructure and build future infrastructure. Solutions such as Building Information Modelling (BIM), Enterprise Asset Management and Geospatial Information Systems (GIS) help generate information over the entire life of the asset.”

Benefits

Bentley Systems, Inc., explains that the most significant value a transit system can achieve by the successful implementation of a digital twin is through using a twin created to plan, design and build the network, to improve its performance during operation and maintenance.

“Just as doctors can analyze human DNA to anticipate health issues and personalize care for better health outcomes, project

A GRAPHIC illustration of Plasser’s digital twin concept.



delivery firms can harness digital engineering information or ‘digital DNA’ to enable collaboration, improve decision making and deliver better project outcomes,” said the company.

Bentley’s OpenRail connected data environment (CDE) makes this possible through a set of cloud-provisioned or on-premise services that support digital context, components and workflows, enabling asset owners and project delivery firms to access consistent, trusted and accurate information across the entire asset lifecycle.

Plasser American Corp. says that while a digital twin can represent one or more components of a rail transit system, the more components that are included, the more value a digital twin will add.

“At the most basic level, maintenance and condition data col-

lected on a wide array of assets allows for analysis of assets without equipment downtime or track possession. When implemented correctly and kept current, it empowers operators to plan and adapt their business processes over time with minimum disruption to day-to-day operations,” said Plasser.

Stukton Rail North America adds that the successful implementation of digital twins combines dozens of siloed and disconnected sources of information to provide

many benefits, maintaining the twin is as important as maintaining the physical assets themselves.

Lund, at DXC, offers a reminder that most transit assets are now equipped with sensors, transducers, communication systems, processors and other smart systems that provide passengers and operators with practical route and service information. Lund notes that the use of intelligent equipment does not necessarily result in smarter information.

“To be smart, the data generated from intelligent assets must be integrated with information about the operating environment as part of an enterprise management system that results in better outcomes for the operators, their customers and other stakeholders,” said Lund.

He continued by explaining that

a complete picture of the network in real time. Willow Rail, powered by Strukton, is a digital twin platform specific to rail networks and Strukton believes asset management optimization is one area where the technology can be of use.

“In the instance of an irregularity, when using Willow Rail, there’s no waste of time assigning workgroups to maintenance work. A custom mobile application allows direct communication between maintenance teams and asset managers. One can track progress in real time with a unique GIS map, and store all maintenance history, records and details in one place (knowledge sharing),” said Ellen Linnenkamp, vice president, Strukton Rail North America.

Digital twin upkeep

While a digital twin can provide

asset information itself should be treated as a critical asset due to both assets and asset information being in a state of constant change. Both need to be kept current if they are to be trusted.

“Change management is key when adopting digital twin in an enterprise. Stakeholder support is also critical. To maximize the value of information, organizations need to mature their information management systems. This includes the policies, standards and associated business rules which, when implemented, will enable data and information to be managed in a secure, structured and consistent manner throughout the information life cycle,” said Lund.

Synchronization that represents an asset’s physical reality and its “virtuality” is key to having a reliable twin, but Bentley says mere-

“When

implemented correctly and kept current, it empowers operators to plan and adapt their business processes over time with minimum disruption to day-to-day operations.”

-PLASSER AMERICAN CORP.

It drives deeper insights, proactive management and optimization of the rail network.

-ELLEN LINNENKAMP,
vice president,
Strukton
Rail North
America.

ly capturing and representing physical conditions is not enough without also comprehending the “digital DNA” captured in the project’s or asset’s engineering specifications. A concept the company’s iTwin™ Services can help implement through Bentley’s CDE.

“A digital twin can meet this requirement by geospatially converging the digital context (representing the physical) and digital components (representing the virtual), resulting in an immersive environment for both visualization and analytics visibility,” said Bentley.

For Strukton, utilizing automation of data collection and integration has been built into the Willow Rail platform, allowing it to adapt and provide greater insight as more information is gathered. Strukton says this deeper intelligence presents rail

operators with a way to learn from existing procedures and run simulations to optimize operations and cost management.

Accuracy of information is another sticking point to building a well-structured digital twin. Plasser American says keeping a digital twin accurate and up-to-date must become one of a rail transit system’s business processes.

“Implementing a true digital twin is a challenging task and requires navigating around technological and operational roadblocks; it requires a holistic approach rooted in experience and expertise. At Plasser, we help our clients with navigating these roadblocks,” the company explained. “The railroad industry, in general, and transit systems, in particular, have been moving in the direction of digitization for several years.

Implementing digital twins is a natural evolution in this process.”

Tapping potential

Transit agencies see the potential digital twins can bring to the table, but with other pressing issues, progress toward implementation is somewhat slow.

“Think of a puzzle with many pieces; the more pieces put together correctly the more accurate and refined the resulting picture will be,” said Plasser American.

The company notes that it’s PT Connected for condition monitoring of track construction and maintenance machines, as well as its geometry measurement and imaging systems for condition monitoring of track and related infrastructure, are some of the systems commonly used as components of a digital twin. The

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company services one transit system that is using Plasser-delivered data to analyze track conditions in an office environment, which reduces the need for track time and allows for simultaneous review of several track conditions.

Strukton and Willow have seen early adoption in markets such as Europe and Australia and expect North American rail transit clients to begin in 2019-2020. Strukton believes the slower adoption has been due to North American clients working on other priorities such as state of good repair backlogs and limited funding, but expects the technology to become a higher priority as the industry starts to see the benefits.

"A digital twin can make life easier regarding requirements from the FAST Act and Transit State of Good Repair. It drives deeper in-

sights, proactive management and optimization of the rail network. It clearly identifies availability, punctuality, capacity, speed restrictions, interruptions and deviations all within a single interface," said Linnenkamp of Strukton.

Given that rail is a very traditional and safety-sensitive industry and with the backdrop of owner operators and project delivery firms needing to work within tighter budgets, to shorter deadlines, along with increased legislation, change can often be slow says Bentley.

"[Change] rarely comes easily and the risks associated with changing a tried and tested formula can weigh very heavily on the minds of those responsible," said the company.

However, Bentley believes the upside is that the highly complex nature of rail networks and systems

More online

Digital twins hold potential when it comes to simulations and training; see the online exclusive "Digital twins – the secret to safe training?"

[MassTransitMag.com/13000009](https://www.MassTransitMag.com/13000009)

mean the opportunity to leverage technology to change the way they do business, and deliver improved outcomes for all the stakeholders involved, is significant.

"We need to accelerate the application of digital technologies and close the productivity gap with others like automotive, aerospace or defense," said Bentley.

The big question: Will digital twins in transit happen?

"The short answer is yes, it has to! It is no longer enough to simply do things the way they have always been done," said Bentley. "Our visionary users are actively exploring different strategies for both the creation and curation of digital twins, so that they may continue to deliver the increased levels of service, safety and reliability being demanded of them now and in the future." **MT**

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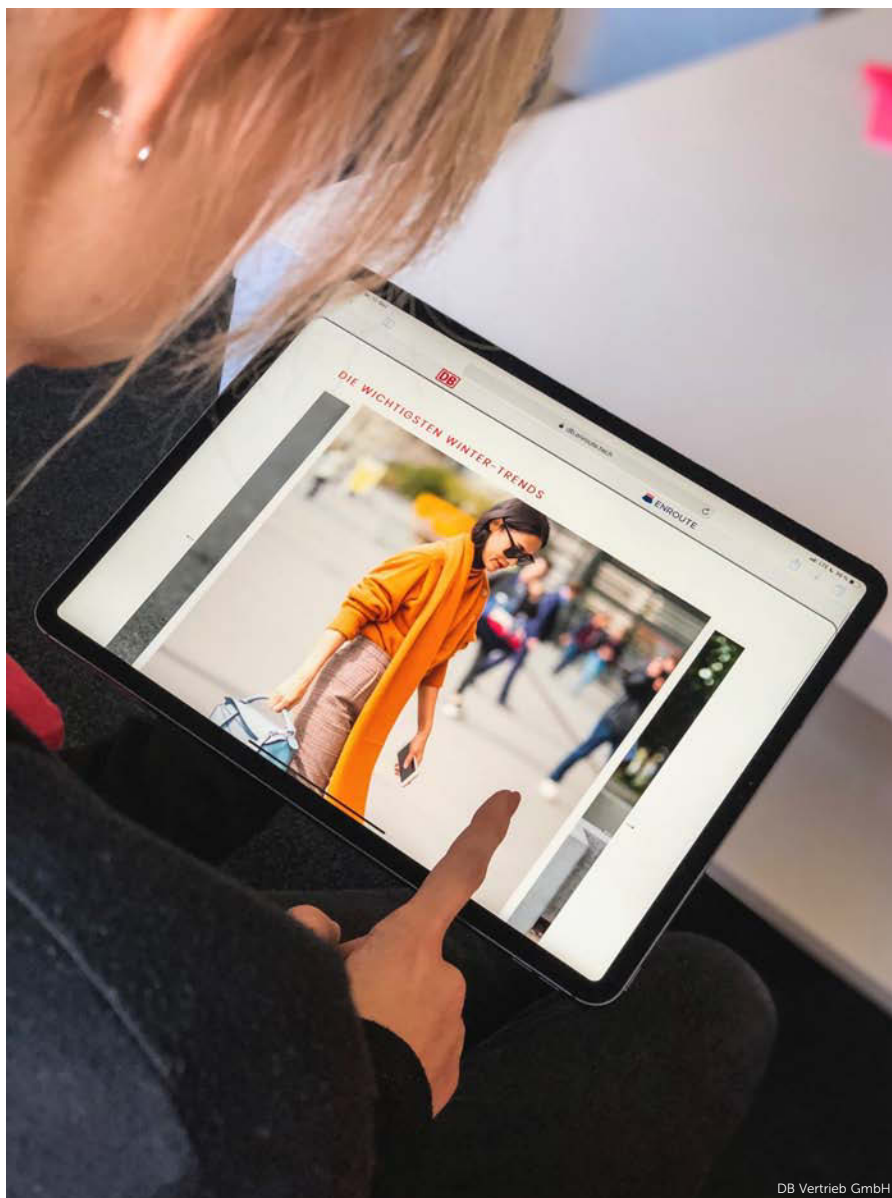
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ENROUTE APP being used to shop on a German train.

Loyalty programs and gamification in public transit

Can transit agencies develop a connection with their riders the way sports teams have with their fans? Gamification can help if it's simple, digital and valuable.

By **Paul Comfort, Esq., contributor**

'M A SUCKER FOR POINTS. I

enjoy playing games on my phone that allow me to score points, especially when it gets me “free stuff.” Companies have figured this out about me (and millions of others) and figured out how to entice me to use their mobile applications (app) to order items I’m already purchasing on a regular basis. They’ve gamified my purchases – where the more I order, the more points I get toward winning their products for free. (Think Dunkin’ Donuts, Marriott and Southwest Airlines apps giving me points toward free food, drinks, hotel rooms and flights.) I find myself almost enjoying spending my money on these merchants because I get rewards when I do and I spend more money with them as a result.

The merchants love when I use their apps because they get all kinds of data on me (what I like, when I eat, where I like to travel, etc.), building my loyalty toward their product or service. Now I want to drink my coffee always from Dunkin’ because I’m working toward that free one. When there are two or more options, I choose Dunkin’. In a recent study from KPMG, 74 percent of consumers will go out of their way to shop where they earn loyalty points. So, it’s not just me that makes purchase decisions based on the loyalty programs in which they belong.

There are clear positive outcomes from utilizing loyalty programs and gamification, so why hasn’t the transit industry taken advantage of this more?

Examples of efforts

Currently, the efforts of loyalty programs in public transit fall into two groups. I call these:

- **First-level efforts** – those using drawings and cards for rewards and discounts

•**Second-level efforts** – those using smartphone apps and geo-location data for rewards, discounts and to gather ridership data for the agency

First-level efforts

One of the first efforts in the U.S. was Minnesota's Ride to Rewards Program. Launched in November 2010, the rewards program offered public transit riders points for using Go-To Cards. Users then could redeem points for \$5 to \$10 gift cards, to use anywhere they wish. But it was killed after three years due to funding issues.

In Connecticut, the state's Department of Transportation recently announced a transit rewards program where passengers can show their transit ticket or pass to 50 participating merchants for discounts.

Other systems, like Valley Metro in Phoenix, use merchant \$25 gift card prizes to lure passengers to try ridesharing programs or to shift their trips to off-peak times, like the short-lived BART Perks program in San Francisco and the Chicago Transit Authority pilot a couple of years ago.

The Southeastern Pennsylvania Transit Authority's (SEPTA) "SEPTA Perks" loyalty program rewards the authority's daily, weekly and monthly pass holders with discounts and special offers for museums, restaurants and shops across the SEPTA service region. They also have contests for riders to win prizes, such as autographed hockey sticks.

Second-level efforts

The Des Moines Area Regional Transit Authority is using TransTrack Systems Inc. TransTrack Manager TM tools for a fantasy football-style application for its road supervisors to use as a tool to manage operators and improve performance, according to TransTrack CEO Dave Jackson. The operators choose their

teams annually and compete on a quarterly basis for the best scores. Points are added or deducted as appropriate for on-time performance, preventable accidents, lost time injuries, complaints and commendations. The scoring is automated using the software, awarding a traveling "winner" and "loser" trophy each quarter.

One successful gamified program helps transit riders in Tennessee who can earn at least a penny per shared mile ride using a special mobile app from Hytch. They have corporate sponsorship from Nissan and other funding to pay for rewards. Their loyalty program has partnerships with WeGo Public Transit, Music City Star and the Regional Transportation Authority of Middle Tennessee. In heavily congested areas, such as Nashville, riders can earn additional cash rewards from multiple sponsors and can redeem rewards via PayPal (once their balance reaches \$10) and they can choose how to spend their earned rewards.

Stephen Bland, Nashville's WeGo Public Transit System CEO asserted, "The program is working well and has been well received by riders. Some of our regular commuters are reporting savings on their commute costs of over 50 percent per month. In addition, because of the innovative nature of the program, we've calculated over \$55,000 in earned media value (local) from the program (generally, from news stories not only promoting the app but promoting transit service)."

Many Canadian transit systems use gamification through the Transit App to encourage users to crowdsource their vehicle position with other riders, which provides them with precise real-time information. Users get a ranking for each route and, depending on how many riders their info helps, can become "King" or "Queen" or their route. The program first

launched in Montreal with huge success and is now available in other Canadian cities and throughout the world using the Transit App.

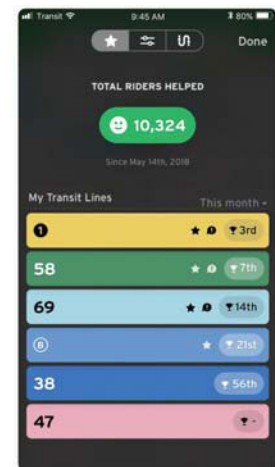
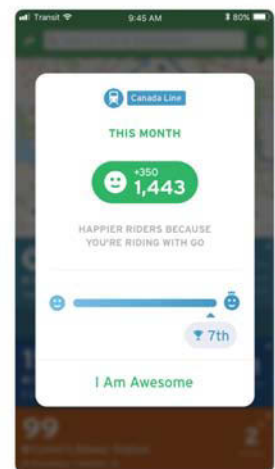
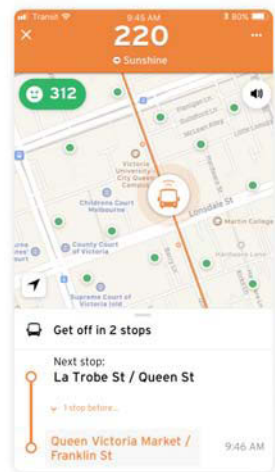
Global efforts

An Israeli technology startup venture, Enroute, has an online loyalty program operating with Deutsche Bahn (a train system in Germany) where commuters can earn credits toward discounts and free rides on the train by shopping online at major retailers through their portal available from the Wi-Fi on board the train. The transit agency also receives an additional revenue stream from this service.

Public transport users in Moscow can earn loyalty rewards as they travel around the Russian capital. Billed as "the largest loyalty program in Moscow," the program has more than 5,000 participating retail outlets and is available to the 9 million Troika transit card cardholders. After downloading the city mobile app and registering their Troika card number, users collect bonus points when they add funds to their travel card or make purchases at participating retailers. These can be exchanged for trips on Moscow's public transport network or discounts in shops and at online stores.

Gamification rewards program design

While many major transit systems have a loyalty program,



THE TRANSIT
App being used
in Canada and
elsewhere

not all of them are gamified with points toward rewards. Gamification may be a simple addition that can add value to transit agencies and their passengers.

For transit agencies to establish a loyalty program that includes gamification successfully, they should keep it:

“Gamification lets us communicate with our customers and gain feedback. Miles and trips can convert to points, which turn to cash, credits or rewards for free rides, discounts or actual prizes.”

-DR. ROBERT SCHNEIDER, executive director of Northern Virginia's OmniRide Transit System

- **Simple** – Easy to understand point levels/prizes and simple to sign up

- **Digital** – Use a smartphone app to track

- **Valuable** – Have good prizes for users including free rides and discounts for shops along your routes. Gather quality data from the riders that improves your transit system to make it valuable for your agency

Dr. Robert Schneider, executive director of Northern Virginia's OmniRide Transit System said, “Mass transit has truly evolved in the past 20 years with much-improved marketing, branding and messaging. We’ve embraced technology, which gives us the chance to finally build a level of loyalty between the organization and its customers.

“Gamification lets us communicate with our customers and gain feedback. Miles and trips can convert to points, which turn to cash,

credits or rewards for free rides, discounts or actual prizes. How about three points for answering three questions about the bus stop's cleanliness? Double points for trying a new route? What about badges for riding every route? The key is building loyalty between our customers and our systems—a passion, like what exists between a sports team and its fans.”

These successful models show that transit systems can reach out to millennials and new users plus reward existing passengers by gamifying loyalty programs. This can only help in stabilizing or even increasing ridership levels. **MT**



Paul Comfort is vice president of business development at Trapeze Group.

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In Focus: Passenger Information

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Tolar Manufacturing Passenger Information at Bus Stops

Passenger information at bus stops has one of the largest impacts on passenger confidence.

In Livermore, Calif., Tolar Manufacturing Company created four bus shelters for Livermore Amador Transit Authority designed around two critical elements – a printed transit map and real-time passenger information. Working in concert to build rider confidence, the oversize map display is centrally located on the rear wall of the shelter in close proximity to the roof-installed real-time digital passenger information.

With 500+ designs and hundreds of customized solutions in its portfolio, Tolar Manufacturing Company has the experience to pair customized bus shelter designs with a combination of printed and digital passenger information to create a Sense of Place that improves passenger confidence.

TolarMFG.com

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All Advantech digital signage players come pre-loaded with an embedded OS and digital signage software, Acronis data protection software and McAfee system security software. Advantech provides solutions with varied computing power and cost structures from entry-level to high-end systems.

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Peerless-AV Smart City Kiosks (KOP2549-XHB, KOP2555-XHB) are all weather-rated solutions, ideal for sharing community, travel and weather details, as well as wayfinding, advertising, entertainment and more. The included Xtreme High Bright Outdoor Display with full HD 1080p resolution provides a bright crisp picture, even in direct sunlight. An optional 10-point IR touch overlay makes the kiosk interactive for all users. The Smart City Kiosk is designed to be modern, approachable, practical and endure the rigors of everyday use. Installation is easy, no cranes or forklifts needed. The locking rear door offers quick access to the display for maintenance.

peerless-av.com





● REC

Get more from your data with video-based safety

Combining data-driven analytics with the provided context of video allows transit agencies to identify the riskiest driving behaviors and intervene.

By **Jason Palmer, contributor**

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THERE'S NO QUESTION THAT in the age of information, the availability of large volumes of data can help vastly improve organizations' operational and strategic integrity. Data-driven insights can help transit agencies better understand customers, enhance product and service offerings and, most importantly, operate more safely. However, many transit agencies do not yet truly grasp just how to use available data to make their operations safer.

According to data from the Federal Transit Administration (FTA), transit injuries have increased steadily in the past decade. In 2007, there were 2,505 injuries reported. Since then, the injury rate has risen close to 20 percent, with 3,008 injuries recorded in 2017.

There's no excuse for transit agencies not to utilize the trove of information available to assess risk and improve safety processes. A growing number of transit agencies are turning to video-based safety and analytics as a key element of their comprehensive safety plans. The benefits of adopting a fully managed video safety program include access to insights that identify high-risk driving, accident pre-

vention and compliance with the FTA standards. Many agencies today also cite the exoneration of drivers not at fault in a collision as another significant value driver for implementing video safety.

Video provides crucial safety data

Safe operation of a transit vehicle is affected by a myriad of risk factors. Adding to this complicated issue is the fact that each driver has a specific set of strengths and weaknesses, making it difficult for safety managers to understand and act on the specific needs of each driver without having the context of proper safety data. This is where video-based safety comes into play; by combining data-driven analytics with the context only video can provide, transit agencies can glean insights into the riskiest driving behaviors and then intervene with proactive coaching to reduce risk and prevent accidents.

Video-based safety provides the necessary context for each driving situation. For instance, in the case of a collision, was there an incident on-board with passengers that distracted the driver? Or, did another vehicle swerve, requiring the operator to react to minimize impact?

"A trigger-activated system, such as SmartDrive, is excellent in helping to mitigate litigation and the amount you could pay out to a potential person who is going against you in any type of suit. The results you achieve outweigh the costs"

-TODD CHEEVER,
Nassau
County
Transit

With context, transit safety managers have full visibility to an incident, allowing them to intervene with targeted coaching to hone driver's skills and improve safety.

Managed service is key

Agencies have access to data from all the pertinent incidents that drivers experience each day after implementing a video-based safety program. However, in mid- to large-sized agencies, the sheer amount of information that is provided can be overwhelming and is an onerous task to sift through and derive actionable insights. Time spent reviewing volumes of footage captured by an off-the-shelf DVR is inefficient and unlikely to deliver useful information. With a fully managed program that includes expert review, unbiased analysis and consistent scoring, safety managers can better spend their time and resources in the field, training and working with drivers.

Most buses have a DVR system, but you have to pull the hard drive and watch hours of video to try and find out what happened.

"A trigger-activated system, such as SmartDrive, is excellent in

helping to mitigate litigation and the amount you could pay out to a potential person who is going against you in any type of suit. The results you achieve outweigh the costs,” noted Todd Cheever, Nassau County Transit.

This is where a managed services program can step in; it’s not enough to simply install a video system; fleets need to utilize a managed services program that can take the mountain of data from video and turn it into valuable insights quickly and effectively. For the riskiest driving skills, safety managers can’t wait days or weeks while review of DVR footage takes place in order to intervene. A managed services program can save time and money, allowing transit safety managers to focus on what matters most: targeted coaching on specific behaviors. Rather than sitting be-

Hidden costs of self review

Number of Vehicles	300
Number of Video Events (per vehicle/per month)	20
Review Time in Minutes (per video)	5
Total Time (hours/money)	500
Fully Burden Labor (per hour)	\$20

WITHOUT MANAGED SERVICES

2.9 Full-time equivalent

\$33.33 per month/vehicle

\$10,000 monthly

hind a desk and watching hours of video, management can instead spend time on high-value operational support and training.

A managed services program also provides an unbiased, consis-

tent review process that is both fair to drivers and provides a basis of measurement to evaluate driving improvements. Safety managers may have biases and inconsistent methods of evaluation, leading to

ADDITIONAL HIDDEN COSTS:

- Initial and recurring recruiting costs
- Training
- Develop and maintain safety review rules
- Lost opportunity costs for lack of reporting, analysis and benchmarking

IMPACT OF THIS CHOICE:

- Limited ROI
- Delayed action waiting days or weeks to get reviewed video
- Driver acceptance of video
 - » Inconsistency of view breeds lack of trust
 - » Ineffective coaching

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uneven, sub-optimal results. With a managed services program, drivers benefit from uniform feedback, applied evenly across the organization, and safety managers have a consistent measurement and coaching tool.

Ensure compliance and help exonerate drivers

In addition to helping drivers operate more safely, the rich data from a video-based safety program offers a host of additional benefits to transit agencies. The FTA mandates transit operators develop safety management system (SMS) plans to meet safety compliance regulations. With a proven video-based safety provider, transit operators can ensure they are providing the data requisite for compliance with the four SMS safety pillars, which are safety policy, risk management, assurance and

promotion. Real-time footage that is captured from video can be used to measure driving behaviors and improve risk management for a fleet.

Commercial transit operations are often first to be blamed during incidents on the road. With video-based safety, transit agencies can pull video in near real-time, provide the requisite data to responding officers/insurance providers and exonerate their operators without having to go through costly litigation. In the instances where a transit driver was at fault, agencies can quickly work to resolve the issue, speeding the claims resolution process and allowing their operations to resume in a timely fashion. This process can save hundreds of thousands of dollars each year and get drivers and vehicles back on the road.

Noting that the SmartDrive program also provides necessary

contextual evidence to exonerate a driver wrongly accused in an accident, Patrick Manley, director of safety and security at RATP Dev USA, added, "Nothing else tells a better story than video. Video immediately exonerates a misunderstood situation and helps turn grey areas into black and white."

Video is the answer

Agencies should ensure their fleets are capitalizing on the benefits of big data and utilizing the best technology available to operate at the highest level. With video-based safety and a managed services program, transit agencies not only get access to the most pertinent safety data in near real-time, but are given the insights necessary to exonerate drivers, comply with FTA regulations and most importantly, keep drivers operating safely on the roads. **MT**



Jason Palmer
is the chief
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at SmartDrive
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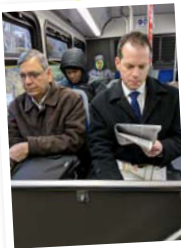


"This past year was the biggest year for transit in OKC in half a century... Next week, our city will begin Sunday bus service... Yesterday we welcomed our 100,000 rider on the @OKCStreetcar."
-Mayor @davidfholt
#StateOfOKC



Evan Glass
@EvanMGlass

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Sydney Metro - NSW GOV

@Sydney Metro

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THE VIEW



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CEO & Founder of Franklin Transit Services with Former U.S. Secretary of Transportation Mary E. Peters at #TRB2019 #transportation #transportationresearch #transit



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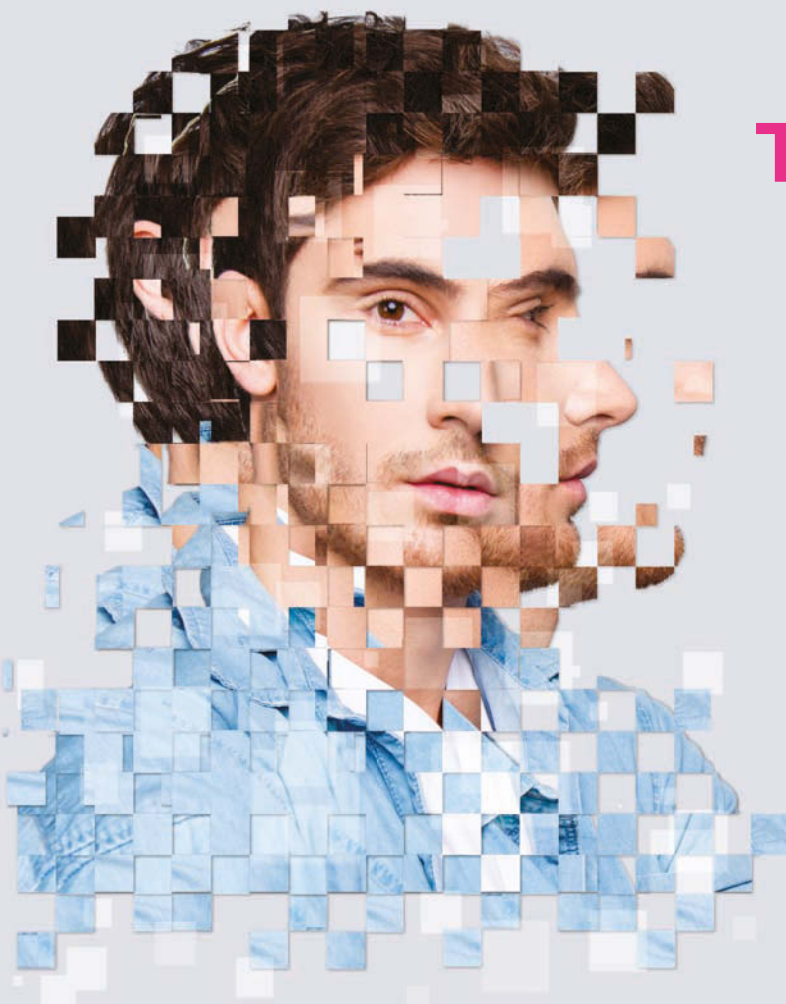


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