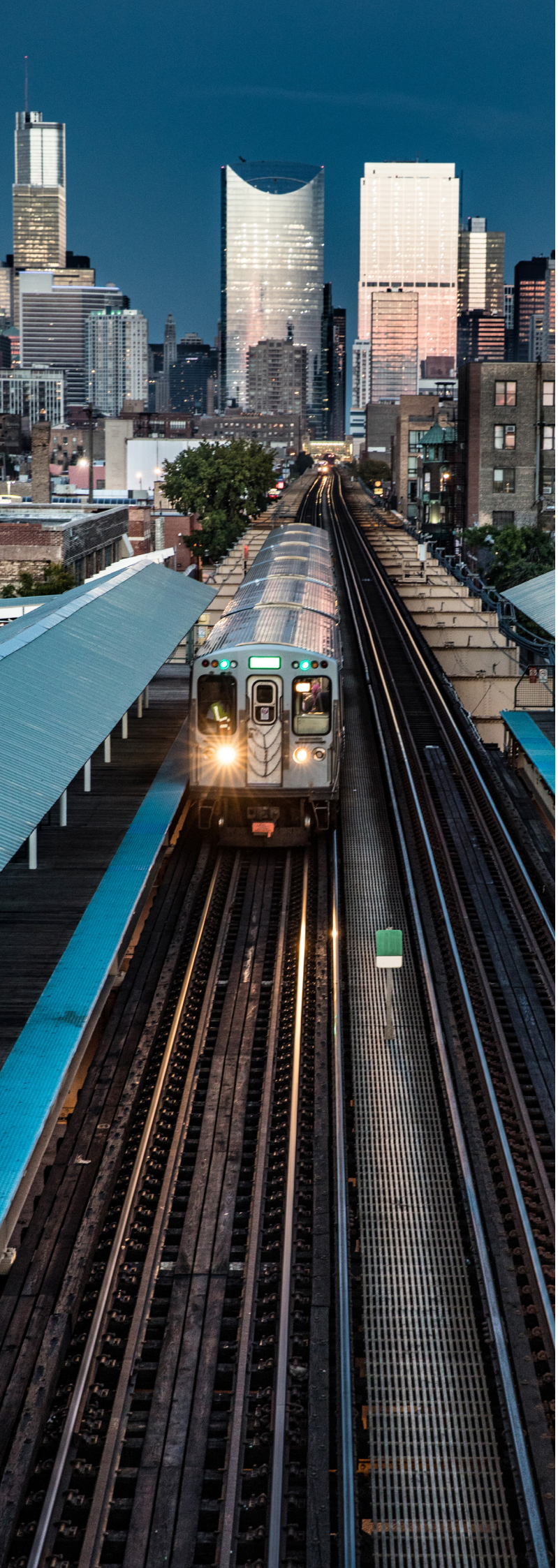

The Cognitive Enterprise for Oracle EPM, ERP and Cloud HCM in Public Transportation

Powered by IBM and Oracle

IBM

ORACLE | Partner

The Cognitive Enterprise for Oracle EPM, ERP and Cloud HCM in Public Transportation

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Overview

Public transportation in the United States is a $71 billion industry that employs 430,000 people[1] with one goal in mind: to serve the needs of the public in the best way possible.

Public transportation organizations support millions of private sector jobs and benefit the economy by getting individuals to and from work by connecting the public to communities all over.

However, public transportation organizations and government organizations must now navigate turbulent times driven by an unprecedented convergence of financial, technological, societal and regulatory forces. Impacts from the COVID-19 pandemic are causing new challenges for public transportation organizations. With a more virtual and reduced workforce, public transportation organizations must focus on using technology to be as efficient as possible while giving customers a safe experience.

In order to accomplish these goals, organizations are looking to reshape their standard business procedures to reduce operating expenditures while making smart capital expenditures.

1. Industry footprint. (2020, May 21). American Public Transportation Association. https://www.apta.com/research-technical-resources/industry-footprint

Meanwhile, public transportation organizations also have the many traditional challenges such as efficiently hiring a highly skilled and diverse workforce, improving ridership experience, understanding the impacts of Transportation Network Entities (TNC) and micro-mobility services, and bolstering cybersecurity. To remain competitive, organizations are rapidly adopting many changes, including training their employees with additional skill sets to achieve better job performance, efficiency and flexibility.

Another challenge that is dominating CIO conversations is the modernization of legacy systems. Management of applications on outdated systems is rigid and doesn't provide the proper resilient architecture or predictive analytics necessary to model the probability of disasters as well as contingency and recovery plans. Public transportation organizations are also increasingly concerned with their level of public engagement. With the technology and expertise that IBM provides, public transportation organizations (DOTs, Tollways, Airport Authorities and more) will have more resources available to focus on the immediate concerns of their customers. Clients are also increasingly interested in the power of business intelligence and analytics.

IBM, powered by Oracle Cloud Applications, is uniquely positioned to help public transportation organizations navigate through the COVID-19 pandemic and beyond.

IBM has years of experience and thought leadership in transportation which enable high value transformation. In the following six segments, you will learn how IBM uses advanced analytics, cloud and security capabilities to enhance Oracle Cloud Applications, tailored to the transportation industry.

1

Funding and Financial Impacts

The COVID-19 pandemic has caused unprecedented financial, technological, social, and regulatory pressures to public transportation organizations including, but not limited to **service limitation, workforce cost reductions, idle asset management, debt obligation worries, delayed capital projects, and infection control**.

Solutions using Oracle Cloud Applications, AI and automation provide significant cost savings, business outcomes and optimized user experience to end users.

Solutions can be divided into the following three categories:

1. **Planning, Budgeting and Project Management**
2. **Fraud Reduction and Procure to Pay Efficiencies**
3. **Elimination of Financial and Accounting Redundancies.**

These solutions will help public transportation organizations to reshape their standard business architectures; standardize systems and metrics to track performance, schedules and budgets; reduce costs and capital spending; improve cash flows, and enhance ridership by improving customer experience.

Planning, Budgeting and Project Management

"As the coronavirus pandemic wreaks havoc on the U.S. economy, state and local governments will not be immune from the pain. In the near term, governments face liquidity challenges, as many tax deadlines have been postponed. In the longer term, governments will experience large revenue declines that may lead to significant budget cuts."[2]

Solutions, leveraging AI and Oracle Cloud Applications, can help public transportation organizations adapt and meet the rapidly changing budgeting and financial realities of today's environment. IBM understands this volatility and models the financial and operational changes based on fast changing assumptions.

"Project financial management goes well beyond simply planning, capturing, and managing costs on individual projects. It must also address the customer's need to maintain a balance between the project investment and the expected benefits or returns associated with that project, ..., and the overall impact on their business results."[3]

2. Alison Felix, Senior Policy Advisor for Federal Reserve Bank of Kansas City, "COVID-19 Challenges State and Local Government Finances", Main Street Views: Policy Insights from the Kansas City Fed.

3. Wilson, S. & Schwartz, C. (2011). Powerful project financials. Paper presented at PMI® Global Congress 2011
www.pmi.org/learning/library/powerful-project-financials-6339

Planning budgeting and project management					
Oracle Planning and Budgeting Cloud Service (PBCS)	**IBM Services**	**Oracle ERP Cloud Budgetary Control and Encumbrance Accounting**	**IBM Planning Analytics**	**Oracles's Project Portfolio Management (PPM)**	**IBM Project Financials Portal**
Leading planning, budgeting, and forecasting solution	Rollout financial tools with IBM's services	Prevent overspending with real-time checks and reservations against budgets, projects or grants when processing requisitions, purchase orders, supplier invoices, or journal entries	Automates your planning, budgeting, forecasting and analysis processess	Manage projects, record details and manage financial aspects	Analyze key project financial elements such as costs, revenues, billing and unbilled transactions or work in progress with a full project centric view from planning through to collections

Fraud Reductions and Procure to Pay Efficiencies

"Fraud Waste and Abuse (FWA) leads to improper payments, which refer to the financial losses that undermine program integrity. Typically, improper payments are defined as avoidable payments that are not mandated by statutes, regulations, and court orders. Addressing the problem with cognitive computing can enable better decisions through real-time understanding of key information found in large and distributed data sets. Instant analysis enables governments to stop payments before they are made, significantly reducing the amount of fraud and the costs to recover."[4]

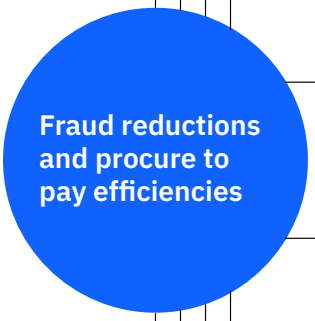
State and Local Public Transportation Systems are in the business of delivering on the promise of trust to stakeholders. Dealing with fraud adds time and expense, while reducing trust systemically.

"Using cognitive capabilities embedded within procurement, IBM experienced a USD $65M saving year on year in 2017 and expected a similar saving to be achieved in 2018"[5]

Solutions use analytics, automation, and Oracle Cloud Applications to detect fraud and reduce risks. IBM works with the state and local agencies to identify such areas and subsequently works to roll out the tool-sets that enable the organizations to make the analytical decisions based on data.

4. IBM Center for The Business of Government, "Understanding Cognitive Counter-Fraud Waste and Abuse".

5. IBM Institute for Business Value Cognitive Procurement: Seizing the AI opportunity.



Requisition Image Recognition
Automate conversion of images into demand and recognize up to 20% savings.

Requisition Intelligent Assistant
Recognize up to a 20% improvement in the accuracy and speed at which requisitions are created.

Smart inventory check
Automate inventory reconciliation across multiple systems to ensure consistent stock levels through the use of this RPA tool and recognize up to 40% improvement in time to reconcile and a 90% reduction in manual effort of repetitive tasks.

Touchless Supplier Data Management
Automate supplier registration and recognize up to a 60% reduction in time in supplier registration process.

IBM Blue Prism RPA for Invoice Matching
Automate invoice matching and achieve up to 70% reduction in manual intervention and up to 28% productivity improvement.

Accounts Payable Invoice Intelligent Assistant
Improve client satisfaction through improved first call resolution and reduced call center costs in dealing with supplier and internal queries relating to payment and invoices.

Oracle ERP Cloud Payables and Payments
Implement procure to pay with audit controls.

Oracle Advanced Financial Controls
Robust risk management capabilities including continuous monitoring of all expense and payable transactions.

IBM Risk and Compliance Intelligent Workflow
Transform compliance, counter fraud, anti-financial crimes, and enterprise risk management into an end-to-end platform that drives predictable work, a holistic view of risk for data-driven decisions, cost savings, and improved customer interactions, while maintaining regulatory obligations.

IBM Supplier IQ
Make informed decision based upon market data, reduce reliance on RFx data and remove the need for time consuming research.

Elimination of Financial and Accounting Redundancies

In a recent report based upon research by the McKinsey Global Institute:

"40 percent of finance activities (for instance, cash disbursement, revenue management, and general accounting and operations) can be fully automated, and another 17 percent can be mostly automated."[6]

On the following page, we have highlighted Oracle and IBM Cognitive Enterprise Applications, Artificial Intelligence, Digital Assistants, and Robotic Process Automation that will assist State and Local Public Transportation Systems to realize significant increases in levels of automation for financial and accounting operations.

6. Bots, algorithms, and the future of the finance function, January 2018 Mckinsey.com

Touchless Intercompany Reconciliation enables efficient processes which require critical control procedures to be automated.

The solution has been scaled to work across large organizations such as the public transportation industry. Based upon our case studies we have estimated 31% productivity gain, 100% accuracy and 28% reduction in journals raised to support intercompany reconciliation.

Oracle Accounting Hub Cloud consolidates multiple source systems together into the Oracle ERP Cloud's general ledger for a single source of truth.

Oracle's Financial Consolidation and Close (FCCS) Cloud Service allows public transportation systems to optimize their financial close including complex intergovernmental consolidation support; close process orchestration, and supplemental data collection.

Oracle Accounting Reconciliation Cloud Services (ARCS) configurable rules to automate the reconciliation of collections and report on exceptions. **ARCS** is a configurable matching and reconciliation tool that provides workflow and seamless integration with Oracle ERP Cloud, Oracle EPM Cloud or other data sources to enable large volumes of data to be brought together.

IBM Touchless Subledger Reconciliation automates the reconciliation of sub-ledger to GL balances with distribution of results / requests for action to relevant parties through the use of this RPA tool. Through this tool you can recognize up to a 40% improved efficiency, visibility and accuracy in reconciliation and closing the period.

IBM Touchless Control Account reconciliation automates the reconciliation of control account with distribution of results / requests for action to relevant parties through the use of this RPA tool. Through this tool you can recognize up to a 40% improved efficiency, visibility and accuracy in reconciliation and closing the period.

IBM Intelligent Asset Management automates the creation and update of assets, including integration management and correction through the use of this RPA tool. Through this tool you can recognize up to a 20% increased efficiency and accuracy in data entry.

IBM Watson® Cognitive Collection Platform (CCP) solution provides approaches to manage customer collections across collection channels. **IBM Watson CCP** is an end-to-end receivables collection and dispute management application.

IBM Touchless Close for Oracle ERP Cloud automates significant amount of the month end process, thereby reducing the overall time required and providing visibility across the life cycle of the close via dashboards to validate the outcome.

Benefits include:

- 70% improvement close cy
- 90 % reduction in manual effort of repetitive tasks

2

Public Health, Safety, and Security

The health and safety of users and passengers is the most important priority for public transportation organizations. Travelers want to be updated on what public transportation organizations are doing to improve their health and safety standards.

Ultimately, rider perceptions of how well transit operators are addressing their health and safety concerns will shape the recovery of transit demand. A new, smarter approach to public health and safety is needed to develop a unified response capability.

Key competencies that will ensure the most positive rider experience include accessing and integrating the right data, cybersecurity, tracking employee safety, responding to irregular operations, capturing and analyzing health and safety incidents and incorporating incident-based training.

Improving Safety with Hybrid Cloud

The future of transportation safety will require highly advanced communication systems that can automatically stop trains and other transit vehicles before unwanted incidents occur. Public transportation organizations that deploy this technology gain benefits through **line capacity enhancement, improved service reliability, faster running times, better track maintenance and higher safety standards**.

As public transportation organizations transition their IT infrastructure from traditional virtualization toward a hosted cloud model, Hybrid Cloud provides unified management and operations, as well as a consistent user experience.

IBM has developed a Multicloud Management Platform to seamlessly manage all aspects of client solutions, with consistent services across cloud platforms and containers.

The problem

- Need modern tool-sets to efficiently track and communicate transportation accidents and histories in an efficient and effective way in the available Software as a Service (SaaS) human resource systems
- Need to capture crucial data for employee medical appointments — such as required Personal Protective Equipment (PPE), job-related injuries and other health factors
- Need to comply with Occupational Safety and Health Administration (OSHA)
- Need rapid employee cost reimbursement

The solution

- Expand existing health and safety offering to offer a holistic view of employee health and safety:
  - Accident tracking module allows public transportation organizations to capture employee's accident history, transportation conditions, Emergency Medical Services (EMS) and police actions and vehicle information allowing supervisors to make informed decision on employee's skills and safety
  - Medical safety module allows organizations to maintain employee medical appointments
  - Reimbursement card module allows agencies to reimburse the employee for costs such as fuel, transportation and equipment(s)

Visit

Learn more about IBM Multicloud Management Platform
ibm.com/services/cloud/multicloud/management

Weather Modeling

Weather modeling leverages enhanced weather data and analytics to improve forecasts and mitigate possible service and network disruptions. While delivering the most accurate weather forecast in the world, IBM has started to leverage The Weather Company's (TWC) data and analytics capabilities to enable critical decisions government agencies are required to make. **Traffic management and optimization, energy consumption forecasting, and emergency management** are amongst the areas in which TWC services are being integrated into broader, Cognitive solutions.

All of IBM's insights allow government agencies to move from reactive decision making into a **proactive approach to managing both weather events, as well as other events in which weather data and analytics play a critical part**. IBM effectively brings together its own proprietary broad and deep set of capabilities, from consulting to software, and from analytics to cloud services in order to help organizations solve critical issues.

"Today there are much better options for building cloud solutions on open-source software. To put ourselves in a stronger position to meet future growth and scalability challenges, we decided ro re-architect all our cloud services using open-source tools in the IBM Cloud. Our web platform was the perfect place to start"

— Jagmeet Chawla, Global Head of Architecture Office and Cloud Engineering at The Weather Company

Cybersecurity

Public transportation organizations across the country are increasingly emphasizing cybersecurity as their top priority. Organizations know that the threat of breaches and resultant impacts is only going to increase. IBM knows that as populations grow and economies bounce back from the COVID-19 coronavirus pandemic, public transportation is going to become even more critical to support that growth by combating network security breaches.

Public transportation organizations manage many critical applications and infrastructure for entire states and regions, so their risk exposure is uniquely significant.

"There are 86,000 new pieces of malware reported each day. The odds are high that your transportation systems have already been infiltrated."

— Transportation Research Board (The National Academies of Science, Engineering, Medicine)

Replacing the infrastructure, applications, and processes of the past is a substantial feat; however, the risks of failure to replace include endangerment of public safety, economic loss, loss of confidential information, and impacts on national security.

"The average cost of a data breach is $3.92 million."

— Ponemon 2019 Cost of Data Breach Study

In this vulnerable new world of cyberthreats, IBM encourages its clients to question and rethink everything. Public transportation organizations must work with trusted advisors to peel back the myths of cybersecurity and adopt a holistic strategy towards building resilience in their critical transportation infrastructure. **Resiliency** enables an organization to continue to function with the least amount of disruption in the face of a threat. Early detection and quick recovery allow organizations to mitigate risk and business impact of disruptions in order to provide continuous business operations.

The **IBM Cyber Resilience** approach uses advanced technologies and best practices to help assess risks, prioritize and protect business-critical applications and data, and rapidly recover IT during and after a cyberattack. **IBM Disaster Recovery as a Service (DraaS)** enables rapid and reliable recovery of business-critical applications and data within minutes of an outage. **IBM Resiliency Orchestration (RO) Services** optimize disaster recovery and reduce operation costs with intelligent automation to achieve up to 80% faster recovery.

Visit

Learn more about IBM Disaster Recovery as a Service (DRaaS)
ibm.com/services/business-continuity/draas

Learn more about IBM Resiliency Orchestration Services
ibm.com/services/business-continuity/disaster-recovery-orchestration

From	To	Benefit
Minimal Recovery Time Objective (RTO) and Recovery Point Objective (RPO) visibility except during tests / drills	Dashboard for continual monitoring and predictions of RTO and RPO	Reduced risk and increased visibility
Manual, error-prone operation of Disaster Recovery (DR) processes and run-books	Intelligently automated run-books and processes with predefined patterns for efficient implementation	Simplified and accelerated DR process
Complex approaches resulting in longer recovery times and resource intensity	Simplified solution using 450+ recovery automation library patterns reducing the recovery times and resources	Reduced deployment time, recovery time and operating costs
Manual DR testing / drills	Using technology to orchestrate automated test plans and failovers	Simplified DR testing exercises
Traditional DR focused at IT infrastructure level only	Managing DR and resiliency at the business process and application level through intelligent workflow management	Increased availability of business applications

3

Operational Efficiency and Reliability

As cloud technologies continue to challenge the fundamental understanding of how businesses work, organizations are moving quickly to adapt to a changing set of rules. In terms of operational efficiency and reliability, transformations that include Cloud and the Internet of Things (IoT) can provide real-time data and analytics that enhance the efficiencies of asset life-cycle management, server incident resolution, procurement, and supplier management functions to achieve lower costs, higher quality, and improved safety.

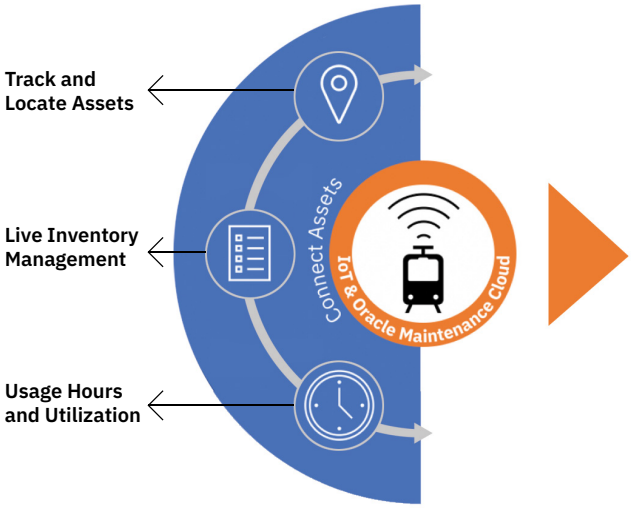
Asset Lifecycle Management

Asset Management is a critical area of focus for public transportation organizations to manage performance, risks, and costs while providing safe, low-cost, and reliable public transportation and other services to customers. As both the population and investment in transit has grown, fleet sizes have also increased. Thus, organizations are now managing fleets of different ages which further complicates asset tracking.[7]

Transit assets that have exceeded their useful life or are not properly maintained create higher risk for asset failures that can cause malfunctions, devastating accidents, and service disruptions. Operations are further impactedby unplanned downtime, high costs of unscheduled maintenance, and the inability to determine the root cause of failures. Additionally, many organizations still use manual or siloed systems which adds difficulty when integrating and disseminating information and slows the decision-making process at the point of impact. As a result, public transportation organizations need to establish systems that provide increased visibility to asset health, and advanced analytics to predict asset uptime, maintenance, and repair.

Oracle Internet of Things (IoT) Cloud and Oracle Supply chain Manufacturing (SCM) Cloud combined functionalities allow organizations to move from a reactive to a predictive and prescriptive asset maintenance model to maximize operational efficiency of physical assets, uptime, and productivity. This solution ensures product quality as organizations detect and fix problems before they otherwise become apparent which ultimately, improves the customer level of service and drives profitability. The graphic below details key features and benefits.[8]

An all-encompassing asset management solution, such as that provided by Oracle IoT Cloud and Oracle SCM Cloud, enables organizations to maintain predictability of costs and repairs for proper budgeting, ensure regulatory compliance, and improve the physical condition of their rolling stock and equipment to enhance performance and ridership.



Features and benefits

- Uses real-time data from connected assets to detect anomalies, and uses advanced analytics to predict failures and optimize maintenance planning
- Generates actionable insights that trigger workflows with prescriptive actions, such as creating work orders or shortening replacement intervals
- Continues to refine maintenance schedules to maximize machine uptime using adaptive intelligence and machine learning
- Provides financial details to understand current, future, and total life-cycle cost to operate and maintain assets
- Enables end-to-end visibility for seamless exchange of information and improved productivity through integration with finance and other SCM Cloud modules

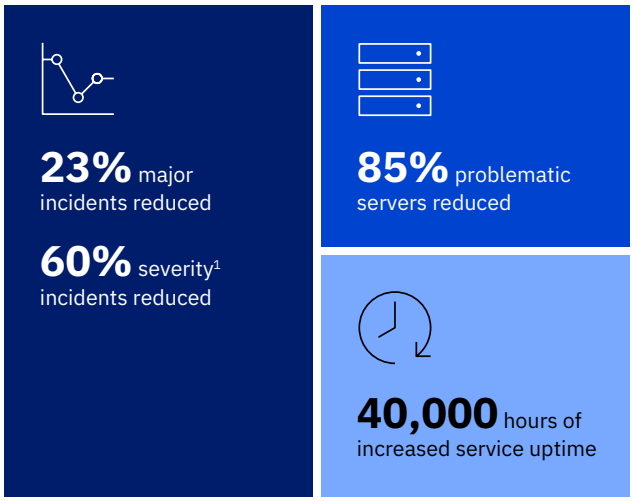
7. Federal Transit Administration (FTA), Transit Asset Management Guide, updated November 2016, FTA Report No. 0098. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/57411/transitassetmanagementguideftareportno0098.pdf

8. Oracle Corporation, Future Ready Predictive Maintenance Infographic, December 11, 2020. https://www.oracle.com/a/ocom/docs/applications/supply-chain-management/oracle-future-readypredictive-maintenance-info.pdf

Server Incident Resolution

A significant portion of public transportation organizations' IT infrastructure portfolio is subject to traditional maintenance and support efforts that drive an unpredictable workload and significant number of incidents in the service management life-cycle. The resulting problems and changes directly impact internal and external client service and result in a less than positive experience.

In order to properly flag risks and problematic changes, organizations require a **cognitive-based, automated service management process** that begins with incident detection and progresses through problem determination and resolution. In addition, our solution can assess and make deterministic predictions of the probability of application environments subject to failure. This capability should extend beyond the core application operating systems to databases, network, and security environments to reduce their respective impacts on service management. Expected outcomes include the prediction and remediation of troubled environments, an increasing degree of automated incident resolution, and a dramatic reduction in the time-to-resolution.



Procurement and Supplier Management

"Procurement is arguably the single most important factor for a public transit agency's bottom line."[9]

Viewing procurement and supplier management as key business disciplines rather than just a series of mundane and compliant transactions, agencies can strengthen operational efficiencies and supplier partnerships that create a competitive advantage. Critical areas of improvement within these functions include standardization, data access and visibility for employees and suppliers, and supplier performance management.

Oracle SCM Cloud processes optimize all aspects of planning, sourcing, fulfillment, and logistics to reduce cost and improve productivity. Additionally, enhanced supplier features such as self-registration, the ability to post invoices, and the visibility to payment data, move the burden of data entry to the supplier which allows employees to focus on more pertinent tasks. The data gathered through these processes is then used by **Oracle Business Intelligence Applications** to provide real-time procurement and spend analytics for end-to-end insight and a complete picture of supplier performance to enable more informed decision making.

Actions	Features	Benefits
 **Transact**	– Supports decentralized requisitioning, receiving, and inventory management – Integrated demand and supply planning processes – User access controls	– Provides standardization through workflow, accounting, budget controls – Demand is properly fulfilled – End-to-end visibility for employees while maintaining separation of duties
 **Collaborate**	– Enhanced supplier features – Shared vendor master – Shared content, context-sensitive help for employees	– Improves service as routine supplier inquires are eliminated – Decreases costs as business units leverage pricing and volume discounts – Improves employee collaboration and productivity
 **Analyze**	– Supplier performance reports – Supplier payables analysis	– Enhances understanding of supplier relationships to reduce risk to the organization – Enables organizations to maintain relationships with the best suppliers

9. American Public Transportation Association, Procurement Handbook: A Guide for Transit IndustryExecutives, October 2014. https://www.apta.com/wp-content/uploads/Resources/resources/bookstore/Documents/APTA_Procurement.pdf

4

Customer Experience

A Complex Ecosystem: Many different aspects of the business—technology, operations, management, training—all influence the customer's experience. **85% of customers feel that the experience a brand provides is as important as the actual service delivered**. A customer's experience with an organization is a journey. On any journey, the adventurer is going to go through changes in emotions, changes in environment and changes in plans. As the shepherd of such a journey, a public transportation organization must be prepared for all scenarios.

Ensure access to data: Transportation employees, despite being the first point of contact for most passengers, often don't have access to the right data at the right time. Empowering them with the appropriate tools is imperative for driving real personalization and loyalty in the future. Network failures and systems outages can impact customer satisfaction, and many current IT systems are old and complex which makes the sharing of data difficult.

Modernization and Mobilization: Systems that interface with the customer need to be simpler and more accessible. Customers demand a more seamless experience from start to finish. Therefore, mobile payments are a must, and the more automation the better. An organization must have the proper infrastructure to support innovation in payment systems. Customers also want to be able to know what other transportation options are available to them and how those options would impact them. This requires a high degree of personalization and mobility.

Re-frame Your Business Around the Customer: People, process and technology all need to be anchored to a customer-centered strategy. IBM business designers start with Enterprise Design Thinking, co-create with IBM Garage Methodology and make data work harder by connecting it to customer platforms to drive speed and insights.

Shift the Paradigm of Customer Care with AI: Taking care of your customer's needs impacts both your top and bottom line. Ensure your customers and agents are empowered with AI-infused omni-channel solutions that make your business more responsive, in the contact center and in the field. IBM Watson Assistant can handle thousands of conversations a day and significantly minimizes follow-up calls to human agents.

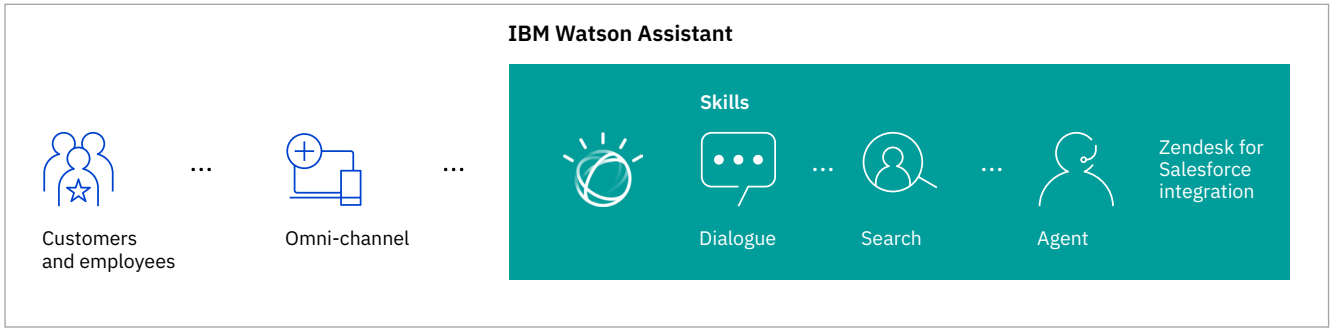
IBM Watson Assistant

“Only leader for AI Powered Conversational Computing”

– Forrester Research

Forrester study finds IBM Watson Assistant customers saw $24 million in benefits over three years.

Conversational AI Fueling Smart Customer Experiences:



Build a resilient and smarter call center: IBM Cognitive Care solution can help you create smarter omni-channel experiences by leveraging real-time data, intelligent automation and AI technology. Public transportation organizations can transform customer conversations, scale operations and delight customers.

AI First with seamless human touch

Enhance digital channels to serve customers in their channel of choice, on their own terms, 24x7

Seamlessly blend automated digital service with human assist (if and when needed)

Empowered customer care agents

Empower associates to quickly, accurately, and consistently address inquiry on first contact

Enable a single view of trusted customer data across every interaction

Proactive personalized engagement

Reduce reactive engagement by proactively anticipating and addressing customer needs

Personalized communications in the ‘moments that matter’ in their preferred engagement model

5

Workforce Retention

HR leaders are facing a work environment irreversibly changed by the pandemic. As a result, HR leaders have never been in a more essential position. Strategies shaped during the health crisis need to evolve—enabling a more adaptive resilient workforce and embracing digital innovation to outmaneuver uncertainty and continuously chart a new path for the future.

IBM and Oracle Linkage

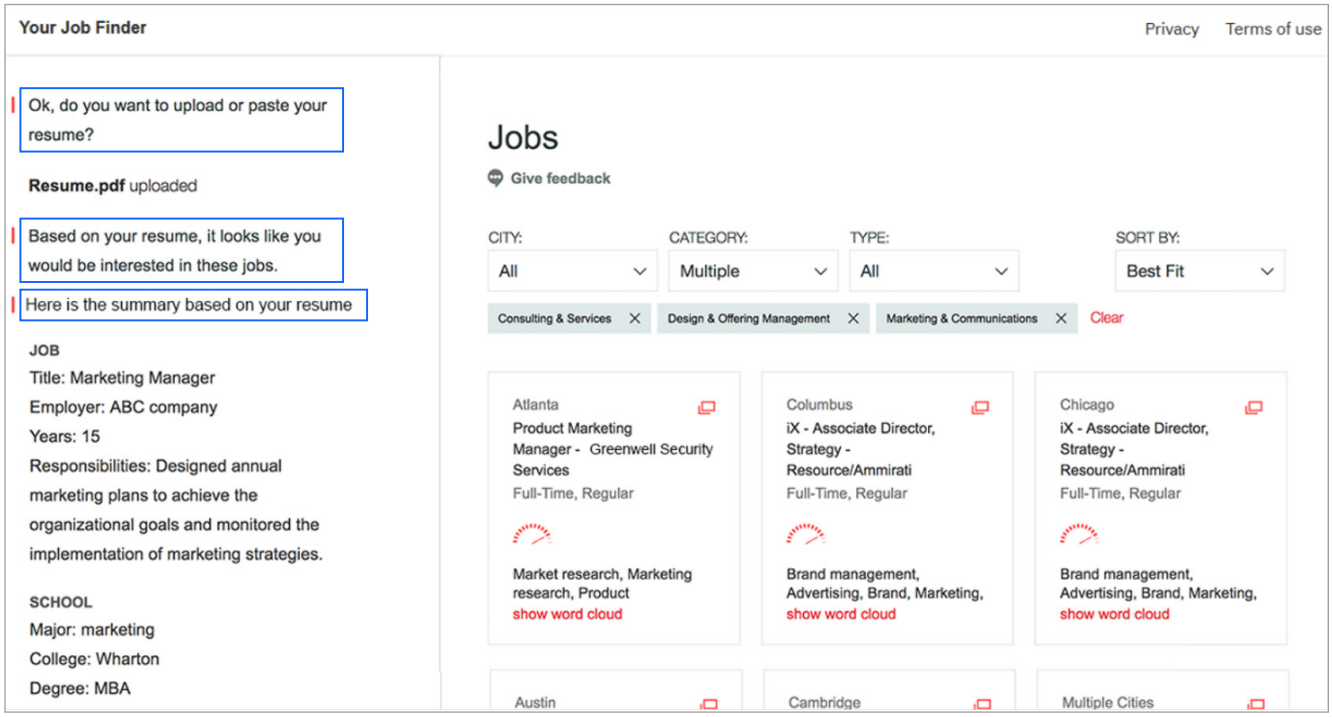
IBM and Oracle technologies are designed to work cohesively for the public transportation industry to adapt to the future demands of change across multiple talent, work and cultural dimensions. At every stage in the employee life-cycle, there are solutions geared to ensure that the industry can acquire, manage and retain top talent in the industry.

	Attract	Hire	Engage	Retain	Develop	Grow	Serve
							
IBM	Watson Candidate Assistant	Watson Recruitment	Shift Rostering	Myca - My Career Advisor	Skills Inference	Watson Career Coach	Payroll Advisor Cognitive Assistant
ORACLE	Oracle's Talent Acquisition Solution (ORC) (Fusion) and OTAC (Taleo)	Global Human Resources	Talent Profile Goal management Performance management	Workforce Predictions	Learning Management	Career and Succession Planning	Oracle Digital Assistant Oracle Platform as a Service (PaaS)

Workforce Retention

IBM Watson Candidate Assistant engages job seekers in personalized discussions and recommends positions that fit their skills and experiences to help them find a job that they will thrive in and grow with. This enables your organization to modernize its approach to human resources and transform the HR agency into a business partner and the organization into an employer of choice.

IBM® Watson Recruitment (IWR) is an AI—powered talent management solution that increases recruiter efficiency. It surfaces the most qualified candidates for the job—without human bias.



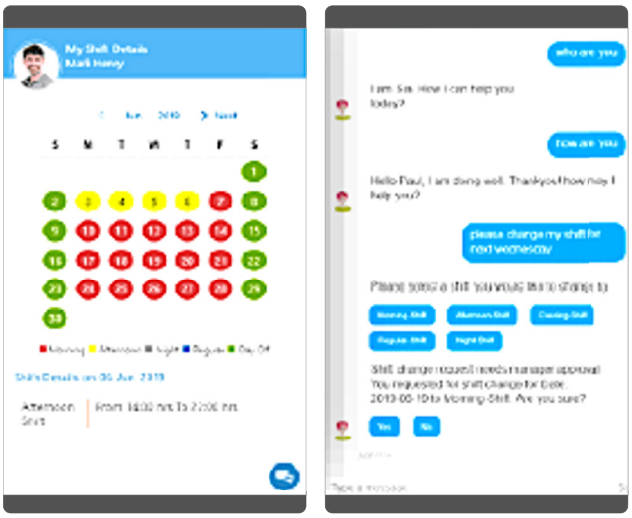
Engage and Retain

IBM Shift Rostering solution enhances the delivered functionality in the Oracle Cloud HCM product. The solution is designed for organizations of all sizes and business models and incorporates chatbots for both managers and employees, while offering a personalized employee experience.

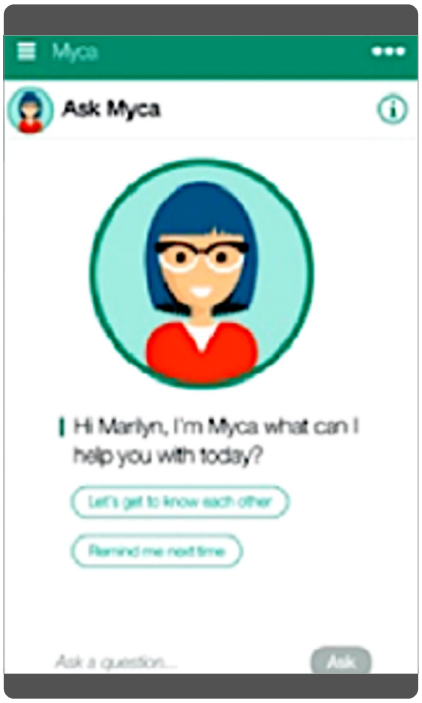
IBM Shift Rostering solution includes:

– Conversational interface — "What shift do I work on Thursday?"

– Integration with Oracle Cloud HCM to update employee shift changes after a shift swap is approved.



When employees know that they have room to grow, retention is easier. **Myca (My Career Advisor)** is the mobile chatbot that employees can engage with anywhere, anytime. It interviews users, understands their needs, and provides instant personalized career advice to the most commonly asked career-related questions. Powered by IBM Watson, Myca supports 40+ career-specific questions as well as general out-of-the-box 'chit-chat' queries. This cognitive-bot learns from user feedback on its answers and additional comments, to personalize and refine its future responses.



Develop and Grow

IBM Expertise Inference recognizes that skills are the new business currency and can help organizations understand the skills they have.

IBM Expertise Inference

- Expertise Inference is a state-of-the-art, consistent, objective, efficient way to measure the skills and skill depth of your workforce
- Inference has been in production within IBM for 5 years, with high success (85% accuracy)
- Expertise Inference provides baseline skill levels to track progress over time and drive targeted workforce planning
- Inference skill data serves as a source to provide employees with personalized skill coaching and actions

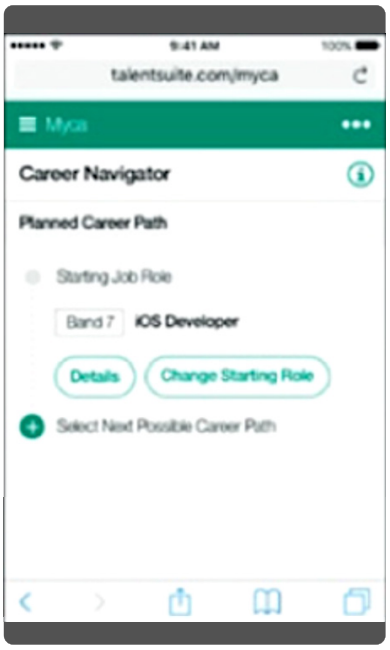
At IBM, inference mines data from:

- **23.4 million** documents
- **60 GB** of text content
- Across **22** data sources
- End to end information architecture — **robust, scalable, consistent, and fair method methodology**

IBM Watson® Career Coach is a virtual assistant that aligns your business goals with your employees' career aspirations. Watson Career Coach learns about an employee's preferences and makes recommendations for job roles based on their current role and skills. Watson also serves as a personalized development coach that recommends learning to close skill gaps to their preferred role.

Job Opportunity Match helps employees find open job positions by asking a set of skills-based questions or uploading their resume. Using IBM Watson APIs, Career Coach matches users to internal job opportunities that are relevant to their current career experiences. Users can refine their search and then apply directly from Watson Career Coach.

Career Navigator works in conjunction with Career Coach and enables employees to define a personalized career progression and receive guidance based on job transitions of others in similar positions and roles.



6

Technological Innovation

Innovation is the thread that weaves together all the challenges and solutions discussed. With a long history of leading technological innovation - IBM specializes in proven methods that create valuable results.

IBM Traffic Analytic Solutions

Improve traffic management with a congestion prediction application to proactively plan and execute operational changes to manage and optimize for heavy traffic patterns and behaviors. Predict volume of vehicles with more than 90% confidence by incorporating data sources such as Traffic, Incidents, Flight Schedules, Events, Parking Garage Occupancy and Weather.

Advise on congestion pricing

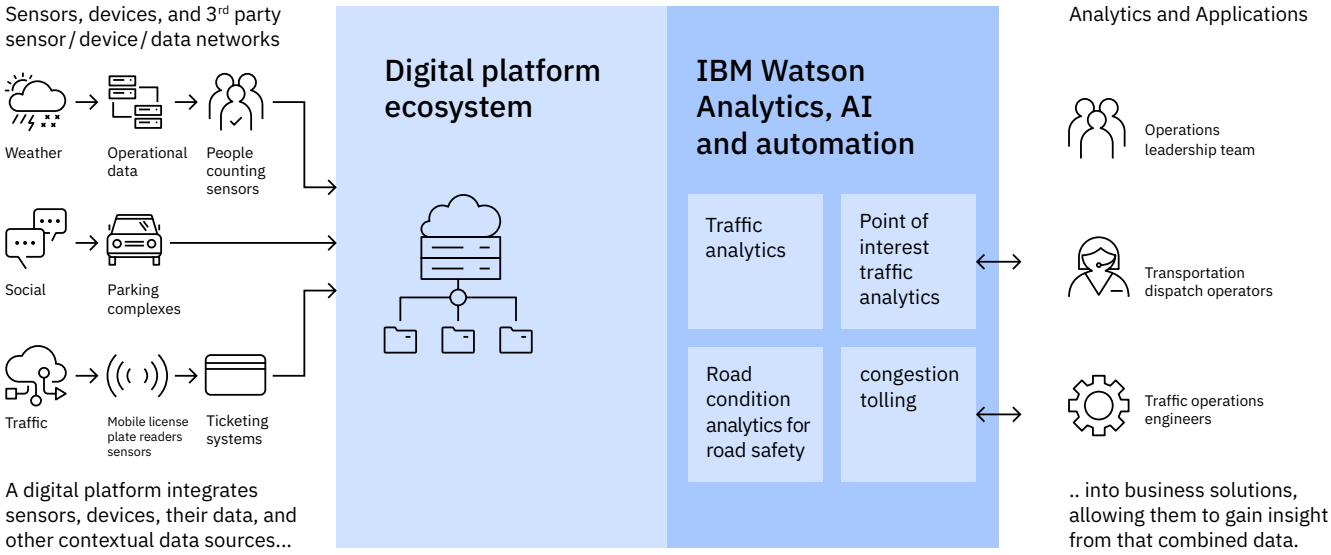
Leverage experience in designing, implementing and operating key aspects of congestion pricing implementations.

Implement congestion pricing

Ensure citizen acceptance by infusing innovative solutions based on IoT, artificial intelligence, blockchain and cloud.

Operate congestion pricing

Build on IBM business process library for congestion pricing; leverage automation and analytics to make operations efficient and meet citizens' demands.



IBM is exploring a number of capabilities that utilize Internet of Things (IoT) technology and Artificial intelligence (AI) to help public transportation organizations approach long standing challenges in new ways.

Traffic Analytics	Point of Interest (POI) Traffic Analytics	Road Condition Analytics	Congestion Tolling
A full picture, digital twin, of traffic on the roadway with the ability to understand the causes of congestions and simulate how traffic will behave in the future. Around cities, we could explore multi-modal transportation, micro-mobility, TNC, and parking data sets and the associated impacts on congestion.	Explore the traffic around specific locations. For example, airport traffic is impacted by weather, flight schedules & delays, aircraft size, airport parking/ shuttle, events, and holidays.	We have developed visual analytics to detect cracks in road or bridge surface and can create work orders in the EAMS. Also, we have built black ice and snow analytics to predict winter weather road conditions.	Traffic analytics can be used to set and measure the effects of a congestion tolling solution. With our traffic analytics, we can understand yield management and congestion impacts of communicating and then implementing dynamic pricing models.

7

Conclusion

Public transportation organizations need to continue to connect people to their communities.

With extensive experience in the transportation industry, IBM can address new and existing challenges for public transportation organizations.

Transform your services and processes with to reduce expenditures, improve safety and increase the skills of employees to meet the evolving needs of your constituents more flexibly, safely and securely.

8

Client Case Study

> “IBM Services and Oracle Cloud have provided invaluable support aswe implement the first wave of our transformation program.”
>
> — **Karin Jonsson, Corporate Controller, CSL Group**

CSL GROUP

CSL Group Inc.

Problem

Employing more than 1,500 people (both shipboard and ashore) across three continents, Canada Steamship Lines is the world’s largest operator of self-unloading vessels. Canada Steamship Lines delivers more than 78M tons of dry-bulk cargo a year for their customers yet embarking into the digital age still proved problematic. IBM® Services helped deliver a multi-pillar Oracle Cloud solution in less than 20 weeks resulting in a solid foundation for Financial Accounting and Reporting which provides value through improved quality and timeliness of information in support of better decisionmaking and insight.

Requirements

- Boost efficiency and cut costs, without sacrificing service quality
- Large-scale business transformation, encompassing an overhaul of the organizational structure and core technology platforms across finance, human resources and procurement
- Align the Oracle applications to suit the new business organizational structure, reducing the need for additional changes further down the line

Solution

- Oracle Enterprise Performance Management (EPM) Cloud
- Oracle Enterprise Resource Planning (ERP) Cloud
- Oracle Cloud Human Capital Management (HCM)
- Oracle Supply Chain Management (SCM) Cloud
- Oracle Talent Management Cloud

Results

- Sets the company on course for **major efficiency gains** and **cost savings**
- Lightens the burden of manual work by harnessing **automation**
- Delivers **competitive advantage**

Learn more

ibm.biz/cslgroupcasestudy

Client Case Study

> “IBM brought something that we were lacking—a vision for the solution and knowledge of the product—and they got us on track quickly”
>
> **—Bill Gayler, ERP Systems, High speed Rail Two (HS2)**

HS2

High Speed Rail Two (HS2)

Problem

High Speed Rail Two (HS2) is embarking on a massive construction project which will result in a new rail line in 2026. In order to manage this significant task they needed a world class ERP which is scalable and flexible to cater for the organization as it grows and its purpose changes. IBM® Services worked with the client to deploy Oracle ERP, HCM, SCM, and PaaS Cloud, allowing the client to move forward on the construction of the railway.

Solution

- Oracle Enterprise Resource Management (ERP) Cloud (Financials, Projects)
- Oracle Cloud Human Capital Management (HCM) (including Taleo)
- Oracle Supply Chain Management (SCM) Cloud (Procurement)
- Oracle Platform as a Service (PaaS) Cloud (including OACS)
- Oracle Global Payroll

Learn more

erp.today/ibm-and-oracle-power-hs2

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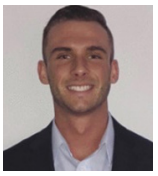
Authors

Rob Churchyard
Global
Oracle Practice Leader
rob.churchyard@uk.ibm.com

Deborah Bates
North America
Oracle Public Markets Partner
dabates@us.ibm.com

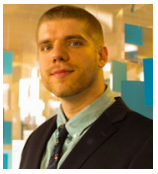
Vineet Raina
North America
Oracle State and Local Expert
rainav@us.ibm.com

Keith Van Leeuwen
North America
Transportation Industry Lead,
State and Local
keith.vanleeuwen@us.ibm.com

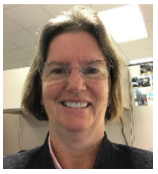


Chad Berl
North America
Oracle State and Local Expert
cberl@ibm.com

Brian Fimple
North America
Oracle State and Local Expert
bcfimple@us.ibm.com



Ethan Kersat
North America
Oracle State and Local Expert
ethan.kersat@ibm.com



Patricia Sharpe
North America
Oracle State and Local Expert
patricia.sharpe@us.ibm.com

IBM Corporation
New Orchard Road
Armonk, NY 10504

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