L&T Metro Rail
Hyderabad

ITS IMPLEMENTATION A CASE STUDY ON HYDERABAD METRO

SAP Hosting on AWS
for
Tsavaari App for Metro Rail Hyderabad

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Metro Rail India :

There are currently 11 operational rapid transit (also called 'metro') systems in ten cities in India. As of November 2017,
India has 425 kilometres (264 miles) of operational metro lines and 347 stations. A further 500+ km of lines are under
construction.

Metro rail lines in India are composed of mainly standard gauge. Projects like the Kolkata Metro and Delhi Metro used broad gauge for their earliest lines but all new projects in India are on standard gauge as rolling stock
imported is of standard gauge.

The first rapid transit system in India is Kolkata Metro, which started operations in 1984. The Delhi Metro has the largest
network in the entire country. The newest metro opened in Hyderabad Metro on 29 November 2017.

Tsavaari Mobile App:

TSavaari App is a free online travel App that acts as a point of convergence of transport options.

Hyderabad Metro Rail is well connected to major locations in Hyderabad, including schools, colleges and offices, with a host of associated travel options (MMTS, TSRTC buses, OLA cabs and autos, local autos and others), providing last mile connectivity.

Available modes of transport will be appended depending on infrastructure availability on TSavaari App.

TSavaari App is loaded with best-in-class features such as Journey Planner, Buy a Card, My Orders, My Trips, Notifications, Offers, Feedback, My Profile, SOS button and Terms of Service.

The mobile app would provide a comprehensive transport solution, with information on all modes of transport for a journey whether it is a TSRTC bus, MMTS train, metro trains and later even private carriers, said senior metro rail officials, requesting anonymity.

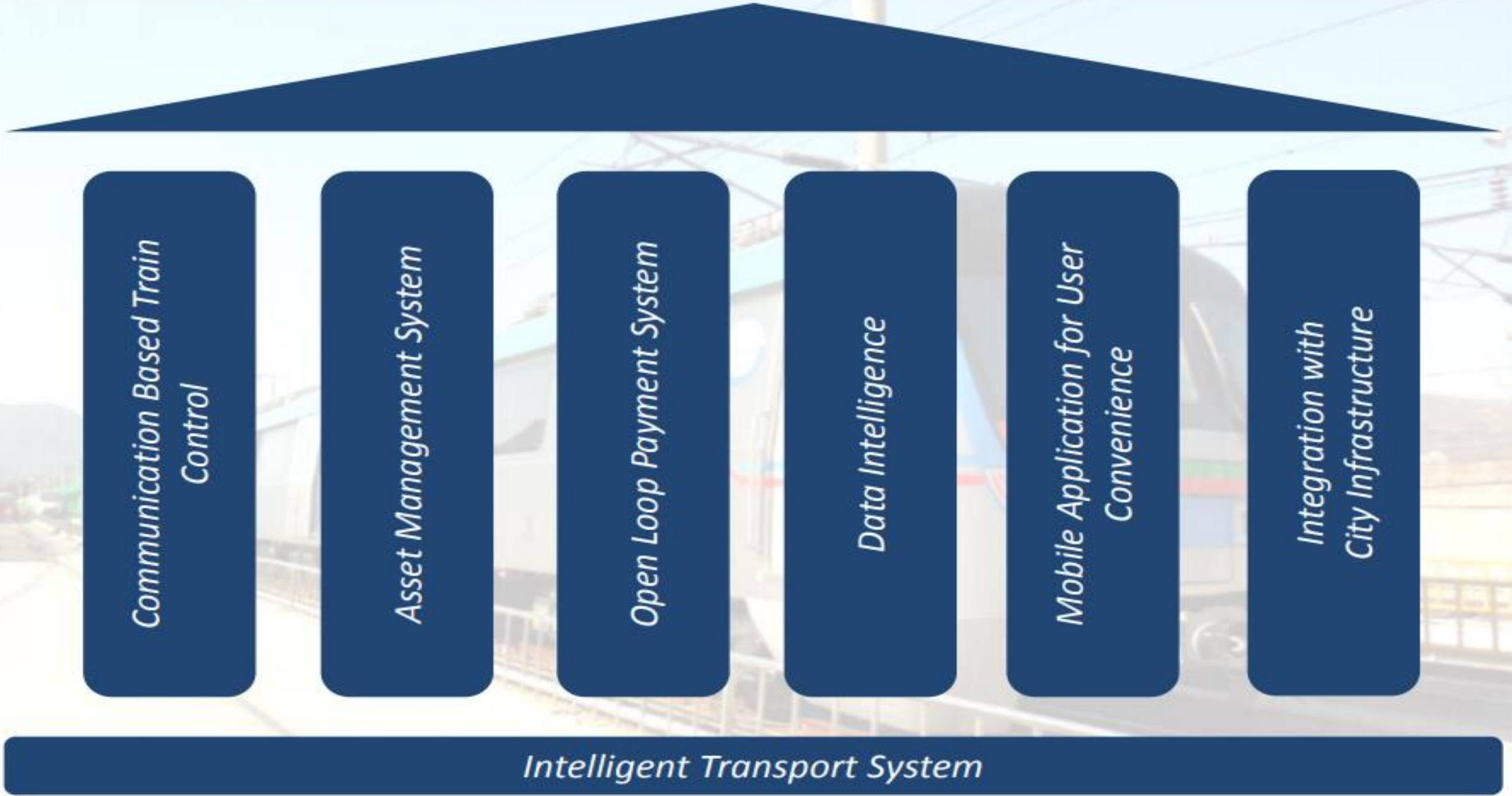
Commuters downloading the app would get an update on the nearest TSRTC bus stops and efforts have been on to provide live information on the bus frequency.

Apart from ticket tokens that can be purchased at counters at all the stations, a prepaid card of ₹200 would be made available for passengers.

Challenge:

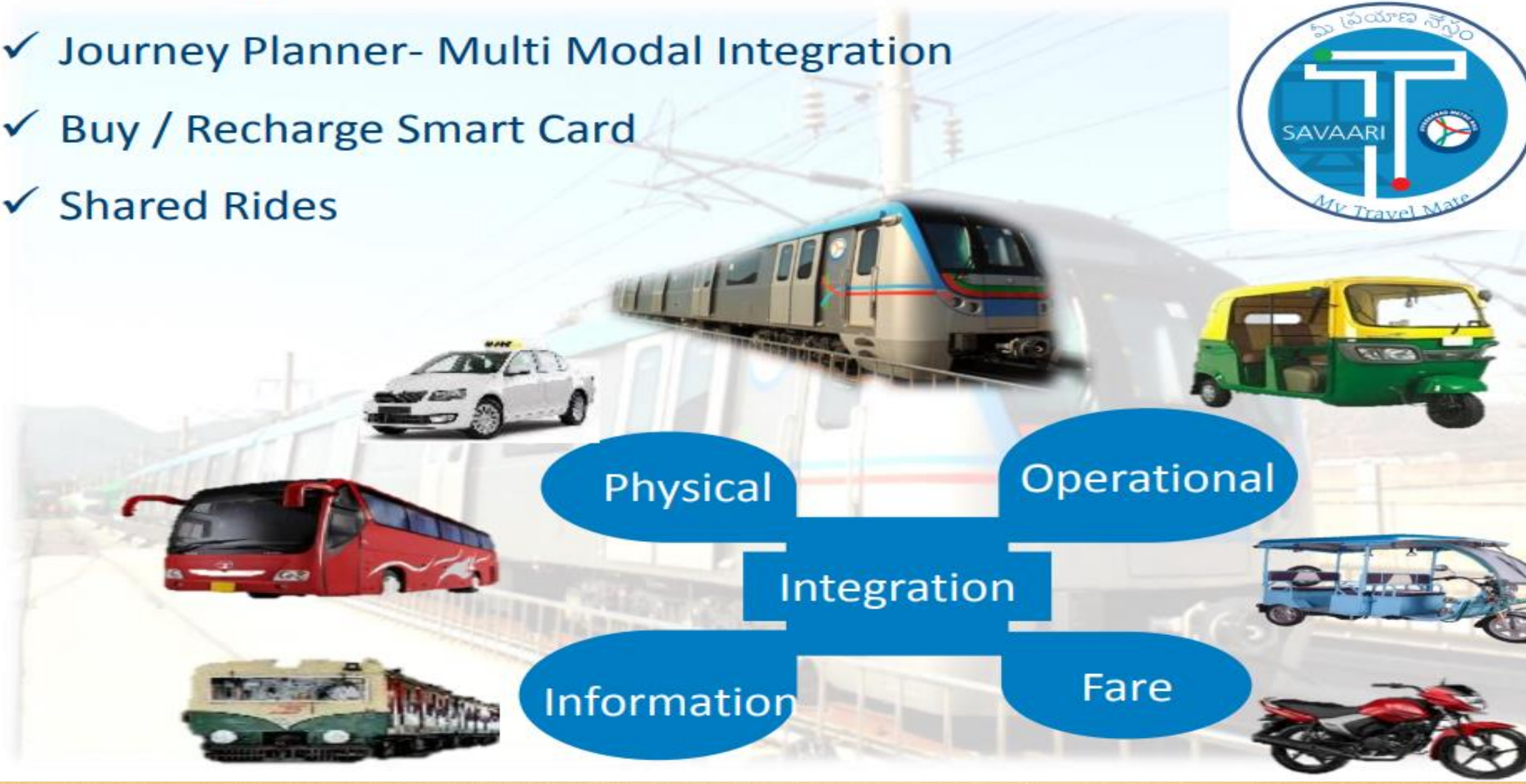
- ***Maintain performance during Peak hours such as the morning and evening hours for office and school timings.***
- ***Ensure zero downtime for the online ticket ordering application amidst increased time .***
- ***Scale database environment to keep pace with a 30 percent monthly increase in online transactions***
- ***Provide a solution that could be rapidly deployed without disrupting service and with little infrastructure***.

Intelligent Transport Systems- Hyderabad Metro Rail



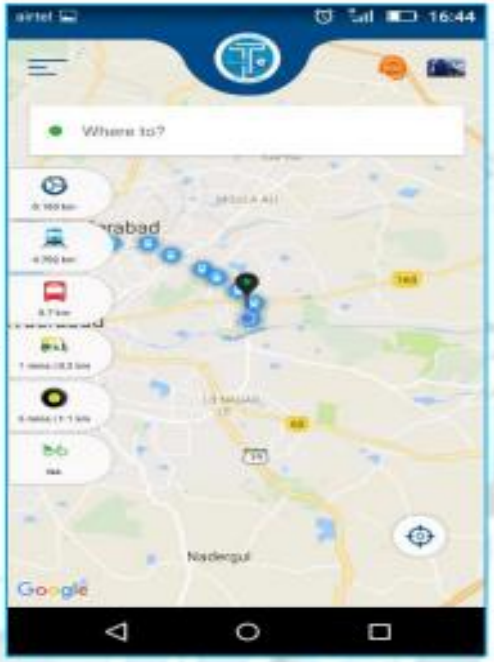
Mobile Application

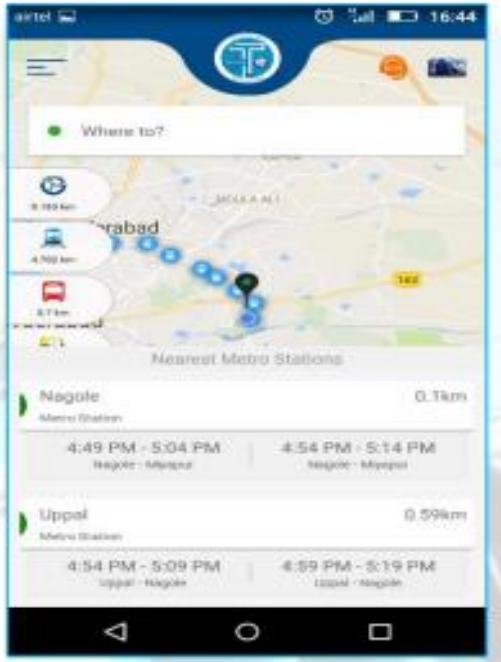
- ✓ Journey Planner- Multi Modal Integration
- ✓ Buy / Recharge Smart Card
- ✓ Shared Rides



Mobile Application

Journey Planner





Buy / Recharge Card

Why Amazon Web Services :

L&T Metro Hyderabad looked at both infrastructure providers and IT consultants at the same time, and ultimately selected Amazon Partner Network (APN) Premiere Consulting Partner Minfy Technologies as a consultant and AWS for commoditized infrastructure provision. Anil kumar says, "It's a high variability service, and we have it set up across dual Availability Zones. We have a sophisticated mechanism for how we link to that; it's not just direct through the Internet; there's also a range of virtual private networks (VPN) and fixed line options into it using AWS Direct Connect."

L&T Metro Hyderabad Tsavaari App uses the service for online applications with complex, heavy usage Balancing, and Amazon RDS with Multi-AZ deployments. It runs Windows Server using SQL Server.

Calculation applications in the background, running database and high intensity calculation engines, to calculate routes and ticket options. The number of servers has been used only 2 virtual instances. The solution includes Amazon EC2, Elastic Load .

The Benefits:

Using AWS enabled L&T Metro Hyderabad TSavaari APP to save about 20 percent in infrastructure costs. Anil says, "That allows that far greater flexibility and management of those costs." The AWS pay-as-you-go model was also a benefit to the company, enabling the company to pay close attention to its costs to handle them as effectively as possible.

Using AWS also makes it easier to provision and make changes. Ashby says, "Using AWS gives us far more flexibility to set things up. It's a big benefit to us in terms of agility and being able to react quickly."
The solution is still new for Tsavaari, but it is already using it to test new features. Anil says, "L&T Metro rail Hyderabad can benefit from opportunities and advances in areas such as data management."

L&T Metro Hyd sees the AWS solution as very successful, particularly in terms of availability for its customers. On the day Tsaavri launched the load was 60 percent higher than the previous busiest day, but the service remained largely available, and site users were able to access the system throughout the storm. Tsaavari adoption of the commoditized infrastructure has been so successful that other companies within the rail industry are looking at how they can adopt some of the same strategies.

"By using AWS, we've been able to reduce infrastructure costs by 20 percent and gained the flexibility to react dynamically to demand," Anil kumar says.


Modern Mobility for Modern Society
THANK YOU