

WHITE PAPER

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# How Metaverse can elevate the actual travel experience

Coforge

# Consumers are looking forward to shifting a range of their activities to the virtual world

New-age and immersive technologies like Virtual Reality, AI & Analytics have brought about a massive disruption in the everyday lives of consumers. From online game platforms like Roblox to immersive online shopping experiences with “try before you buy”, technology in many ways is slowly and steadily transforming businesses, their customers and their behavior and expectations.

Young millennials have comfortably adopted these digital technologies, which have made interactions in the virtual world closer to reality blurring the distinction between the physical and the digital world.



This rising comfort and adoption of digital technologies is now giving rise to consumer expectations for a seamless and immersive experience. **Consumers now expect a clear vision of the product or experience before purchasing.**

**As per a recent report by McKinsey, it is estimated that the metaverse may generate up to \$5 trillion by 2030 across consumer and enterprise use cases. It is also estimated to have a market impact of between \$2 trillion and \$2.6 trillion on e-commerce by 2030.**

These technologies are also revolutionizing the way people look at travel. Travel restrictions during the pandemic in last few years have already accelerated digital & contactless experiences, virtual tourism. People have started revising their approach to travel. The travel industry is therefore slowly realizing the value, the virtual world can bring in by enabling consumers to explore the destinations they had always been dreaming of visiting.

This paper showcases our point of view on how Metaverse and related new age technologies can transform the future of travel.

**As per a research report by McKinsey, 62% of the respondents were very excited by the possibility of travel in the metaverse, especially the ability to visit “places I can’t physically go”—including space.**

#### **I. Entering the Travel Metaverse – Travel journey with Julie**

The Metaverse is all set to be the next technology frontier in the travel world. It has the potential to not just boost virtual tourism but also elevate the actual travel experience and take it to a whole new level by offering travellers a realm of the actual reality and experience they can expect.

The Metaverse world can also enable people to interact and share their travel experiences.

As these underlying technologies like Virtual Reality, Augment Reality, Mixed Reality, AI & ML, Data Analytics, Blockchain, IOT are making headway, they are also shaping the future of the travel industry. These technologies are now being used in conjunction and converging into a broader technological capability in the shape of Metaverse, we are building for ourselves.



Below is a glimpse of a sample journey and how these new age technology initiatives at the different touchpoints are now shaping the future travel journey and transforming travel into technology singularity.

### Metaverse transforming Travel into Technology Singularity

#### Crafting Immersive experiences for the travelers across the journey

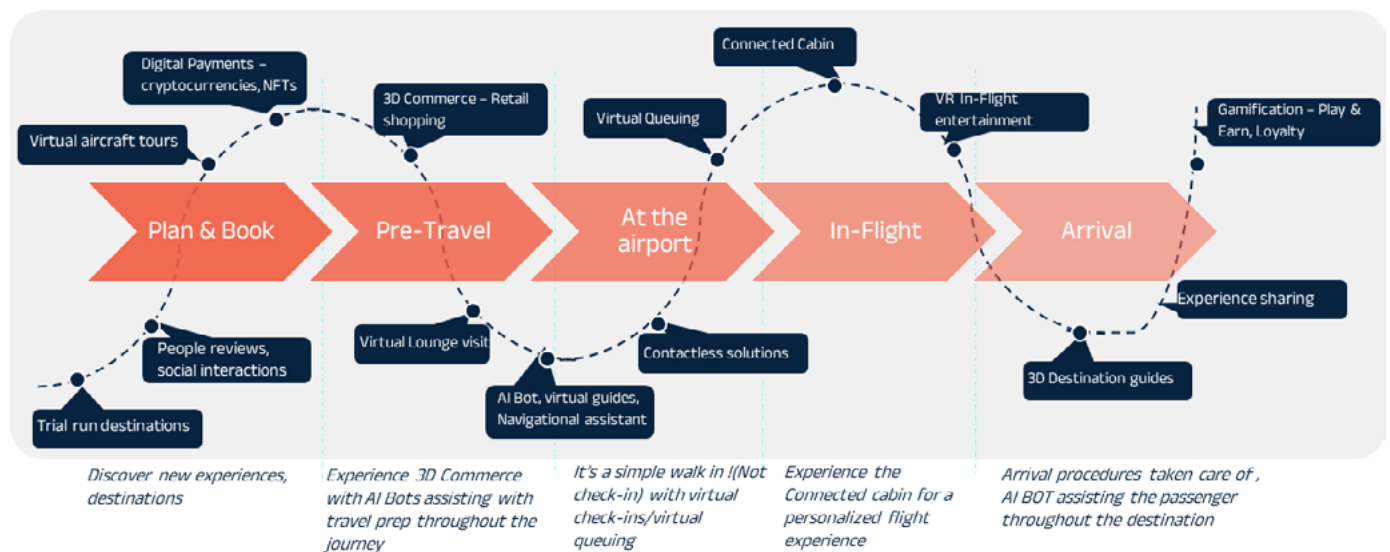


Fig 1: Travel Journey and technology touchpoints

To explain this better, let me take you on a travel journey for a fictitious character named Julie. Julie is a young millennial who loves to travel and explore new places and destinations. She is a loyal member of her favorite airline – 'Virtuasa Airline' and has collected lot of airmiles, which she is thinking of redeeming on her next trip.

This summer, she wants to visit an island destination to explore the world of water and have a fun-filled vacation with thrilling water sports & activities. She has started her research to narrow down the possible destinations. However, due to her current occupation, she's not able to spend a lot of time researching and so she hasn't been able to finalize her go-to destination.

She wants to talk to her friends & other people before finalizing her destination but it seems that none of her friends have been to similar places. Her travel dates are approaching fast and she is well aware that airfares would go higher and the best of properties would be sold out if she doesn't book in time. At the same time, she also doesn't want to book anything in haste and spoil her experience.

If only she could actually take a sneak peak at the islands & properties herself and then take an informed decision!

'Get a **quick glimpse** of the video showcasing how travelers like Julie can explore and experience a destination in the metaverse.

**Try before you Buy**

She decides to open the Airline site to check the flight fares and to her surprise, she's shown an option to take a virtual tour to the destination islands that the airline flies to. She clicks on the option to try and buy a destination experience.

#### • Try and Buy Destination

The minute she clicks on the given link, she is taken into a complete new virtual world where she can not just take a tour of the islands but can also view the possible activities she can undertake eg: scuba diving, swimming with dolphins, numerous water sport activities! She's mesmerized and enchanted by the whole experience. She can even take a complete tour of the properties where she can stay. She then finds a property right on the beach directly facing the sunset point! In this new virtual world, she quickly finds people who happily share their experience of staying at that property.

All her doubts have now vanished. She has found the place she wants to book.

In fact, she also finds a friend who is also looking at the same property around the same dates!

She clicks on the option to book and selects her travel dates and traveler names. She is shown a complete package with flight, hotel, car along with even optional services like travel insurance, destination events etc. All her worries have dissipated and she is feeling lot more confident in making the booking now as she has a first-hand experience of the property and the destination. She can book everything right here in just a few clicks.

She is also delighted to see that she can use her cryptocurrencies to make the payment for her booking.

- **Aircraft tour**

She carefully reviews her flight and starts to wonder how long her flight will take and what class to book. She finds that there is an option for her to take a virtual tour of the aircraft that lets her experience the services and also the view from her selected seat!

She clicks on the virtual aircraft tour and for a minute, she feels that she's actually on the plane to travel to the destination. She carefully compares the options in different cabin classes and selects her class of travel.

Her booking is completed with just two more clicks. It couldn't have been that simple!

- **AI BOT – Her new personal guide**

Just as her booking is done and she heaves a sigh of relief with her thoughts wandering off to her dream destination she had just experienced, she gets a message from **"Droid"**. The airline has just assigned her an AI BOT who will be guiding her throughout the travel journey. That's unbelievable! It has just taken away all her worries.

As her travel date comes closer, Droid reminds her to pack the necessities that will be needed for the trip, he also shares a link to declare her health passport details and baggage pick up details for a smooth and hassle-free travel.

Droid also informs her of her eligibility to get access to the premium lounge at the airport. She clicks to view the lounge and is able to book her preferred meal in advance.

- **The day of travel – seamless & hassle-free experience with Droid taking care of everything for her!**

On her day of travel, Droid guides her through the formalities of registering her digital id and virtual queue for a seamless airport experience. Using the digital id and virtual queue number, it's a simple walk in and she's not required to wait at the check-in counter through the long queues. Droid also guides her way to the lounge through AR based navigation.

As she settles down in the lounge with her hot plate of favorite meal, Droid offers her a wide range of content offerings - from music to e-papers, books, games and OTT content streaming apps. She selects her favourite movie and starts watching it happily. In a few minutes, Droid informs her that her turn to board is here and guides her to the required gate.

She is amazed at the zero queue and just-in-time boarding experience and as she settles down in her seat in the aircraft, she happily resumes her favourite movie which has been automatically added to her inflight entertainment app as well.

What's more, she realizes that her app also provides her with options to select her status (eg: do not disturb), meal at a given time and even select her drink/water which is served to her with just one click on the app. That's a **truly connected cabin experience!**

She's now confident that her arrival and destination experience will be even smoother with Droid on her side throughout the journey.

She happily dozes off dreaming about her vacation.



- **Smooth Arrival – All set to explore her destination!**

As she expected, before she lands, Droid informs that her baggage has arrived as well, and she can either pick it up at the given belt or she can have droid arrange for a direct delivery at the hotel property. She chooses the latter as she's now confident that it will be delivered safely and well in time.

Her other arrival formalities have already been taken care of and as she walks out, she is greeted by an agent who delivers the products she had ordered a few minutes back in the flight and along with it a welcome note, a personalized itinerary with list of destination events she can explore. She then walks out to see a cab waiting for her to take her to the property.

As she's gazing outside the window, she gets a message from Droid prompting her to enter the metaverse to share her flight & travel experience so far. She happily shares her experience and connects with her friend in the Metaverse who is residing at the same property. She informs her of a gala event tonight and sets up a meeting time with her to explore the destination together.

- **And the journey continues..**

It is therefore evident that Metaverse could drive a very different travel world within the next decade and whilst some may say it is a long way to go, we do not realize that some of these experiences like virtual tours, queues, AI bots are already becoming the norm.

Metaverse can unlock a lot of new capabilities, using new age technologies and by integrating with devices like mobile, IOT devices and the devices that we wear.

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## II. Understanding Metaverse and the underlying building blocks

To understand what Metaverse is all about, let us first understand what it encompasses.

Figure below shows the building blocks of Metaverse – the Component “layers” on which the metaverse experiences are based.

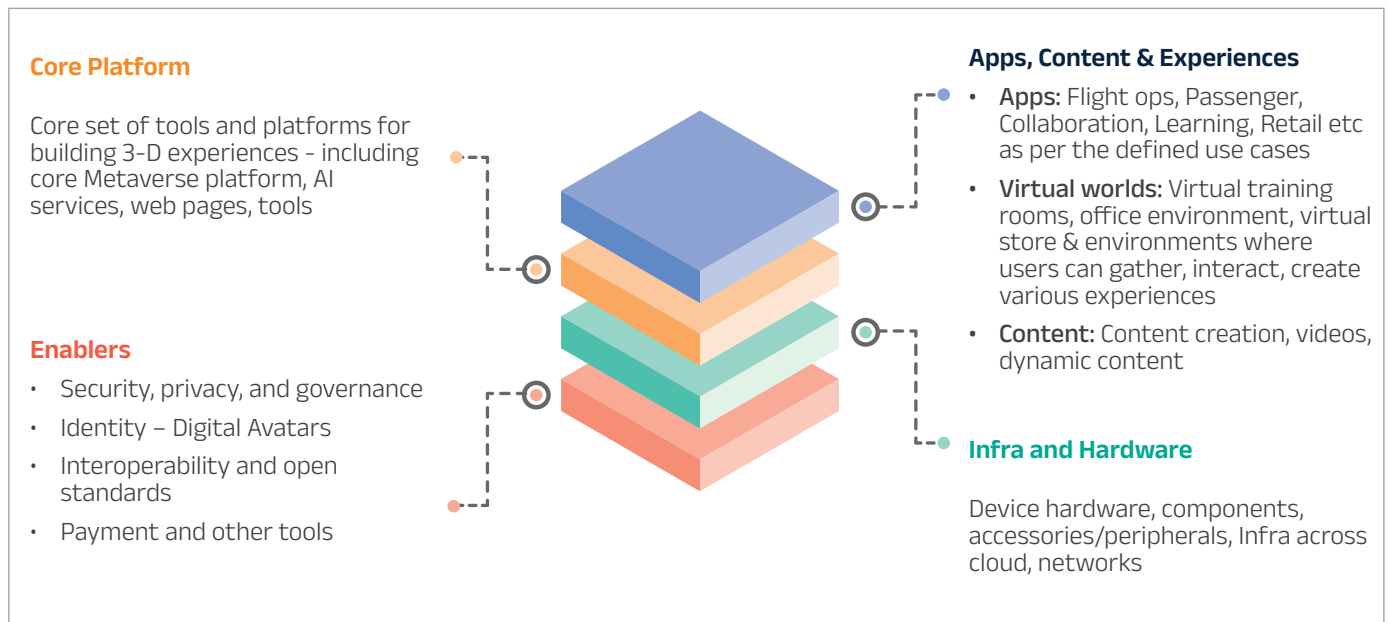


Fig 2: Metaverse – Key Building Blocks

As shown in the fig. above, while the Metaverse platform provides the core for building 3D experiences, it constitutes a lot of components like apps, Infra, digital identities and underlying technologies which form the enablers for delivering the experiences.

Metaverse cannot exist in siloed form and requires technologies like AI, web 3.0 to deliver a true close to reality experience.

Listed below are few of the key technology enablers that constitute the Metaverse and alongside some of their underlying use cases in travel which can elevate the travel experience.

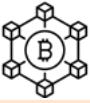



			
Blockchain	AI & Analytics	AR / VR	IoT & edge computing
Blockchain offers a permanent single source of truth. Digital assets issued on a blockchain therefore represent value portability and permanence	Big data analytics and AI enable hyper personalization and the predictive personalization system can drive more engaging passenger experiences	AR/VR enable virtualization with features such as virtual tours conjuring up a digital environment for consumers	Sensor-driven systems enable data capturing & processing with smart devices where edge computing helps solve problems of limited bandwidth and latency for driving a high-fidelity experience.
Key use cases			
Baggage Tracking, Loyalty Management, Digital currencies, NFT	AI virtual assistant, Predictive analytics, Personalization, digital twins	Navigation, Learning & Trainings, Virtual tours, Maintenance	Asset tracking, Energy management, Passenger flow management, Preventive Maintenance

Fig 3: Underlying Technology Enablers



### III. Metaverse can solve potential business problems – Roadmap for the Industry

As can be clearly observed in the journey with Julie and technology use cases, Metaverse can open a whole plethora of use cases which can help in truly elevating the travel experience for end passengers. It can also enable the Aviation and Travel enterprises to solve their potential business problems and further elevate their capabilities by enabling them with more information driven advanced decision making.

Let us look at some of the key problems this industry has been facing and how Metaverse can enable solutions which can benefit the aviation and travel industry.

Challenge	Metaverse as the Enabler	Benefit
<b>Crew Training</b> – High cost of facilities and Difficulties in meeting the demands to provide more time for crew to practice sufficiently.	Replicate the complex environment of an aircraft or CST which can be programmed into creating various scenarios and conditions for the trainee pilots & crew members	Reduced cost of training and setting up of live training rooms Improved training results & service efficiencies
<b>Traveller Experience</b> – Meeting the ever growing expectations of delivering an immersive, personalized and seamless travel experience	Virtual tourism, 360 tours, AI enabled personalized content can allow users to travel to imagined destinations and bring about a whole new era of exploration	Highly Enhanced and Engaging experiences Improved customer satisfaction, Loyalty Improved ancillary revenues
<b>Flight Operations</b> – Building resiliency and improved situational awareness to respond to real life situations and disruptions	Digital twins or virtual replicas can enable quick simulation of what-if scenarios by combining data with machine learning	Optimized airside operations Reduced flight delays Better situational awareness & resiliency
<b>MRO</b> – Ensuring safety & accuracy of MRO & ground handling procedures	3D Innovative solutions with AR/VR enabled preventive maintenance can enable accurate results with real-time insights	Improved safety, security Reduced cost of maintenance
<b>Employee Experience &amp; Collaboration</b> – Facilitating a hybrid working model for more effective communication and collaboration	Virtual office replica with 'digital presence' within the collaboration metaverse can ensure better & effective communication	Improved brand engagement Improved employee productivity

Fig 4: Metaverse as the enabler to address key industry challenges

One of the highest operating expenses for any airline today is managing crew trainings and learning programs. The Metaverse can provide a near real life virtual environment or a replica of Crew Service Training (CST), aircraft, which can allow crew members to learn at their own pace along with practicing real life passenger service scenarios. This transformation of crew training on Metaverse will not just optimize costs but also improve crew service efficiencies to a large extent.

Similarly, Metaverse can also bring in a huge impact on flight operations using digital twins which can enable simulation of what-if scenarios by combining past flight operational data with machine learning to build better situational awareness to respond to real life situations and disruptions.

Listed below are few key Metaverse use cases that can benefit different stakeholders in the aviation value chain:

#### Potential Metaverse Use cases benefitting various stakeholders in the Aviation value chain

##### Passenger Experiences

- Virtual tourism,
- Trial run destinations
- Virtual queuing
- Virtual aircraft replicas
- Virtual Assistant/AI Coach
- Blockchain based loyalty currency, NFTs
- 3D Commerce, Virtual stores
- Real time Baggage tracking
- Consumer Loyalty





### Flight Ops

- Digital twins
  - Flight ops planning & management
  - Air Traffic management
  - Capacity Management
- Collaborative decision making
- Disruption management
- AR/VR enabled airside maintenance, ground handling
- Smart Asset Twin

### Crew Training & Servicing

- Crew Learning & Development
- Crew virtual training rooms - CSTs
- Pilot & crew learning scenarios (based on real life Passenger interactions)
- Virtual Assistant/AI Coach
- Crew disruption management

### Employee Experience

- Emp exp – onboarding, HR policies, issues
- Virtual office environment
- Employee collaboration - forums, connects
- Self Learning & Trainings
- Meetings & Virtual conferences
- Employee retail – 3D Commerce
- Emp assistant, support groups
- Gamification

The metaverse therefore has the potential to impact everything from employee engagement to traveller experience, product innovation, marketing, flight operations as well as collaborative planning & community building.

However, before an enterprise decides to take a leap into metaverse, building the right business and technology strategy is crucial in order to secure maximum business benefits from the underlying technologies.



*Fig 5: Building your Enterprise Metaverse Strategy*

First and foremost, the enterprise should identify the potential business problems that can be addressed with Metaverse and then define goals, identify business opportunities and associated use cases.

Once the business use cases & associated business impact has been ascertained, the enterprise can look at building a technology strategy and roadmap which encompasses identifying the right technology platform, partner, associated apps and tech enablers to implement the identified use cases.

#### IV. Coforge's Metaverse COE – Transitioning your Enterprise Business to Metaverse

At Coforge, we have set up a Centre of Excellence (CoE) which aims to be at the forefront of Metaverse immersive experience and the possibilities it offers to the enterprise world.

The CoE has –

- Identified & trained 100+ people on Metaverse with multiple masterclasses
- Created a dedicated Coforge Dedicated Immersive Studio (CODIS) to showcase our capabilities, demos, walkthroughs, EBRs, QBRs to our current & prospect clients, investors, and other officials
- Secured hardware and software to power CODIS with headsets, glasses, licenses, and other special equipment
- Articulated a learning path on specific technology stack for 3D Artists, Developers

Based on our two decades of experience in aviation & travel, we have formulated the below roadmap for the travel enterprises with different use cases with increasing value, complexity.

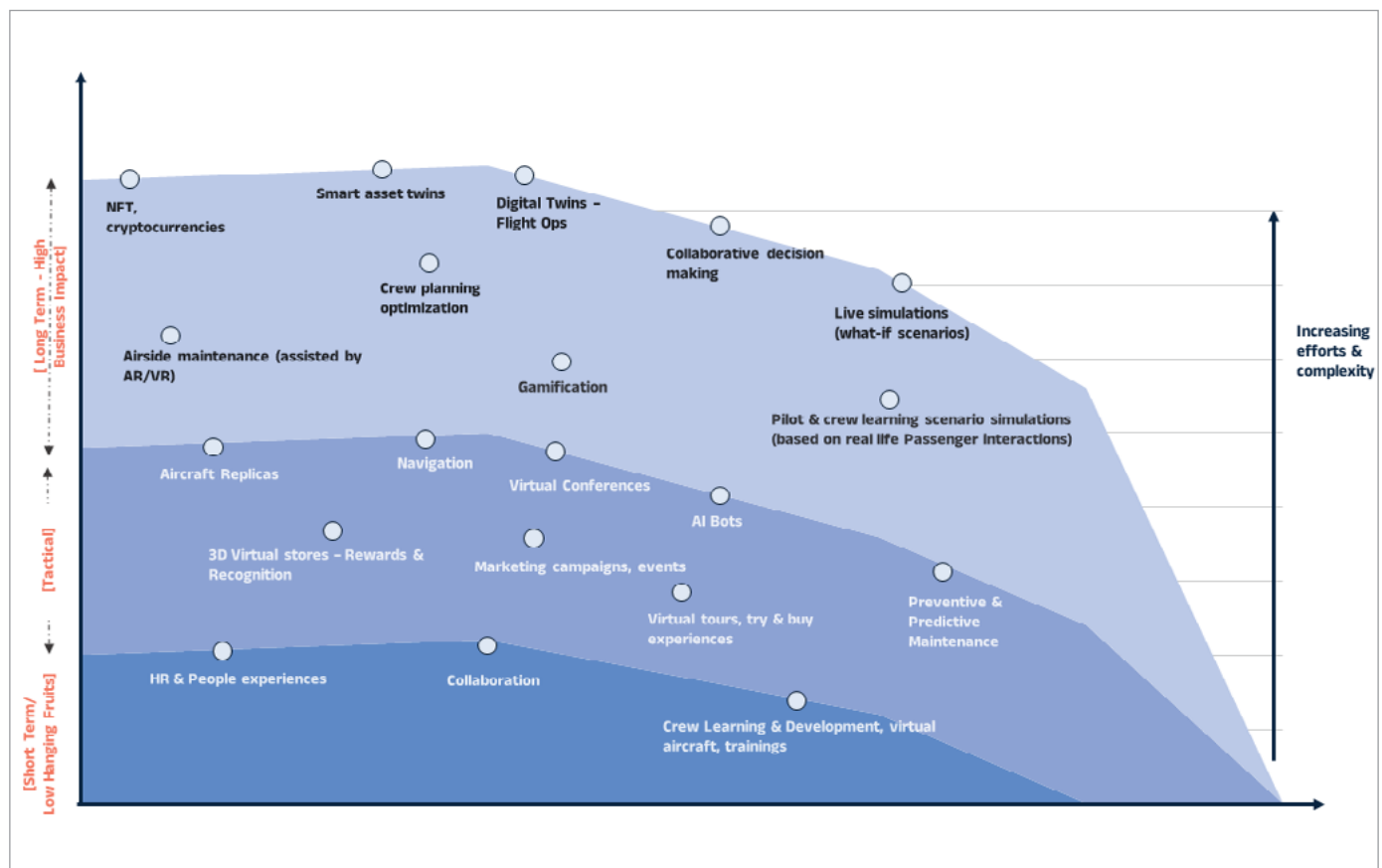


Fig 6: Roadmap for Enterprise Metaverse

As the above roadmap depicts, it is recommended to first build the foundation of the platform starting with use cases which are minimal risk but can yield short term benefits or in other words low hanging fruits.

The first phase would therefore focus on building and implementing a Metaverse environment for your enterprise which can drive immersive, collaborative and engaging experiences to all employees whilst allowing the Enterprise to learn, operate and scale the Metaverse for future uses.

As we begin with internal use cases which can benefit internal employees, crew members, we can slowly transition into moving to more tactical use cases like virtual tours, Try & Buy experiences, AI Bots, Marketing events which can benefit business.

Further, the platform can scale up and build & integrate additional use cases with high business impact and value like Digital twins – flight ops, collaborative decision making, live simulations etc.

## About Coforge

Coforge is a global digital services and solutions provider, that enables its clients to transform at the intersect of domain expertise and emerging technologies to achieve real-world business impact.

We can help refine your problem statement, crystallize the benefits, and provide concrete solutions to your problems in a collaborative model.

We would love to hear your thoughts and use cases. Please reach out to Our [Metaverse CoE team](#) to begin a discussion.

## Authors

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Pranjali Bhatia is AVP, Travel solutions at Coforge Technologies. She has 20 years of experience of working with leading airlines, airports, travel technology & hospitality companies across the globe. She is a travel domain enthusiast and has been driving transformation for leading travel enterprises using disruptive digital solutions.

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Deepak Saini is AVP in CTO Organization of Coforge Technologies. He has 20+ years of IT experience in Financial Services, Telecom, Travel and Hospitality. He has strong technology leadership experience in Artificial Intelligence (Machine Learning, Deep Learning, NLP, Speech, Conversational AI, Contact Center AI, Responsible AI), Search, Intelligent Automation, Analytics, Cloud, Enterprise Metaverse Platforms, 2D/3D wayfinding solutions.





## About Coforge

Coforge is a global digital services and solutions provider, that enables its clients to transform at the intersect of domain expertise and emerging technologies to achieve real-world business impact. A focus on very select industries, a detailed understanding of the underlying processes of those industries and partnerships with leading platforms provides us a distinct perspective. Coforge leads with its product engineering approach and leverages Cloud, Data, Integration and Automation technologies to transform client businesses into intelligent, high growth enterprises. Coforge's proprietary platforms power critical business processes across its core verticals. The firm has a presence in 21 countries with 25 delivery centers across nine countries.

Learn more: [www.coforge.com](http://www.coforge.com)

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