BIG DATA
TRANSFORMING TRAVEL

Enabling businesses to take immediate decisions as per the changing customer demand and seek out new revenue opportunities

Murari Mohan Jha

Technology has always been a major driver of change in travel. And, big data is probably the biggest generational shift in technology. While big data is used in many industries around the globe, the travel industry stands to gain a tremendous amount from its use. It is by all means a new and powerful tool for fine-tuning and maximising the tactical brand decisions. Many larger companies are already using big data creatively and are benefitting from this.

Big data suggests a future in which discovery is managed, experiences vetted and true adventure marginalised. Through the use and analysis of big data, travel industry companies can learn more about the preferences of smaller segments of their target audience or even about individuals in some cases. This gives them the ability to tailor make special promotions, deals, experiences and more specifically to them. The use of big data goes well beyond personalising and enhancing an individual traveller's journey. Travel companies can also use data and analytics to compellingly demonstrate the economic value they are delivering to their clients.

Analysing 'big data' – the ability to evaluate lots of data points – and artificial intelligence (AI), where machines replace brain power, could be making a difference in predicting a lot more travel behavior, using algorithms to do more listening, talking and even thinking. In fact, many international airports have increased their food and retail sales through the use of AI and 'big data' created experiences that are more seamless and convenient, thanks to a network of IoT devices, cloud-based biometrics and risk-based screening. Needless to say, approaching customers with a unique and personalised service will bring more loyal customers which will directly have a positive impact in every way, from boost in sales to increased company reputation on social media.

Relevance of big data

According to Sandeep Dwivedi, Chief Operating Officer, InterGlobe Technology Quotient (ITQ) using Big Data and Machine Learning (ML), companies can build recommendation engines that can help them personalise offers on products from their inventory and from their partners' catalogues. "The internet of things (IoT) is already helping hotels, airlines, and travel companies streamline their operations by connecting smart devices, systems, and processes. This is probably the biggest opportunity travel companies can achieve from big data analysis. With the availability of receiving a large quantity of personal data from user behaviours, preferences, previous interactions and social media platforms; companies can turn this big data into a related and focused service around the travellers' needs. For example, by analysing a customer pattern, it is possible to predict and offer a pet-friendly hotel within the price range of that individual customer's preferences," Dwivedi added.

Echoing similar sentiment, Todd Arthur, Vice President, Sabre Travel Network Asia Pacific, says that data is what helps to cater to increasing consumer expectations. "Agents, airlines, hoteliers and travel managers today have access to a treasure trove of traveller information — historical booking data, traveller profile information, reservation browsing patterns, and much more. Collectively, this data paints a detailed picture about who a traveller is and what they care about, both of which make it much easier to craft personalised offers for travellers," Arthur says.

Anshuman Bapna, Chief Product Officer, Goibibo adds that newer technologies and digital platforms assist in improving customer experience and that is one of the prime reason that companies are deploying technology to solve problems at scale. "Technology helps in both customer acquisition and in customer retention, while offering the best possible service and experience to the end customers.

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>
> Anshuman Bapna

Big data helps in better understanding of user's intent of visit on the app or website — consequently preparing a customised user interface, sending relevant notifications and offers to convert 'lookers' into buyers. At the same time, supply-side insights help in surfacing the right product/inventory to the customer, thus increasing customer satisfaction and delight," Bapna adds.

Priyanka Chaurasiya, Head of Analytics, Cleartrip opines that the size of big data makes it extremely helpful in identifying hidden patterns and the granularity makes it very valuable in customisation and personalisation. "In the context of travel and tourism industry as well, big data provides a great opportunity to be able to decode the real requirements, needs and intent of customers at a very granular level and provide them with far more relevant choices at relevant times. In short, big data is what can really enable service providers to go beyond the 'generic'."

Serving the customer better through analytics

Arthur opines that the travel industry needs operational models that allow for greater adaptability and that caters to a new generation of connected customers who expect experiences. According to Dwivedi, travel industry handles an enormous quantity of data around and the generated data from different sources and actions (reservations, itineraries, accommodation, inquiries, transportation, price, cancellations, customer feedback, geolocation etc.) need to be processed wisely. "Travel companies are now embracing big data analytics to provide their customers more targeted campaigns which ultimately lead to profitable services and products. Tracking, analyzing and understanding all these valuable data help the companies to determine what offerings and services they have to bring to the table in the future," Dwivedi says and adds that personalisation and experience carry similar importance for all kinds of travels, whether for business or pleasure.

Chaurasiya feels that travel industry has always been using analytics to serve customers right. "With big data there is opportunity to take that to a whole new level. User personalisation and customisation is just the beginning of what big data can enable. Intelligent products, aptly relevant content, efficient customer service – big data has a use almost everywhere to improve and better things and make you more relevant to your customers," she adds. Bapna says that the huge amount of customer data at the disposal of online travel companies is allowing for more in-depth predictions and behavioural analytics than ever before. "Not only that, modern-day computing power can now deal with traveller requests in real time. Intelligent virtual assistants are increasingly being integrated into mobile devices and messaging apps, making truly on-demand service a genuine reality, not to mention a key driver of disruption in the travel industry. Artificial intelligence in travel sector has already started to change the way people are searching and booking their travel. These range from algorithms that are constantly refining how options are ranked on people's favourite website, data collected from the apps on phone, sentiments shared on social media etc. AI is helping travel companies to provide highly-tailored offers based on customers' needs and preferences," Bapna adds.
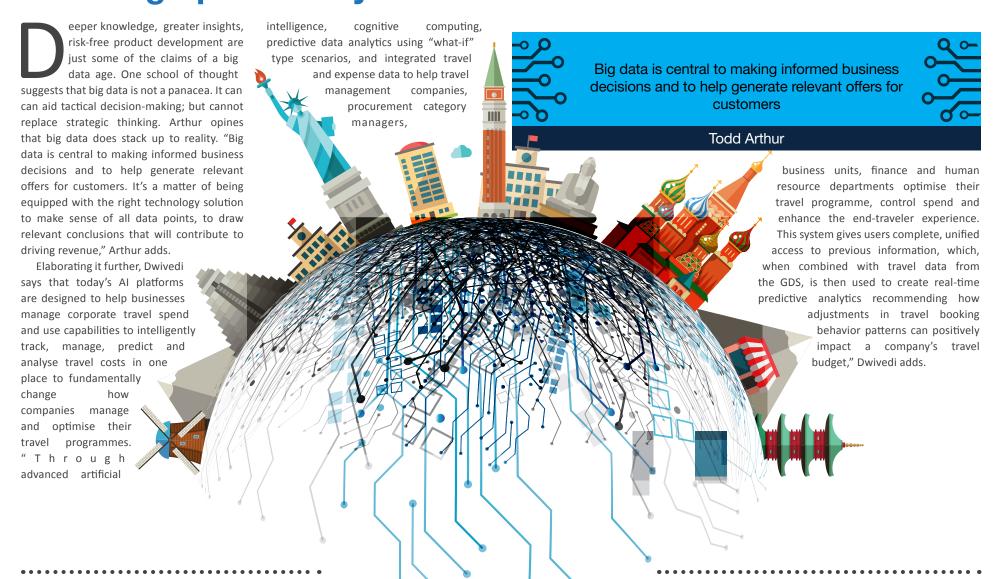
Driving analytics programme

According to the IBM Marketing Cloud report – 90 per cent of the data in the world today has been created in the last two to three years alone, at 2.5 quintillion bytes of data a day! In addition, it has been widely said that: Data is the new oil in the travel industry. Big data is so important because of the impact it can make by feeding artificial intelligence. "In a company pricing six billion itineraries a day, the opportunities to mine that data for both customer and supplier insights allows Travelport to deliver new industry insights. Travelport is able to provide real-time feedback to airlines on the brand advantages they achieve through their pricing and fare constructions versus their competition. The analysis of an individual's previous travel patterns will enable travel companies to better predict future travel needs. We are using artificial intelligence, driven by data and analytics, to deliver faster and more personalised results," Dwivedi tells.

Sabre also has a wide selection of innovative solutions, specifically designed for airlines, online travel agents, corporate travel management companies and hotels, that facilitate data analysis and ultimately, drive revenue.

Goibibo leverages ML in multiple aspects of its products, from giving end user a better product experience to optimising internal processes. "Being the pioneers of travel in India, we have access to large data-set of travel users and use-cases. We have been leveraging tools built internally such as inventory forecasting engine to improve on our internal processes to forecast inventory availability across hyper-locations to improve liquidity for hoteliers and better selection for customers. Our chat bot Gia is doing close to 50K conversations every day, giving answers to customer queries not only inside our apps but on WhatsApp and FB messenger as well. This has resulted in improved experience for customer and lower calls to call center," Bapna says.

Stacking up to reality

Deeper knowledge, greater insights, risk-free product development are just some of the claims of a big data age. One school of thought suggests that big data is not a panacea. It can can aid tactical decision-making; but cannot replace strategic thinking. Arthur opines that big data does stack up to reality. "Big data is central to making informed business decisions and to help generate relevant offers for customers. It's a matter of being equipped with the right technology solution to make sense of all data points, to draw relevant conclusions that will contribute to driving revenue," Arthur adds.

Elaborating it further, Dwivedi says that today's AI platforms are designed to help businesses manage corporate travel spend and use capabilities to intelligently track, manage, predict and analyse travel costs in one place to fundamentally change how companies manage and optimise their travel programmes. "Through advanced artificial intelligence, cognitive computing, predictive data analytics using "what-if" type scenarios, and integrated travel and expense data to help travel management companies, procurement category managers,

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business units, finance and human resource departments optimise their travel programme, control spend and enhance the end-traveler experience. This system gives users complete, unified access to previous information, which, when combined with travel data from the GDS, is then used to create real-time predictive analytics recommending how adjustments in travel booking behavior patterns can positively impact a company's travel budget," Dwivedi adds.

Solving visibility problems

According to Bapna, Goibibo was able to understand its customers much better with regards to hotel rankings using big data. "By applying ML, we started recommending more relevant hotels to customers based on a number of variables related to customer type, hotel characteristics (past review ratings, hyper-location etc.), trip type (destination city, business / family trip etc.). This has improved customer experience and also benefited our hotel partners as hotels get more exposure to their relevant customer segment, thus increasing their likelihood of conversion," Bapna adds.

Arthur says data is only truly useful to the travel professional if it's sewn together in a way that tells a complete and meaningful story, and this is exactly what Big Data analytics platforms are designed to address. These platforms aggregate data from a variety of sources — APIs, cached data, third-party apps, etc. — into one platform. This brings everything together into a holistic view across data streams.

Dwivedi opines that centralising conventional data often posed a challenge and blocked the complete enterprise from working as one team. "But big data has entirely solved this problem, offering visibility of the data throughout the organisation.

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>
> Sandeep Dwivedi

Another advantage to big data is that it can help the entire enterprise work as one functional unit. There is no longer any need for data silos for different functions such as marketing, finance, logistics, etc. Big data techniques allow us to all work from the same data set and pull out what we need. Big Data allows travel providers to not only understand passenger behavior and choice of travel but also helps in understanding the industry performance as a whole. Big Data helps in the revenue management and strategic pricing which enables them to maximise their income opportunities and offer best travel experiences to passengers," he adds.

Challenges

The quality of data is a big concern all around. To have a better data quality, there is a need for organisational discipline/maturity to cleanse the data and move it to some data warehouse. "Apart from this, the journey from "capture" to "consumption" can take months, and sometimes, years. Though the next big frontier for online travel space is conversational commerce which combines conversational design and NLU (Natural language Understanding), there are few challenges also faced by the overall industry. The area of voice-UX is also new and UX designers are still figuring out the more effective voice-flows. In addition, while computers can convert voice to English with the same accuracy as humans (MSFT and Google have reached this level and published proof), NLP for Indian vernacular languages is still lagging far behind. Companies like Google, Microsoft, Amazon have started working on Indian languages, but it'll take time to solve it for business domains (because that data is not available in the public domain)," Bapna informs.

According to Arthur, agents and TMCs need access to all the right data at the right time to obtain a detailed picture of who a traveller is. And they also need tools that can convert all the raw information into truly actionable insight. "Too often, these conditions are not in place. Instead, data is siloed and stored across a variety of disparate back office systems that don't communicate with each other (and certainly not in real time). As a result, travel agents are forced to operate with generic information that does little to empower exceptional customer experiences and drive new revenue opportunities," Arthur adds.

Dwivedi says that travel managers who seek ways to reduce costs often need to undertake the painful task of sifting through huge data silos of varying types and different sources. "Instead, they can make use of AI-based travel platforms that unlock insights from internal and external data sources and help them optimise travel programmes, control spends, and enhance the travel experience," he adds.