

Big Data

Creating a 360-degree View of the Connected Traveller

The 360 degree overview for the Travel industry



Let's consider these scenarios:



Scenario 1:

Mike wants to go for a vacation. He does that at least once in two months. He wants to book a flight within \$500, wants the seat will have extra leg space. He prefers vegan meal. He likes his hotel to be in the heart of the city and also booked a minivan to travel around. Now every time Mike plans his vacation he has to go through multiple airlines, hotel, OTA websites, and subsequently talk to various travel agencies to get all his preferences met. And even after going through so much hassle, there have been times when Mike had to compromise and settle for less, thus making his travel experience less enjoyable.

How can Mike's experience be made better, easier and more delightful?

Scenario 2:

Airline A has a customer B who makes a booking via the A's Philippines call center. Customer B then goes to airline A's website to book ancillary services and also check his flight details. The customer has some special baggage requirements which he logs with airline's another call center situated in India. He then goes on and books his hotel. After the vacation, customer B writes about the experience and reviews about various services on his facebook page and travel blog.

So how we do profile customer A? We have a vast amount of information about customer B that sits with different channels and geographies. Is there any means through which all this information can be collected and intelligently curated so business insights can be derived to offer a more personalized offers to customer B, which would be of much higher value to him? Can we deliver on the WOW' customer experience here? Now lets consider another scenairo.

Scenario 3:

Airline C and D offers a variety of fares and other ancillary products and services to its customers like excess baggage. But an OTA displays only the lowest fare option that the airlines offer. To a customer with extra baggage then looks at the OTA website to make a booking.

Fare	Extra Baggage Allowance	Cost to Customer
Airline C		\$200
Airline D		\$250



The absence of extra baggage allowance information on OTA site drives the customer to book on Airline D and he ends up paying \$250. Had the customer been aware of all information including baggage allowance, he would have booked Airline C and paid \$200.

Despite Airline C having the better pricing strategy, it is unable to communicate the same to the customer as the interaction channel is controlled by the OTA. Due to data silos between the OTA and the airline, the customer loses out on a better deal and Airline C loses a well deserved business opportunity. These scenarios depict the dilemmas and opportunities that the travel industry is facing today.

Today travel providers have vast amount (petabytes) of data on every step that their customers take during their travel booking cycle. But the main challenge they face is converting this data into value for customers. The right solution can open up immense opportunities for all – the customers, the travel providers and the solution providers.

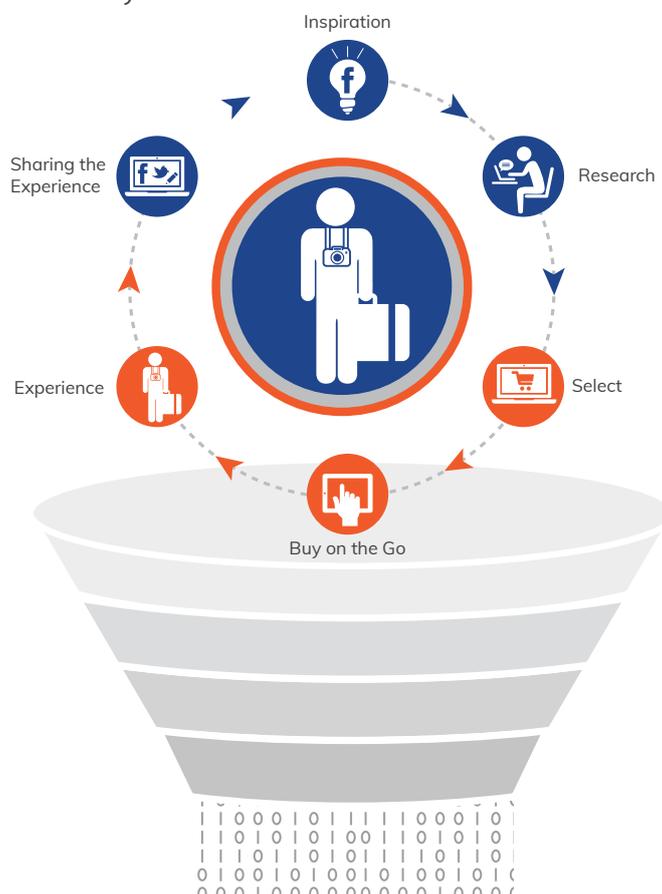
What is Big Data?

Big Data simply means lots and lots of data.

- Data about each and every step of your customer(s) – Volume
- Data from multiple sources, both internal and external – Variety
- Data which is generated every day, every minute, every second - Velocity

Where is this data coming from?

Before we go ahead and decide what we can do with this vast amount of data, we first need to analyze from where and how we are getting this data. Let's see how and where the customer, knowingly or unknowingly, leaves his footprints during a typical travel life cycle.



Travel Life Cycle

Travel life cycle phase	How customer generates data?	Where that data is found?
<p>Searching: This phase is usually applicable in case of leisure travelers. In this phase the customer is searching where he wants to travel.</p>	<p>Browsing through travel service provider's website, traversing through OTA sites, clicking on ads on social media sites like facebook, pinterest, using marketing promotions by travel service providers, using travel search sites, online searching and travel blogs and publications</p>	<p>Online travel agencies logs, social media sites like facebook, travel service providers' analytical logs, travel search site logs, Google web logs, blogs and more</p>
<p>Planning: Before reaching this phase the traveler has narrowed down on the destination. Now he is planning various details of his travel, like, mode of transport to the destination, what kind of accommodation will he take, what mode of transportation will he use at the destination, places he would like to see, restaurants he would like to eat and more.</p>	<p>Calling up the travel providers' call centers, browsing OTA sites, surfing websites of travel service providers, reading other travelers' experiences on social media sites and blogs, surfing through travel review sites such as Tripadvisor, seeing pictures and videos</p>	<p>Call center logs, OTA web analytics logs, travel review sites database, social media sites and blog sites analytical databases, Google internet search database</p>
<p>Booking: After the traveler has planned his trip the next step would be to make all the necessary bookings like flight, hotel, transportation, tourist attraction sites etc.</p>	<p>Travel service provider's website/call center/social media page/on property, travel agency, OTA</p>	<p>Travel service provider's web database, call center logs, social media database, OTA database, travel agency database</p>
<p>Experiencing: In this stage the traveler is using the travel services i.e. he is flying through the airline he booked, staying in the hotel, driving the car he rented, having dinner at the restaurant he booked.</p>	<p>Traveler's on property feedback, online reviews/ complaints registered via call centers, site, his movements, time spent on the service</p>	<p>Feedback logs, feedback with employees, location/ movement database</p>
<p>Sharing: After the traveler has completed his travel, he shares his experience with his own and outside network.</p>	<p>Word of mouth, writing blogs, sharing experience on social media sites, travel review sites</p>	<p>Social media database, user's web profile database, travel review sites' databases</p>



What value can be derived out of this data?

The good news is that the data about customer interaction sits with you. But the big question is – what to do with this big data that can deliver value to the end customer and the travel service provider as well. The following represents a most impactful of the many benefits that can be derived by analyzing and making this big data work for you:

Personalization – Gone are the days of profiling, when the customers were segregated into different categories and offers were made for a particular category. Present day customers are becoming more demanding and the competition is growing each day. To retain the loyalty of its customers a service provider needs to stitch an offer which meets their individual requirements - a truly personalized offer. This personalization has to be based on:

- **Past behaviors:** “We see that you like an aisle seat with extra leg space. Book a seat on our economy plus class which has extra leg space and also get 30% off on selection of aisle seat.”
- **Social media relationships:** “50 of your friends have flown with us this month. Know what they have to say about us and give us a chance to serve you!”
- **Location:** “Want to try the best local cuisine? Visit “The Alpines”, just two blocks away from your hotel.”
- **Itinerary:** “We see that you are flying from Peru to Costa Rica next week. Would you like to try our Limo service for the airport transits?”
- **Ancillary Sales:** “Did shopping from the beautiful streets of Paris. Don’t worry book for an extra bag now and get 20% off on the extra baggage allowance!”¹

Today travel firms need to embrace —Next Best Offer analytics (Next Best Offer refers to the use of predictive analytics to identify the product or services that the customers, based

on their past purchase behavior, are most likely to buy in their next purchase) to reach their customers at the right time, at the right place, through the right channel and most importantly with the right offer.

Enhanced Customer experience: A key factor in the success of any service organization is the customer happiness index¹ and travel service providers are no exception to this rule. The key differentiator which can help a service provider stand out is the quality of customer experience that it can offer.

By combining customer interaction footprints through all the channels, a firm can get a 360-degree view of its customers. This comprehensive knowledge can help the firm make better suited offers for its customers, provide additional services which can increase customers' delight or simply make a kind gesture which can touch its customers. All these actions go a long way in ensuring that your customers remain loyal to you.

An example of the customer delight that can be created is the —KLM Surprise campaign.

In November 2010, the international airline KLM surprised its customers: As passengers arrived at security checkpoints and gates, flight attendants were there to greet them by name and give them a personalized gift — something that the passenger could use on his or her trip, or enjoy when they returned home.

Flight attendants browsed Twitter and Foursquare, looking for people who mentioned that they were taking a KLM flight. Then, using the information the customer provided about him or herself on social media platforms, the flight attendants purchased a suitable gift and presented it to the passenger upon his/her arrival at the airport.

As a result of this campaign, news of the KLM surprises spread like wildfire through social media - mentions, tweets, retweets, and word-of-mouth. That November, the KLM Twitter feed was viewed more than million times.

What made this particular campaign stand

apart from other run-of-the-mill marketing campaigns is personalization - which enabled the airline to offer customers something that held real, tangible value.²

Identifying most valuable customers: The major chunk of value from harnessing big data analytics can be derived by identifying the most profitable customers. Marketing efforts can be directed to capture their attention, the offers can be better suited to their needs, and efforts can be made to drive loyalty. This is more important keeping in mind the fact that cost of new acquisition is higher than the cost of retention.

Revenue generation through Cross-sell and Up-sell: Inventory is only a part of the complete suite of services that a travel firm provides. There is a complete range of ancillary services which often get neglected. This is primarily due to incomplete customer behavior profile, because of which the seller, be it through OTA or any other channel, is not in a position to anticipate the right ancillary service that the customer is most likely to buy and hence misses out on a great revenue generation opportunity.

By analyzing the past behavior, social media activities and online behavior of the customers, the travel service firms can target the right cross-sell and up-sell opportunities and the right channel as well.

For e.g. – If a customer always books an aisle seat in the airplane, the next time he books an air ticket, the airline or the OTA can offer him pre-booking option for the aisle seat upfront.

Targeted marketing: Marketing ROI is a figure which often raises eyebrows in the boardrooms. A high ROI

tops every marketer's wish list. Key techniques for a high ROI demonstrate a campaign intelligently targeted to a specific set of customers, executed at the right time and delivered through the right channel.

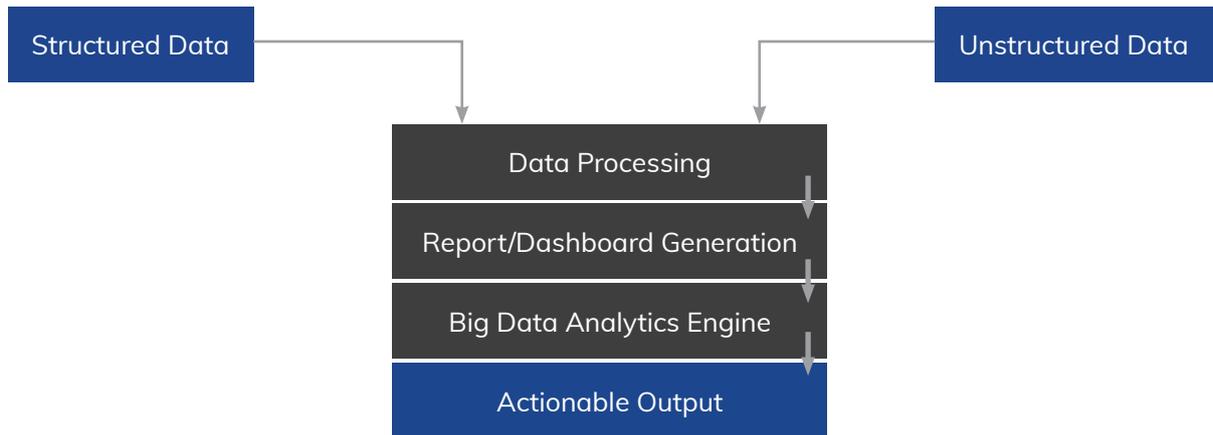
Consider a scenario where Julie, searches Tripadvisor for customer reviews on Spain and accommodation. Being a heavy Facebook user, she checks out the Facebook page for Spain travel & tourism. Based on Julie's online activity, an airline posts an offer for a flight to Barcelona on Julie's facebook profile page. It's obvious that the chances for Julie to click on that advertisement would be much higher than clicking a promotional offer for flights to Prague.





From data silos to data value

The following framework presents an ecosystem overview that shows how actionable insights can be derived out of big data. The table that follows contains examples of the sources of structured and unstructured data, technologies and products that can be used for the different stages in the big data ecosystem.



Ecosystem Component	Source/Products/Technologies
Structured Data	CRM data, Reservation System, Call center logs, ERP, Website logs
Unstructured Data	Social Media, Blogs, Location data, Browsing behavior, Mobile data, Website content, Enterprise data not recorded in CRM or ERP(e.g. marketing e-mail responses, survey results etc.), customer- employee interaction data, weather data, news, reviews etc.
Data Processing & Report generation (Technologies)	Hadoop (HDFS, Mapreduce), Cassandra, Hbase, Hive, Cognos, Hyperion
Big Data Analytics	R, Sas, SiSense, Mahout, Datameer
Actionable Output	Mondrian, JGraphX, mxGraph, JavaScript Inforvis, Excel

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