A vertical abstract graphic on the left side of the page, composed of various shades of blue. It features a network of white lines connecting dots, a plus sign, a circle, and a vertical stack of three squares, all set against a background of overlapping rectangular shapes.

# THE STATE OF DATA AND ANALYTICS IN TRAVEL REPORT 2017

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A global, industry-wide survey of more than 450 travel data professionals

# ABOUT

We bring together everyone in the travel industry, from small tech start-ups to international hotel brands, to form a community working towards a smarter and more connected travel industry.

Our mission is to be the place our industry goes to share knowledge and data so that travel and tech brands can work collaboratively to create the perfect experience for the modern traveler.

We do this through our network of global events, our digital content, and our knowledge hub EyeForTravel On Demand.

## Our Values

We believe the industry must focus on a business and distribution model that always puts the customer at the center and produces great products. However, to deliver an outstanding travel experience, the strength, skills, and resources of all partners in the value chain must be respected and understood.

At EyeForTravel we believe the industry can achieve this goal by focusing on a business model that combines customer insight with great product and, most importantly, places the traveler experience at its core.

At our core we aim to enable the above by valuing impartiality, independent thought, openness and cooperation. We hope that these qualities allow us to foster dialogue, guide business decisions, build partnerships and conduct thorough research directly with the industry.

These principles have guided us since 1997 and will continue to keep us at the forefront of the industry as a vibrant travel community for many more years to come.

## Our Services

Our events are the heart of EyeForTravel. These draw in experts from every part of the travel industry to give thought-provoking presentations and engage in discussions. It is our aim that every attendee takes back something new that can help their business to improve. This might be in the fields of consumer research, data insights, technological trends, or marketing and revenue management techniques.

Alongside this we provide our community with commentary, reports, white papers, webinars and other valuable expert-driven content. All of this can be accessed through one place – the On Demand subscription service.

We are always expanding the content we create, so please get in touch if you want to write an article for us, create a white paper or webinar, or feature in our podcast.

## EyeForTravel by the Numbers

**70,000+ database contacts**

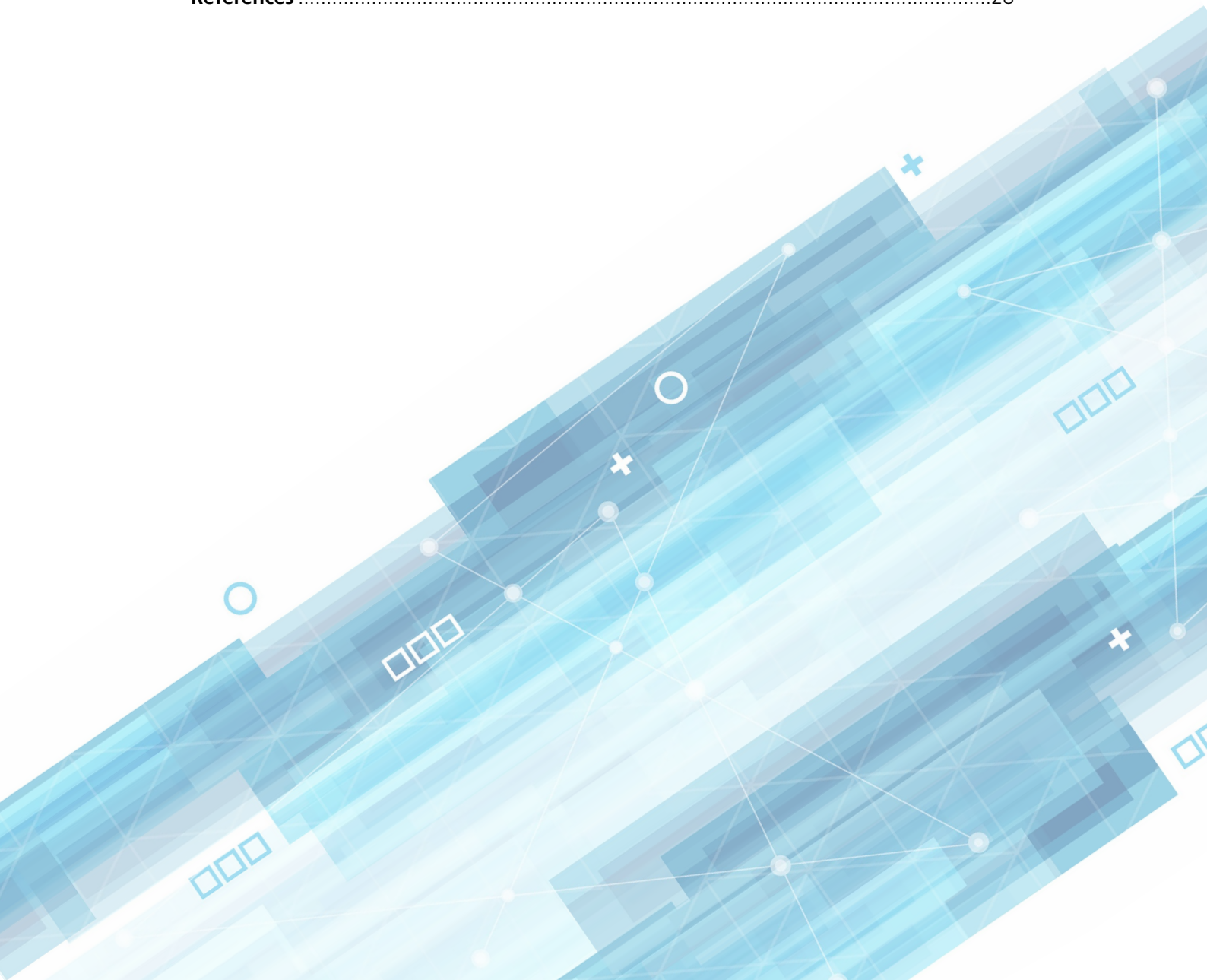
**2,500+ annual event attendees**

**100,000+ monthly online reach**

**1,000+ online conference presentations**

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# INTRODUCTION

EyeforTravel works closely with our industry and we have been constantly reminded in our research calls, surveys, and interviews of the importance of being able to make informed decisions. The industry is clamoring for more and better data, as well as the tools and skills to understand it. We therefore set out to investigate where travel, transportation and tourism stands with regards to data and analysis in 2017.

We put out a major survey across all the sectors we work with and received responses from more than 450 professionals working with data in travel. They came from across the world and from a variety of different professional areas, including C-suite executives, marketers, revenue managers, and analysts. With this survey we now have an overview of where the industry is succeeding and where it is struggling.

Overall, it is a positive picture, with budgets growing, dedicated teams being put in place, widespread gathering of data, and positive sentiment about the coming year. However, there are clearly gaps and areas to work on, such as attribution, data quality, integrating new sources of data, and timely analysis and deployment of findings.

As travel brands tackle these issues, they are doing so with the aim of putting their customers first and trying to understand what makes them tick, and that trend is only going to accelerate. More sophisticated systems, increasingly skilled teams, more investment and an exponentially increasing universe of data means that brands will be better placed to reach their customers and serve them with targeted products that can match their expectations.

We wanted to give you the information to approach the age of data so we produced this report as part of the Smart Travel Data Series. You can read our other reports in this series by signing up to EyeforTravel On Demand and checking out the following reports:

- [Understanding the Travel Consumer's Path to Purchase](#)
- [Improving the Airline Experience](#)
- [Aggregating Data Streams for More Effective Revenue Management](#)
- [EyeforTravel Smart Travel Data Summit North America 2017 Round-up](#)
- [EyeforTravel Smart Travel Data Summit 2016 Round-up](#)
- [Airport 3.0: The Technology and Data Transforming Airport Operations](#)

We hope that this survey and our related content will help prepare you and your organization for the challenges ahead and give you a wider of understanding of data in travel.

Alex Hadwick

Head of Research, EyeforTravel

# 1. KEY TAKEAWAYS

## Data is on the march

- Most travel organizations - 65% - now have a dedicated data, analysis or insight team.
- However, this team is, for the most part, quite small, with just over half of respondents (51.5%) reporting that it consisted of less than five individuals. Three quarters reported that the team consisted of less than 10 people. Clearly, data experts remain a rare and expensive resource and few organizations can afford a large-scale team.
- Budgets are on the rise – three quarters of travel data professionals (74.5%) believe budget increases are on their way. This compares to just 3.7% who expect their budget to fall. The remainder, 21.8%, expect their budget to remain the same in 2017.
- The majority of organizations are analyzing their data through diagnostic, descriptive, and predictive analytics but there remains work to do as nearly two thirds (64.4%) are not yet able to use their data to build prescriptive analytics, the most sophisticated form of analytics, which can give travel businesses a complete outlook and strategy.

## Travel brands are putting customers first in their data strategy

- When asked what was the primary driver of their data and analytics programs, 16.8% of respondents chose enhancing the customer experience, which was the highest of all the choices.
- A further 10.5% said it was to drive loyalty and retarget customers, meaning more than a quarter of our pool are focusing on data principally to improve the customer experience and get them to come back and re-use their organization's services.

## However, the picture is incomplete as teams struggle with the amount of data and tracking

- Only email, Customer Relationship Management (CRM), and search engine data is used by more than half of our respondents to drive insight.
- All other categories fell below 50%, leaving gaps in many organizations' data capabilities. For example, just 36.2% gather third party transactional data and 15.1% free text data.
- 7.4% of respondents report that they don't gather data on their customers at all.
- Although 6.2% of respondents reported that they had achieved all their aims and goals, and a further 31.6% said they had achieved most of their goals, the majority – 59.7% – had only achieved some of their aims and goals.
- In terms of where data professionals in travel are struggling, data quality and cleanliness comes top, at 45.7% of respondents. This is followed by creating a consistent data strategy (39.1%) and integrating data from external sources (38.9%), the latter of which goes some way to explaining why many travel organizations are not integrating more data from more sources into their approach.
- Deploying analytics in a timely manner was also an issue for 32.3% of respondents. When we delved deeper, it was clear this was a major issue for the industry: 46.6% of respondents reported that they were not able use to data to effect changes in real time within their organization.
- Not only were integration of data and deployment of findings reported as concerns, but also the tracking and attribution of customers. We asked marketers how far they could track users and more than half (54.3%) reported that they have very limited tracking of users or could not do so at all.

### Facebook dominates the industry's approach to social media

- When it comes to marketers' opinions of social media, there is only one winner – Facebook. 61.6% think it was the best performing social media network, leaving Instagram a distant second at 15.8% of respondents. This is all the more galling for other players as Instagram is also a Facebook company.
- Twitter rounds out the top three at 10.3% of respondents and is followed by YouTube at 6.2% of respondents. No other social media network had a significant response rate.

### The travel industry is cautiously optimistic about the year ahead

- 34.9% of respondents were very positive about conditions in 2017 and 47.4% were quite positive.
- 15.7% were neutral about prospects and just 2% were negative.
- North America appears to have been hit by the recent instability in the policy environment. Overall, North America was more negative in its outlook than Asia-Pacific or Europe. 16.3% of respondents in Asia-Pacific and Europe were neutral or negative about growth prospects, compared to 23.3% of respondents from North America.
- North American respondents were also the least likely to report that they were expecting an increase in their budgets, behind Asia-Pacific and Europe, in that order.



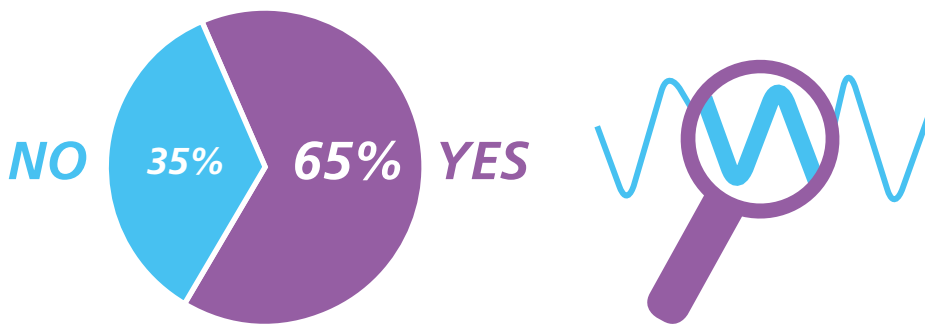
## 2. TEAMS AND BUDGETS

Until machine learning and Artificial Intelligence truly come of age, professionals with strong skills and an understanding of data will be key in driving innovation forward. Unfortunately for travel organizations, almost every industry has reached the same conclusion and the right people are at a premium. There is now a global fight for the best talent in tech and travel brands will need to fight hard to attract these individuals.

In our survey it seems that the industry is having success in pushing forward dedicated teams that can take data and turn it into meaningful insight. In 2017, nearly two-thirds of brands (65%) have a specific data, analysis or insight team. This strong majority shows us that the industry is taking data analysis seriously and making real investments.

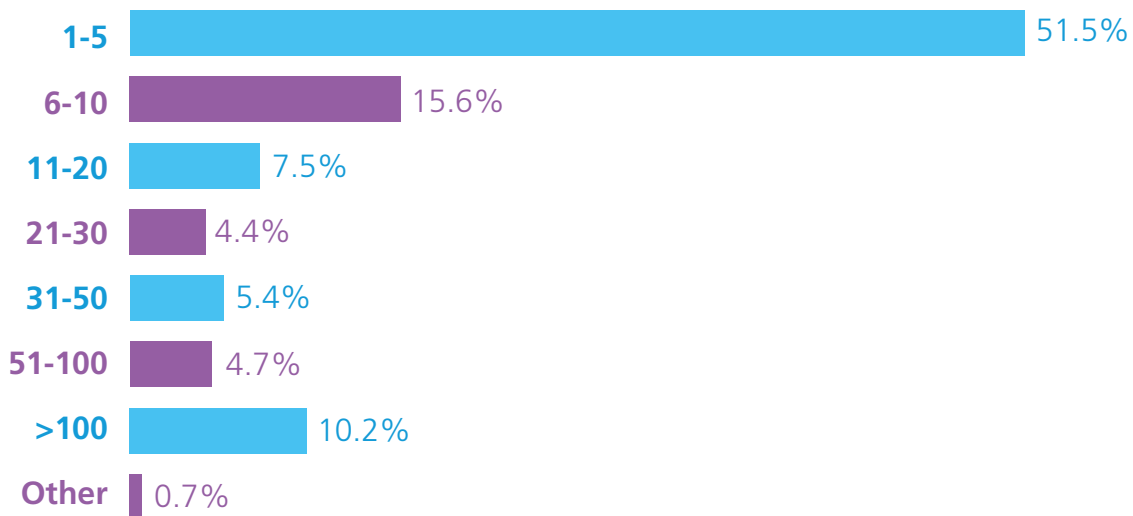
Interestingly, when it came to breaking this down by industry vertical, accommodation brands were more likely to have a dedicated data team than Online Travel Agencies (OTAs) or Destination Marketing Organizations (DMOs), for example. In the hospitality and accommodation sample, 64.7% of brands had a dedicated team, compared to 51.6% of OTA and 50% of DMO respondents.

Figure 1: Does Your Organization Have a Specific Data, Analysis or Insight Team?



Source: State of Data in Travel Survey, 2017

Figure 2: How Many Employees Does This Team Have?



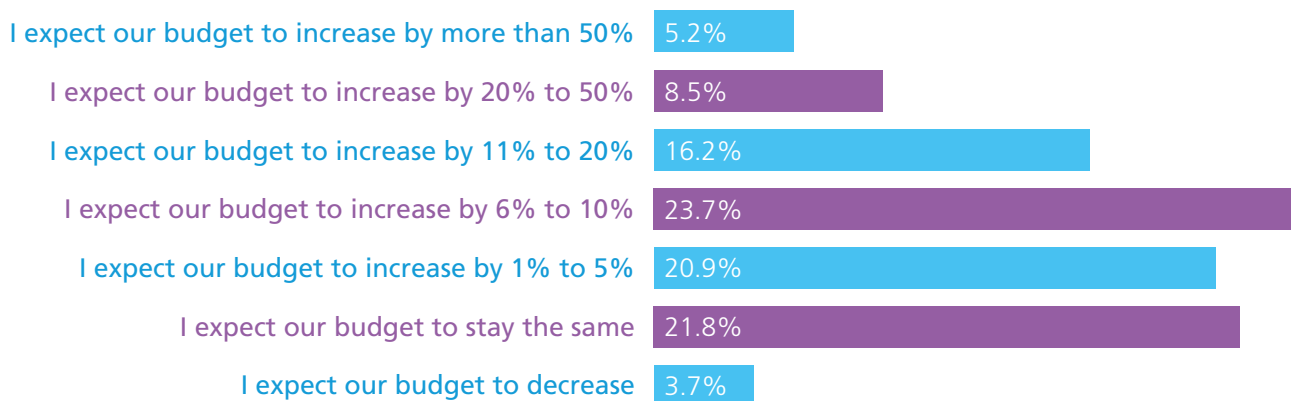
Source: State of Data in Travel Survey, 2017



Of those that have a specific team, 51.5% have five people or less and just over two thirds (67.1%) have less than 10 employees. Data and analysis teams therefore remain relatively lean and small within organizations. For hospitality and accommodation organizations, teams were slightly smaller on average, with 63.6% of dedicated teams having five employees or less. Technology vendors led the way in terms of team size, with 21.7% reporting that their teams were larger than 100 members, reflecting the complexity and focus of their area of expertise.

When it comes to how these teams see 2017 shaping up for them, there was a sense of general optimism. Budgets were largely expected to increase, with three quarters of respondents (74.5%) reporting that they envisage budget increases over 2017, compared to 21.8% who expect their budgets to remain the same and just 3.7% who expect a budgetary decrease. There was further positive news, with the majority of those who believe that their budgets will grow expecting substantial increases of more than 10%. Indeed, 53.6% of all respondents expect an increase of more than 10% in their budget this year.

**Figure 3: How Do You Expect the Budget Your Organization Allocates to Gathering, Storing and Interpreting Data to Change in 2017?**



Source: State of Data in Travel Survey, 2017

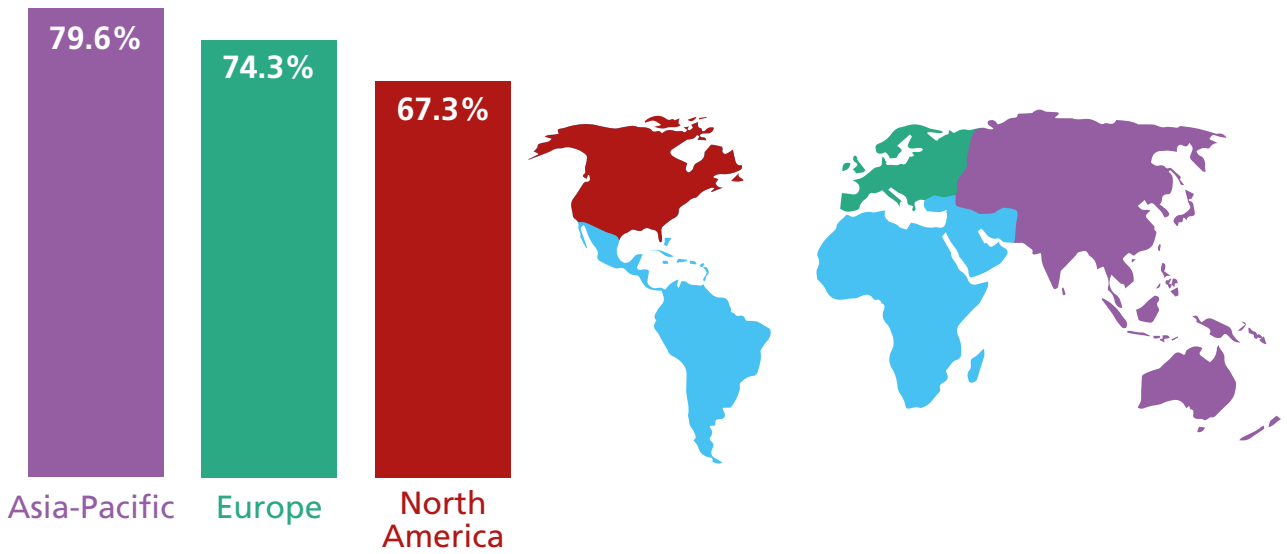
However, there was some regional variance that reflects the different economic and policy outlooks for the world's major tourism regions. Topping the table in terms of expectations of budgetary increases is Asia-Pacific, where 79.6% of professionals are looking forward to having more money to play with, followed by Europe at 74.3%, and then North America brings up the rear with 67.3% of respondents positive about 2017. Respondents from Asia-Pacific also expect bigger percentage increases in budget than the other two regions.

Asia-Pacific benefits from having what are expected to be the world's fastest growing major economies by clear margins in 2017. These are China, India and, to a lesser extent, Indonesia, according to the OECD (OECD, 2016). These growth rates are boosting inter-regional travel and also the domestic markets of these countries, creating an air of optimism. IATA expects India's domestic air market to be the fastest growing in the world in percentage terms (IATA, 2017).

North America appears more subdued, which would not be that notable as a standalone result, perhaps reflecting that data teams in the region already had substantial budgets. However, we also found North American professionals were the most likely to have neutral or negative outlooks for the growth of the travel industry in the coming year (see Chapter 6).

As an outward looking industry, travel professionals are likely to be concerned by the Trump administration's protectionist and confrontational rhetoric, as well as policy moves, such as the effort to enforce a travel ban. The US is also coming off a huge year of growth in outbound travel, which is unlikely to be reached again in 2017, so there appears to be a tempering of expectations.

Figure 4: Percentage of Respondents Expecting a Budget Increase by Region



Source: State of Data in Travel Survey, 2017

Overall then, the picture is strong for data in travel and tourism and those employed to work around it. There is a recognition across the industry that data literacy is required across organizations as well as dedicated elements that can draw conclusions from the constantly growing and vast repositories of information. Budgets are expected to grow and this should translate into more dedicated teams with more employees in each. This will allow better quality conclusions to be drawn, which in turn will reinforce the importance of data to the travel and tourism industry and continue the upward cycle we can see in our results over the medium term.

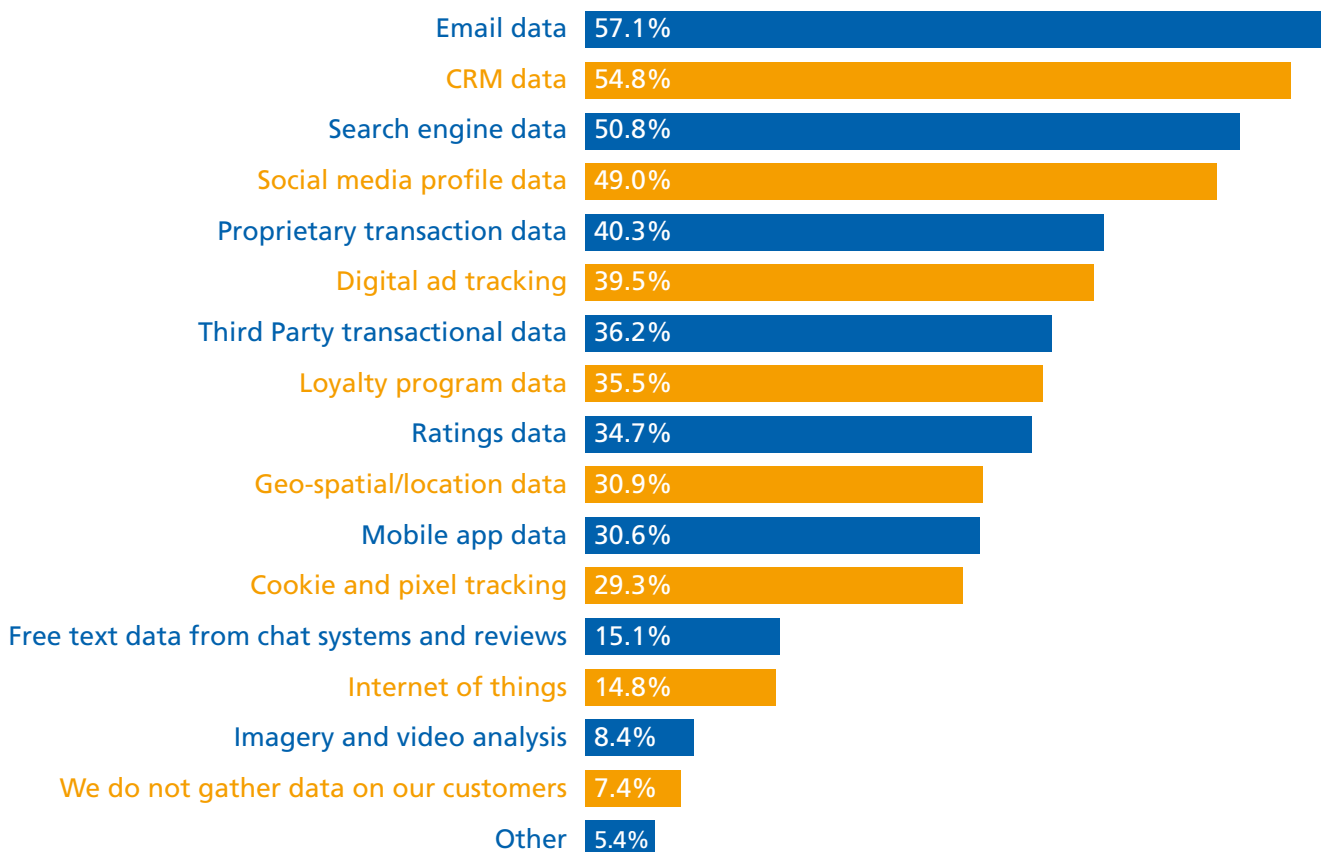
### 3. HOW IS THE INDUSTRY APPROACHING DATA?

When it comes to where the travel industry is heading, data sits at the heart of almost all the main aims and goals. Personalization, effective pricing strategies, product design, optimizing sales channels, attribution, customer service, social media engagement, channel management, ancillary sales – all of these can only be tackled efficiently with a strong foundation of data.

So, what are companies measuring? How are they measuring it? And why are they doing so?

When looking at data gathering there was a surprising degree of variation in the types of information that travel brands are and aren't utilizing. At the top came email data, at 57.1% of respondents, followed by CRM data at 54.8%, and search engine data with 50.8%. No other category is measured by more than half of the sample, which suggests that there is a much wider universe of data that travel brands can gather and analyze.

Figure 5: Which of the Following Do You Gather to Generate Insight into Your Customers?



Source: State of Data in Travel Survey, 2017

Table 1: Which of the Following Do You Gather to Generate Insight into Your Customers?

Email data	57.1%	224	Geo-spatial/location data	30.9%	121
CRM data	54.8%	215	Mobile app data	30.6%	120
Search engine data	50.8%	199	Cookie and pixel tracking	29.3%	115
Social media profile data	49.0%	192	Free text data from chat systems and reviews	15.1%	59
Proprietary transaction data	40.3%	158	Internet of things	14.8%	58
Digital ad tracking	39.5%	155	Imagery and video analysis	8.4%	33
Third party transactional data	36.2%	142	We do not gather data on our customers	7.4%	29
Loyalty program data	35.5%	139	Other (please specify)	5.4%	21
Ratings data	34.7%	136			

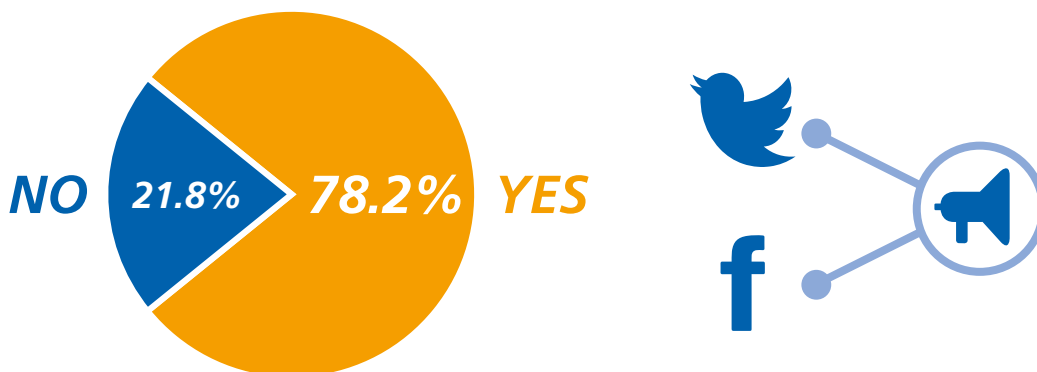
Source: State of Data in Travel Survey, 2017

In terms of where travel brands can expand their data gathering efforts, this can largely be divided into two areas. Firstly, there are those areas where the systems are already in place and the methodologies to analyze the data are understood. The top six categories in our survey are all areas where there is now a strong background in driving insight from these sources. There are significant resources, which are often free or low cost, to understand search engine or social media information for example. Third party transactional data is also an area where we would expect a greater percentage of our panel to be using it, given it can drive considerable insight and there are a huge number of potential providers, particularly with regards to segmentation.

Secondly, there are forms of data where the technology is still evolving, particularly in terms of Artificial Intelligence (AI) that can properly analyze the huge amounts of information being generated. For example, free text data, the internet of things, and imagery and video analysis are all relatively new frontiers, although there is plenty of work going into this area. It is still somewhat surprising that just 15.1% of respondents are driving insight from free text data as basic analysis can be conducted here with relatively simple tools.

Once these areas are fully unlocked and analysis is widely adopted among travel brands this would provide huge insight for the industry. Imagery and videos are known to be heavily influential in the travel decision making process, so categorizing the key elements and how these affect behaviors can unlock vast potential for travel marketers.

Figure 6: Do You Use Social Media Data in Your Marketing Campaigns (Marketers Only)?



Source: State of Data in Travel Survey, 2017

There is also variation in terms of data gathering and usage when it comes to job type. Although 50.8% of the overall sample said that they use social media information to drive insight, 78.2% of marketers in the survey reported that they use social media in their campaigns.

However, overall it is clear that travel brands have a long way to go in terms of getting a more complete understanding of their market. None of our categories were measured by more than two thirds of respondents, and indeed not even close at 57.1% for email data. An email address is often the first point to building consistent customer profiles, so it seems concerning that this figure is not higher. Similarly it is surprising that just 39.5% of the panel report that they are tracking digital ads.

*Figure 7: Which of the Following Analytics Are You Using in Your Organization?*



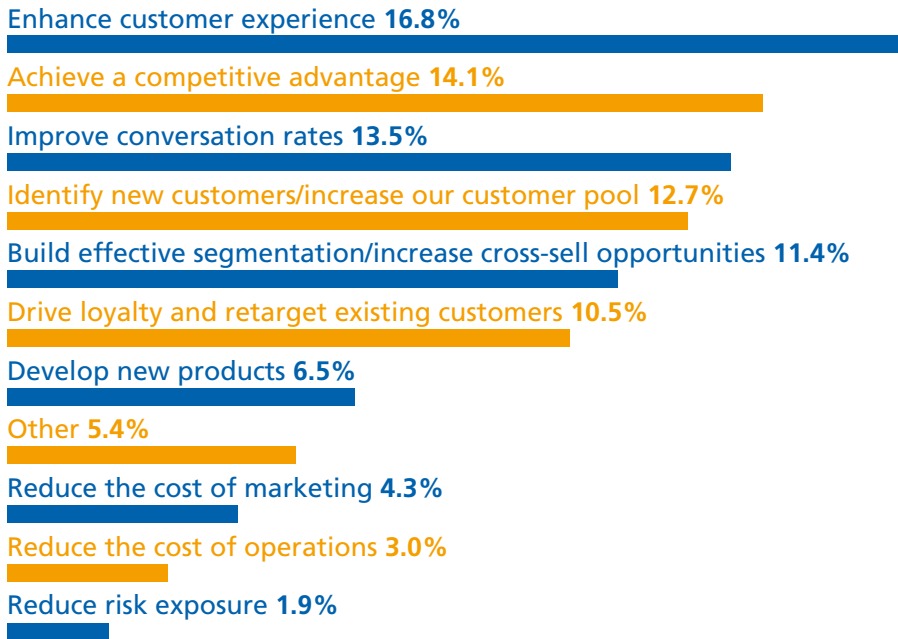
Source: State of Data in Travel Survey, 2017

When it comes to the type of analytics that are being used there is general adoption of simpler analytical types but this decreases as complexity rises. Below is a brief summary of what these four types of analytics are:

- **Descriptive** – a type of reporting analytics that summarizes what has happened or is happening currently, usually in the form of simple metrics, such as site visitors over time.
- **Diagnostic** – more advanced than descriptive analytics, diagnostic analytics tries to explain why the information is as it is, such as through finding correlations.
- **Predictive** – predictive analytics uses modelling and forecasting to try and project findings derived from past patterns in data.
- **Prescriptive** – the most advanced form of analytics, prescriptive analytics is a more intelligent approach that can identify what the best outcome is in a given scenario and recommend it to the user. It can therefore answer complex questions, as well as identify causation and also identify time frames. It relies on a foundation of descriptive and predictive analytics before adding on a further layer of analysis. An example would be the machine learning that is being undertaken by IBM's Watson.

The most common form of analytics identified in the survey is diagnostic (67.9%), followed by descriptive (59.8%), predictive (58%), and finally prescriptive (35.6%). This broadly reflects the challenges and increased costs that surround implementing more complex analytics. Although it could be argued that the adoption of analytics perhaps should be broader, this is a positive sign of the state of the industry, particularly with regards to prescriptive analytics. A Gartner survey from early 2016 estimated that 10% of organizations were using a form of prescriptive analytics and that this would take until 2020 to reach the level currently reported by the travel and tourism industry in our survey (Gartner, 2016).

Figure 8: What Is the Main Driver for Your Data and/or Analytics Program?



Source: State of Data in Travel Survey, 2017

Clearly the large-scale deployment of advanced analytics across much of the travel industry is encouraging news. It is also good to see a customer focus in the most common aims of data programs in the travel and tourism industry. When asked to identify the single most important driver for their analytics or data program, our respondents put enhancing the customer experience top, with just under 17% selecting this option. We have noted in previous EyeForTravel research that the most successful travel brands are those that have focused on creating strong customer experiences across platforms. A key part of improving the customer experience is to try and get the customer to return to the brand to re-use its services. This is reflected by a further 10.5% of respondents answering that their main goal was to drive loyalty and retarget users, meaning that more than a quarter of respondents are looking at the customer first in their data strategies. The next most important objectives for travel data professionals are achieving a competitive advantage (14.1%), improving conversion rates (13.5%), and identifying new customers/increasing their customer pool (12.7%).

Figure 9: How Successful Do Data Professionals Believe They Have Been in Their Data/Analytics Program?



Source: State of Data in Travel Survey, 2017

When it comes to how successful our sample felt they had been, there was general positivity but clearly much work still to be done. Only 6.2% believed that they had achieved all of their aims and goals so far and 31.6% felt that had achieved most of their aims and goals. The majority, 59.7%, thought that they had accomplished some of their objectives. Just 2.4% believed that they hadn't met any of their aims in the data or analytics program.

## 4. THE CHALLENGES SURROUNDING DATA

Whilst the new frontiers created by greater availability and quantity of data presents enormous opportunities, the sheer volumes also present problems and dangers for travel brands. There is a risk of taking conclusions from data as gospel without realizing that there is still a degree of subjectivity, that the correlations may be misleading, or that the underlying sources could just be plain inaccurate. Data professionals must be constantly vigilant about drawing the wrong conclusion and need to be aware of the limitations.

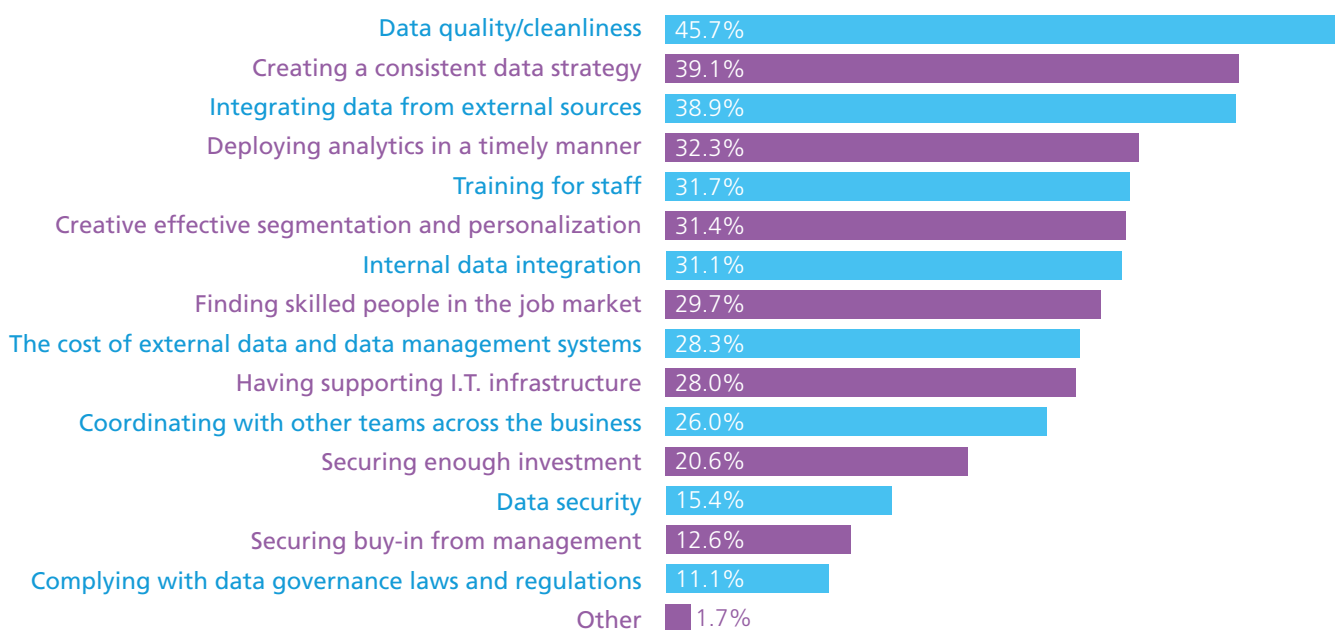
The challenges and problems around data analysis was illustrated by the survey across several different questions. When being directly asked what the biggest challenges were, the category identified most frequently by travel data professionals was data quality and cleanliness. This was identified as a challenge by 45.7% of our respondents. This is a theme that has been identified elsewhere by EyeforTravel. At our 2016 Smart Travel Data Summit, data quality was noted as a major issue, with Javier Espinosa Navarro, director of forecasting and revenue strategy at NH Hotel Group, saying that “we are in an era of data pollution”.

This is exacerbated by the fact that the travel industry largely revolves around human behavioral analysis, a complex field where the number of variables is extremely high, plus the subject – the consumer – is very possibly not following a rational framework in their decision-making. Therefore, there is enormous potential for big data programs based on historical data to simply draw the wrong inferences and overemphasize correlations that may have little or no bearing.

The Smart Travel Data Summit also identified the issue of finding people with the right skills and equipping staff to understand data. Speakers emphasized the skills shortage and that without the right training, letting inexperienced individuals work with data could be downright dangerous, akin to “giving a child a bazooka”. In our survey, finding skilled people in the job market is a challenge for 29.7% of respondents and providing adequate training for staff is also an issue for 31.7%.

Encouragingly, when it comes to leadership comparatively few noted that securing enough investment or buy-in from management are issues, at 20.6% and 12.6%, respectively. Along with the widespread deployment of dedicated teams and increased investment noted in Figures 1 and 3, this suggests that travel brands have fully realized the importance and potential of data and are embracing the field.

**Figure 10: Which of the Following Is a Challenge to You and Your Organization’s Data Capabilities and Strategy?**



Source: State of Data in Travel Survey, 2017



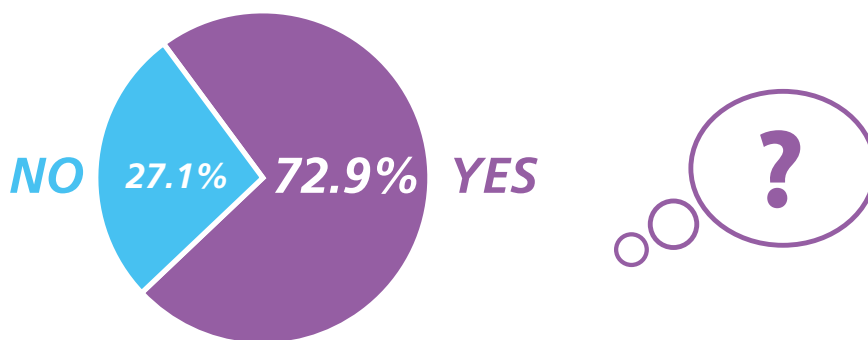
**Table 2: Which of the Following Is a Challenge to You and Your Organization’s Data Capabilities and Strategy?**

Data quality/cleanliness	45.7%	160
Creating a consistent data strategy	39.1%	137
Integrating data from external sources	38.9%	136
Deploying analytics in a timely manner	32.3%	113
Training for staff	31.7%	111
Creating effective segmentation and personalization	31.4%	110
Internal data integration	31.1%	109
Finding skilled people in the job market	29.7%	104
The cost of external data and data management systems	28.3%	99
Having supporting I.T. infrastructure	28.0%	98
Coordinating with other teams across the business	26.0%	91
Securing enough investment	20.6%	72
Data security	15.4%	54
Securing buy-in from management	12.6%	44
Complying with data governance laws and regulations	11.1%	39
Other (please specify)	1.7%	6

Source: State of Data in Travel Survey, 2017

However, it appears that one of the most effective ways that travel brands can further their analytics programs is to sit down and cohesively figure out exactly what they want from their data and how teams will achieve these goals. Four out of ten of our respondents noted that creating a consistent data strategy was a major issue for their organization, making it the second most important issue identified by our panel. Furthermore, when we asked whether our respondents have a clear understanding of the Key Performance Indicators (KPIs) they should be measuring and working towards, 27.1% said “no”. Although the vast majority said that they did, it is concerning that more than a quarter of travel data professionals do not know what measures they need to be focusing on and 39.1% believe that the lack of consistency in their data strategy is holding them back. This points to some discord behind the scenes and perhaps travel brands should make sure that the capabilities of, and the demands on, their data and analytics teams are clear and well communicated across the organization.

**Figure 11: Do You Have a Clear Understanding of What KPIs You Should Be Measuring and Working Towards?**

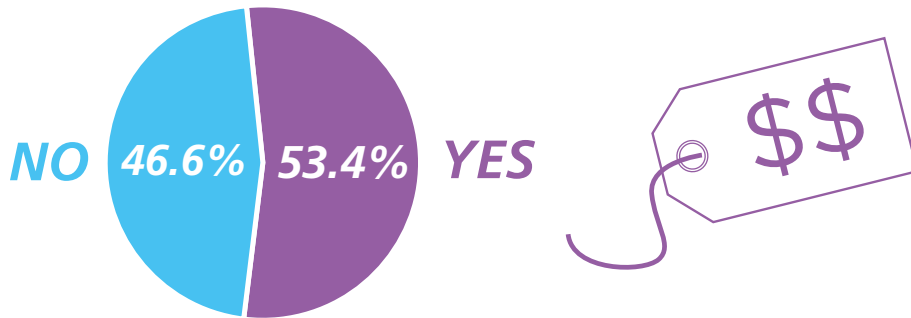


Source: State of Data in Travel Survey, 2017

This lack of understanding is likely to hold back organizations’ abilities to implement their findings rapidly. This was another area where travel brands need to improve, although similar to deploying advanced analytics, travel brands are doing well in comparison to other industries. In our survey a slim majority of our respondents – 53.4% – reported that they are able to deploy data in real time. In comparison, a Forrester survey of media analytics professionals from 2015 found that 27% of those surveyed were receiving data in real time, let alone deploying it into decisions (Forrester, 2015).

Given the importance of deploying data in real time within the travel industry in a wide variety of areas, such as dynamic pricing, retargeting, and programmatic advertising, it seems likely that this rate is going to rise from its current level. There is a high potential value in being able to utilize real time data, but it will require organizations to rationalize their proprietary data effectively.

**Figure 12: Are You Currently Able to Deploy Real Time Data to Make Changes in Your Organization, Such as to Pricing or Advertisements?**

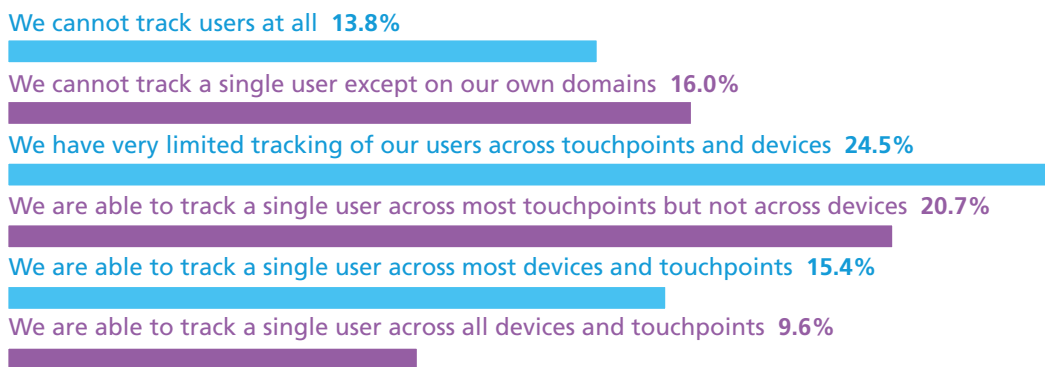


Source: State of Data in Travel Survey, 2017

Similarly, travel brands need to work on understanding their own users as attribution was a clear issue for our respondents. The majority of the survey's respondents report that they have limited tracking of consumers as they cross devices and touchpoints. Just 9.6% of respondents are able to track users across all devices and touchpoints currently, with a further 15.4% reporting that they could do so over most formats, and 20.7% noting that their tracking could cross touchpoints but not devices. This leaves the majority of travel brands unable to properly track users, with 54.3% reporting that they could either track users to a limited degree (24.5%), just on their own domains (16%) or not at all (13.8%).

This is a clear area that travel brands will need to work on given the length at which travelers research their journeys and the well documented movement between devices as they do so. For example, EyeforTravel research shows that although mobile devices are now generating the majority of traffic on travel domains, desktop remains the main device for booking in most major markets. This will therefore be a high priority for travel and tourism organizations in the coming year, but it should once again be noted that the travel industry appears to be out ahead of its peers in this regard. A 2016 survey by eConsultancy noted that despite 74% of respondents putting the ability to match consumers across multiple devices as a priority, just 14% reported that that they had this capability (eMarketer, 2016).

**Figure 13: Do You Have a Single View of Your Customers and Prospects Across Devices and Touchpoints?**

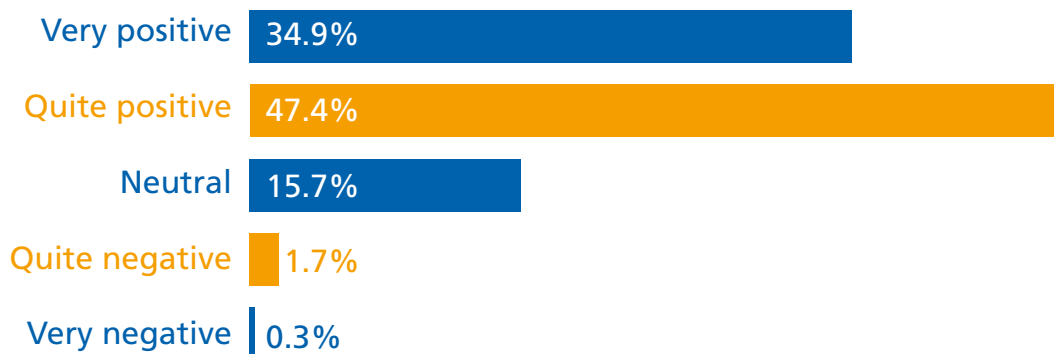


Source: State of Data in Travel Survey, 2017

## 5. TRAVEL AND TOURISM INDUSTRY OUTLOOK AND TRENDS IN 2017

When it comes to how data professionals feel about 2017, there is a strongly positive outlook. Overall, 82.3% of respondents feel positively, with 34.9% of these feeling very positive and 47.4% quite positive. This compares to 15.7% who feel neutral and 2% who believe that the coming year will be negative for the travel and tourism industry. This is encouraging that the professionals monitoring the industry and providing it with forecasts remain resolutely upbeat about this year.

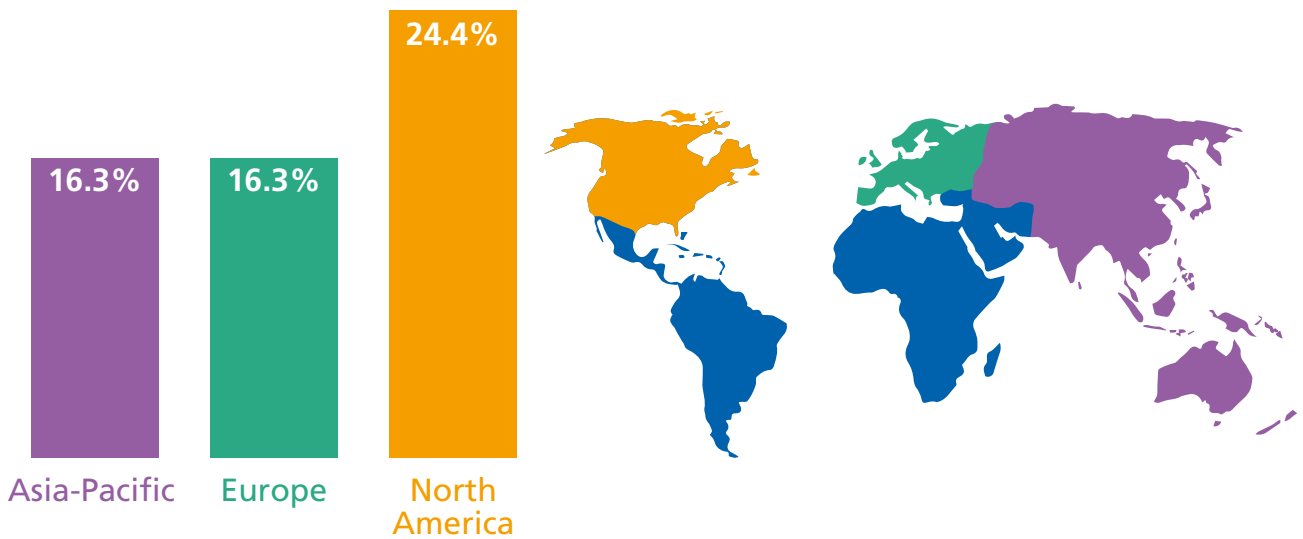
*Figure 14: How Do You Feel about the Potential for Growth in the Travel and Tourism Industry in 2017?*



Source: State of Data in Travel Survey, 2017

When we then break this down by region there is a clear step change for North America that points to a less confident outlook for that region's travel professionals when compared to Asia-Pacific and Europe. Both Asia-Pacific and Europe had the same level of neutral or negative sentiment, with 16.3% of respondents fitting into these categories. Just under a quarter of North American professionals, in comparison, felt the same way. Combined with Figure 4, it is clear that executives in North America are not expecting quite the same level of strength in their business environment when compared to their peers in Asia-Pacific or in Europe. As discussed in Chapter 2, it seems likely this is linked to the political and economic climates of each region. Business confidence in the Euro-Area reached the highest point since 2011 in January 2017, Asia-Pacific harbors the world's fastest growing major economies, whilst in North America the dollar is still strong, making inbound tourism more expensive, and political actions are causing concerns.

Figure 15: Combined Neutral and Negative Sentiment Towards Growth in the Travel Industry by Region



Source: State of Data in Travel Survey, 2017

Table 3: Sentiment Towards Growth in the Travel Industry by Region

	Very positive	Quite positive	Neutral	Quite negative	Very negative
Asia-Pacific	36.8%	47.1%	15.1%	1.1%	0.0%
Europe	29.9%	53.7%	15.0%	1.4%	0.0%
North America	36.0%	39.5%	20.9%	2.3%	1.2%

Source: State of Data in Travel Survey, 2017

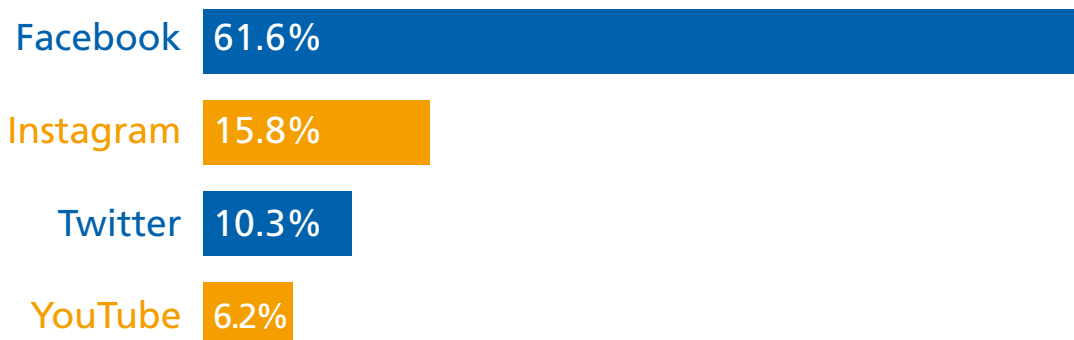
Note: Figures in table and graph may appear different due to rounding to one decimal place

So, with the industry positive about growth, what are the key trends that will define analytics in travel, and also the digital side of the industry in general, over the medium term?

As seen in Figures 5 and 6, social media is a core part of the data mix for our respondents. In order to find out what the industry sees as the key social media network we asked marketing professionals in our survey which one they thought is the best-performing.

The answer we received was conclusive. Facebook dominates the responses with 61.6% of marketers surveyed believing that it was the single best-performing network. This is far ahead of the next contender, Instagram, at 15.8%, which was bought out by Facebook in April 2012 for USD1 billion, further adding to their social media empire. Outside of these two, only Twitter and YouTube gathered a significant number of responses at 10.3% and 6.2%, respectively. Interestingly, the only challenger regularly mentioned to Facebook around the travel industry, Tencent’s WeChat, gathered just two responses, despite a large proportion of our respondents coming from Asia-Pacific. It therefore seems that for the foreseeable future Facebook and its associated brands, which include Instagram and WhatsApp, will remain the pre-eminent social media platforms for travel marketers.

Figure 16: Which of the Following Do You Find Is the Best Performing Social Media Network?



Source: State of Data in Travel Survey, 2017

Facebook's dominance as an advertising platform is driven by the data it has on each one of its users. At its fullest it represents close to a total record of a person's life over many years, with almost unrivalled information on their preferences. It is the quest to fully unlock this kind of detail on customers that will drive some of the main trends in digital and data analytics in travel.

In particular, we can expect data to be sourced from more areas and in greater depth. In Figure 5 we can see that organizations still do not have a complete repository of information on their customers. No category of data in that list could be thought of as being truly integrated into the heart of the travel industry given the relatively low rates of gathering reported across the sample. Furthermore, with 38.9% of travel data professionals directly identifying the integration of external data as a major challenge, 31.1% the integration of internal data, and 31.4% the creation of effective segmentation and personalization, there is a clear need to improve when it comes to data gathering and integration.

We can therefore expect travel brands to move towards more closely scrutinizing external data, to focus on tearing down internal silos, and to cast their net of data options far wider. Although focusing on increasing the spectrum and quantity of data captured and analyzed will be a key trend, the quality of both the underlying data and the end product will arguably be of even greater importance. This is because, as we saw from Figure 10, quality is the single greatest issue and there is the potential not just to be inefficient in using an analytics program, but downright dangerous. Feeding large sums of irrelevant or simply incorrect data into a data program has the potential to push the right conclusions into the margins and promote erroneous findings. We can therefore expect travel brands to be examining closely at the quality of data both internally and externally and looking to corroborate their results with findings from alternative independent sources.

This will require a greater free sharing of data and collaboration across the industry. There is a huge space for mutual support and collaboration and growing acceptance to do so. For example, airlines can improve their operations through sharing data with airports and ground transportation companies. Ground transportation companies can better understand users by working with hospitality companies. Hospitality companies can improve their guest experiences by working more closely with ground transportation and tours and activities organizations. These are just a few examples of an area of massive potential. Almost all travel brands have extensive proprietary information and a distribution network that can be utilized by others. This means it is not just a case of improving operations and increasing revenue, but using all of their digital real estate to the maximum effect. As the largest players in the travel space seek to become one-stop shops for everything a traveler might need, it is becoming more difficult for smaller players to compete, further accelerating the need for cooperation.

APIs have changed the horizon of possibilities for collaboration, yet it will be a challenge to make it all work behind the scenes. With data quality and cleanliness already the major issue, travel brands will need to work hard to make sure that information is accessible and accurate for both internal and external use. We can therefore expect data governance to be a key focus of the industry over the next few years.

Improving data governance, accessibility, and structure will also be crucial to driving forward the complexity of analytics. The travel industry is relatively well advanced in introducing analytics programs but we can anticipate organizations to increasingly move down the funnel towards predictive and prescriptive analytics.

Being able to achieve more advanced analytics requires more sophisticated systems and a significant part of the budgetary increases will be spent on new tools to mine and interpret data. As part of the survey we also asked a separate track of questions to those who identified themselves as revenue managers. When asked whether they felt they had all the tools necessary to do their job, 70.8% said they did not, which demonstrates the depth of the market for further spending on tech.

There will be an urgency to this spending, as the advances in Artificial Intelligence (AI) are accelerating and genuine step changes in capability are now being realized or are rapidly approaching. The potential of AI to change the travel industry is vast. Already we are seeing the deployment of relatively simple artificial intelligences in the rapidly growing area of chatbots, for example. We are only at the start of AI capabilities in the field of natural language processing and already brands such as KLM, Expedia, and Skyscanner are deploying these systems. However, the bulk of the spending in the field of AI is likely to go on better data mining and interpretation for the time being. Speech as a means of digital commerce remains a new area and is also being pushed as a solution to the complexities of shopping on mobile, which remains a smaller part of the customer journey in travel than in other industries.

Furthermore, by interpreting the data and utilizing the technologies already in the mainstream through both human and AI capabilities a strong foundation can be set and then built into emerging technologies, such as chatbots or even Virtual Reality (VR) offerings.

In order to maximize the value that can be derived from bigger and better data programs and more sophisticated interpretation of information, travel brands will also need to improve the speed with which they deploy findings and also the attribution of customers. Failing to serve the right content to customers when they are most receptive essentially means throwing away any prior investment made to rationalize and understand the data. Therefore, attribution and means of effectively using real time data, such as adaptive websites, programmatic advertising, and dynamic packaging and pricing, will be two major areas of investment focus in the medium term, alongside AI and human resources.

Ultimately, these trends and our findings point towards the vast majority of travel brands aiming towards the same goal: a better customer experience. The most successful players in the travel and tourism sphere are those that understand the customer best and make their experiences smooth and convenient. Data and analytics will be the key underpinning areas that drive this forward as better customer experiences will be reliant on effective personalization. Travel brands will need to understand who their customer is, what they are looking for, how much they are willing to pay, what channels and devices they like to use, what kind of messaging will work best, and what kind of experience they want, amongst other factors. All of this is impossible without strong foundations in data gathering and interpretation.

This will become a matter of survival in the very near future. We have seen that the travel and tourism industry is relatively advanced in comparison to other industries in terms of analytics, data deployment and attribution but this is because of the competitiveness of the industry and the depth of scrutiny consumers put into their purchases. Top players in travel have shifted the game so now consumers expect to be met with relevance at nearly all times and seamlessness throughout the journey. Now is the time to get the underpinnings right to secure a position at the table in the years to come.

## 6. WHAT THE EXPERTS ARE SAYING

### Data Quality and Consistency

Although data, analytics and AI are creating a host of new possibilities for the travel and tourism industry, unlocking the true value of the data explosion will continue to be a challenge. Complexity, silos, data quality and a lack of skills are just a handful of the barriers creating issues. However, “progress is being made,” said Kelly McGuire Vice President of Advanced Analytics at Wyndham Destination Network, “it’s just being made slowly because this is complex stuff and it can take a lot longer to get a data analytics program up and running than people would like.”

Similarly for Arnaud Masson, COO of Voyages-sncf.com the amount of data and the complexity of travel behaviour makes the task difficult: “A big challenge in creating a connected traveler experience is assuming that everyone travels in the same way. At Voyages-sncf.com we know that this isn’t the case and each month we deal with more than 90 terabytes of data to understand how our customers are travelling.”

Trying to understand this behaviour is made all the more complex for long-established brands with legacy systems, as there can be “Multiple databases using various levels of data granularity and quality,” noted Michael Overly, who is a data scientist looking at customer intelligence and marketing sciences at Southwest Airlines. For Southwest “this can limit our ability to turnaround insights.”

Dan Christian, Chief Digital Officer of The Travel Corporation, also pointed to data quality as the pre-eminent issue for his company: “The big challenge for us is if they have entered their name differently or email address, for example, is to clean the data so that the records match, whether it is cross-brand or whether multiple times with one brand.”

As The Travel Corporation is a family of brands, this effort is vital to improve cross-selling their wide range of products. “We implemented Salesforce as our CRM solution, so that we could be in a better position to combine all of our data and make sense of it. One of the initiatives that took place with that was the ‘ten year wallet’ program. This is where we are looking at how do we identify repeat customers and make sure people are travelling within the family of brands? So, pulling data on prospects, past passengers that booked direct or through partners, and being able to go up to them with a customized message to encourage them to come back and travel within the family of brands.”

“I think one of the biggest dangers is ‘analysis paralysis’, or the quest for perfection. There is so much data today it is easy to get lost in a rabbit hole”

**Kelly McGuire**  
Vice President of Advanced Analytics  
Wyndham Destination Network

For McGuire, efforts like these are critical. It is important not to be overwhelmed and to push ahead with incremental improvements wherever possible: “I think one of the biggest dangers is ‘analysis paralysis’, or the quest for perfection. There is so much data today it is easy to get lost in a rabbit hole when you are looking at this stuff. It is also easy to decide to not get started until everything is perfect. The data itself is never going to be perfect, you’re never going to have everything you want and not everything is going to be in the state you want.”

“Our philosophy in my department is that some insight is better than no insight. So, what can we get out of what we have first? Then we go through the cycle of saying how do we make this insight deeper and get to it more efficiently?”

She also noted that an organizational culture around data needs to be developed: “Data quality and cleanliness is a cross-functional and it’s an on-going effort. If you really want to be confident in the quality of your data you need to really think broadly about anyone who may want to use it, anyone who has created it, anyone who has touched it, and make sure everyone agrees on the definitions. You must also make sure that you have put processes in place to make sure it stays clean and consistent on an ongoing basis.”



“Be very democratic about data because that’s how it will get into the organizations DNA and that’s how everyone moves forward.” However, McGuire also urges caution, as “the second that you start allowing people to freely “mess around” with the data, the quality starts to deteriorate. It’s a constant struggle.

“Clearly companies are increasing focus through bigger budgets and putting in place dedicated teams but we must not forget to build a data culture supported by relevant skill sets and the right mindset throughout the organization.”

**Carmen Lam** Vice President of Sales & Marketing Projects, Asia-Pacific  
Accor

There have to be practices put in place to ensure the ongoing quality and consistency, but ones that don’t overly burden the organization’s access and use of the data.”

Carmen Lam, Vice President, Sales & Marketing Projects, Asia-Pacific at Accor echoed McGuire’s sentiments around creating a culture around data and analytics: “Clearly companies are increasing focus through bigger budgets and putting in place dedicated teams but we must not forget to build a data culture supported by relevant skill sets and the right mindset throughout the organization. When that culture is strong not only at the corporate level but also at the operational unit-level such as hotels and retail outlets, we will be in a much better position to tackle nagging issues such as data quality and consistency, and improve the translation of data into action giving rise to higher return from digital and related investments.”

## Partnerships, Data Sharing and APIs

Internal data cultures are one thing, but what about the travel and tourism industry as a whole? With so many different companies gathering all sorts of data, there is enormous potential for collaboration and partnerships. Despite the possibilities, the industry is only at the beginning of the journey in this regard. With just 36.2% of respondents reporting that they use third-party transactional data, it is clear that there is huge room to grow. “When it comes to sharing data among partners, I think there is a lot of reticence to do that,” said Emre Mangir President, Co-Founder and Head of Partnerships at start-up Mozio. “I think that is one piece that the travel industry is missing out on, particularly on the B2B side.”

For Mangir co-operation is vital, as “first-party data is important but really to understand the customer and how they are thinking, you can’t ignore those third-party sources. Where the customer is looking, how they are looking and just understanding the customer better - this cannot be done with just first-party data, even if you are a massive company, such as Priceline or Expedia.”

Masson, stressed a similar line: “From experience, those businesses that realize that working in partnership with other businesses, and organizations, including even governments, achieve far more by working together than separate entities who attempt to go it alone.

For Voyages-sncf.com, partnerships are business-critical as they are “an online ticket distributor selling passes and point-to-point tickets for rail travel around Europe,” so “Voyages-sncf.com has to take a collaborative approach – indeed we work in partnership with 15 European rail operators and many more travel organizations across some 100 countries globally.”

This has led them to “work with Alcmeon to monitor our social media customer service, with Helpbox from Do You Dream Up to automatically respond to customer queries, and with Usabilla to collect customer feedback on our website and areas that we specifically want to analyze.”

When it comes to Mozio they look to partner “with some of the omnichannel and multichannel advertisers” as they are “a great way of bringing insight”, especially with regards to improving tracking and attribution.

The great enabler for the deepening links across the industry and beyond are Application Programming Interfaces (APIs). Firstly, and most visibly, APIs are opening the industry to a wide variety of distribution and content partnerships. Most major travel companies now have a dedicated API page that developers can access and use to add additional functionality to their sites, such as TripAdvisor location data or allowing users to hire an Uber ride.

“From experience, those businesses that realize that working in partnership with other businesses, and organizations, including even governments, achieve far more by working together than separate entities who attempt to go it alone.”

**Arnaud Masson**  
COO  
Voyages-sncf.com

“A strong, emerging trend is to improve APIs so that you have flexibility to work with multiple partners,” said Dan Christian. “That might be taking an API and combining air travel for example. . . . We want to make sure is that we can give our partners APIs that serve their needs because we are a fully integrated travel company. We run our coaches, we operate the tours, and so our focus is offering our partners the best ways to sell our products.

“A strong, emerging trend is to improve APIs so that you have flexibility to work with multiple partners,” ”

**Dan Christian**  
Chief Digital Officer  
The Travel Corporation

“[Our partners] are demanding more of us, so they will want things from us such as dietary requirements or multi-lingual services. They’re coming to us and telling us how they want us to improve our APIs and we are trying to better set ourselves up so we can accommodate those requests.”

Secondly, APIs alongside the cloud are creating new opportunities for data access and understanding. Previous data storage and access methods are proving inadequate to deal with the demands of big data, particularly as queries will need to be answered rapidly to really grasp the issue of personalization. In this world of vast potential resources but tight time constraints, APIs working with cloud databases are making it easier to access and integrate third party data sources, as well as offering solutions to data architecture and querying.

Mangir believes that as a start-up unencumbered by silos, “[the cloud] has allowed [Mozio] to scale seamlessly. We can instantly spin up the server with the typing of a few commands and get a server that is automatically configured that doesn’t require us to maintain anything. We would not be able to run without having our business in the cloud the way we do.”

As businesses can now instantly create more storage and access data in the cloud, it is becoming important to pool data into ‘data lakes’. From this, organizations can both use APIs to plug-in various external databases to their own and increase their available pool of information, as well as use RESTful APIs to access data more easily, such as from Amazon’s S3 cloud services.

“We would not be able to run without having our business in the cloud the way we do.”

**Emre Mangir**  
President, Co-Founder and Head of  
Partnerships at start up company **Mozio**

Both Hilton and Accor have praised the capabilities they are deriving from their data lakes at EyeForTravel’s Smart Travel Data Summit North America 2017. Martin Stolfa, Vice President Commercial Services Analytics at Hilton Worldwide, noted at the Summit that they have moved on from enterprise warehousing to a data lake. This is “fully API-managed” and will enable them to “move forward much faster,” and to become “much more open and much more agile.” By creating a common data architecture they have simplified the way they can ingest, combine and plug in data to other systems so that they can “democratize the data for the organization.”

This could be critical as building on better access layers and interfaces so that more people can access analytics may well be the only way that organizations can keep on top of the increasing demands. “It’s going to take a lot of effort on the part of IT to set up the environments, such that the business can derive its own insights,” said McGuire, “but I think that is going to be the only answer going forward - the degree that you can enable your smart business people to access the information they need without having to call IT or analytics.”

## Artificial Intelligence and Offering the Complete Customer Experience

Wyndham’s McGuire warns that people are increasingly intimidated by the tasks at hand and also often overwhelmed by the quantities of information: “It also becomes really easy to say ‘We are not ready for big data yet. I can barely get at my small data’ and then do nothing. I think it is creating a lot of confusion and a feeling of too much choice. It is really easy to get intimidated.”

This is where AI steps in to relieve the human workload and is realistically becoming the only way that travel data professionals can keep on top of increasingly complex datasets.

The key theme that shone through when we talked to industry figures about the possibilities afforded by AI was the focus on using it to provide better outcomes for customers and to improve their experience. Delta’s Overly believes that AI’s biggest impact will be to “inspire travelers to take trips they didn’t know they wanted or need to take by providing relevant and targeted messaging at the right point in time.”

“We know each individual traveler so well – their preferred airline, the time of day they like to fly, their seat preference, the type of hotel they like staying at – that all they need to tell us are their destination and travel dates, and with a high degree of accuracy we should be able to take care of everything else.”

**Carlos Sanchez**  
Senior Manager of Big Data Analytics  
Carlson Wagonlit Travel (CWT)

Carlos Sanchez, Senior Manager of Big Data Analytics at Carlson Wagonlit Travel (CWT) reflected this sentiment: “One of the most staggering statistics in travel is the amount of websites visited before booking a trip – more than 30. AI is here to change that. It will have a major impact, enabling the analysis of large data sets on the fly and delivering the right information to the right traveler at the right time. We will no longer be presented with every possible combination but only with the options which appeal to us.”

Masson also notes the importance of the getting the situation ‘right’ for the customer: “We know that a business traveler, using our V.Pro, platform, will want to get from A to B as quickly as possible and may be willing to pay a higher fare for that direct journey. Whereas student travelers are perhaps on a tighter budget, less worried about their time and might want to take a scenic route, so by using our ‘smart tourism’ philosophy we can ensure we offer the right products to the right customers at the right time.”

CWT has the comparable goal of “one-click travel, where we know each individual traveler so well – their preferred airline, the time of day they like to fly, their seat preference, the type of hotel they like staying at – that all they need to tell us are their destination and travel dates, and with a high degree of accuracy we should be able to take care of everything else,” said Sanchez.

For Dan Christian, he sees AI having an immediate impact through programmatic advertising. “We are interested in just trying to target people that have intent to travel in Europe for example.... A lot of that is an interception strategy and that is where AI makes a huge difference for us in that we can target the most likely customers. Based on the sites they are visiting, geographic information, demographic information and their user behaviour, we can then work out not the exact end-user but a profile that we are trying to match to and only show our ads to those people.

“We put huge efforts into retargeting, as we know if that if we are chasing someone enough times we can get them over the line. What are the four to five touchpoints that we need to reach them with? A social ad? A search display ad? An email? What is the right combination of touchpoints? And that is where AI comes in. Now all of a sudden we realize that if we do those combinations, we get someone over the line.”

Voyages-sncf.com on the other hand are looking at the applications of AI to communicate with the customer in the form of chatbots and voice recognition software. The company’s Facebook Messenger chatbot “is a digital travel companion available at the touch of the button that can provide personalized up-to-date travel information, mobile tickets and customer service. It’s a customer experience-enhancing product that is already proving a success - we have already issued more than 85,000 order confirmations via Messenger.”

“we have already issued more than 85,000 order confirmations via Messenger.”

**Arnaud Masson**  
COO  
Voyages-sncf.com

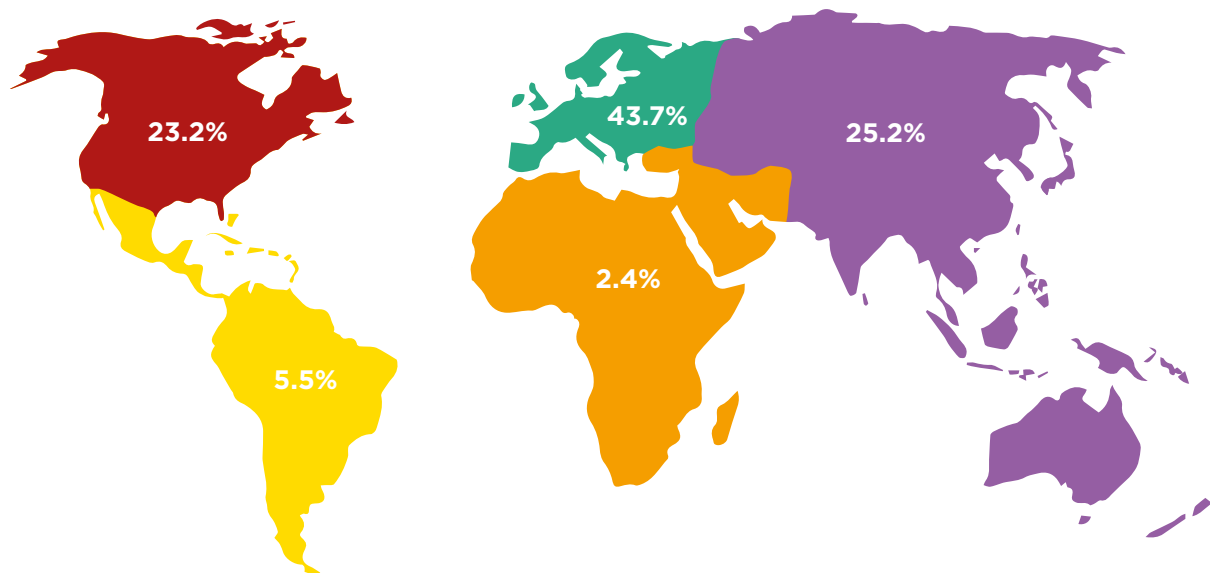
Alongside this, their “engineering teams have been working hard to develop the possible use of Amazon Echo and ‘Alexa’ to communicate with our own digital travel companion - Lea - to source the best train travel options, tickets and times for users - all through the use of their voice.”

However, in the quest for personalization through AI, Carlos Sanchez also sounded a warning note: “Machines might be able to predict with a high degree of accuracy what your tastes are on TV series, or where we might want to go next. However, they are incapable of judging whether their recommendations cross any boundaries. Take the famous Target incident where it began sending baby offers to a teenage girl. When her dad saw them, he became furious and asked Target for an apology. Sure enough, the dad found out his daughter was pregnant – but that is not the way to find out!”

# METHODOLOGY

EyeforTravel conducted a survey of self-identified data professionals working in the travel sector between 2nd January 2017 and 6th February 2017. The majority of respondents were from EyeforTravel’s internal database of travel professionals. A total of 453 respondents replied to our survey. Respondents came from all sectors of the travel industry, with accommodation and hospitality the largest sector to take part. There was also broad representation from a wide variety of job roles, of which marketing was the foremost, and a range of geographic areas, with Europe the leading region, as this is the largest area in terms of EyeforTravel’s audience. The following section covers the breakdown of respondents in detail.

Figure 17 / Table 4: Location of Respondents



Africa and the Middle East	2.4%	11
Asia-Pacific	25.2%	114
Europe	43.7%	198
North America	23.2%	105
South and Central America	5.5%	25

Source: State of Data in Travel Survey, 2017

Figure 18 / Table 5: Industry Sector of Respondents



Hospitality and accommodation	33.1%	150
Air transport	6.0%	27
Online travel sales and price comparison	7.1%	32
Ground transport	2.2%	10
Cruise	0.2%	1
Technology vendor	18.8%	85
Destination marketing organization	9.7%	44
Tours, trips and entertainment	4.6%	21
Business travel, MICE	6.4%	29
Wholesaler	2.9%	13
Travel agent	9.1%	41

Source: State of Data in Travel Survey, 2017

Figure 19 / Table 6: Job Title of Respondents



Revenue management	14.0%	49
Marketing	23.2%	81
Sales	10.9%	38
Data analysis/forecasting	17.2%	60
C-suite	9.2%	32
Information Technology	10.0%	35
Other	15.5%	54

Source: State of Data in Travel Survey, 2017

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