Powered by data, driven by people: The travel sector's future

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Without human beings to develop and apply new technology, to direct the analytics, and to implement the findings, nothing ever happens.

This past April, McKinsey senior partner Harry Bowcott spoke at the MarketHub Americas conference (in Riviera Maya, Mexico) about the ongoing relationship between people and data in the travel sector. Among other topics, he discussed the new industrial revolution of the 21st century, the hype around data analytics, the need to curate and personalize travel offerings, how to make a data-enabled transformation work, and cultural change, as well as the long-term impact of automation, machine learning, and robotics. What follows is an edited version of his remarks.

A new industrial revolution

Back in the stone ages, there weren't enough data to create anything much beyond the odd cave painting of buffalos. Roll forward a few thousand years, and you get papyrus—the start of an exciting journey. Human beings have been generating more and more data and learning to use them more and more capably ever since, particularly in the past few years.

Yet it's too easy to be dazzled by this new industrial revolution. Data analysts who obsess about predictive insights or automated processes or seamless customer experiences risk forgetting that without people to develop the technology, direct the analysis, and implement the recommendations, there won't be any businesses to run. Data may power companies, but people drive them.

Here's a story illustrating the centrality of the relationship between people and data. Several years ago, an airline wanted to use its assets more efficiently by turning its aircraft around faster and doing less unplanned maintenance. The analysis compared fault codes appearing in cockpits with the parts that eventually resolved the problems. It uncovered an 80 percent chance that one of three parts would be needed. The airline got them onto the engineering manifest and had them ready for airplanes when they landed, so they could be fixed more quickly. Higher asset utilization for the airline and fewer disruptions for customers—a fantastic thing.

But the analysis completely ignored a basic people reality: engineers at airports get their pride in the job, and their sense of standing in the company, from diagnosing the problems of aircraft. At first, they resisted the new system. In the end, they accepted it—but much more slowly than they would have if their point of view had been considered from the start. As this story shows, companies should think carefully about how to apply data-driven insights without antagonizing the very people who must implement them.
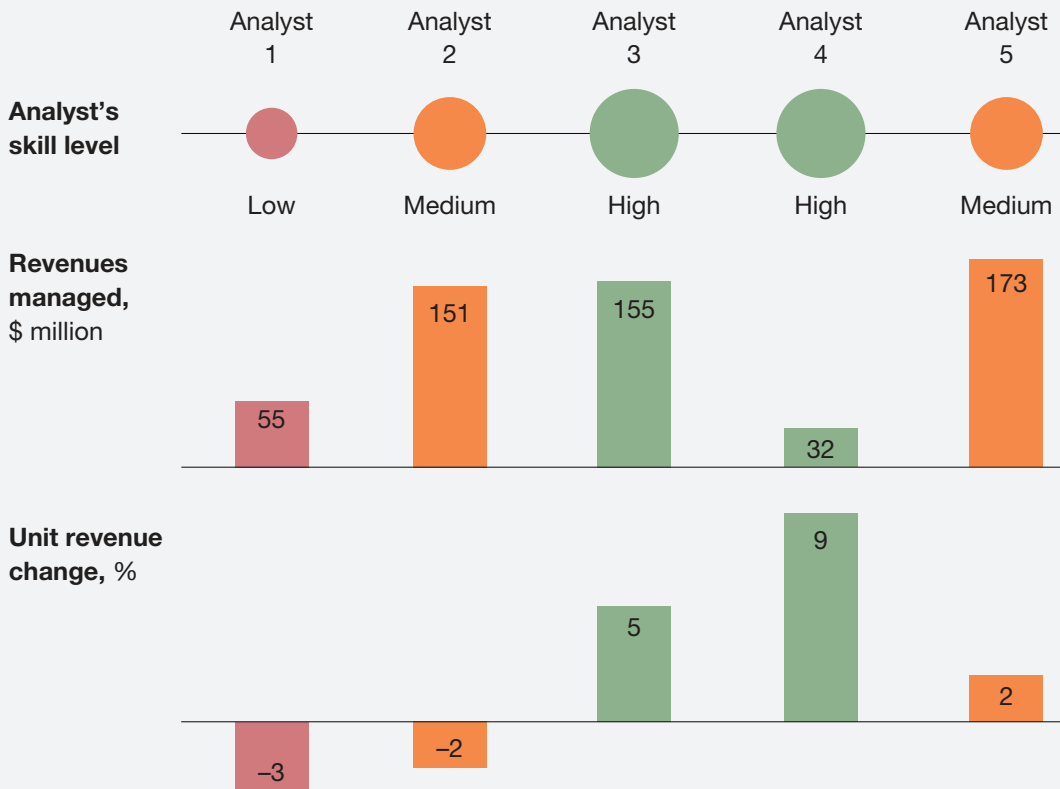
A second lesson about people and data comes from hotel pricing and revenue management, which are susceptible to marginal gains from data analytics. There's something of an arms race going on among providers of the latest black-box software promising higher yields. But in my work, I find that what's really important is the difference between the best and worst revenue managers (exhibit). In fact, it's probably greater than the value promised by the next update of yield-management software.

The slightly counterintuitive conclusion is that the best way to implement data-enabled pricing and revenue management is to focus on people. Companies must ensure that the data

Differences among revenue managers are dramatic—and probably greater than the value promised by the next software update.

Revenue performance by analyst's skill level and assets managed

	Analyst 1	Analyst 2	Analyst 3	Analyst 4	Analyst 5
Analyst's skill level	Low	Medium	High	High	Medium
Revenues managed, $ million	55	151	155	32	173
Unit revenue change, %	−3	−2	5	9	2

Source: McKinsey analysis

are transparent to all revenue managers and that transparency helps them improve their performance. The data should be presented and visualized in a way that's intuitive, user friendly, and manipulable at a granular level. In one typical case, this kind of effort delivered a 7 percent increase in yield, with no IT bill whatsoever.

The hype around data

Three things are often misunderstood in all the hype around data. The first is the implication of the much greater analytic horsepower that's now available. Some people think that companies should

aggregate all their data and look at the result. But that ignores management's responsibility to identify, understand, and focus on the main drivers of value in a business. The impact of data analytics comes from applying data-driven insights to problems previously solved by intuition or judgment. It doesn't involve cooking a data soup and seeing what problems bubble up—an approach that leads people to believe they have found causes when all they really have is correlations.

For example, one company was working to improve its recruitment funnel: the number of applicants,

first- and second-round successes, and so forth. The project involved a partnership with a firm that promised to scrutinize open-source information to find the data that had the strongest relationships with the company's recruitment performance. These people came back bearing the insight that it was most closely correlated with the performance of the Chinese yuan. The yuan is pegged to the US dollar, so one possible interpretation of the analysis was that the best way to help the company's recruitment efforts was to crash the US economy. That's a classic example of an analytically pure correlation mistaken for causation.

The second myth is the idea that all companies are locked in a battle for rare, expensive analytics talent. Data scientists are indeed rare and do command a wage premium. Good ones can be three to ten times more productive than those who are just OK. But I have spoken with many chief executives who worry too much about how they can compete against the employment propositions of digital-native brands or the salaries of investment banks. My answer? I ask them why they think they must compete with those companies. Find the talent you need for a competitive advantage against your actual competitors, not Facebook, Goldman Sachs, or Google. Often, that means thinking about how to be good in data analytics rather than great. I don't mean to be demotivating or lacking in ambition. In travel, as in many sectors, being good gives you a real competitive advantage.

If you're thinking about how to get there, look for the analytics talent you already have; an audit would probably find a surprising amount of it in systems-related departments. Then ask if you are deploying this rare, valuable talent in the right way. In some organizations I know, people with data-engineering or data-science qualifications spend their time doing things like creating automated performance-management reports of sales in some region several months ago. That isn't the best way to deploy these special people. The war for talent starts at home.

The third myth is the idea that a data-enabled transformation must be accompanied (or in some cases preceded) by a full review of your company's IT architecture. True, a lot of organizations depend on legacy IT systems that talk to each other imperfectly. But expensive, risky IT-architecture reviews are inimical to the agile mind-set companies need to create value from data and digital and to create it faster than their competitors do. You probably don't need such a review. What you do need are people who understand how to use data to create value—very often, in a quick and dirty way.

Recently, for example, a car-rental company built a web-based application that drew information about the location, availability, make, and model of every car in the fleet from four existing legacy systems. It didn't have to alter them at all to get the data it needed. This tool delivered high-single-digit improvements in yields, took less than a month to finish, and cost far less than a large-scale IT transformation. The decision makers thought about the business win they wanted and the data they needed for it, not about a wholesale transformation of IT.

The need for curation and personalization

Such myths aren't the only problems in the relationship between people and data. Put yourself in the customer's position. You're using an online travel agency to find a hotel in New York. It gives you 941 properties. Are you really going to take hours to sift through all of them, squinting at slightly too small, slightly too fuzzy photographs of anonymous hotel lobbies and rooms? Travel is a high-anxiety purchase. People have very little vacation time. Vacations are expensive. There's a lot of rubbish out there, and it's very difficult to know if you're getting a good deal. What does the search engine do

when you're in this anxious moment? Pop-ups on the screen tell you, "Hurry, hurry, hurry! Only two rooms available at this price point!" Hmm—that really puts you at ease, doesn't it?

The first company that understands how to treat travel as an anxiety purchase will win big, and an understanding of people will be essential. Let's draw an analogy with high-end art galleries, which have certain rules of thumb. Their salespeople usually don't show you more than four paintings, for example. The first is by a famous artist and probably costs much more than you want to spend. The second is by a young, up-and-coming artist at a much lower price point. Having bracketed the value they are playing for, the salespeople show you two further paintings to try and up-sell you within those limits. Finally, they don't say why you will love a painting; they talk in rich, emotional language about why they love it.

This idea, which might be called curation, is important because it suggests that tour operators—even brick-and-mortar ones—aren't dead. In fact, it is the absence of curation that's deadly. When you book a flight with an airline on the web, for example, a little button appears, asking if you also want to book a hotel room. When you click on that, one airline site lists thousands of hotels and another lists three great deals. Guess which airline has the highest rate of conversion of flights to hotel purchases.

How do you identify the right few properties for specific consumers? Personalization. In itself, that's just a motherhood-and-apple-pie statement, but I mean something rather different. Personalization is about understanding which data help you to personalize your offering meaningfully. If you interact with a holiday company once a year, it doesn't learn enough about you to personalize in a sophisticated way. It's much more important to think about the data "wake" behind you. Are you booking on your own or with kids? How far in advance? What else are you searching for? What's your zip code?

These will help a company target its value proposition much more effectively than it would if it knew only what you did last summer.

One of the core marketing challenges in travel is calculating share of wallet. Say you travel with a company twice a year. If you take only two trips and are totally loyal to this company, it should send you marketing communications based on that information. If you take two trips with this company and five with somebody else, the company should send you something very different. Loyalty is such an extraordinary term in this industry. It hardly ever means share of wallet, as it really should.

How can a company calculate its share of the customer's wallet? Starwood, which is good at the loyalty game, has an interesting relationship with Uber: you can earn Starwood points when you use it. If you register with Starwood in one city but earn Uber points in another, and you aren't in Starwood's reservation system there, Starwood could send you a targeted promotion in an attempt to capture an immediate possible spending opportunity. It can use external data to understand share of wallet and to personalize communications and value propositions. That hugely important trend will be a great source of value.

Making a data-enabled transformation work

If a company believes that curation and personalization are the two biggest sources of value in the travel industry, how can it make a data-enabled transformation work?

Winners in this industry have five instructive characteristics. First, they recognize that all interactions with customers must be seamless across channels. Second, they prototype pragmatically, by working quickly, finding out what's good, and rolling it out to the world. That's far better than waiting for the intellectually pure algorithm and feeling very clever about your

understanding of some abstruse relationship—while the moment to strike has come and gone.

Getting data and insights into the hands of frontline employees who can make a real difference is the third thing winners do. Some of the best at this are casinos. If you're ever on the floor of one and suddenly get a huge increase in your credit, you can be sure that it's not your lucky night.

Fourth, winners focus on the main cost drivers. Too many companies think that data and digital are all about the latest app, the latest customer-service improvement, the latest distribution channel. They are about all of those things, but companies that really know what they're doing understand that asset utilization, for an airline, or occupancy, for a hotel, is the main driver of value. They think about how to target those drivers as well as revenue.

Finally, they take their own proprietary data and combine them with third-party data, as Starwood does. Sometimes there's a partnership (like the one with Uber); sometimes such companies use open-source data. A consumer-goods company, for example, collects data from the Internet to understand, at a micro level, when colds are starting to tick up, so it can target its advertising of cold medicines.

But remember that there are a lot of biases in data, and your use of them will be only as good as the data themselves. A city in the United States, for example, wanted to use reports from iPhones to speed up the filling of potholes. The result, of course, was that the data sample was limited to people who had that particular phone, with all its specific demographics, so the data set was skewed.

Culture change

Once a company knows how to use data effectively, it must somehow apply the findings. That usually means, among other things, a change in corporate culture. Culture change is one of those terms that get people's eyes rolling—"Oh gosh, culture! I'll deal with that once the real work is done." But culture is real, and you can apply science to the soft stuff and supercharge your strategic agenda.

McKinsey has a database of thousands of companies around the world, and we've measured their cultural health in a very specific way. Companies in the top quartile of that database deliver, on average, total returns to shareholders three times higher than the rest. It doesn't get more real than that. Getting your culture right, which means making it suitable for your strategy, is one of the biggest levers management can pull. And a company can be every bit as structured about improving its culture as it is about improving its financial performance.

First, break down the culture you want into a set of defined outcomes and practices you can measure and set targets for. Articulate a change story everyone in your organization can use to foster the conviction that this transformation is right. Senior leaders should understand that role modeling the new culture is among the most important force multipliers. The company can ensure that appropriate behavior is being visibly role modeled by creating incentives—often, changing the balance between financial and nonfinancial ones. Finally, of course, the company needs to build the right skills for working in the new way.

These are generic lessons for driving a cultural transformation in any industry. What makes digital talent and data scientists different? Many fundamentals remain exactly the same: measurement, role modeling, change messaging, incentives, and skills. But building a culture for the new talent is different in four ways.

First, think about how the company promotes horizontally. Programmers like programming. Why promote them to roles where they'll do less of it?

Attract and retain them by creating a diversity of challenges, but keep them writing code. Second, star performers in data and digital could lurk in any part or level of your organization and be of any age. Compensation programs based on tenure and age are structurally ill defined to retain those terrific employees. To improve the company's performance, it must think about how to recognize and reward them at every level.

The third unusual thing is that digital talent poses a very real risk: what happens if a great programmer gets hit by a bus? Digital skills are hard to write down and codify, and it's hard to build a corporate memory around them, so succession planning must extend beyond the most senior roles. Think seriously about how the company rotates these digital and data people.

Finally, a company needs a different recruitment engine and employment proposition: it's trying to recruit such people through social-media channels they manipulate far better than it can, because they are digital natives. The company must create a more flexible employment proposition recognizing that such men and women will stay with it more briefly than most other employees do and offering different incentives. That's a real challenge.

Automation, machine learning, and robotics

Despite these recruitment problems, everyone keeps reading that automation, machine learning, and robotics will lead to mass unemployment. That may happen, in the travel sector as in others, but the outcome could be quite different.

Think about the impact of automation at the level not of jobs but of their constituent activities. Existing technology could automate about half of them. In the travel sector, for example, machines can do work such as providing personalized recommendations for activities, handling customer-service interactions during flight delays, and delivering service orders to hotel rooms. But there will still

be plenty of work for people, so the arm wrestle between them and machines will probably lead to a redefinition of human work, not its elimination.

Businesses too face challenges. Automation will scale up much more quickly than anything anyone was accustomed to in the past. This acceleration will benefit companies that have achieved scale already, which have money to invest, and start-ups, which can now disrupt industries and scale up quickly. Companies between these extremes will struggle. What's more, faster access to scale means that the consequences of getting things wrong will be greater.

Sometimes, the wise thing is to resist new technology. One company was thinking about closing all its city-center ticket agencies and its call centers until it realized that its conversion rate was 20 times higher through those old-fashioned channels than through the digital one it was planning to depend on totally. Isn't everything digital now? Everything is going digital, but people still matter, and so does common sense.

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Automation and machine learning will bring to the fore some very interesting questions about values, bias, racism, sexism, and the reconciliation of analytical judgments with moral ones. Privacy and cybersecurity will also give the world much to think about. But companies powered by data—like companies powered by water mills, steam engines, and electric motors—will still be driven by people. Some things never change. ■

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