The technology disruptions that have transformed other sectors of travel now loom over the aviation industry, threatening to destroy everything from profit margins to long-term relationships with customers. In order to survive, airlines will need to reimagine their relationship with customers and how they sell their own products, using technology to transform their business for a new era of fast-moving, customer-centric commerce.

If you have any questions about the report please contact trends@skift.com.
Adapt for the customer and you adapt for the future.

The Datalex Digital Commerce Platform supports a global digital marketplace of over 1 billion shoppers driven by the most innovative airline retail brands.

Adapt for the future with unified pricing and offer and order management to deliver an exceptional customer experience on every channel and at every touchpoint.
EXECUTIVE SUMMARY

Despite recent signs of business success, the airline industry faces a moment of transformative disruption. The current system of retail distribution cuts into profit margins and prevents airlines from forming ongoing relationships with customers. At the same time, new “digital invaders” like Google, Amazon and Uber, companies built with technology at their core, are redefining the future of the digital customer experience for many industries, creating rising expectations among airlines’ passengers and customers.

The challenge, and opportunity, for airlines is to evolve their businesses for a new “connected commerce” environment. The airlines that will prosper in this new environment recognize there are three key areas that will determine their success. One is addressing the growing impact of mobile technology and the expectations it creates for immediate, constantly-connected, airline products and services. Another is supporting omni-channel interactions with customers, where customer engagement happens across a range of touchpoints. The third is using technology to deliver more personalized, seamless, products and services to passengers.

Even as airline industry executives recognize the opportunity to transform their business, they also face a variety of internal and external obstacles. Legacy technology systems are one key pain point. A lack of a “single view of customer” is another, referring to the competing (and siloed) applications airlines use to monitor, assist and market to customers. Meanwhile, new industry-wide standards like IATA’s One Order and NDC, which are designed to help airlines better merchandize and distribute their products, offer potential solutions, even though implementation is still a work in progress.

As airlines look to build the connected commerce systems of the future, putting technology at the core of their redesigned retail experience, a number of strategies are finding success. Many airlines are recognizing the benefit of using a “Systems of Differentiation” approach to building new retail and technology experiences. More unified offer and order systems will also prove critical. So will opening up back-end systems to enable collaboration with a growing ecosystem of airline partners and channels, offering new opportunities for innovation and scalability.

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### ABOUT SKIFT

Skift is a travel intelligence company that offers news, data, and services to professionals in travel and professional travelers, to help them make smart decisions about travel.

Skift is the business of travel.

Visit [skift.com](http://skift.com) for more.
From the perspective of an outsider, the airline industry is experiencing a wave of success. In 2015, the World Bank estimated worldwide air passenger traffic hit more than 3.4 billion passengers per year amidst strong year-over-year growth in demand. Not only are more passengers flying than ever before, but recent airline profits are on the rise too. U.S. airlines announced record-breaking profits for 2015, raking in $25.6 billion thanks to lower fuel prices and the growing success of their strategy to charge more fees for services like checked bags, ticket change fees and seat selection.
In addition to strong demand and healthy profits, airline retailers have access to an incredible range of connection points with customers, a relationship unsurpassed by other consumer sectors. Airlines are unique in the vast amount of data they have about customer behavior as they proceed from shopping to flying and returning home. “One unique advantage we have in the aviation industry is that when someone goes on holiday, we actually know where you’re going to, when you’re arriving and when you’re leaving,” said John Hurley, chief technology officer for Ryanair.

But look beyond this present success, and a crisis looms on the horizon. The truth is that airline retailers still operate in a legacy environment. Not only are airlines hampered by decades-old technology systems, but their current distribution arrangement costs too much and often prevents them from effectively selling their products. On top of this, new intermediaries like Google have too much access to valuable customer data and threaten to strangle long-term growth. The truth is the only way for airline retailers to survive this crisis environment is to take back control of their retail experience, reimaging their businesses for a new era of “connected commerce,” where competitive advantage is awarded to those that act most rapidly on these digital changes.

The impetus for this connected commerce revolution comes from two challenges: the current state of airline product distribution and changes in consumer behavior. Today’s aviation distribution system is one factor. Take a look under the hood of the typical airline’s financial performance, and the trouble becomes clear. “On average, global airlines on a per-ticket or per-seat sold basis, they make less than Starbucks on a coffee,” said Daniel Friedli, managing director and partner for industry consulting firm Travel in Motion.

According to IATA’s 2014 forecast of worldwide airline financial results per departing passenger, the average airline made $220.30 in revenue from a typical flight. At the same time, however, the cost per departing passenger in 2014 was $215.37, leaving an average profit margin of just $4.94 per passenger.
The reality is that airline retailers don’t control their own destiny when it comes to selling, and profiting from, their products and services. Instead, much of the airlines’ profit margins from indirect channels are controlled by third-parties like online travel agencies (OTAs) and global distribution systems (GDSs). A quick look at the financial performance of these retailers reveals their success when compared with the airline as supplier. The OTA Priceline’s profit margin, according to 2015 financial results, was 27%. Meanwhile GDS players like Amadeus noted in their 2015 annual report that more than 60% of their revenue came from distribution.

Airlines can no longer support the costs of subsidizing this business model and many are starting to question the viability, value and fairness of the current distribution framework. One example of an airline wrestling with these tough decisions is Lufthansa Group. In 2015, Lufthansa Group, which includes Lufthansa, Swiss International Air Lines and Austrian Airlines among others, announced it was adding a surcharge of $18 per ticket to any tickets booked through a GDS partner. The move was widely seen by those in the aviation industry as an effort to take back control of how its products were bought and sold, ultimately creating a stronger relationship with customers, and more profit for the airline.
Lufthansa sticks by decision to implement GDS surcharge

By Robert Silk & Jamie Biesiade / March 20, 2016

The 2015 decision by Lufthansa Group to add an $18 surcharge to all bookings made through a global distribution system (GDS) is symbolic of an effort by airlines to take back control of their customers and retail business.

"Until now, the percentage of revenue generated from the sale of flight tickets by our airlines has continuously decreased," said Jens Bischof, Lufthansa Group’s chief commercial officer, in a 2015 company statement describing the surcharge. "While other service and system partners in the value chain are recording increasing margins and returns, our airline’s earnings have been compromised over time, even though [we] are the actual providers of flight services. We want to counteract this trend by refocusing our commercial strategy."

Lufthansa Group executives have also stated that the move is not just about profitability. It’s also an attempt to get more control over the data the airline gathers from customers about their shopping and flying habits. "We are becoming more and more users of the data that we own and want to maintain ownership of," said Lufthansa Group’s CEO Carsten Spohr in a 2016 interview with Travel Weekly.

Spohr’s point about owning customer data is a key one, as it relates to the second key challenge for airlines, adapting to consumers’ changing digital behaviors. As the range
of devices consumers use to buy, shop and interact with airlines has increased, so too have the potential “leakage” points where non-airline companies are stepping in to try and “own” the interactions with travelers. These, days, it’s not just the OTAs and GDSs that want to help travelers book flights. Instead, airlines increasingly need to worry about “digital invaders” like Google, Amazon and Uber, each of whom uses technology to reinvent how companies interact with customers.

“Every member of our travel and hospitality value chain thinks they own the customer,” said Eash Sundaram, evp and chief innovation officer for JetBlue. “From MasterCard to Visa to Amex to the bankers. Then you have the OTAs and the travel agencies. Then you have the direct channel that we have. Once you get into the day-of travel, there’s the airports and the airline and the Ubers. The world is getting very complicated.”

What all of this has emphasized for airlines is the need to take back control of their relationship with customers by evolving their role as travel retailers. Making this system work, however, requires a new level of technical sophistication, involving new, more personalized, customer touchpoints and more agile back-end systems.

This report on the evolution of connected commerce and customer engagement in the airline industry examines the traits that tomorrow’s successful airline retailers will need to possess to thrive in a rapidly changing environment. It also looks at the technical challenges facing airline retailers as they seek to adapt outdated legacy technology systems and the impending threat of more nimble “digital invaders” who are increasingly shifting customer expectations. Doing so can help these companies realize new levels of revenue, profitability and customer loyalty in the future.
To embrace the "connected commerce" environment of the future, airlines will have to change the way they operate. This will involve reorganizing themselves to adapt to three factors, including a consumer base that is increasingly mobile and connected, an “omni-channel” environment with a proliferating range of devices and touchpoints and a set of customer expectations for seamless, personalized experiences.

**Increasingly mobile and connected consumers**

Two of the most important characteristics of tomorrow's connected commerce airline retailers are speed and flexibility. The truth is that the customer journey of today's traveler requires a higher degree of instant gratification and real-time responsiveness than ever before. This means that airlines’ digital experiences must be immediate, connected and intelligent across an increasing volume of digital channels, devices and touchpoints.

The biggest driver of this growing demand for immediacy is mobile. Whereas mobile was once a “nice to have” feature, increasingly it is a necessity. As Skift noted when looking at 2015 data from Criteo, the percent of travel industry sales made from mobile devices continues to rise, with some sectors like hotels and car rentals seeing 25% or more of their sales coming from the channel. The real-time, always-on, nature of mobile applications require systems to support the immediate gratification of customer needs. One much-cited example of this is Uber, where a passenger can not only immediately request a ride from their mobile device but
also get real-time updates on transit time to their destination. Uber is not alone in its model however. Other travel companies like hotels now allow customers to check-in via mobile, skipping the front desk. Some even allow their customers to use smartphones as their room keys.

This demand for instant gratification and real-time connection is all the more imperative for airline retailers because most of their opportunity to offer additional up-sell services happens after the initial ticket purchase. “What’s distinct about airline retailing that’s different from traditional retailing is that when you and I make a purchase, whether it’s online or in-store, once we complete that transaction, it’s done,” said Atmosphere Research’s Henry Harteveldt. “The research that we’ve done at Atmosphere shows that a considerable amount of the [airline] purchase opportunity actually exists after the initial reservation has been made.”

As consumers research flights, purchase flights and communicate with airlines, airline retailers need to create connected commerce technology systems that are able to react and respond to the rapid pace of customer commerce, maximizing opportunities to connect with customers and profit from interactions during all stages of their journey.

The demand for omni-channel interactions

Consumers also increasingly expect experiences to be “omni-channel,” allowing them to seamlessly move between their preferred devices and sales channels throughout their airline experience. Omni-channel in this case refers to the interactions that occur between customers and airlines.

Source: 6 Charts That Show Mobile Booking’s Gain on Desktop Around the World, Skift

The growth of mobile commerce across all sectors of the travel industry is just one sign of consumers’ increasing emphasis on speed and flexibility in their interactions with travel retailers.
allowing them to happen in a consistent manner on whichever sales channel they choose. This is not to be confused with multi-channel, which refers to the distribution of products across all potential sales channels.

The truth is that the range of channels used by airline customers is growing rapidly. “The number of digital touchpoints is increasing by 20% annually as more offline customers shift to digital tools and younger more digitally-oriented consumers enter the ranks of buyers,” said Brian E. O’Rourke, global industry leader for aviation within IBM’s transportation and travel industry practice. “You can think about it as a more integrated view across the enterprise as the need grows to engage the customer 24/7.”

When examining the use of aviation touchpoints like airport kiosks, mobile apps and websites, how and when passengers choose to interact reflects a complex range of factors. Take for example research by airline IT and communications firm SITA, which found that 46% of passengers use a mobile app while on-board a flight, while 16% use mobile apps during booking.

Yet another channel that’s seeing more interest from airline retailers is in-flight. Although many airline retailers recognize the importance of communicating with passengers before and after flights, the in-flight experience represents a rapidly expanding frontier for many airline retailers to communicate with, and sell products to, passengers. One recent study by FlightView

### Passengers usage of technology during travel

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<td>Check-in</td>
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Passengers are engaging with more devices than ever before, from kiosks to websites to mobile apps, creating opportunities for airlines to deliver more seamless experiences.
found that more than half of travelers were willing to pay for in-flight premium services like Wi-Fi and in-seat charging.

“The one area we’re missing where we’re looking forward to getting started is the in-flight entertainment piece,” said Ryanair’s CTO John Hurley. “We own the customer’s journey from the second they leave home until their hotel bedroom. Yet we have them on the airline for an hour and a half, and we’re not talking to them correctly.”

### Need for personalized, seamless, experiences

Related to the increasingly omni-channel nature of airline retail is the need for more personalized and seamless experiences. No longer is it enough to have a “one-size-fits-all” approach to customer communication and sales. The vast wealth of data airlines have about customer habits and their preferences offers an opportunity to provide highly personalized communications and offers to guests.

“Perhaps the biggest problem is just the data itself. What do the airlines do with it?,” said Travel in Motion’s Friedli. “When you see what kind of potential there could be in looking at other industries, the airlines have to clean up their data first and understand it before they can offer really personalized offers.”

Friedli offers an example of why airlines are currently missing the mark on personalization. “I just booked a vacation today with Swiss International Air Lines for my family. Then I got a follow-up email asking if I wanted to book a hotel. When I click ‘yes,’ I just get directed to a generic Booking.com site with a Swiss logo. But the destination I’m flying to wasn’t in there, and the dates

### 50% of Travelers Will Pay More for In-Flight Premium Services. What’s Most In Demand?

- **64%**
- **50%**
- **31%**
- **22%**

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<thead>
<tr>
<th>WiFi w/ streaming</th>
<th>Texting</th>
<th>In-seat charging</th>
<th>Early deplaning</th>
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Source: Convenience & Choice: What Travelers Want Most (And Are Willing to Pay For) Throughout Their Journey, Flight View

A growing share of travelers are willing to pay for in-flight services, offering additional opportunity for airlines to treat such in-flight purchases as part of a broader connected commerce strategy.

The key takeaway from this proliferating range of channels is that airline retailers need to have the back-end connected commerce systems in place that allow them to interact with customers whenever and wherever they desire throughout the flight experience. Too often, airlines focus just on specific channels like their mobile app or website at the expense of building the right connected commerce systems infrastructure behind the scenes. But it’s all too easy to obsess over designing the ultimate web or mobile experience only to discover what really matters are the digital enterprise systems that support these channels in the first place.
[I’m flying] weren’t in there. They didn’t care about any of that.”

Other recent interviews with airline observers suggest the industry is falling behind in its ability to target and personalize items like ancillary products to passengers. “I see few visible signs of European airlines — or indeed other airlines — using the rich data they hold to drive bookings and revenues,” said John Walton, a writer for online aviation publication Runway Girl Network, in a 2016 interview with Skift.

Another example of the need for better personalization comes from a 2015 survey co-created by Datalex and Atmosphere Research Group, in which 67% of airline executives said they were “extremely ineffective” or “somewhat ineffective” at targeting and personalizing ancillary retail offers to passengers. Nearly 50% also said their customer data was currently “somewhat ineffective” at targeting and personalized ancillaries.

Other executives emphasize the importance of personalization to the future of the airline’s connected commerce experience. “We want to create a seamless way to interact at different steps in the travel journey, from pre-shopping to shopping to day-of travel to post-travel experience,” said JetBlue’s Sundaram. “Say I’m traveling on a JetBlue flight two days from now. We start monitoring 24-48 hours before the trip with an ‘auto’ check-in. We know your preferences, we know what you’ve done in the past, so we don’t need you to check-in anymore. We assign seats and send you a boarding pass.”

“How useful is your airline’s customer data for targeting/personalizing ancillary retail offers?”

- Extremely ineffective: 7%
- Somewhat ineffective: 13%
- Neither ineffective nor effective: 13%
- 47%

“How effective is your airline in targeting/personalizing the ancillary offers you present to your passengers?”

- Somewhat effective: 60%
- Extremely effective: 7%
- Neither ineffective nor effective: 27%
- 7%

Base: 33 Global Airline Marketing, Distribution, and Merchandising Professionals

Source: Datalex/Atmosphere Research Airline Retailing Survey, Q2 2014

More than 60% of global airline professionals admit their current targeting and personalization efforts fall short when it comes to ancillary offers.
While this connected commerce vision of a more connected, omni-channel and personalized future for airline retailers looks great on paper, most airline executives will tell you that realizing it in practice is far more difficult. As it turns out, airlines’ internal systems are not set up to adapt to this new connected commerce environment, creating technological barriers that inhibit growth.

The current gap between airlines’ digital technology systems and customers’ rising digital expectations is best summed up by IBM’s 2016 Travel Experience Index, a research framework that assigns a rating score to hotels and airlines based on their customer experience in areas like digital interactions, service experiences and sophistication of communication. As IBM’s plotting of various hotels and airlines shows, 20% of airlines fell in the “laggards” category, while 69% were designated as “fast followers.” This was in comparison to hotels, where no brands were considered “laggards” and only 61% were “fast followers.”

At the same time, new external competitors from outside the aviation sector are building new types of supply chains and travel products, making moves to grow their relationships with customers and gather more of their personal data. This growing mix of internal challenges and external threats will need to be addressed in order for airline retailers to grow and prosper in the future.
Platforms and the new “digital invaders”

As airlines look to evolve their own technology systems to this new connected commerce environment, they need to watch out for “digital invaders” like Amazon, Google and Uber that may beat them to the punch. As it turns out, all of the attributes of “connected commerce” companies described above, including more mobile and connected systems, omni-channel touchpoints and more personalized, seamless experiences, are already embodied by these technology giants.

What also makes “digital invaders” such a threat is that they put technology at their core, offering products that leverage a sophisticated understanding of customer habits, rapid adjustments to marketplace demand, simple-to-use interfaces and integrated relationships with suppliers and partners all in one package. It’s also how a company like Uber, informally known as the world’s biggest taxi company, actually owns no taxis. “What Uber has mastered is this sense of ubiquity,” said Atmosphere’s Harteveldt. “You expect Uber to be available. They’ve made it very easy and intuitive for people to use.” The challenge for airlines is that consumers often don’t draw distinctions between their own industry and a company like Uber, transferring the same expectation of similar experiences onto flight buying.

With other “digital invaders” like Amazon and Google, the threat comes not so much from these firms’ abilities to sell any one type of product but rather from the rich data they are able to gather about customers based on what they search for and purchase. “The data that Amazon has about its customers is priceless,” said Harteveldt.

“Digital invaders” like Google offer a new type of threat to the future of airline retail. While the company’s services offer incremental opportunities for airlines to sell more flights, they are also making behind-the-scenes moves to gather more insights on customer habits and preferences.
One example of the threat posed by Google is the company’s slow encroachments into the world of flight distribution. Even as Google claims it has no plans to launch a full-fledged travel service, the company is quietly adding capabilities like instant booking that suggest future e-commerce intentions. Other Google products like Flight Search are gathering a wealth of data on airline customer habits with little to no notice by airline retailers. “Airlines in particular have a natural advantage in the marketplace that they are not fully benefiting from – that nearly all trip planning begins with the flight search,” noted Bobby Healy, chief technology officer for B2B travel technology firm CarTrawler, in an opinion piece for Travolution. “By partnering with the Google Flight Search product, airlines are effectively handing Google the top of the trip-planning funnel.”

Although distributing products through Google offers airline retailers short-term gains in incremental demand, it also cedes significant customer data. Google’s growing insights into airline customer habits and booking preferences may put airline retailers at a distinct disadvantage in the years to come. “On one hand you have direct providers surrendering invaluable customer and itinerary data and, on the other hand, Google is selling these customers to the highest bidder – on all devices and at all points in the timeline,” said Healy. Indeed, the same could be said of other “search” channels including global distribution systems and online travel agencies as well.

Legacy systems hamper aviation’s retail evolution

Even amidst the looming threat of “digital invaders” like Google, a bigger problem sits on the horizon: airlines’ own legacy technology systems. “Some of the biggest airline systems out there are 40- or 50-year old IT systems. Everybody’s scared to touch them, because nobody knows what’s going to break,” said Travel in Motion’s Friedli. The combination of low investment in new IT systems, combined with aging software and fragmented databases prevents airline retailers from finding new revenue streams and hampers their ability to create value through more efficient delivery of products and services.

Unfortunately, many airlines aren’t investing into new technology the kind of dollars required to make more dynamic systems possible. “The challenge is that airline technology systems are limited and airline technology budgets have traditionally been below the proportion of other industries,” said Atmosphere’s Harteveldt. “This year SITA, in its airline IT study, estimated airlines will spend on average 3% of their gross revenues to IT. For a multi-billion dollar airline like Delta or British Airways, that’s anywhere from several hundred million dollars to potentially a billion dollars or more. I’m not sure that they will spend that much of their budget.”

Indeed, an examination of SITA’s 2016 data on airlines’ expected spending for “capital” investments (referring to upgrades or
acquisitions of new equipment or software) found that more than 60% expected spending to either decrease or stay the same for the rest of the current year.

The airlines have starved IT in the past, relying on decades-old systems and built patches around that,” said Harteveldt. “They have extracted functionality, and the limitations are now showing. That’s why it’s essential airlines start thinking bigger, and more creatively, about how to knit all the [software] pieces together.”

Transforming the digital enterprise will require airlines to innovate and enrich their current technology systems, rather than simply focusing on maintaining their current back-end. Yet as additional data from SITA’s 2016 Airline IT Trends study demonstrates, two-thirds of 2015 spending was allocated towards “service continuity” efforts, with just one-third dedicated to innovation.

According to SITA’s 2016 Airline IT Trends Survey, less than half of airlines expect their IT spending on capital investments to increase in 2016, though more substantial investments may be on the way for 2017.

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Source: 2016 Airline IT Trends Survey, SITA
Figuring out how to prioritize the type of investments that can enable the new connected commerce infrastructure described in the sections above will be a key challenge for airline retailers as they seek to adapt in the years to come.

**IATA’s NDC, One Order and the transition to unified offers and orders**

Even as airlines try to overhaul legacy technology systems, an additional challenge is creating a unified system of offer and order management that will serve as the foundation of connected commerce efforts in the future. In today's aviation distribution environment, many services and offers available on direct channels like an airline website are difficult to distribute via third-parties like travel agencies. However that is in the process of changing as IATA, the aviation industry’s international trade organization, creates new standards to simplify and streamline this process. This represents a strong statement of intent from the airline industry to change they way they do commerce.

“The big challenge that the industry faces today is a ‘gap’ between the airline.com and the travel agent channel,” said Yanik Hoyles, director of the NDC program at IATA. “When an airline is selling on its website...you can have descriptions and pictures and text [explaining] what the product is about. It’s more than just ‘a seat;’ it features the context of all the things that go with it.” This is in contrast, says Hoyles, to how airline seats are sold by travel agencies, where older legacy systems prevent airlines from showcasing all of these same features. “When selling through the travel agent channel...you can’t
‘push’ this stuff through. It’s very difficult to get that level of differentiation."

One way the industry is addressing the issue is by creating a series of standards led by IATA. One standard, called the New Distribution Capability (NDC), facilitates quicker and more standardized shopping and booking for the airline “products” sold to customers via travel agency channels. “IATA’s ‘New Distribution Capability’ will provide a flight shopping framework that will make it easier for carriers and their distribution partners to be retailers,” said Atmosphere’s Harteveldt.

The hope is that NDC not only makes flight shopping experiences more consistent across multiple sales channels, but also makes the experience more dynamic, adjusting in real-time to changing market conditions. “Think about the way an airline does that on their website. Now they can do that through all kinds of different channels as well,” said Travel in Motion’s Friedli. “Anything you don’t sell through your website, like through an online travel agency or brick and mortar shop, those offers aren’t defined by the airline directly. They’re a collection of offline files and databases which an airline updates periodically...the airline loses control over what’s shown and how that’s shown.”

The other advantage will be increased opportunities for distribution. Once a standardized model is in place, airlines could literally sell their products anywhere consumers go to buy products. “Once we’ve got this, it will allow airlines to go and sell to companies like Amazon or Wal-Mart, said Friedli. “As soon as you do NDC, that core product is going to be different. You’re not going to be selling a seat and maybe some ancillaries. You’re going to be selling a ‘product’ which is bundled together to a certain [customer] niche or segment."

There’s also IATA’s intended “One Order” standard, which will focus on the order fulfillment process. Currently, many of the elements of an airline order are stored in different databases, creating unnecessary paperwork and redundant information. One Order aims to simplify order management and accounting of travel products for today’s sophisticated retail environment. “We have made ourselves artificially different and the systems were built 40 years ago,” said Keith Wallis, director global distribution for Air Canada, in an interview with IATA about the new One Order protocol. “With the advent of e-commerce, we tried to adapt our systems instead of moving to modern systems.”

Others agree on the benefits. “What One Order is doing is trying to get rid of some of these legacy data records that we have in the industry and move towards a retailing type of order management system just like Amazon or Alibaba might use,” said Friedli. “[Orders are] probably 70% the same across industries and 30% unique to a given industry. With One Order we’re actually trying to move in the direction of being able to use more standardized software products.”

At the same time, it’s worth noting that the NDC and future One Order standard will only be as good as the connected commerce systems that underpin their success. Standards are only part of the solution. Airlines must also invest in the offer and order management systems which can apply these standards and help to extend them with new capabilities.
Lack of a single view of customer

Yet another challenge for airlines is their piecemeal system of tracking customers. The idea of a “single view of customer” refers to an airline’s ability to create a holistic view of all its passengers’ interactions, utilizing past and present transactions and communications to deliver more personalized service. However, many airlines track passengers in completely siloed environments as they move through different stages of the passenger journey, from pre-trip shopping to checking in to in-flight. Each of these stages exist in a competing web of airline databases such as “passenger name records” (PNRs), “special service requests” (SSRs) and “electronic miscellaneous documents” (EMDs).

As airline executives note, these competing systems complicate operations for airlines and create a fragmented experience for passengers at the airport. “Much of the software that solves airline problems are point solutions,” said JetBlue’s Sundaram in a 2016 interview with Tnooz. “For example, within the airports, there are separate systems to manage flights, gates, and bags. However, when a customer travels through that airport they need integrated information.”

Another analysis of the problems this fragmented customer view creates comes from a 2015 opinion piece by investor and business advisor Ben Kepes, writing for aviation news site Runway Girl Network. “As it stands, the relationship between myself as a frequent traveler and my airline of choice is completely siloed,” said Kepes. “I exist in literally dozens of disparate systems within airlines, and with almost no integration between these systems, my experience as a customer is fragmented.”

The trouble with having these fragmented systems is they prevent the airline from creating a connected commerce enterprise which can personalize and optimize products and services in real time. The “single customer view” of the future will enable two key benefits for airline retailers.

First, it will create a single cohesive overview of the customer journey. Whether the customer is contacting an airline call center, signing up for a loyalty program, boarding a flight or making an online purchase, the records for these transactions should not exist in siloed databases. It also means marketing functions and airline operations efforts will no longer need to exist separately, improving customer service and helping better personalize the experience for passengers. Second, this single customer view will allow commerce to happen seamlessly as customers interact with the airline across all channels and devices and deliver products and services with increased precision.

For some airlines, an additional opportunity also exists to build a more detailed understanding of where their constituents are at in the customer journey, targeting them with the right information based on where they are in the shopping, buying and flying journey. “Think of all the marketing and commercial attributes around a customer. A passenger is someone who actually has an active PNR. The needs of that person are [focused] more around the operational details,” said JetBlue’s Sundaram. “Where my flight is, where to check-in, [tracking] my bags. We differentiated that [from the commercial attributes], so now we know what source of information we need for two different sets of needs for the same person.”
There is no single solution for how airlines should overhaul their current technology infrastructure. Instead, the airline retailers that succeed in the years to come will utilize a range of solutions to transform their business.

Whether those solutions involving taking a “systems of differentiation” approach to new technology development, better unification of offer and order systems, creating single views of the customer, or building back-end systems that enable collaboration with a growing range of partners, the key will be aligning these solutions with business objectives. “You approach it by not thinking about the technology,” said Atmosphere’s Harteveldt. “You approach it by thinking about the business objectives.”

Below are some examples and attributes that will define the airline connected commerce experience of the future.

### Moving from “systems of record” to “systems of differentiation”

Today’s more dynamic, omni-channel,
The airline retail environment is simply no longer suitable for airlines to rely only on existing legacy systems and processes. But trying to completely overhaul these systems all at once is without a doubt a perilous, expensive and challenging process.

Instead, growing wisdom suggests the opportunity for building more flexible systems lies in quickly building new technologies that work in tandem with legacy infrastructure to fulfill new business requirements as they emerge. A good way to think about this approach is consulting firm Gartner’s idea of “Systems of Record” versus “Systems of Differentiation and Innovation.”

Whereas airline “Systems of Record” refers to older legacy systems that must be adapted, they are difficult to adapt or evolve quickly because they are supporting some of the carriers’ most mission-critical services for passengers and flight buyers. It’s simply not feasible to ask many airline IT managers to completely throw away such systems. Instead, in the future airlines will create “Connected Commerce” systems by constantly reconfiguring and adapting as business needs change, allowing the airline to remove the barriers of legacy constraints while simultaneously enabling systems differentiation and innovation.

### Unifying the offers and order process

Consistent with this idea of building “Systems of Differentiation and Innovation,” many airlines are now experimenting with “layering” connected commerce systems on top of airlines’ existing PSS (passenger

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**Systems of Record** — Established packaged applications or legacy homegrown systems that support core transaction processing and manage the organization’s critical master data. The rate of change is low, because the processes are well-established and common to most organizations, and often are subject to regulatory requirements.

**Systems of Differentiation** — Applications that enable unique company processes or industry-specific capabilities. They have a medium life cycle (one to three years), but need to be reconfigured frequently to accommodate changing business practices or customer requirements.

**Systems of Innovation** — New applications that are built on an ad hoc basis to address new business requirements or opportunities. These are typically short life cycle projects (zero to 12 months) using departmental or outside resources and consumer-grade technologies.

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A Gartner’s definitions of “Systems of Record” and ‘Systems of Differentiation” help explain a new style of software development built around shorter life cycles.
This is one way for airlines to accelerate a more unified offer process. “What we’re finding, as airlines look to improve the customer experience and modernize their platforms, is they’re really looking to integrate services on top of a PSS platform,” said IBM’s O’Rourke. This is what we’re doing with Datalex, is building this layer on top that improves the cross-touchpoints to the user experience.

This approach has a number of benefits for airline retailers. “It improves and enables [airlines’] API platform, improves their merchandizing engine to drive ancillaries and improves offer and order management,” said O’Rourke. It can also allow new “cognitive” artificial intelligence systems that live in the cloud (on remote servers) to help to make sense of customer insights when it comes time to purchase. “This cognitive, analytical piece is key,” said O’Rourke. “We’re embedding algorithms that can identify what [the customer’s] preferences are and what’s motivating as an incentive offer. And, from a cost perspective, cloud-enabling this platform. We call it Watson Retail Travel Framework.”

A number of airlines like JetBlue have embraced this approach of building a connected commerce framework that interoperates with their existing enterprise systems. JetBlue leveraged Datalex’s Commerce Platform to dynamically price and tailor their passenger offers, one example of which was their latest ‘fare options’ offering. “JetBlue has been very public about using Datalex to introduce the different product bundles they brought to market last fall,” said Atmosphere’s Harteveldt. “They allow you to buy just the seat, or the seat with a bag, or a seat with two checked bags, or other amenities included with the product.”

The benefit of this approach is a more seamless experience for customers while allowing more flexibility for retailers to dynamically offer new combinations of products in real-time. Travel in Motion’s Friedli mentions the telecommunications industry as an example of what a more standardized order management system might look like in the future. “I have Swisscom in Switzerland. As soon as I go to the US, there’s some kind of roaming agreement between a US Telecom and my Swiss provider. I don’t have to worry about it. The whole billing and settlement is done in the background. I can purchase data packages from the US provider without really noticing it...they’re cross-selling and upselling across various touchpoints like my mobile device, on the web or a call center, said Friedli. “Why did they do it? They realized this was only possible if they had more standardized back-end capabilities.”

The new digital marketplace: supporting a growing ecosystem of partners and channels

The connected commerce airline retailer of the future will also need to prepare their systems for a digital marketplace which can support a growing ecosystem of partners and channels. The truth is that the current airline retail environment is already quite complex, and getting more so every day. Asking one airline to handle all the facets of channel ownership and distribution is not only mind-bogglingly difficult, it’s also not smart business. “Channel ownership, and how we address customers, is not going
to be [managed by] just one [company],” said JetBlue’s Sundaram. “Our philosophy is that it’s going to evolve with partnerships, rather than [airlines] saying ‘I own everyone, everything and everywhere.’”

In other words, JetBlue has realized that one company alone cannot create the connected commerce system of the future. “We are looking for opportunities to build that ecosystem that helps us build the ‘connective tissue,’” said Sundaram. To achieve this vision, airlines must prepare for an exponential increase in the channels and partners that will need to access their data and commerce systems, ensuring a consistent offer and experience for the consumer in the process. Whether this is a distribution partner, content partner or technology developer is irrelevant. The key is that building the right access points like APIs will allow airlines to ensure consistency, immediacy and scale while still maintaining control.

As Sundaram explains, this range of partnerships and knowledge-sharing is an ideal way for JetBlue to expand its opportunities to understand customers and create new retail opportunities. The truth is that in the current airline environment, innovation, insights and business opportunities may not always come from the industry itself. Instead innovators from both inside and outside the industry will collaborate in an ongoing and evolving fashion. “Now we are exploring opportunities for partnership with companies like MasterCard to fill the gaps of the customer needs. MasterCard has a piece of [customer] information, airports may have pieces of information, retailers [like Amazon] may give us pieces of information. So we’re filling the [gaps] to address the customer need.”
KEY TAKEAWAYS

**Disrupt or be disrupted** - Airlines need to transform their primary systems for customer engagement and prepare for a digital transformation in travel retail. If they don’t, carriers are just an “oil price hike” away from serious problems. This is to say nothing of the new digital disruptors, who are all-too eager to build closer relationships with airline customers.

**Start building connected commerce systems and practices now** - Changing the way airlines operate so they can deliver connected digital experiences to customers, partners and employees is a difficult task. What’s more, doing it fast enough to compete is impossible unless systems are built to support. Airlines must prepare to provide immediate, connected and intelligent commerce across an increasing volume of channels, generating billions of new offers and orders in the future.

**Own the relationship with airline customers** - Airlines have access to more insights about customer habits and preferences than just about any consumer industry. But if too much of that data is given away to third parties, creating the systems of the future that will cement relationships with those customers will be difficult if not impossible.

**Merchandising is just one piece of the connected commerce puzzle** - Airline retailing is about much more than just selling products like ancillaries on a website. Retailing starts with building systems and processes that support pricing and promotion of products and services with precision and accuracy. It also requires an ongoing relationship and single view of customers using whatever channel or device they choose (omni channel).

**Work in tandem with legacy systems to differentiate and innovate** - Transforming legacy airline technology systems for the future of connected commerce can seem like an impossible task. The key is to approach such initiatives not by trying to fix everything all at once but instead by building new types of retail experiences in tandem as needed, offering new opportunities to sell and connect with customers.

**Open up systems to partners to expand retail opportunities** - Open up systems to distribution channels and to technology partnerships to drive innovation and competitive differentiation.
ENDNOTES AND FURTHER READING

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Contact us for more details:

Rafat Ali,
Founder & CEO, Skift
ra@skift.com
212-564-5830