BUSINESS 4.0™:
CHECKING-IN TO A DIGITAL FUTURE

Industry Focus: Travel & Hospitality

Winning in a Business 4.0™ world: a TCS study tracks the adoption and impact of Business 4.0
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Business 4.0™ is the next wave of change breaking over organizations across the world. Digital technologies such as the cloud, the internet of things (IoT), analytics, automation, robotics, and artificial intelligence (AI) are vital enablers of this transformation, but it is not enough to use these to simply mechanize existing functions.

Instead, firms are using technology as a foundation for four critical business behaviors that will help them move to the next level:

- **Driving mass personalization** – personalizing products and services to a market of one customer, often even of one transaction, and at scale.

- **Creating exponential value** – adopting business models that leverage value from transactions at multiple levels and address new markets.

- **Leveraging ecosystems** – collaborating with partners inside and outside the supply chain to create new products and services.

- **Embracing risk** – moving beyond rigid planning and operational barriers with an agile strategic approach.
CS’ global research shows the way forward by helping organizations benchmark their progress against peers.

As part of the TCS Business 4.0 Global Study, this report details the level of Business 4.0 adoption in the travel and hospitality sector, the benefits industry players have seen, and their plans for the next three to five years. An important characteristic of this sector is that a vast majority are legacy organizations and only recently have a few digital-natives sprung up in the industry. So, while digitalization is enabling industry players to introduce innovative offerings continually, there is considerable scope to do much more.
CS surveyed 1,231 respondents from firms across 11 industries and 18 countries. All firms included in the survey report annual revenues of at least $500 million. All respondents were either directly involved in or were aware of their firm’s digital transformation plans.

The sample included 140 executives working in the travel and hospitality sector (including transport and logistics). Just under one-third of the travel and hospitality respondents (29%) were from the C-suite, while the rest were manager-level and above.

In addition, we conducted in-depth interviews with 30 experts and business leaders from across industries worldwide.
cross the travel and hospitality industry – from hotel operators and passenger airlines to third-party logistics providers – digitalization is transforming how companies work, the services they provide, and the way they engage customers. Air travel is booked through mobile apps, chatbots organize personalized hotel services for guests, and warehouse robots prepare shipments for delivery, while drones deliver them.

Digital technologies and the use of agile methodologies are making it easier for travel and hospitality businesses to take risks in introducing new services and changing their operating models, but our research indicates that there is scope to be much bolder. Those that have begun to adopt Business 4.0 behaviors are generating tangible benefits from them today.

Our findings suggest that organizations that adopt all four Business 4.0 behaviors – driving mass personalization, creating exponential value, leveraging ecosystems, and embracing risk, which we refer to as the ‘leaders’, are more likely to report and anticipate strong financial performance.
leaders, early adopters, and followers

We have identified three distinct groups in the survey based on their adoption of Business 4.0 behaviors:

- **Leaders**: organizations that have adopted all four behaviors
- **Early adopters**: organizations that have adopted one, two, or three behaviors
- **Followers**: organizations that have adopted none of the behaviors

When we analyze the leader group, we find that travel and hospitality respondents represent 10% (see Figure 1). The fact that the industry is at the lower end of the spectrum could be explained by its general conservative nature. That, however, does not mean that travel and hospitality companies are opposed to driving radical changes in the way they operate. What slows their pace down is the very nature of their business – it is capital intensive, asset intensive, and relatively more susceptible to macro-economic changes.
This could have led travel and hospitality companies to be a tad reluctant about investing in IT and digital thus far; however, there has been a visible shift in the last decade or so. This change is evident in the aviation industry, for example, where leading airlines including Singapore Airlines, Finnair, Qantas, and American Airlines are opting for analytics-led, open-ecosystem platforms for a variety of reasons – better revenue management, improved retailing capability, enhanced customer reach, and so on.

Figure 1: Industry-wise share in the leaders, early adopters, and followers groups
ollowing are our key findings pertaining to the travel and hospitality sector:

**Progress toward Business 4.0 is evident, if slower than other industries.** Mass personalization is being pursued by a large majority (three-quarters) of surveyed travel and hospitality firms, and half are also actively participating in ecosystems with partners within and beyond the industry. Creating exponential value is more challenging for most firms, however, and only about one-third show themselves ready to embrace risk.

**Adopters are benefitting.** The pursuit of personalization and new value creation is delivering bottom-line benefits to those adopting Business 4.0 behaviors. Most such firms report higher revenues and profitability, as well as expanded target markets. Many that can leverage their ecosystems also report greater access to new markets.

**Solid digital foundations are being laid for future growth.** Although the industry lags slightly behind others in the survey with respect to digitalization, travel and hospitality firms are ahead when it comes to the planned use of AI. A notable proportion are also making active use of cloud, IoT, and automation technologies to streamline operations and develop new services.
MAKING THE JOURNEY
We were a postal company,” remarks Björn Ekstedt, Group CIO and member of the Executive Management Team at PostNord. “Now we’re a logistics and digital company.”

Airlines analyze data sourced from social media channels to build new pricing models. Hotel chains are improving customer experience through the use of automated check-in and keyless room apps.

Logistics companies such as PostNord have been using a combination of IoT sensors and advanced data analytics to optimize routes, improve predictability of deliveries, and better understand customer preferences. This comment from PostNord CIO summarizes the journey taken by many firms in this industry.
Indeed, although the industry as a whole is progressing slower on the Business 4.0 front than the others in our research, a large number of travel and hospitality companies are pursuing far-reaching digital change in several areas (see Figure 2).

We can customize products and services to almost every transaction (mass personalization)

We operate a business model that drives exponential value

We collaborate with multiple partners in our network to create new products and services (leveraging ecosystems)

We plan to transform our business model within one year (embracing risk)

Figure 2: Adoption of Business 4.0 behaviors in the travel and hospitality industry
Personalizing experiences to the T

The travel and hospitality industry boasts of an extremely wide range of customers – from the multinational clients of logistics firms to the hotel guests and airline passengers at the B2C end of the sector. As a result, designing an effective customer experience management strategy is critical to industry players. Our findings reveal that a majority of travel and hospitality firms have adopted mass personalization and are customizing products and services in almost every transaction.

Digital technologies are key to improving customer experience through personalization. Hotel chains are using mobile apps and IoT sensors to enable guests to customize room features such as lighting, curtains, and in-room music.¹ Airlines are striving to advance personalization beyond the realm of customer communication, which many have mastered.

Nonetheless, some organizations in this sector recognize that there is room for improvement and personalize at a more granular level. “Our industry cannot go on segmenting customers as we’ve been doing,” says the CIO of a leading airline. “We must be able to reach a segment of one. For most airlines, that will take time.”

Increased volume of customer transactions

Increased value of customer transactions

Higher customer profitability

Reduced customer churn

It is also worth noting that, overall, the adoption of mass personalization is slightly less advanced in travel and hospitality than in other industries. One reason for this could be the sheer diversity of organizations within the sector. While those in the B2C space – airlines and hotel companies – are making strides, it is harder to find examples of successful personalization initiatives among the B2B businesses of logistics and industrial transportation.

Those that are pursuing personalization are, however, deriving tangible benefits (see Figure 3). Most, for example, report an increase in the value and volume of customer transactions, as well as higher customer profitability over all.

Figure 3: Benefits from adopting mass personalization in the travel and hospitality industry
According to Tomohiro Nishihata, Executive Officer for Innovation at Japan Airlines, to improve the passenger experience, it is not enough to focus on what happens in the lounge or in-flight. An airline must address all the touch points on the passenger’s journey from point of origin to ultimate destination. Japan Airlines, he says, plans to use data and other technologies to analyze each customer’s progress from home to airport and on to their destination, and to prompt responses from the airline when something goes awry. “We need to know if something goes wrong,” says Tomohiro Nishihata, “to apologize, and have someone meet them at their destination to follow up.” If held up in transport en route to the airport, he says, the airline needs to be able to push recommendations to them through a mobile app.

This level of personalized services requires extensive collaboration with partners, adds Tomohiro Nishihata. “We can’t track them everywhere, so it requires collaborating with a lot of partners to make sure we obtain and analyze the data and can take action based on it.”
Innovating to reach a wider range of customers

Mastering digital technologies does more than allow organizations to improve the customer experience and increase operational efficiency, important as these objectives are. Digital can also unlock new revenue streams and expand companies’ addressable markets.

This is what PostNord aims for with its warehousing-as-a-service offering targeted at small, high-growth e-commerce companies who find themselves in need of storage space and logistics help to move their goods.²

Japan Airlines, according to Tomohiro Nishihata, is exploring opportunities to provide drone services in Japan, a nascent market, the rules of which, he says, are not yet fixed. “We have much knowhow in air safety and maintenance which can be leveraged in this new market.”

creating new value in similar ways requires an operating model that encourages and prioritizes innovative thinking and initiatives. Such models are less prevalent in travel and hospitality than in other surveyed industries. Those travel and hospitality firms that report operating on such a model, however, are benefitting immensely, above all in their ability to target a wider range of potential customers (see Figure 4).

Figure 4: Top benefits travel and hospitality firms realize by operating on an exponential business value model

- Ability to target a wider range of potential customers: 64%
- Higher profitability: 57%
- Higher revenues: 57%
- An expanded geographical marketplace: 55%
aking travel ecosystems to the next level

Alliances, networks, and multi-party ecosystems have long been integral to how the travel and hospitality industry works. Cross-code alliances and revenue sharing among competitors are hallmarks of the airline industry; this can drive collaboration for the development of new services. This is supported by our survey results where travel and hospitality companies are slightly more likely than their peers in other industries (except for manufacturing) to collaborate with competitors and others in the value chain.

Alliances bringing together airlines, hotels, car rental firms, credit card companies, and retailers are also commonplace. Digital technologies, however, are expanding the scope of ecosystems and changing how they work. Logistics firms, airlines, and hotels are beginning to make wide use of APIs, for example, to share data.
Almost half of travel and hospitality organizations that collaborate actively in ecosystems have benefitted by gaining access to new markets (see Figure 5). Moreover, four in 10 respondents say their ecosystems have helped their firms respond faster to meet customer demand for new services. Collaborating through digital platforms is enabling industry firms to access the needed skills and services.

Access to new markets 45%
Higher revenues 43%
Ability to act faster to satisfy customer demand or perceived appetite for new products or services 40%
Access to different skillsets 37%

Figure 5: Top benefits for travel and hospitality companies from leveraging wider ecosystems
ith alliances and collaborations at the very core of their business, some industry players are going beyond the traditional use of ecosystems. For instance, BigBlank, the incubation studio set up by Air France and KLM, aims to revolutionize the travel sector by encouraging technology enthusiasts and entrepreneurs to co-innovate and develop breakthrough digital solutions for airlines.³

Airlines and other transport carriers operate capital-intensive businesses in markets with strict regulation. Any significant decision to change the business is therefore given careful consideration. Perhaps, this is why less than one in three travel and hospitality firms expect to change their business model in response to customer demand, market conditions, or competitor threats within the next year.

At the same time, digital technologies are making it easier for companies in the industry to take risks. For example, the use of IoT and AI for preventive maintenance enhances safety and predictability by reducing the potential for equipment failures. Using cloud-based applications and IT infrastructure allows firms to scale up IT resources faster to support new services – and to scale them down if the initiatives do not pan out.
The enterprise-wide adoption of agile methodologies, by reducing the time and resources required to test new services, can narrow the risk involved in innovation and encourage a ‘fail-fast’ attitude (see Figure 6).

PostNord, says Björn Ekstedt, launched ‘rapid development teams’ two years ago. “We have now scaled that initiative up,” he says, “so it’s accessible to other parts of the organization, including business development. The entire business, not only IT, must become agile.”

- We can harness ideas from the whole team and deliver incremental improvements across the business: 40%
- We can test more ideas without committing big budgets: 40%
- We can speed up technology projects significantly: 37%
- We can reduce the ‘fear of failure’ within the organization and build a more innovative culture: 37%

Figure 6: Key benefits travel and hospitality companies have realized so far from adopting agile methodologies
SCALING THE HURDLES
embracing risk at senior, middle, and even lower levels of management is in many ways the foundational pillar of Business 4.0.

A culture that encourages risk-taking is more likely to find new ways to drive personalization, and to create exponential value, partly through the leveraging of ecosystems and the resources they offer.

In established travel and hospitality organizations, such risk-taking is not common. The foremost obstacle to it, cited by survey respondents, is the traditional corporate culture (see Figure 7).

When asked about the toughest barrier to adopting Business 4.0 behaviors in his industry, Tomohiro Nishihata refers simply to ‘mindset’. It refers equally, he says, “to the boardroom, executive suite, and the front line. Cultivating an ‘innovation mindset’ at all these levels is extremely difficult.”

This helps explain why the share of respondents citing culture as a barrier (43%) is substantially higher than in the other industries in the survey.
Risk aversion also manifests in prevalent concerns around data security, which is the most commonly cited barrier in the research to leveraging ecosystems and creating exponential value. While many airlines, hotels, and other firms use APIs, many others (32% in the survey) are wary of opening their APIs to third parties.

Embracing cloud technologies – which may involve going beyond simple migration or the ‘lift and shift’ of IT operations to encompass modernization at the core – should help travel and hospitality companies address many of their security concerns. When asked to name the main benefits they have seen from shifting to cloud, as many executives point to improved security as to reduced operational costs (54% citing both).

<table>
<thead>
<tr>
<th>Business 4.0 behavior</th>
<th>Main barriers to adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driving mass personalization</td>
<td>42% Lack of budget</td>
</tr>
<tr>
<td>Creating exponential value</td>
<td>34% Risks to data security</td>
</tr>
<tr>
<td>Leveraging ecosystems</td>
<td>36% Risks to data security</td>
</tr>
<tr>
<td>Embracing risk</td>
<td>43% Traditional corporate culture</td>
</tr>
</tbody>
</table>

Figure 7: The top barriers to adopting Business 4.0 behaviors
PUTTING DIGITAL BUILDING BLOCKS IN PLACE
ur survey findings reveal that travel and hospitality organizations trail slightly behind other industries in the adoption of digital technologies and capabilities (see Figure 8). This broad picture, however, hides many instances of digital leadership in individual industry segments. The airline and logistics industries, for example, have been among the earliest adopters of IoT, which is being used to enhance uptime and durability of fleets, reduce maintenance costs, and optimize routes.

Figure 8: Technologies currently adopted by travel and hospitality firms
ore than six in 10 surveyed travel and hospitality organizations use cloud-based IT applications and infrastructure services. For half of the firms in the industry, the cloud is now their main IT environment. “Cloud allows us to spend more time with the business to look at new things, new innovation,” says a senior executive of one transportation firm. “We don't have to worry about provisioning of capacity because we can do that within an hour. And whenever our capacity requirements increase, we can scale up as quickly as possible.”

The travel and hospitality industry is ahead of all but two industries in this survey when it comes to using AI. Hotels and airlines, for example, use AI chatbots to provide real-time information, advice and booking services to customers. According to Björn Ekstedt, PostNord intends to use AI algorithms to determine when shipments to customers are likely to be late and when they will arrive. “Customers can be forewarned of delays and be given more precise arrival times than is currently possible.”, he says.
CONCLUSION
Business 4.0 is helping sector businesses meet customer demand. Across the sector, customer demand for personalization and general service excellence is growing. Some organizations in travel and hospitality, notably the B2C firms, are embracing personalization and experiencing the benefits as a result. To remain competitive, whether they are in B2B or B2C, the other organizations must strive to catch up.

Management must be committed and vocal. Strong leadership from the top is vital to overcome cultural and institutional barriers to technology-led change, including the lengthy decision-making processes that can delay innovation within the travel and hospitality firms. It is critically important to, among other things, ensure that the desired behaviors are pursued enterprise-wide and not just in a few functions.
Digital ecosystems are different from what has come before. Airlines, hotels, logistics firms, and other industry players are used to working in partnerships and alliances, but effective collaboration in the digital era requires greater commitment to open forms of innovation and data-sharing, including with partners in other industries.

Agile must extend beyond IT to the whole business. Travel and hospitality organizations have much to gain by implementing agile methodologies in different areas of their business. When new product and service ideas can be tested faster and with less commitment of resources, the risks of failing are commensurately smaller.
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