Completing Our Technology Evolution

Joe DiFonzo, Chief Information Officer
Vish Saoji, Chief Technology Officer

06 March 2018
We are completing the evolution of our technology to deliver the world’s most advanced travel platform.
Most of our apps are cloud-now or cloud-ready

**Travel Network**

- New Sabre Red Workspace
  - Cloud deployed, single instance

**Airline Solutions**

- AirCentre and AirVision
  - On open systems and preparing for cloud deployment

- Airline Inventory
  - On open systems and distributed to multiple data centers

**Hospitality Solutions**

- SynXis Property Management
  - Cloud native multi-tenant

- SynXis Central Reservations
  - On open systems and cloud-ready

**Shopping**

- Shopping
  - On private cloud with continuous availability

**GetThere and TripCase**

- On open systems
Completing our migration to cloud

We’ve been migrating workload from IBM mainframes to Intel servers for years:

• Open system environment has 50x the processing capacity and 200x the storage capacity

• Since 2014, mainframe utilization is relatively flat, while open systems footprint has increased significantly

• We have identified and scoped the remaining work items to complete migration of TPF functionality to cloud

• On pace to complete migration by the end of 2023, concurrent with the expiration of the Tulsa vendor contract

$100M+ of annual OPEX savings when complete
Recent accomplishments and benefits

| ✓ Shopping moved to private cloud | • Cost per shop reduced by 50%  
| | • Shopping response time decreased by 25%  
| | • Continuous availability for 25% lower cost |

| ✓ Deployed multiple products to public cloud | • Product hosting costs reduced by 15%  
| | • Leveraging benefits of public cloud  
| | • Capacity flexibility to meet peak demands |

| ✓ Launched Sabre global network operation center (GNOC) | • Enhanced visibility to detect and correct performance issues before they impact service |
Recent accomplishments and benefits

✓ Developed data center independence plan
  • Shifts workloads to lower cost environments
  • Consolidates existing Sabre data centers
  • Multiple public and private clouds for flexibility

✓ Reducing costs to fund future investments
  • August 2017 business realignment and cost reduction program
  • Shopping infrastructure upgrade
  • Focused innovation and version management
Increasing value throughout the evolution

Cloud

Microservices

DevOps

Speed to market

Rapid scalability

Advanced functionality

Upgrade-safe extensibility

Cost savings
A unified architectural framework

**SaaS**

**TRAVEL NETWORK**

**AIRCIDE SOLUTIONS**

**HOSPITALITY SOLUTIONS**

**BUSINESS SERVICES**

- RETAILING
- DISTRIBUTION
- FULFILLMENT

**AI & ANALYTICS**

**SYSTEM SERVICES**

- APPLICATION
- DATA FABRIC
- FOUNDATION

**ADMINISTRATION**

**MONITORING**

**SUPPORT**

**SECURITY**

**IaaS**

- Public Cloud Providers
- Sabre Private Cloud

---

**A layered architecture** with clearly-defined infrastructure and platform capabilities shared by all products.

**Fully-functional vertical solutions** for travel agencies, airlines and hotels.

**Flexible to meet current and future business needs** through extension, composition and orchestration of microservices.
A global hybrid cloud infrastructure

Hybrid Cloud infrastructure with standard operational tools and processes

- Host services in public and private clouds to provide operational agility and scalability
- Distribute services and data globally to further improve response times
- Implement continuous availability architectures to provide 99.995% uptime and reduced cost vs. traditional DR

Public Cloud Providers  Sabre Private Cloud
2017: Built new private cloud data centers

Deployed shopping in a 3-site active model for continuous availability
2018: Build out cloud landing zones in NA and integrate with Sabre data centers
2019: Build Out Cloud Landing Zones Globally

- North America: Tulsa, Dallas
- Europe
- APAC
Evolving to a microservices platform

Evolve platform using microservices to deliver modular architecture

Build, deploy and use microservices independently, or in combination to address more complex applications

Integrate microservices created by third party developers or our customers
Benefits of microservices

**Speed**
Accelerate innovation by bringing new products to market faster

**Efficiency**
Drive efficiency through code reuse and contemporary software practices

**Flexibility**
Enhance flexibility for both Sabre and our customers to meet the changing market needs
## The path to completion

<table>
<thead>
<tr>
<th></th>
<th>2018 - 2019</th>
<th>2020 - 2021</th>
<th>2022 - 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SaaS</strong></td>
<td>Begin migration of existing Linux/Windows apps to cloud</td>
<td>Continue migrations of existing apps</td>
<td>Complete migration of existing apps</td>
</tr>
<tr>
<td></td>
<td>Build all new apps as cloud native</td>
<td>Complete deployment of microservice PSS</td>
<td></td>
</tr>
<tr>
<td><strong>PaaS</strong></td>
<td>Complete retail services migration to cloud</td>
<td>Complete refactoring of retail services to microservices</td>
<td>Platform evolution complete</td>
</tr>
<tr>
<td></td>
<td>Expand predictive analytics powered by AI/ML capabilities beyond retail</td>
<td>Complete distribution services migration to cloud</td>
<td>Complete remaining business services as microservices</td>
</tr>
<tr>
<td></td>
<td>Start distribution and fulfilment services migration to microservices</td>
<td>Continue migration of fulfilment services to cloud</td>
<td></td>
</tr>
<tr>
<td><strong>IaaS</strong></td>
<td>Build cloud landing zones and network hubs in NA, EU and AP</td>
<td>Continue migration of customer connections</td>
<td>Complete migration of customer connections</td>
</tr>
<tr>
<td></td>
<td>Begin migration of customer connections to new hubs</td>
<td>Complete consolidation of Sabre-managed data centers</td>
<td>Turn down Tulsa data center</td>
</tr>
<tr>
<td></td>
<td>Begin consolidation of Sabre-managed data centers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Commitment** to fully exit TPF mainframe by end of 2023 with increasing commercial and financial benefits along the way

**All development going forward** takes advantage of modern architecture for next generation retailing, distribution and fulfillment

**Identified savings** that largely self-fund evolution and innovation within current cost envelope as contemplated in medium-term guidance