atpco

DRIVING INNOVATION

Insight from AAC Innovation Workshop

Foreword & Afterword by
ATPCO CEO Rolf Purzer

A report prepared by
Travel Tech Consulting, Inc
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FOREWORD

Partners in Innovation

BY ROLF PURZER, CEO & PRESIDENT

FOREWORD BY ROLF PURZER, CEO, ATPCO

CHANGE AND INNOVATE

Five years ago, one year ago, even just months ago, the air travel industry looked different. We are actively witnessing a paradigm shift in air travel as the demands of consumers and the pace of new technology drive airlines to become better digital retailers, who can price and display the total product associated with air travel—and distribute those products with trust and control across every channel. The lowest ticket price is not the end-all, be-all anymore. Airlines are aggressively investing in digital, rich content, dynamic pricing, and their ecosystem partners in order to compete for travelers and the amenities they demand.

ATPCO expertise has been a stalwart of the industry for over 50 years. We take seriously our role to reduce complexity and facilitate innovation across the ecosystem, and our neutrality allows us to sustain and develop adoption for these ideas in a way that commercial organizations cannot.

We're in a unique space between carriers, systems, industry bodies, and start-ups to observe how these changes are playing out in everyday business and distribution strategies over time—and to help build and connect the new structures that will change the way the industry looks tomorrow.

ABOUT THE WORKSHOP

In this spirit, we brought together senior leaders across air travel in 2017 for the first-ever ATPCO Advisory Council Partners in Innovation group. To help us kick off this influential consortium, we invited noted analysts from Travel Tech Consulting to facilitate the first session and develop this report, a first step in defining these structures and setting a path for achieving them.

ATPCO Advisory members—and colleagues of their choosing from digital, merchandising, and technology transformation groups—identified key efficiency challenges and explored new lines of business that span the industry. Why? So that we can respond to changes, facilitate more value in data distribution, and rethink current processes. We focused on items that can be delivered within three years, reviewed the current business and technology landscape, conceived and voted on ideas, and drafted our next steps.

CLEAR IDEAS FOR INDUSTRY VALUE

The initial outcome was clear. Our customers have been suggesting it, our board has been considering it, and the innovation session confirmed it: there is industry value created in ATPCO offering a smart central industry platform that connects all content to all channels.

We know the areas we need to focus on, and top among them is efficiency and quality data. But what if we could offer a single content platform to send all components of your offer—price, picture, amenities, and more—where all sellers could take it in the channel format of their choosing?

- A platform where it's easier to organize, create, and federate your offers in a trusted industry-wide format
- Where you can save costs as you scale, remain confident that your offer and its display is consistent everywhere
- Where you are assured interoperability between both NDC and indirect channels
- Where shopping engines can certify their data quality and find the specific products travelers are requesting

In partnership with our advisory council, ATPCO looks forward to continuing action on the ideas contained within this paper—and going farther.

AAC Partners in Innovation are leaders who hold a vision for what the future of airline pricing and distribution might be—people who understand the transformational opportunities that have the greatest impact on the travel industry overall. They look beyond current industry practices to new ways of addressing those issues. If you want to get involved, follow our progress here or contact Brenda Bartholic, Director of Airline Pricing and Revenue Management. The next session will coincide with Elevate 2018, to be held on Monday, 8 October 2018.

I look forward to seeing you.
Sincerely,

Rolf Purzer, CEO & President

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This is just the beginning. We plan to continue these high-powered meetings with representatives from across the industry so we can discover, shape, and build tomorrow's travel experience.

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Thank you for your contribution.

Rolf Purzer
Rolf Purzer
CEO & President

01

EXECUTIVE SUMMARY

INTRODUCTION

Key Themes from the AAC Innovation Workshop

We are on the cusp of radical disruption in the way airfares are created and managed. Whether it is in the form of new pricing strategies such as branded fares, targeted and dynamic bundles or dynamic pricing, or changes in the distribution process (e.g., NDC, financial restructuring), airlines are determined to create and offer unique and personalized content tailored to the individual traveler.

The first AAC Partners in Innovation workshop was held in October 2017 and produced a clear message: ATPCO must evolve its systems to meet this disruptive change. This includes simplifying the user experience to enable customers to create and manage fares in line with business goals as well as implement new strategies and products that support evolving pricing and distribution models. Solutions need to encompass the entire end-to-end transaction cycle from shopping to settlement, ensuring that all steps in the process are supported.

DRIVING STANDARDS FOR AIRLINE CONTENT

Industry challenges around content management

The airline industry often falls victim to the belief that creating standard communication protocols such as NDC will result in a common adoption across carriers and distribution points. In reality, even with an agreed set of XML schemas, the actual implementation of the definition of NDC ancillary offerings varies across carriers and systems. In addition, over the last few years we've seen the birth of new rich content (text, pictures, video) designed to help airlines differentiate their products and services. This content is also in different formats and thus difficult to share across distribution and alliance partners.

Merchandising across channels

As next-generation pricing practices take hold, merchandising across channels remains inconsistent. This includes challenges for both distribution partners such as the GDSs and OTAs as well as airline partners. Successful merchandising matches unique content with keen insight into traveler's preferences. This often represents a challenge for airlines to understand the view of the customer. Airlines can track the behavior of their passengers at multiple touch-points within their own systems and services, but often lack insight into the complete buying process through intermediaries or purchases made directly with other suppliers. Distribution and airline partners can help complete this picture of the customer, thereby enabling more accurate and successful merchandising efforts. Overall, the infrastructure for full merchandising needs to be standardized across all points of distribution. Connectivity to all sources of content is essential and standards need to be adopted to accelerate the time to market. The infrastructure still needs the flexibility to allow airlines to tailor the offer and content as they see fit.

PROVIDING CONNECTIVITY

Facilitating third-party content

Third-party sources such as Routehappy, Seat Guru, and TripAdvisor offer additional detail around airfare products. This includes cataloging common products and services (e.g., WIFI availability, seat pitch) as well capturing customer sentiment around a product or service (e.g., the quality of the WIFI on a specific flight, route or aircraft type, the comfort of the seat from passenger's perspective). Airlines have also expanded their sales of third-party services (e.g., hotel, transfers, insurance). The industry would be well served by a common platform to distribute cataloged, complementary services and customer-driven third-party content for airline products and services.

MAINTAINING ATPCO'S POSITION AS A NEUTRAL ARBITER

ATPCO's historic role as a neutral arbiter of fare content remains an essential part of the fare management and distribution ecosystem. ATPCO provides a critical role in driving down costs by providing a single connection to multiple points of sale. As airlines and third parties continue to create rich content, expanding ATPCO's neutral arbiter role beyond fares is a logical evolution for the company. The ability to help airline customers gather, aggregate, manage, and distribute content will enable ATPCO to cement its role as key neutral arbiter as market practices and techniques evolve.

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METHODOLOGY

BOB OFFUTT
Principal
Travel Technology Consulting, Inc.

NORM ROSE
President
Travel Technology Consulting, Inc.

Bob Offutt and Norm Rose from Travel Tech Consulting (TTCI) conducted a half-day workshop with ATPCO Advisory Council members —and colleagues of their choosing from digital, merchandising, and technology transformation groups— representing airlines, GDSs, certification and settlement organizations, online travel agencies, and other subscribers.

The purpose of the workshop was to help ATPCO identify key industry efficiency challenges to address as well as possible new lines of business. This also included a focus on high-level product definitions that would broaden the product base to

- Respond to disruptive change
- Facilitate more value around data and distribution capabilities
- Rethink/design data processes within the current ecosystem

It is important to note that the scope of the innovation discussion was aligned to the ATPCO mission to provide efficient fare and fare-related airline pricing and shopping data distribution. In addition, conversations were carefully managed to avoid any anti-trust issues arising from ATPCO's unique position in the industry.

Both tech and innovation trends were reviewed within this context. After the initial group meeting, five topics were discussed in breakout sections. There were three areas, content and compliance, brand management, and ease of use that bubbled to the top as key issues to be further analyzed. The TTCI team added a fourth area, connectivity:

- **Brand Management:** Differentiate products by inventory and aircraft type
- **Ease of use:** Simplifying and improving the user experience when filing and managing fares
- **Content & Compliance:** Create a marketing and merchandising content hub.
- **Shopping Engine Certification:** Ensure better quality results in the marketplace
- **Processing efficiencies for shopping systems:** Enable pricing systems to find the products travelers are requesting

The group then voted on the top priority items and these were Content & Compliance, Brand Management, and Ease of Use.   The TTC team added a fourth area, connectivity.

It was felt that all four topics could be channeled into a single effort to develop an ATPCO Content/Connectivity Hub. This hub would standardize airline and third-party content within an easy-to-use interface, enabling airlines to distribute consistent content across all distribution points.
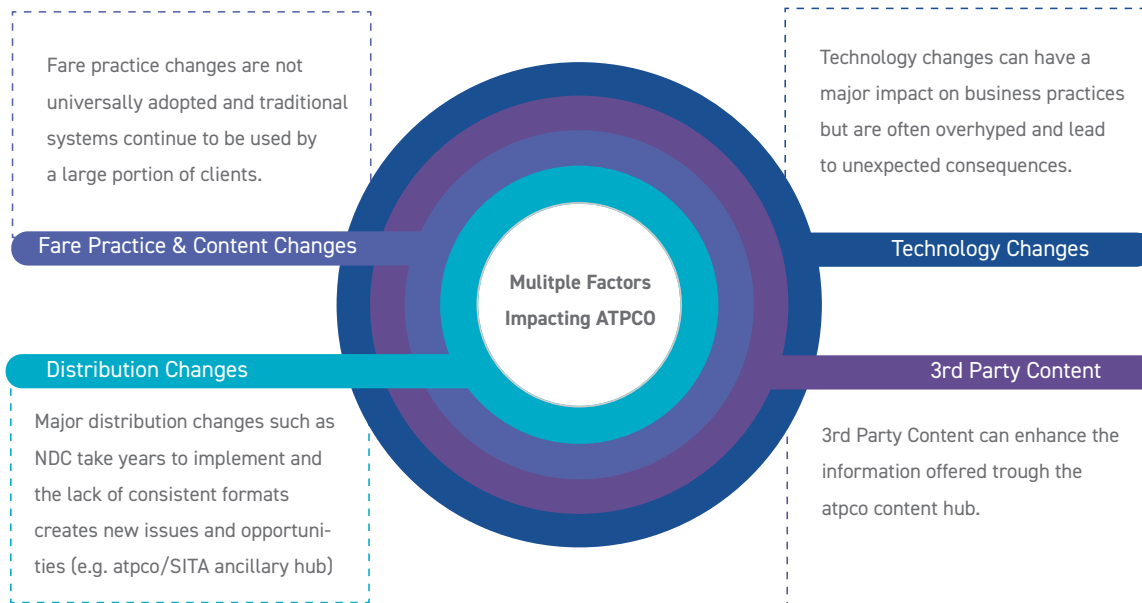
03

MULTIPLE FACTORS IMPACTING ATPCO

There are multiple factors simultaneously impacting ATPCO. These include:

- **Fare Practices and Content Changes:** Fare practice changes are not universally adopted as traditional systems continue to be used by a significant portion of clients
- **Technology Changes:** Technology changes can have a major impact on business practices but are often over-hyped and lead to unexpected consequences
- **Distribution Changes:** Major distribution changes such as NDC take years to implement and the lack of consistent
- formats creates new issues and opportunities (e.g., ATPCO/SITA NDC Exchange)
- **3rd Party Content:** Third-party content can enhance the information offered through the ATPCO content hub

Figure 2: Factors Impacting ATPCO

Fare practice changes are not universally adopted and traditional systems continue to be used by a large portion of clients.

Technology changes can have a major impact on business practices but are often overhyped and lead to unexpected consequences.

Fare Practice & Content Changes

Technology Changes

Mulitple Factors Impacting ATPCO

Distribution Changes

3rd Party Content

Major distribution changes such as NDC take years to implement and the lack of consistent formats creates new issues and opportunities (e.g. atpco/SITA ancillary hub)

3rd Party Content can enhance the information offered trough the atpco content hub.

In addition to these factors occurring simultaneously, specific trends within each group are being implemented at different rates by the carriers with changes often not universally adopted. As a result, modified traditional fare practices will continue.

Figure 3: Adapting to Multiple Swim Lanes

	2013	Past Five Years	2018	Next Five Years	2023

Fare Practice/ Content Changes	Modified Traditional Fare Practices Continue					
	Ancillaries	Branded Fares	Targeted Bundles	Dynamic Bundling	Dynamic Pricing	Individualized Personalized Offers	Complex Personalized Offers
3rd party Content	3rd Party Services	Product descriptions	Product Reviews	Targeted 3rd Party Content		
Distribution Changes	NDC Standards	GDS Surcharges NDC Implementations	Increase in Direct Distribution Rebalancing of financial terms		
Tech Changes	Mobile Digital Assistants	Chat Bots	Home Digital Assistants	Blockchain Machine Learning Deep Leaning		
	Cloud Computing				

It is therefore essential that ATPCO incorporate the capabilities described within each of these "swim lanes" with the ability to accommodate the most advanced airline customers, while still supporting those carriers with slower adoption profiles.

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CREATING A CONTENT AND CONNECTIVITY HUB

THE PROBLEM: NEW CONTENT, NO STANDARDS

The world of airline fare distribution works well across the interconnected network of GDSs, airlines, and OTAs primarily due to the structure and standardization provided by ATPCO. Without this structure, fare shopping, booking, and refunds and exchange processes would be chaotic. On top of tightly structured airfares, the industry is adding sales of ancillary content such as lounge passes and extended seat room. Like fares and pricing data, these new content types require standards to support efficient distribution. Today, however, there is a lack of data-driven business rules on how to use and display fare-related content. This leads to inter-airline incompatibility, redundant software development, and higher cost for the users in terms of labor and network operations. This set of issues affects ancillary content today and will extend to fare families and dynamically created fares in the future.

THE SOLUTION: THE CONTENT HUB

An ATPCO content hub would help drive standards compliance by supporting a defined number of formats. It would include static content as well as some static airline content that is required to create the offers and would also act as a single repository for all airline text and rich content. The following are the main elements of the content hub:

An industry repository for airline ancillary content
1. Standardizing data
2. Allowing merchandising across channels.
3. Enabling compliance across airlines, in turn enabling distribution across all points of sale

The ancillary content would be an extension of each airline's ATPCO profile with the goal to standardize a substantial amount of ancillary content

Additional themes for the initiative would include:

1. User platforms that are simpler and more transparent
2. Recruitment that taps commercial knowledge and attracts bright people Automating processes and reducing dependency on humans
3. Automation of data aggregation that could provide a simple "total product."
4. Data-driven rules on how to display and use content
5. Feedback on what is working at either end of the total product
6. Faster time to market
7. Consistency across multiple platforms fostering interoperability
8. Positioning to implement IATA One Order 101
9. Fare and fare-related content to reflect the airlines' offers
10. A sustainable platform that would last and handle ancillaries as they mature over the next ten years

The Content Hub within the context of NDC

Within the context of NDC, an ATPCO content hub would play an essential role. The premise of NDC is the need for airlines to have the flexibility to customize and present offers to customers in any manner they desire. These offers can be customized airfares and fare families. Much of this content (possibly a substantial amount) could be stored in a repository on a shared ATPCO hub. Perishable r dynamic content such as availability and dynamic inventories would be provided by the airline's reservation system through NDC Exchange.

Without an ATPCO hub, content provisioning is unique for each airline and offers would be developed on a one-off basis. (Figure 4)

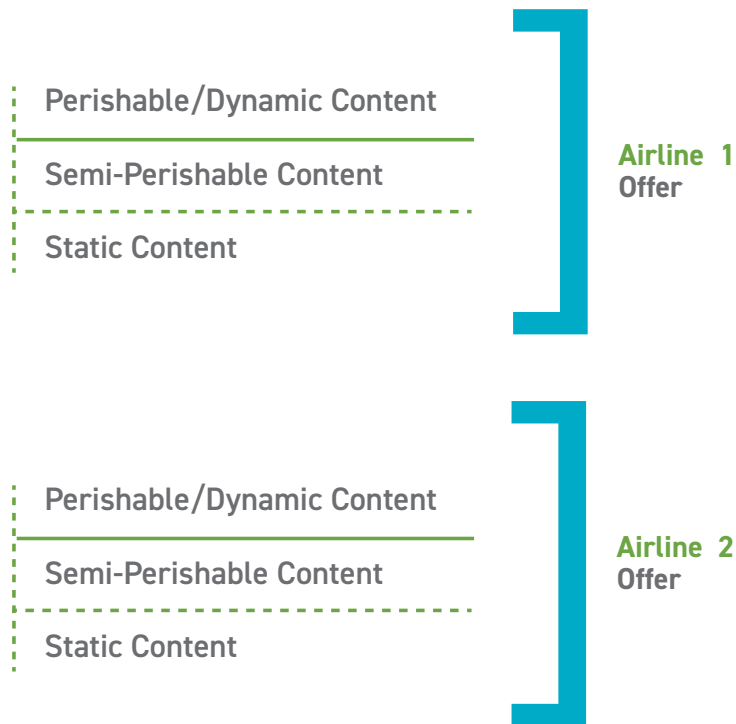**Figure 4: Offer Development Without ATPCO Hub**

Figure 4 shows how an airline offer might be constructed through a combination of content types ranging from static, like terminal layouts or templates for presentation of offers, to semi-perishable, like seat maps, and perishable inventory, like seat availability. In this scenario, each airline maintains its own static and semi-perishable content, with the perishable inventory provided by the airline reservation system.

THE ATPCO CONNECTIVITY HUB - PROVIDING ACCESS TO SUPPLIERS TO PROVISION EACH AIRLINE
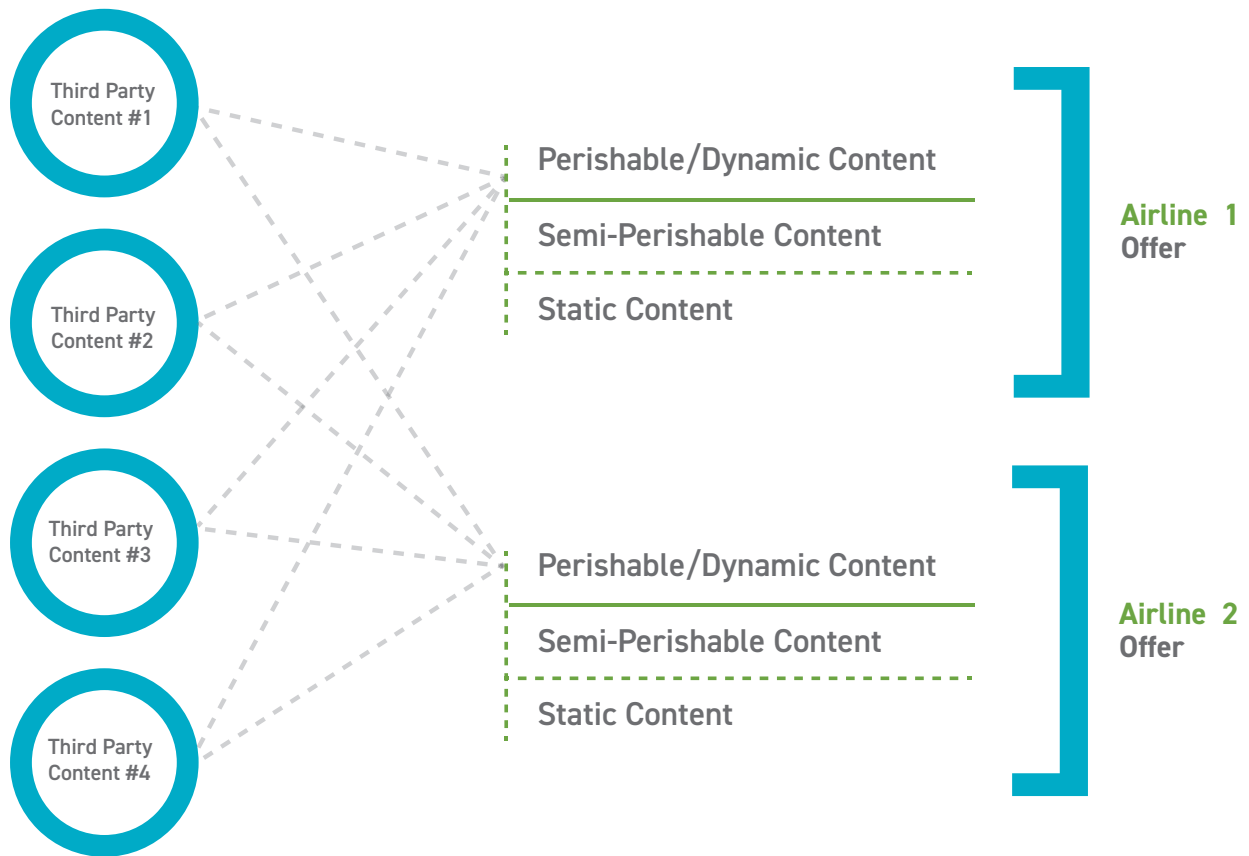
The goal of the connectivity portion of the hub is provide a common way to add third-party content:
- Provide an API for third-party access to the hub
- Provide connectivity to link hub content providers with hub suppliers such as airlines and thrid-party content providers
- Provide tools [using NDC Exchange for retrieval of real-time data (perishable content)] such as seat assignments and availability
- Develop instrumentation to manage end-to-end processes across multiple platforms to audit the accuracy of the platform
- Develop seamless applications to address ancillary sales with code share and interline
- Use standard APIs to reduce development costs and improve time to market
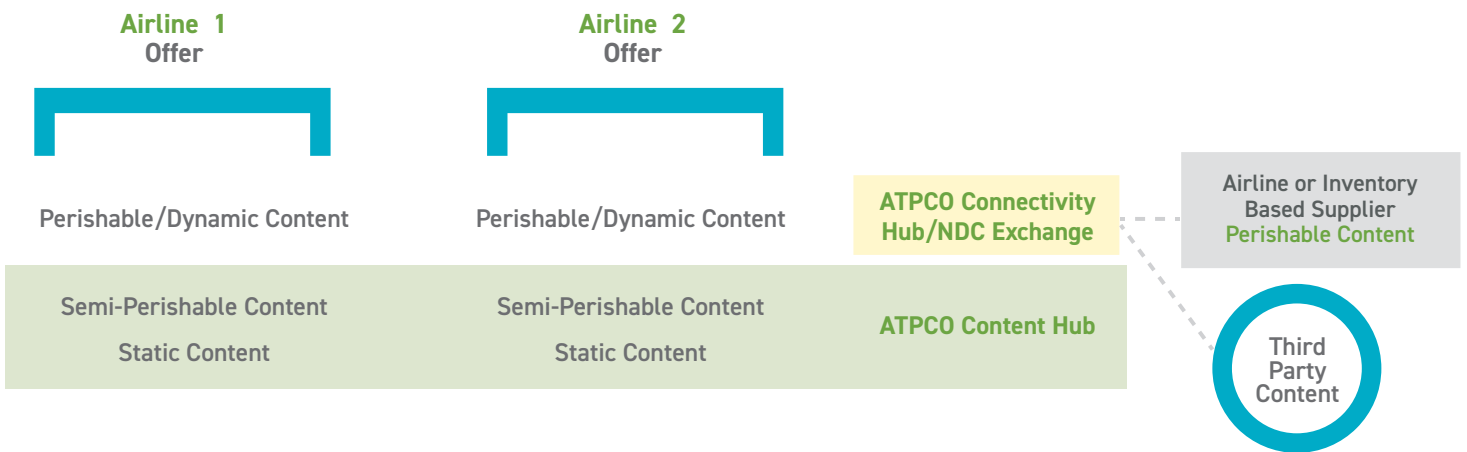- Reduce networking and provisioning costs

When you consider third-party content (such as product attributes, customer sentiment as well as complimentary services such as ground transportation, insurance, lodging, or another airline's products or services) developing offers often requires a combination of static content like pictures, offer templates, and rich descriptive content; semi-perishable content like seat maps, equipment specifics, and hotel room specifics; and perishable content like fare offers and availability. Dynamic fare offers tailored to the traveler will be a significant improvement over today's fare bucket system. Also included in this is third-party content such as insurance, ground transportation, etc. which may also be static, semi-perishable, perishable, or some combination thereof.

Figure 5: Incorporation of 3rd Party Content Without a Hub

If each airline implements third-party connectivity independently, the travel distribution ecosystem looks like Figure 5. It should be noted that each connection (small arrow) may have a different API and implementation strategy.

Third Party Content #1

Third Party Content #2

Third Party Content #3

Third Party Content #4

Perishable/Dynamic Content

Semi-Perishable Content

Static Content

Airline 1 Offer

Perishable/Dynamic Content

Semi-Perishable Content

Static Content

Airline 2 Offer

Figure 6 : Travel Ecosystem With ATPCO Content and Connectivity Hub

Anecdotally, the system shown in Figure 6 would be the desired approach; however, there are many considerations, such as

- **How many owner airlines want to invest in this?**
- **How many airlines want standard provisioning?**
- **How many airlines will embrace NDC and how soon?**

ATPCO could offer a solution to this proliferation by adding connectivity to its content hub. The result would look like Figure 6. The first supplier to connect to the hub would set the standard for all similar suppliers. Subsequent similar suppliers would use these standards, reducing implementation cost and time. If another airline distributes the same content, then all that needs to be done is to enable access at the ATPCO hub level.

Pros and Cons of the ATPCO content/connectivity hub

Pro

- Would give airlines incredible flexibility in dynamically customizing and delivering fare products
- This approach is consistent with the NDC Exchange where users are insulated from technical issues like timing of upgrades
- Provides flexibility to accommodate next-generation pricing methods
- Could be implemented in the cloud, limiting the ATPCO technology overhead
- Would establish baseline standards (beyond NDC) for connectivity
- Would facilitate implementation of IATA One Order 101, providing a bridge from the PNR to IATA's One Order 101

Cons

- Requires buy-in from the airline owners and potential customers, each with their own view of the future of air distribution
- Managing a shared service for multiple companies is difficult. Just maintaining consistency of software releases can be a challenge
- Could grow substantially or could fall flat

Governing Principles

These principles should guide all aspects of ATPCO development:

- ATPCO will be the neutral arbiter of content
- Ease of use will be paramount for all new development and a consideration for maintenance and update
- The ATPCO standards will become the industry's connectivity standards
- The transition to a new ecosystem will go through many phases
- The initiative will continue to support carriers with slower adoption profiles

RECOMMENDATIONS

We recommend ATPCO build on the lessons learned from NDC Exchange to develop a cost/ benefit analysis, including the revenue potential of combining content from multiple sources, to create fully personalized offers including third-party content, and then socialize it with the airline owners and potential airline customers.

The content/connectivity hub concept and capabilities need to be coordinated with other ATPCO initiatives such as NDC Exchange, dynamic content connection, and dynamic pricing and to leverage NDC Exchange to gather other airline dynamic content like availability. Consideration should be given to combining the content/connectivity hub and NDC Exchange projects.

If the concept gains traction,
- Draw together a team from multiple sources to develop a requirements document and get firm cost estimates
- Merge requirements for next-generation pricing with the ATPCO hub to determine synergies
- In addition to including ease of use in future products and services, retrofit existing capability to the extent possible. Fare filing and debit memos are areas of need. Ease of use and a quality user experience should be key tenets
- Develop a strategic technology plan

LONGEVITY

For mid-sized to small carriers, this will be a long-term (more than 5 years) solution. For large carriers, this could be an interim solution. Involving them early in the process may get their help in molding a platform that meets everyone's needs. If that is the case, they may stay 5-7 years, if not, 3-4 years for the large carriers.

There is a time element. The more aggressive carriers have already started planning their own proprietary systems.

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RECOMMENDATIONS

To execute the concept of the content/connectivity hub concept, ATPCO must gain support from management and customers. The following outlines some steps to consider in the process.

BUY-IN RECOMMENDATIONS:

Executive buy-in and support
- Present to appropriate forum
- Develop cost/benefit analysis

Airline support
- Socialize with key airlines
- Adjust as necessary based on airline feedback

Collaborative requirements development
- Rapid applications development process to define requirements for and development of the Content Connectivity Hub

Developing a strategic technology plan

- The Content/Connectivity Hub should be part of an overall ATPCO strategic technology plan

DEVELOPMENT RECOMMENDATIONS

PROCEED WITH CONTENT/CONNECTIVITY HUB

- **Evaluate Routehappy relationship; identify gaps and synergies.**
- **Evaluate the role of ATPCO/SITA NDC Exchange in the content/connectivity hub.**
- **Explore content management tools or possible acquisition targets to provided foundation content management system (CMS) software. A more extensive CMS should allow for matching specific content with specific aircraft routes. Explore ways of managing content in a more flexible way to differentiate products.**
- **Define full instrumentation/reports.**
- **Evaluate the use of emerging technologies including cloud computing, artificial intelligence, and blockchain as possible infrastructure changes for ATPCO.**

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CONCLUSION

CONCLUSION BY TRAVEL TECH, INC.

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THE AIRLINE RESERVATIONS INDUSTRY NEEDS A NEUTRAL ARBITER OF CONTENT

With NDC and IATA One Order 101, the entire air value chain from shopping to experience will be undergoing substantial change. ATPCO is in a unique position to minimize the churn for at least one part of this change. The airline reservations industry needs a neutral arbiter of content. ATPCO has the opportunity to create a content/connectivity hub that normalizes airline content, provides a distribution channel for third-party content, and utilizes an easy-to-use tool that allows ATPCO customers to manage fares and content that reflect their business objectives.

As long as there are differing implementations of content and trends, the airline industry will continue to need a neutral arbiter of content. ATPCO can continue to provide this valuable role by expanding content capabilities and embracing new technology and processes.

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AFTERWORD

Partners in Innovation

BY ROLF PURZER, CEO & PRESIDENT

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We are excited by the ideas that were generated and level of discussion during our first AAC Partners in Innovation meeting. The purpose of this session was to identify key industry efficiency challenges and explore new lines of business that would serve the next generation of distribution, delineating high-level definitions that would:

- Respond to change
- Facilitate more value in data distribution
- Rethink current processes design

We focused on items that can be delivered within three years. With that timeframe as our guide, we identified the top 5 areas of focus for 2018 for the Partners in Innovation.

Ease of use: Simplify and improve the user experience when filing and managing fares.
   Experts Only
- Current process requires deep knowledge
- It takes two years to become an expert
- Often not the same people who create the commercial policy, resulting in miscommunications and delays

   A system where airlines can
- Automate repetitive tasks
- Have a user interface that can be used by non-experts
- Be more flexible, remove coding barriers

Brand Management: Differentiate products by inventory and aircraft type.
   A system where airlines can
- Create specific branded products for certain aircraft
- Dynamically change those product definitions at a given time by business rules or other airline content changes (schedules)

Content & Compliance: Create a marketing and merchandising content hub.
   A repository for airline ancillary content
- Standardize data and allow merchandising across channels
- Drive compliance across airlines, formats, and content to fuel distribution across all points of sale
- Provide transparency on how products are presented in the points of sale
- Manage products with automation rather than manually

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Shopping Engine Certification: Ensure better quality fares and pricing results in the marketplace.

      Better quality fares and pricing results
- Work with airlines so they better understand and implement the fare filings that will meet their intent
- Certify that receivers of data comply with all data application provisions, with immediate feedback to airlines when an issue is determined

Processing efficiencies for shopping systems: Enable pricing systems to find the products travelers are requesting.

      Enable all pricing systems to accurately find the airline products consumers are searching for
- Provide better metadata and normalized data dictionaries
- Create data elements of all search criteria
- Improve targeting and tagging on the products that match these criteria

This meeting reconfirmed many of the business decisions that ATPCO has made, and many product development milestones that we have on our roadmap. As an obvious example, on 30 January 2018, ATPCO acquired Routehappy, a significant step towards the recommendation of a content and connectivity hub. Likewise, we announced the addition of Routehappy content and Airline Reporting Corporation settlement services to NDC Exchange in March 2018 – another significant step towards the vision laid out in our first session.

At ATPCO, we believe that to be truly visionary, the industry needs to look for ways in which we can come together to reduce complexity and the pain of transformation, while building bridges between new and established ways of doing things. Simply put, we can accomplish more if we all take advantage of opportunities to co-innovate. I deeply appreciate the time, energy, and ideas brought to the table from across air travel, and look forward to seeing what we can accomplish together.

Thank you,

Rolf Purzer

Rolf Purzer

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