From vision to reality

Bridging the future with ATPCO's Product Catalog solution

CONTENTS

FROM VISION TO REALITY

EXECUTIVE SUMMARY

The airline industry transformation toward more dynamic and personalized offers is driven by shifting customer expectations, new retailing models, and advancements in offer creation technology. However, this shift from static, pre-filed fares to real-time, flexible offer creation presents significant operational and technological challenges.

Airlines operate in an environment where legacy processes, outdated and fragmented technologies, and varied adoption of modern retailing capabilities create roadblocks to scalable innovation. Many airlines and partners rely on traditional fare filing and legacy product definitions, while new retailing models introduce dynamic offers, continuous offer generation, and more complex product bundling. The lack of a standardized, interoperable approach makes it difficult for airlines to balance innovation with operational continuity, integrate with multiple partners, and ensure consistency across distribution channels.

One industry-recognized option to address these challenges is a framework that allows airlines to separate product from price, enabling dynamic offer creation while maintaining interoperability with existing systems. The industry has identified product catalogs as foundational structures for defining and sharing airline product information across systems, partners, and sales channels.

However, for a product catalog to deliver its full value, it must be widely adopted and seamlessly integrated into the broader airline ecosystem. This is where ATPCO, with its deep industry integration and neutral role, is uniquely positioned to support airlines in implementing product catalogs at scale. With filed data, ATPCO data exchange standards, and aligned IATA industry standards as a starting point, ATPCO enables airlines to begin the transition from static fares to dynamic offers without disrupting existing operations. In other words, airlines don't need to wait for full industry adoption of offers and orders to start realizing the benefits. It also enables tech providers and vendors to align with a flexible, standardized product catalog, making their solutions more appealing to a broader range of customers.

Adding complication, some airlines may adopt different offer and order platforms from their partners. Others may use one vendor solution for offers and another for orders. Still others might have multiple vendor solutions supporting revenue management, offer creation, and orders. The only answer is ensuring interoperability between systems. This modularity demands a standardized data exchange that allows airlines, technology providers, and distribution partners to efficiently share and consume product catalog data with their choice of partners and vendors while avoiding fragmented implementations.

By embracing a standardized, modular approach to airline product data, the industry can move more quickly toward a future where airlines control their offer strategies, optimize revenue potential, and create better customer experiences—without sacrificing interoperability or scalability.

Key benefits from an ATPCO Product Catalog solution

SCALABILITY

Industry-wide adoption and support for more dynamic offers

INTEROPERABILITY

Seamless data exchange across airlines, systems, and partners—even when operating at different levels of dynamic offer maturity

MODULARITY

A standardized, plug-and-play framework for integrating providers

FLEXIBILITY

Modify products without disrupting operations.

INDUSTRY ALIGNMENT

Supports IATA industry standards

ECONOMIES OF SCALE

ATPCO's infrastructure saves time and reduces costs

RELIABILITY AND STABILITY

A trusted, neutral industry partner ensuring long-term continuity and minimizing dependency risk

SECTION 1

INTRODUCTION

Background

The airline industry has long relied on traditional filed fare data structures to manage offer creation, providing a structured yet rigid framework for pricing and distribution. However, as the industry shifts toward dynamic offers, airlines require a more flexible, scalable, and interoperable approach to managing their products and services.

The transition to dynamic retailing introduces new complexities that challenge airlines, technology providers, and distribution partners. Disparate systems, varying adoption rates of offer-order models, and reliance on custom, proprietary integrations have created a fragmented landscape where achieving true scalability and seamless data exchange remains difficult.

To successfully bridge the gap between traditional and dynamic retailing, each airline needs a standardized, modular framework that enables them to integrate dynamic offers, product management, and offer creation at their own pace without disrupting their current operations or revenue streams.

The product catalog has been identified as one solution by the industry, offering a way to define and share airline product information across systems, partners, and sales channels.

Problem statement

The industry faces challenges in modernizing their offer structures with product catalogs:

- **Data and system fragmentation** — Airlines struggle to rationalize traditional fare filing with dynamic offers while managing multiple, disconnected systems.
- **Proprietary reliance** — Many airlines will have to rely on custom integrations for each partnership, leading to higher costs, inefficiencies, and limited scalability.
- **Inconsistent data-sharing frameworks** — Without an industry-wide standardized approach, airlines and partners face barriers to seamless data exchange.
- **Diverse adoption levels** — Some airlines have committed to fully embracing offer-order models, while others have no plans to move from traditional models.
- **Scalable, non-disruptive change** — Airlines need a structured, plug-and-play solution that supports dynamic retailing without disrupting existing workflows or revenue streams.

Solution scope

ATPCO, with its deep industry integration and neutral role, is uniquely positioned to support the industry in implementing product catalogs at scale. ATPCO's vision is providing a neutral, standardized solution that addresses these challenges by enabling seamless, scalable, and interoperable product data exchange across airline systems, technology vendors, and distribution partners.

- **Enabling offer construction and future-state offer-order models** — ATPCO's Product Catalog solution supports airlines that want to construct offers dynamically—without the need to prefile product or price. It lays the foundation for end-state offer and order adoption by enabling real-time product assembly and seamless data exchange across systems and partners.
- **Bridging data and system fragmentation** — A product catalog that rationalizes traditional fare filing and dynamic offers within a standardized framework, ensuring consistency and reducing complexity.
- **Reducing proprietary reliance** — A neutral, standardized data exchange eliminates the need for costly custom integrations, improving efficiency and scalability.
- **Supporting diverse adoption levels** — Airlines can adopt dynamic offers at their own pace, ensuring backward compatibility and flexibility that minimizes dependencies on partner or system progression.
- **Ensuring a scalable, non-disruptive transition** — Airlines can modernize retailing without revenue disruption, ensuring seamless integration between legacy and emerging retailing models.
- **Facilitating interoperability and collaboration** — A modular approach streamlines data management and enables each airline to collaborate with travel sellers, technology providers, and their choice of vendors.

> "The current product catalog landscape is fragmented, with limited reach and inconsistent standards. What the industry needs is a common, structured framework that can support broad adoption without being shaped by narrow commercial interests. ATPCO is uniquely positioned to deliver that."
>
> **Richard Clarke, CEO and Founder, T2RL**

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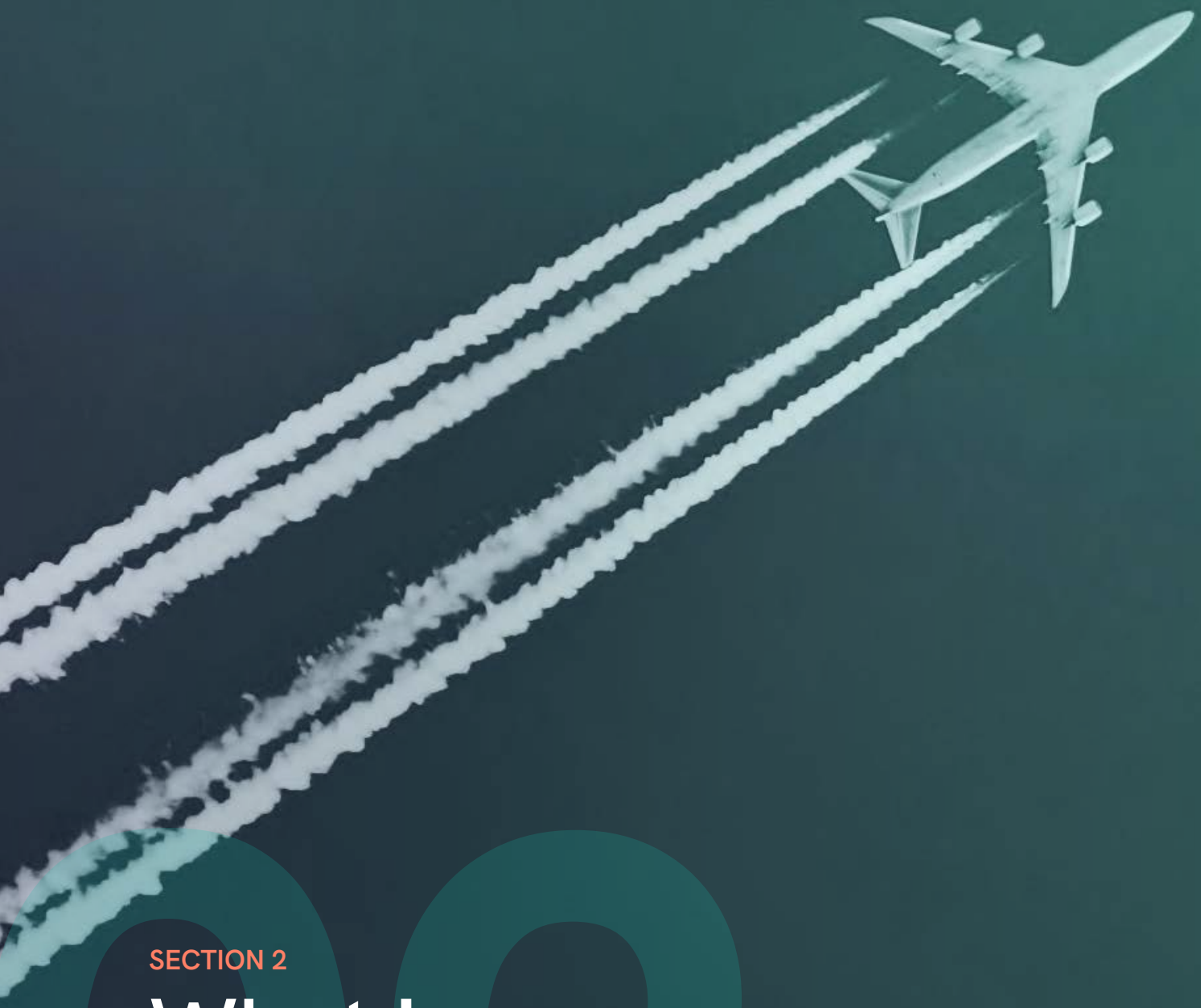


SECTION 2

What is a product catalog?

SECTION 2

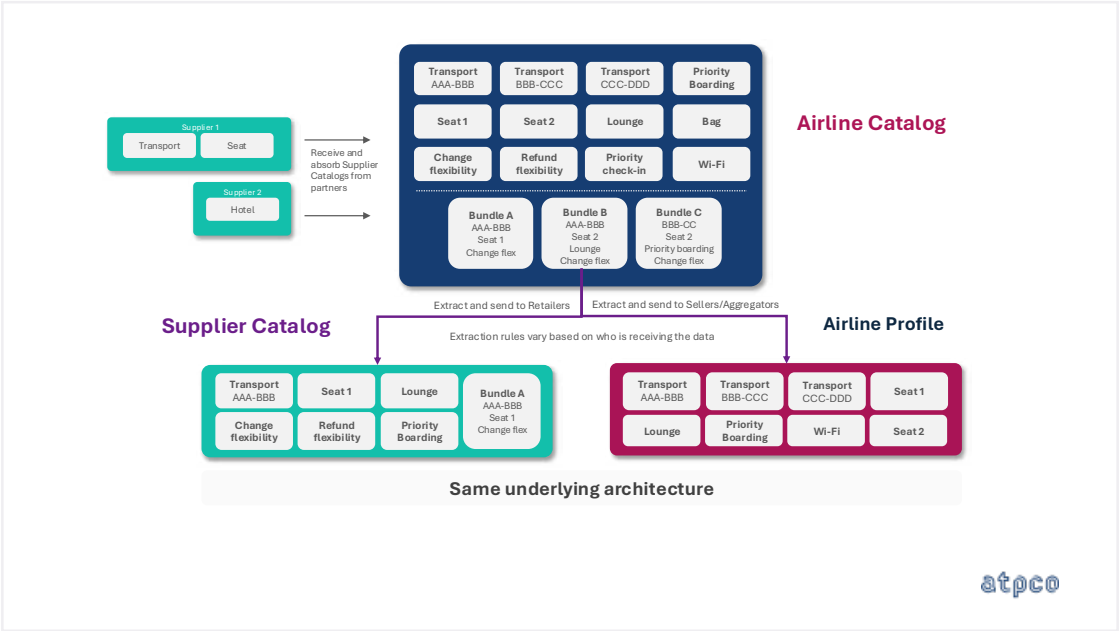
WHAT IS A PRODUCT CATALOG?

Overview

The product catalog is a concept that was developed collaboratively by airlines and industry stakeholders to establish a standardized, structured way to define and share airline products. ATPCO's approach to supporting these product catalogs aligns with IATA industry standards, evolving through ongoing industry collaboration to ensure broad consistency and adoption across the ecosystem.

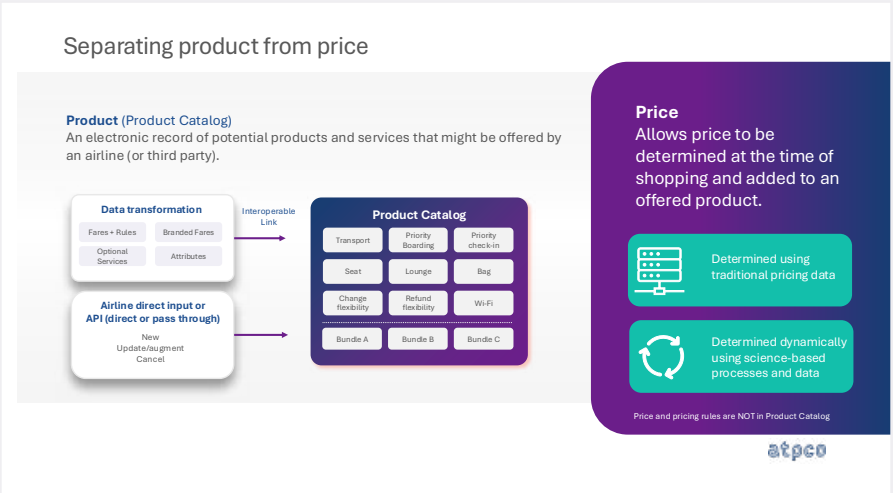
A product catalog is an electronic record of potential airline products and services, serving as a central repository for product details, characteristics, dependencies, and compatibility rules. It facilitates seamless and accurate sharing of product information across internal teams, suppliers, and distribution channels.

- **It serves as the core reference point for product details** including definitions, characteristics, dependencies, and compatibility rules, for products and services offered by an airline or a supplier.
- **It facilitates consistent and accurate sharing of product information across various systems, stakeholders, and processes.** This information can be used for offer creation, order management, and product delivery and servicing.
- **It can be tailored based on the party accessing it,** ensuring that internal teams, suppliers, and retailers receive the necessary level of product detail as determined by existing agreements.
- It has three types of information:
  - **Airline Catalog,** which contains all potential airline products and services
  - **Supplier Catalog,** which has permissioned subsets of the Airline Catalog for designated partners
  - **Airline Profile,** which has permissioned subsets shared with specific distribution channels



Core functions and benefits

- **The product catalog data exchange function is flexible and extensible,** allowing for the addition of new products and the modification of existing ones without disrupting ongoing processes or waiting for industry consensus.
- **It separates product from price, enabling price to be set at time of shopping.** The Product Catalog focuses purely on product information, without including prices or inventory levels. This separation allows an airline to set prices dynamically at the time of shopping on available products, using their existing preferred systems. Versioning and history tracking ensure compliance with legal and regulatory requirements.
- **The catalog format enables quick and accurate construction of dynamic offers.** Because the data is already structured and easily accessible, airlines can quickly pull relevant information (like product features, rules, and compatibility) without needing to search through multiple systems, which dramatically increases the speed at which they can craft dynamic offers, streamlining the offer creation process and enhancing operational efficiency.
- **It simplifies settlement.** The Product Catalog allows potential settlement values to be established before the offer creation process, making them readily available during creation and therefore improving offer quality and streamlining the settlement process.



ATPCO's unique role: Product catalog from an airline's existing filed data

Leveraging the vast data ATPCO already facilitates, ATPCO is creating the Product Catalog from airlines' existing data. ATPCO can translate an airline's existing fares, rules, optional services, amenities, and brands into a standardized Product Catalog, ensuring consistency across both traditional fare filing systems and modern offer and order management systems.

This method enables an airline to

- **Adopt dynamic offers at their own pace** without disrupting current operations.
- **Maintain interoperability** between legacy and emerging retailing models.
- **Keep traditional and dynamic product content aligned as needed**, eliminating the need for duplicate maintenance.

SECTION 3

Product Catalog works as a bridge to dynamic offers

SECTION 3

PRODUCT CATALOG WORKS AS A BRIDGE TO DYNAMIC OFFERS

As airlines evolve toward dynamic offers—whether through optimized, adjusted, or continuous offers —the challenge is managing and structuring product data efficiently. The Product Catalog, supported by ATPCO, provides a foundation that enables an airline to make that evolution seamless, no matter where they are in their journey.

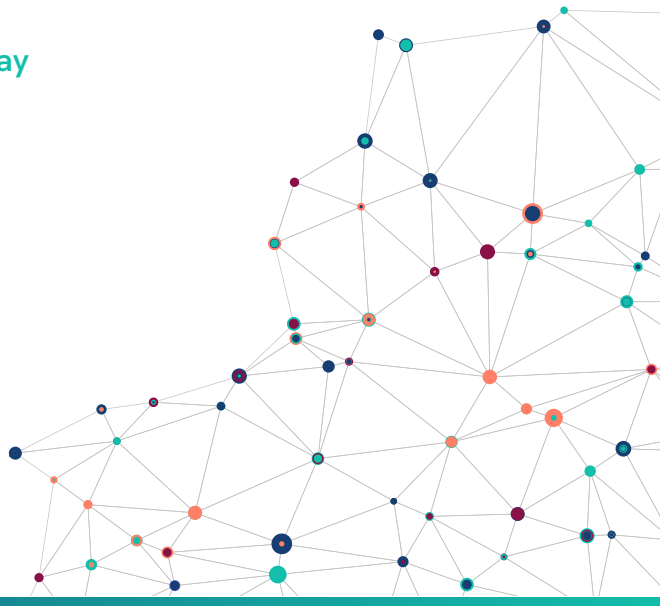
The crucial point

Airlines don't need to wait for full industry adoption of offers and orders to start realizing the benefits. The Product Catalog allows an airline to begin optimizing, adjusting, and personalizing their offers today, using their existing pricing structures while laying the groundwork for future transformation.

Common airline challenges in dynamic offer transition

- **Balancing traditional and dynamic pricing** — Airlines struggle to integrate filed fares with dynamic pricing strategies.
- **Limited flexibility in branded fares and ancillaries** — Current structures make refining offers and merchandising complex.
- **Complex and overloaded systems** — IT infrastructure is burdened with excessive fare combinations, reducing efficiency.

The Product Catalog centralizes airline product data, allowing an airline to benefit from dynamic pricing today without waiting for full offer and order adoption.



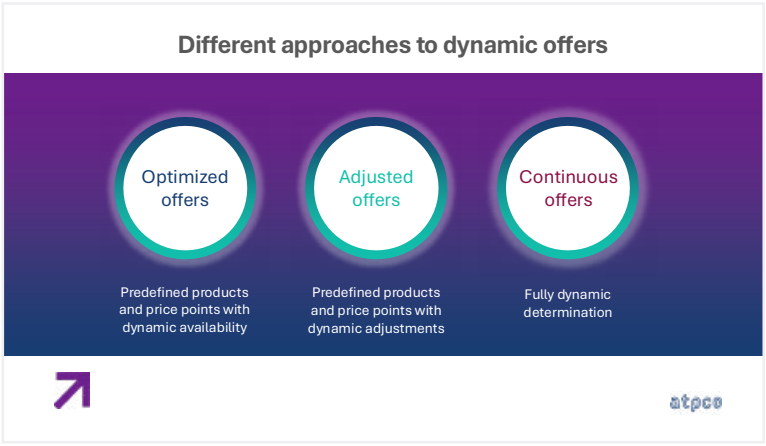
Extending industry trust: Evolving data exchange for modern retailing

For decades, airlines and their partners have relied on ATPCO as the industry's trusted source for product, pricing, shopping, and retailing data. The same principles of governance, neutrality, and reliability now extend to the distribution of Product Catalog data. By integrating Product Catalog into its standardized data exchange, ATPCO provides a scalable, industry-wide approach to modern retailing—ensuring accuracy, efficiency, and consistency across all stakeholders.

This is not a departure from ATPCO's core mission. It's an evolution of its long-standing commitment:

- Enabling standardized and structured data exchange
- Providing a neutral platform for seamless interoperability
- Supporting airlines in their transition to dynamic offers

By embedding the Product Catalog within its ecosystem, ATPCO empowers airlines to modernize their retailing strategies while preserving operational stability.



Optimized offers: Enhancing predefined products with precision

Airlines using predefined fares and products can benefit from the connection to filed data and better targeting from the Product Catalog.

How it works

The Product Catalog maps to filed fare data, so airlines with predefined fares and products can experiment with new enhancements without disrupting current pricing workflows. The Product Catalog can also act as an optimization tool, ensuring that airlines can intelligently match filed content to customer needs without overhauling their fare structures.

- **Product mapping to filed fares**—Connects fare filings to structured product data so an airline can refine and enhance branded fares, ancillaries, and merchandising while preserving existing pricing logic.
- **Smart product matching**—Filters and presents only relevant product bundles, better targeting offers to customer requests and improving the customer experience.

Adjusted offers: Real-time price and bundle customization

Airlines using adjusted offers can also benefit from the connection back to filed data, as well as the separation of products from price. That separation will allow products to be adjusted, not just price.

How it works

Previously, airlines could use adjusted offers to modify predefined pricing dynamically at the point of shopping. The Product Catalog enables airlines to further apply product or bundle customization at the time of shopping without disrupting existing fare structures.

- **Intelligent bundle adjustments** — Airlines can dynamically add missing ancillaries (such as baggage or lounge access) based on demand.
- **Seamless integration with filed fares** — The Product Catalog ensures a smooth transition without breaking existing workflows.
- **Dynamic ancillary bundling** — The Product Catalog also supports use cases like adding ancillary bundles, enabling airlines to adjust and present personalized combinations of services—such as baggage, seat selection, or lounge access—at the point of sale. This supports real-time bundling strategies, as explored in our Dynamic Ancillary Bundles MVP.

Continuous offers: Fully dynamic, real-time offer assembly

For airlines moving toward fully continuous offers, the Product Catalog enables real-time offer creation rather than relying on static fares.

How it works

The Product Catalog acts as a foundation for assembling personalized, science-driven, dynamic offers.

- **Real-time offer generation** — Dynamically assembles offers at the moment of shopping.
- **Direct integration with revenue management** — Feeds structured product data into offer creation engines.
- **Interoperability with traditional pricing** — Integration of Supplier Catalog data ensures seamless interaction with partners still using filed fares or hybrid models.

THE IMPORTANCE OF INTEROPERABILITY AT EACH STAGE

Underlying all these approaches is the need for the airline to work seamlessly with their airline and tech partners at every stage of the dynamic offer journey. Because Product Catalog provides the link back to filed data and has a modular, standardized, plug-and-play framework, the Product Catalog enables interoperability across different pricing models and vendor ecosystems, enabling flexible collaboration without disruption.

- **Cross-pricing model interoperability** — Airlines adopting continuous offers can still interact with partners using predefined fares or hybrid models. Likewise, airlines using optimized or adjusted offers can work smoothly with partners who have fully transitioned to continuous offers.
- **Technology and vendor interoperability** — Airlines often use multiple vendors for offers, orders, and revenue management. Product Catalog supplies standardization that ensures interoperability across diverse vendor solutions and partner ecosystems, allowing for flexibility in implementation.

We're building this with the industry. Sign up to test and validate with us in an MVP

Why it matters

Standardization doesn't have to come at the expense of innovation. By balancing standards with extensibility, airlines can achieve both consistency and agility. With a flexible JSON structure and API-driven distribution, this modern, scalable solution supports both legacy and next-generation retailing models.

By leveraging ATPCO's standardized approach, airlines and partners can avoid fragmented implementations, redundant integrations, and inconsistent data-sharing methods. Just as pricing data flows seamlessly through ATPCO's existing channels, Product Catalog data will be equally accessible, structured, and aligned with IATA industry standards.

While ATPCO offers a flexible, standardized data exchange path, it's important to recognize that airlines and partners always have the option to distribute product data bilaterally—either using ATPCO's data exchange format or through a mutually agreed solution outside it.

Why ATPCO?

Continuing its trusted, industry-focused model, ATPCO continues to serve as the foundation for scalable, efficient, and interoperable airline retailing—empowering airlines to confidently adopt more dynamic, flexible, and personalized offer strategies.

- **Access to airline data** — Direct integration with airline-filed data enables seamless mapping into the standardized Product Catalog.
- **Industry-wide interoperability** — ATPCO facilitates operating across all offer models, supporting diverse adoption paths.
- **Modularity and flexibility** — ATPCO's concept fulfills a plug-and-play framework that allows airlines to integrate their preferred providers.
- **Cost-effective, scalable infrastructure** — ATPCO invests in shared industry infrastructure, reducing costs and complexity for airlines and partners.
- **Neutral and pro-competitive** — As a trusted third party, ATPCO fosters collaboration without bias.
- **Industry alignment** — Existing structures and new development both support IATA industry standards and compliance requirements.
- **Industry collaboration and proofs of concept** — ATPCO's Product Catalog encourages airlines to test and validate new retailing models through POCs.

SECTION 4

INDUSTRY SUPPORT AND COLLABORATION

ATPCO's initiative to integrate the Product Catalog as a bridge to offers and orders has been met with strong industry support. Through close collaboration with airlines, technology providers, and industry bodies, ATPCO is ensuring both immediate transitional value and long-term alignment with the industry's vision for offers and orders.

Opportunities for collaboration

- **Proof of concept and minimum viable product initiatives**
  Validating use cases for dynamic offer creation, ancillary bundling, and settlement integration through real-world testing.
- **Design team support**
  Working with airlines and technology providers to align with current offer creation platforms and make adoption as efficient as possible.
- **Industry working groups**
  Actively engaging with IATA's APMWG, OOTSSWG, SOPSB, and other working groups to align with the broader industry direction for offers and orders.

SECTION 5

No matter your dynamic offer stage, the future starts today

The airline industry is at a pivotal moment in its evolution toward more dynamic, flexible, and scalable retailing. Whether you're just beginning to explore dynamic offers or already implementing dynamic offer and order strategies, there's a way to start taking advantage today.

The transition from static fares to dynamic offers requires a structured yet adaptable foundation, and the Product Catalog can provide the tools to make this shift seamless and scalable—without disrupting existing operations.

You can take action now

ATPCO invites airlines, technology providers, and industry stakeholders to actively participate in shaping the future of airline retailing.

- **Join an MVP project**
  For airlines and systems ready to fully dive in today, let's build or integrate your Product Catalog with ATPCO, seamlessly connect it with your systems and partners, and put it into action to drive real results now.

- **Sign up for future POC initiatives**
  Airlines wanting to test and validate Product Catalog integrations in a low-risk environment can leverage ATPCO's structured data capabilities to seamlessly integrate Product Catalogs without costly system overhauls, ensuring scalability and interoperability.

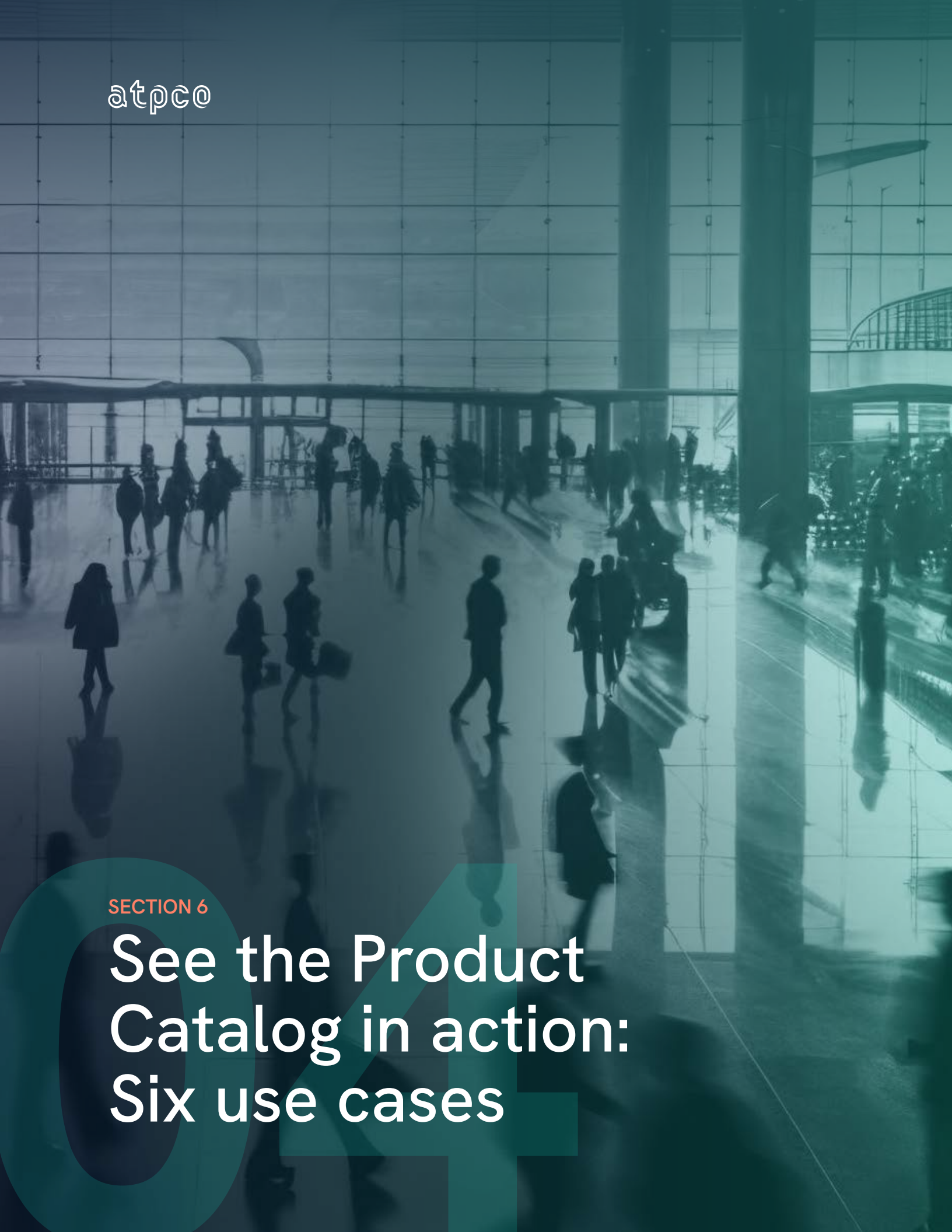
- **Join the design team**
  For airlines and systems wanting to collaborate with industry leaders to refine the Product Catalog framework, design teams ensure it meets real-world airline retailing needs. Play a key role in shaping a standardized, industry-wide approach that eliminates fragmentation and creates opportunities.

This is not the only solution to move toward dynamic offers, but it is one that the industry can embrace now with ATPCO's governance, structure, and neutrality. By working within a trusted, standardized framework, airlines and their partners can innovate with confidence, knowing their product data is interoperable, scalable, and aligned with evolving industry needs. It's about building an industry-wide foundation that supports collaboration, efficiency, and long-term sustainability.

Start now to stay ahead

Early adopters are already exploring the benefits of Product Catalog integration, and your opportunity to shape the future of airline retailing is here. No matter your stage, now is the time to take action.

Let's build the next generation of airline offers—together.



SECTION 6

See the Product Catalog in action: Six use cases

SECTION 6

SEE THE PRODUCT CATALOG IN ACTION: SIX USE CASES

POCs, MVPs, and real-world use cases you can get involved in today

To validate the effectiveness of our approach to the Product Catalog, ATPCO has led several proof-of-concept (POC) initiatives and is actively working with and seeking new partners for minimum viable product (MVP) initiatives with real-world use cases that prove its adaptability and scalability.

Check out the work we are doing and if you and your teams are ready to take the next step, sign up to work with us today!

- **Complete POCs**
  - **Use case 1**
    Transforming Filed Fare Data into a Product Catalog POC
- **Actively working with and seeking new partners for MVPs**
  - **Use case 2**
    Product Catalog Data Exchange MVP
  - **Use case 3**
    Optimizing Retailing and Customer Experience with Dynamic Ancillary Bundles MVP
  - **Use case 4**
    Moving Settlement to the Time of Offer Creation MVP
  - **Use case 5**
    Inserting the Catalog in Offer Creation MVP
  - **Use case 6**
    Optimizing NDC and Dynamic Offer Request (Airline Profile) MVP

USE CASE 1

Transforming Filed Fare Data into a Product Catalog POC

Problem and industry need

As airlines move to dynamic retailing, many still rely on filed fare data for product construction and pricing logic, interline agreements, and network-wide consistency. The challenge is bridging the gap between traditional fare structures and modern, product-based offer creation without disrupting existing workflows or revenue streams.

- Airlines must retain backward compatibility while preparing for future-state dynamic offer creation.
- Legacy fare filing was not designed to support unlimited price points or tailored offer content, creating inefficiencies in retailing strategies.
- Without a structured transition path, airlines risk fragmentation, duplicated work, or operational disruptions when trying to modernize.

Solution approach: What happened in the POC

ATPCO validated how it can transform an airline's filed fare, rule, optional services, amenities, and branded fares data into a structured Product Catalog, providing a seamless transition to offer-based retailing while maintaining compatibility with legacy systems.

Key steps in the POC

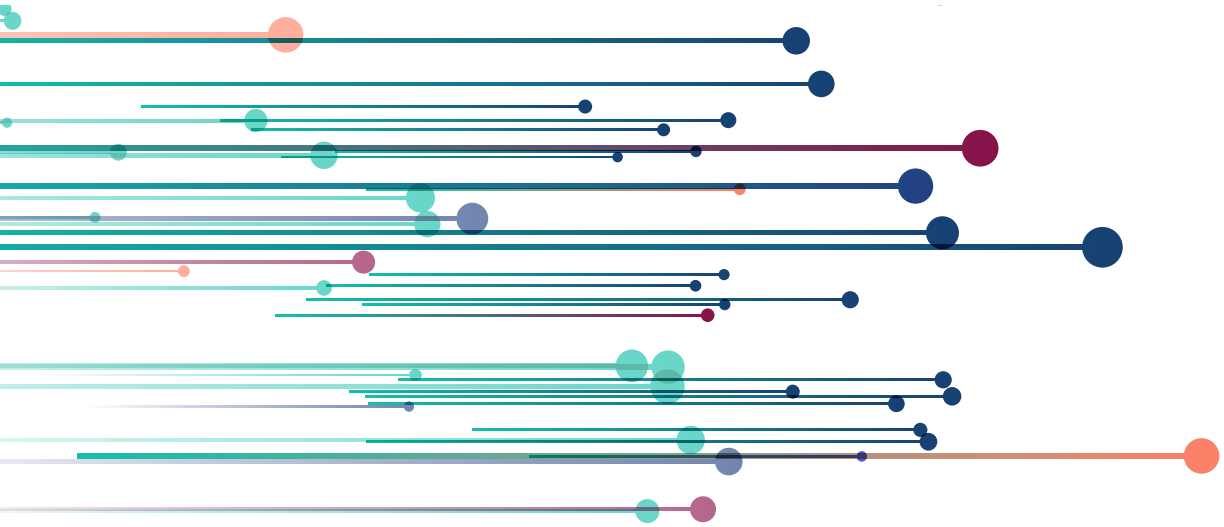
- **Extract and structure data**
  - ATPCO extracted existing filed fare data, including base fares, rules, optional services, branded fares, and amenities.
  - This data was reorganized into a structured Product Catalog format, separating product definition from pricing to allow for greater flexibility in offer creation.
- **Map and standardize product attributes**
  - The extracted data was mapped to standardized Product Catalog attributes, ensuring consistency across airline retailing systems.
  - This process included defining product definition data elements, dependency and compatibility rules, and bundling logic within the Product Catalog framework.
- **Validate backward compatibility and future scalability**
  - The POC confirmed whether the new Product Catalog structure efficiently maintains compatibility with legacy fare filing, ensuring seamless adoption without operational disruptions.
  - It also explored how airlines can incrementally adopt dynamic offers and attribute-based shopping models using the structured catalog.
- **Industry showcase and next steps**
  - Findings from the POC will be presented to industry stakeholders, demonstrating how filed data can evolve into a Product Catalog without requiring a complete system overhaul.
  - The results will guide future implementations and define best practices for broader airline adoption.

Key benefits and expected outcomes

By proving that filed data can be successfully transformed into a structured Product Catalog, this POC provides a low-risk, scalable approach for airlines to modernize retailing while preserving the core integrity of traditional pricing models.

- **Seamless transition from traditional to dynamic retailing** while maintaining legacy pricing compatibility.
- **More efficient brand management,** reducing the complexity of updating and maintaining branded fares structures and providing flexibility to include nontraditionally filed product elements.
- **Improved offer creation** with better product differentiation, upsell potential, and targeted bundling.
- **A modular foundation for future innovation,** allowing airlines to transition to more dynamic and personalized offer capabilities.

Sign up to join us for future POCs



USE CASE 2

Product Catalog Data Exchange MVP

Problem and industry need

As airlines move to offer and order-based retailing, they require flexibility in how they manage offer creation. However, this shift introduces challenges with vendor compatibility and interoperability, making it difficult to scale dynamic offers efficiently.

Airline challenges

- **Desire for modularity**
  An airline may use different providers for different aspects of offer creation, which makes integration difficult.
- **Cross-vendor interoperability**
  An airline's partners may not use the same vendors, yet seamless data exchange is critical for collaboration.
- **Interoperability gaps**
  Systems involved in the offer creation ecosystem may have different native implementations of product catalog data, requiring building, mapping, and maintaining translations manually, which leads to industry wide inefficiencies.

Technology provider and vendor challenges

- **Interoperability and scaling**
  While there is growing recognition of the need for standardization in Supplier Catalog exchanges, the absence of industry-wide standards makes it difficult to achieve seamless integration and flexibility across airlines and system providers.
- **High integration costs**
  Custom integrations with multiple airlines and partners increase complexity and costs.
- **Data availability and curation**
  Airlines are moving to dynamic offers at different speeds, making it challenging to curate compatible data for partners still relying on traditional offer structures. Allowing ATPCO to leverage its existing access to traditional data for partner curation enables vendors to focus on higher-value innovations within their offer and order solutions.

Solution approach: What is happening in the MVP

ATPCO and PROS are collaborating to validate Product Catalog interoperability, demonstrating how PROS' product catalog can align with ATPCO's product catalog to enable modularity in offer creation.

Key steps in the MVP

- **Product Catalog data integration**
  ATPCO provides structured Product Catalog data, which PROS will ingest and apply within its existing revenue management and offer system.
- **Testing modular interoperability**
  The MVP evaluates how structured catalog data can be used across different vendor platforms, ensuring seamless exchange between airlines and their partners.
- **Offer creation and application**
  PROS will use the catalog data in real-world pricing and bundling workflows, demonstrating how airlines can maintain flexibility while ensuring compatibility with partners using different systems.
- **Close the loop**
  ATPCO will consume the PROS data to prove data can be maintained in an airline's offer and order system and processed by ATPCO to update associated traditional data, where appropriate and provide downline distribution to partners.

Key benefits and expected outcomes

ATPCO and PROS are collaborating to validate Product Catalog interoperability, demonstrating how PROS' product catalog can align with ATPCO's product catalog to enable modularity in offer creation.

For airlines

- **Greater flexibility**
  Enables seamless integration of best-fit vendors for different offer creation functions.
- **Interoperability across platforms**
  Ensures that airlines and their partners can work together efficiently, regardless of vendor choices.
- **Reduced operational complexity**
  Standardized data structures minimize manual data mapping and integration burdens.
- **Scalable adoption**
  An airline can progress toward modern offer creation models while they update and replace systems in their ecosystem.

For technology providers and vendors

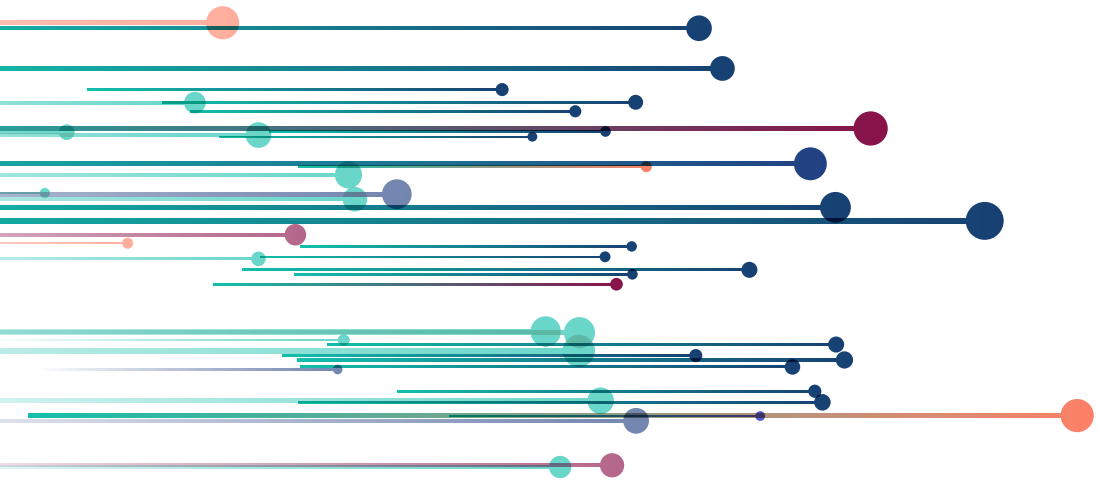
- **Interoperability and scaling benefits**
  Providing a standardized yet flexible foundation for Supplier Catalog exchanges enables vendors to integrate seamlessly with airlines. Offering a common framework for structuring and sharing product data simplifies interoperability, accelerates adoption, and reduces the complexity of managing diverse airline requirements.
- **Lower integration costs**
  Reduces the need for one-off custom integrations, streamlining implementation.
- **Focus on core strengths**
  With the complexity of moving to offers and orders, vendors can leverage standardized Product Catalog data for curation so they can focus on innovating their core solutions.
- **Future-proofing and scalability**
  As airlines evolve their retailing models, vendor solutions can remain compatible and relevant.

Sign up to work with us for an MVP

"At PROS, we're committed to helping airlines modernize through flexible, AI-driven solutions that deliver real value. We draw on our deep expertise in Offer Optimization and airline retailing, combined with our broader experience powering retailers from a variety of different industries through our Product Catalog and CPQ solutions.

This collaboration with ATPCO demonstrates that modern airline retailing is achievable across diverse systems and partners. We're proving how PROS' leading solutions support airline-specific strategies while connecting seamlessly to the broader ecosystem—accelerating the journey to Dynamic Offers and Orders."

Christopher Allison, Product Director, Offer & Order Management, PROS



USE CASE 3

Optimizing Retailing & Customer Experience with Dynamic Ancillary Bundles MVP

Problem and industry need

As airlines explore innovative ways to dynamically create offers to increase revenue, dynamically adding ancillary bundles has emerged as a growing trend. These bundles are being implemented primarily through three key use cases:

1. **Bundles on top of brands**
   Ancillary products are grouped together into bundles and offered after the brand is selected in the shopping flow.
2. **NDC-exclusive brands**
   New fare brands are created exclusively for NDC distribution, and are not available through traditional distribution.
3. **Targeted corporate bundles**
   Customized packages that are designed for specific corporate customers and are often distributed through select indirect channels.

These dynamic bundles are primarily generated and offered through NDC (New Distribution Capability), with their ancillary products and services typically created within the airline's offer and order management systems rather than being filed in traditional ATPCO systems. In some implementations, bundles may combine elements from both ATPCO filed data and the airline's offer-order management system.

Key challenges impeding effectiveness

Despite their potential, several significant challenges restrict the effectiveness and adoption of these dynamic ancillary bundles, particularly in indirect sales channels.

1. **Structural data standardization issues**
   The current IATA NDC schema lacks standardized placement and structure for ancillary bundle data, so airlines resort to using custom placements with unstructured text string formats. When each airline creates and distributes the data differently in NDC, interpreting and processing bundle information can be inaccurate. Without an industry standard, implementation development costs and complexity rise for indirect channels to integrate and scale this bundle data.
2. **Routehappy content enrichment limitations**
   The inherent base data of these bundles creates gaps in Routehappy content (attributes and visuals) enrichment of these offers, which most indirect sales channels rely on for effective presentation of offers in their shopping displays.
3. **Diminished upsell opportunities**
   The lack of descriptive and visual content reduces the ability to effectively communicate the ancillary bundle value proposition to customers, limiting marketing effectiveness of the offer and resulting in airlines and sales channels missing significant revenue opportunities.
4. **Fragmented customer experience**
   Without a consistent way to present and sell dynamic ancillary bundles, shopping experiences vary across channels, in some cases presenting incorrect information, eventually leading to customer confusion and dissatisfaction and negatively impacting conversion rates and brand loyalty.

Solution approach: What is happening in the MVP

ATPCO is validating how airlines can integrate ancillary bundle content into a standardized Product Catalog, ensuring seamless retailing and merchandising, better upsell potential, and improved customer experience.

Key steps in the MVP

- **Capture and structure dynamic ancillary bundles**
  - ATPCO will work with airlines and channels to ingest ancillary bundle product data from their merchandising and NDC systems.
  - The MVP will ensure these bundles are structured within the Product Catalog, defining attributes such as eligibility, bundling rules, and compatibility with fare products.
- **Enrich bundles with Routehappy content**
  - The ancillary bundles will be linked to Routehappy attributes and visuals to enhance merchandising and display consistency across sales channels.
- **Integrate with sellers and aggregators**
  - Sellers and aggregators will update their Routehappy API request messages to include additional information from the NDC shopping response that can be matched to the provided Product Catalog data so the appropriate merchandising content can be returned.
- **Industry showcase and next steps**
  - Findings from the MVP will be presented to industry stakeholders, demonstrating how Dynamic Ancillary Bundles can be efficiently structured, enriched, and distributed.
  - The results will guide future implementations and best practices for broader adoption.

Key benefits and expected outcomes

- **Increased personalization**
  Airlines can offer more targeted and relevant bundles tailored to individual customer preferences, including corporate bundles customized according to negotiated contracts.
- **Stronger upsell opportunities**
  Routehappy content ensures better descriptions and visual appeal, increasing conversion rates.
- **Standardized approach for dynamic bundling**
  Airlines, sellers, and aggregators benefit from a structured, scalable solution that eliminates costly custom integrations.
- **Better customer experience**
  More accurate, intuitive, relevant ancillary offers result in higher satisfaction and engagement.

By integrating dynamic ancillary bundles into the Product Catalog framework, ATPCO enables airlines to maximize ancillary revenue, simplify sales channel operations, and create a seamless, personalized shopping experience for travelers.

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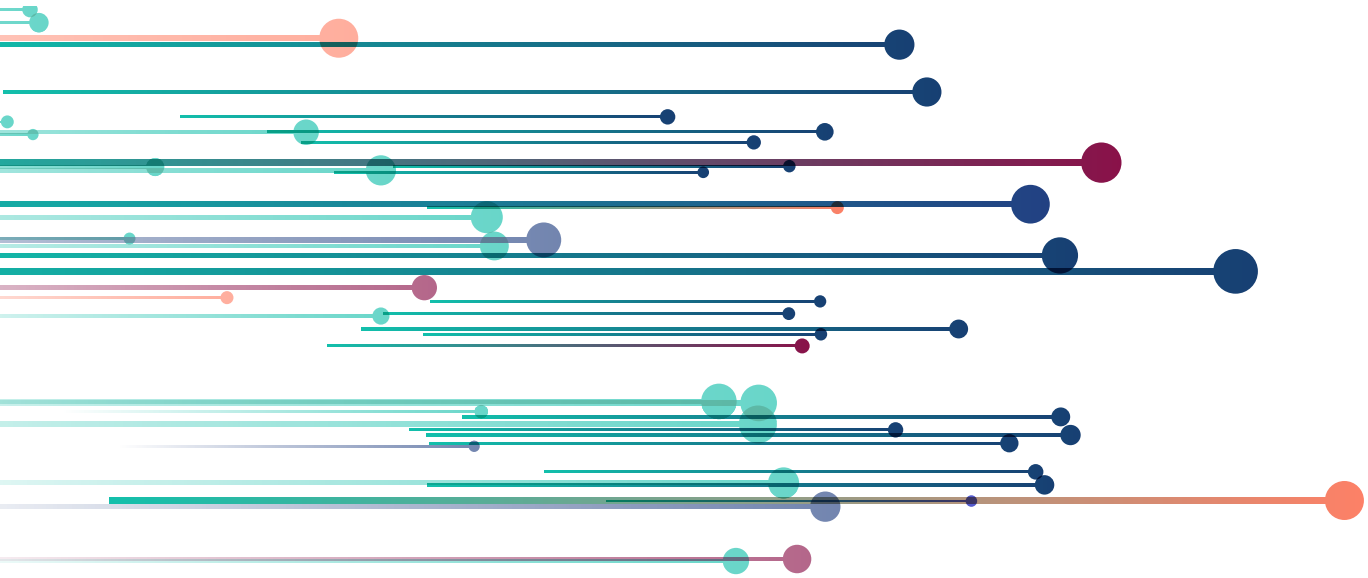
"Our year-long proof of concept with a regional hybrid airline proved the power of dynamic bundling and pricing—driving a 6–9% lift in net ancillary revenue and boosting total net passenger revenue by up to 1.2%, all without impacting air ticket sales. We're excited to work with ATPCO to help eliminate the manual effort of filing ancillary data in traditional systems. ATPCO's Product Catalog provides a scalable, automated solution to that challenge. By structuring dynamic ancillary bundles through ATPCO's standard solution and Product Catalog and enriching them with Routehappy content, it enables much needed efficient distribution, better retailing and merchandising, and allows us to focus on delivering optimization—not managing complexity."

Javier Jiménez, COO and Co-Founder of Airnguru



USE CASE 4

Moving Settlement to the Time of Offer Creation MVP

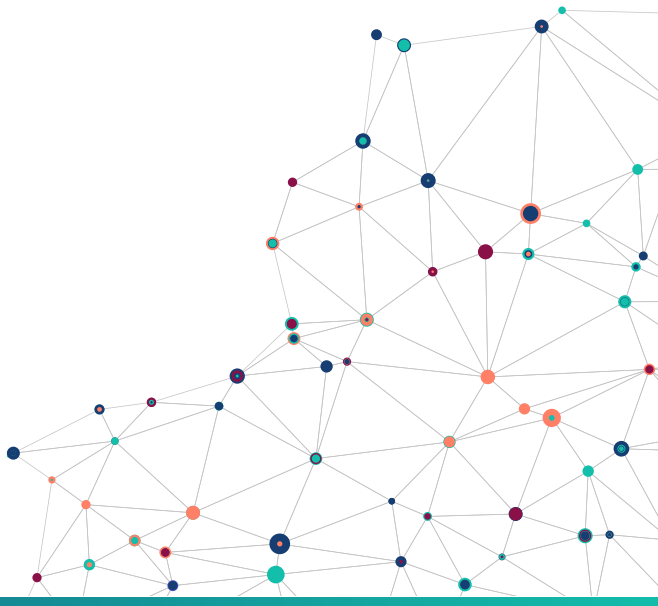
Problem and industry need

Real-time messaging of settlement values between all airlines will take years to implement. Historically these types of real-time exchanges have not been widely adopted and the adoption that exists has taken a long time. For example, today fewer than 30% of all airlines have dynamic availability (polling in place today) and fewer than 5% of airlines have bid price exchanges in place for O&D evaluation. The current settlement processes are inefficient and drive inaccuracies, and they could benefit from an interim solution to improve revenue optimization and avoid revenue leakage during the long transition period.

Key challenges impeding effectiveness

- **Delayed settlement calculations**
  Revenue accounting teams calculate settlement values after an offer is sold, so any adjustments needed to the offer creation process based on this settlement information is reactive rather than proactive.
- **Inaccurate interline billing**
  Different partners use varying calculation methods, leading to billing disputes and rejected transactions.
- **Reliance on historical data**
  Revenue management systems often use average or historical proration values, which do not reflect real-time pricing.
- **Slow industry adoption of real-time messaging**
  Fewer than 30% of airlines have dynamic availability, and fewer than 5% have bid price exchanges in place for O&D evaluation. The full adoption of dynamic offer and order models will take years because of its cost and complexity.

The industry needs a scalable, low-risk solution that allows airlines to move toward upfront settlement until full-scale real-time messaging adoption is complete.



Solution approach: What is happening in the MVP

This MVP explores how ATPCO's Product Catalog data exchange can support improved dynamic offer creation today by making settlement information available during the offer creation process, while wide-scale adoption of PSC Recommended Practice 1780s, Standard Retailer and Supplier Interline Agreement (SRSIA) processes and real-time messaging adoption is achieved.

Key steps in the MVP

1. **Leverage the Product Catalog for settlement data**
   - Leveraging Product Catalog to make traditional settlement values available in the offer creation process.
2. **Leverage existing revenue accounting processes**
   - Leverage the existing revenue accounting processes to capture and re-use traditional settlement value calculations for future offers as appropriate, because many traditional settlement values do not fluctuate frequently.
   - Capture settlement calculations at time of offer creation and feed them through traditional revenue accounting processes to reduce the need for recalculations and eliminate settlement disputes.
3. **Demonstrate compatibility with existing systems**
   - The MVP will validate that airlines can implement upfront settlement today while maintaining compatibility with legacy and future offer-order systems.
   - The solution must work without requiring full-scale real-time messaging adoption, but it should be future-ready as the industry moves toward dynamic offers.

Key benefits and expected outcomes

- **Improved dynamic offers**
  An airline can consider settlement values when they create offers, resulting in better dynamic offers and more opportunities for creating dynamic offers involving a partner.
- **More accurate and predictable settlement**
  An airline can calculate more settlement values upfront, reducing billing disputes and manual adjustments.
- **Faster and more efficient revenue recognition**
  Moving settlement to the offer-order stage reduces delays and reconciliation costs.
- **Future-proof and scalable**
  Works with current industry capabilities and will evolve as airlines adopt SRSIA and real-time interline offer messaging.
- **Eliminates rework and reduces costs**
  Reduces the need for post-sale recalculations and accelerates settlement timelines.

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USE CASE 5

Inserting the Catalog in Offer Creation MVP

Problem and industry need

Improving optimized offers

As airlines continue to improve their revenue management processes and leverage AI and machine learning capabilities, the volume and volatility of filed fare content continues to increase. This drives higher volumes of potential offers to be generated, making it more difficult for sellers and customers to find the offers most relevant to them.

Enabling adjusted offers

Pre-filed fares require all product and price combinations to be pre-determined. It can be difficult or even impossible to create and maintain all relevant combinations of product and price. Having base data and a process by which filed product content could be adjusted or augmented to better match customer requests provides a feasible alternative to filing all product/price combinations.

Solution approach: What is happening in the MVP

This MVP explores how ATPCO's Product Catalog can be inserted as a core component in airline offer creation workflows to drive more efficient and targeted offer creation of filed product content and to enable dynamic product content adjustment.

Key steps in the MVP

1. **Catalog-driven optimized offer constructio**
   Airlines use the Product Catalog pre-defined bundles and linked fare data to match customer requests and drive more targeted offer creation.

2. **Enable modular offer components**
   Airlines can adjust filed branded fare content by adding product components, including the ability to add products that may not be offered or distributed via traditional offer creation, without disrupting their entire pricing structure.

3. **Enhance customization and retailing flexibility**
   By leveraging the catalog's structured data, airlines can dynamically personalize offers based on shopping requests, customer preferences, and contextual demand.

4. **Validate data usability in real-world scenarios**
   The structured Product Catalog is being tested in live airline pricing and retailing environments to ensure seamless integration.

Key benefits and expected outcomes

- **Streamlined offer construction**
  A structured approach to optimizing offers and enabling dynamic offer adjustment reduces inefficiencies and ensures data consistency.
- **Enhanced personalization and bundling**
  Airlines can dynamically tailor offers based on customer needs without requiring extensive back-end modifications.
- **Reduced data redundancy and maintenance costs**
  A standardized catalog minimizes duplicated effort in defining products across multiple platforms.
- **Industry-wide interoperability**
  Ensures seamless interaction between airlines, NDC providers, sellers, and aggregators.

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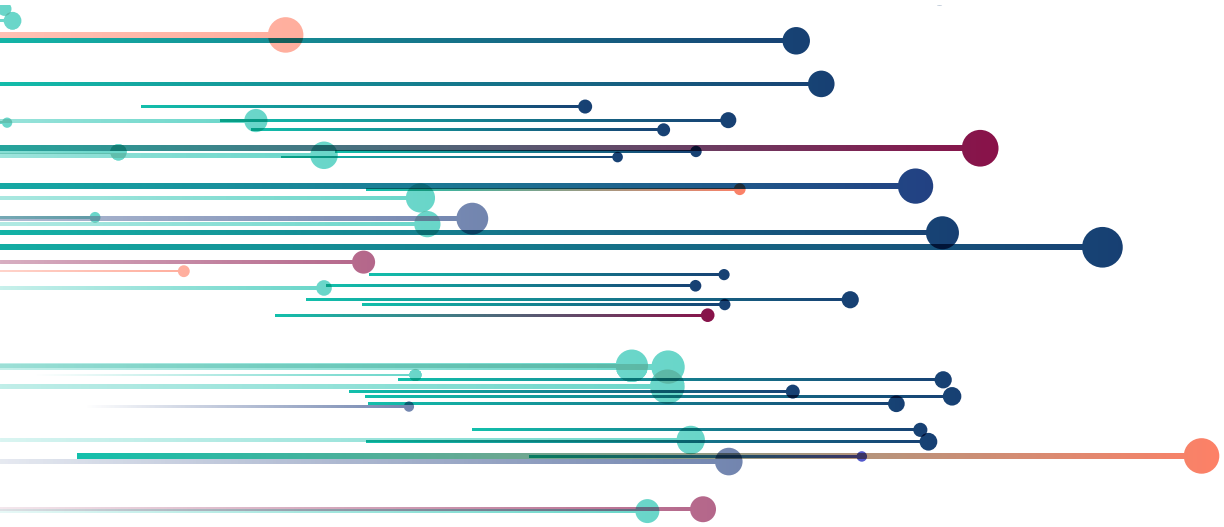

USE CASE 6

Optimizing NDC and Dynamic Offer Request (Airline Profile) MVP

Problem and industry need

NDC (New Distribution Capability) is transforming airline retailing by enabling richer, more dynamic shopping experiences. However, challenges persist in ensuring that dynamic offer requests align with airline preferences and capabilities:

- Airlines receiving a high volume of NDC shopping requests that may not align with their product availability or retailing strategies.
- Lack of a standardized way for airlines to communicate their offer preferences to sellers and aggregators.
- Inefficiencies in how NDC requests are processed, leading to unnecessary system loads and irrelevant offer responses.

Solution approach: What is happening in the MVP

This MVP validates how an Airline Profile within the Product Catalog can optimize NDC and dynamic offer requests by providing structured market and select product information.

Key steps in the MVP

1. **Define the Airline Profile within the Product Catalog**
   A structured subset of the airline's Product Catalog serves as a profile that lists airline preferences for when to be called for an offer.
2. **Pre-filter NDC requests**
   The Airline Profile acts as a filter, ensuring that shopping requests align with available products, reducing noise and inefficiencies.
3. **Real-time updates and synchronization**
   Any changes in the airline's product strategy are reflected in the Airline Profile, ensuring that sellers and aggregators always have up-to-date information.
4. **Interoperability testing with NDC aggregators and sellers**
   The structured Airline Profile is being tested with real NDC workflows to validate effectiveness and efficiency.

Key benefits and expected outcomes

- **Reduced irrelevant NDC requests**
  Airlines receive only relevant shopping requests, reducing processing loads and optimizing IT infrastructure.
- **Stronger alignment between airlines and sellers**
  Ensures that NDC aggregators and sellers request offers based on airline-defined parameters.
- **Improved conversion rates and offer accuracy**
  By reducing the gap between airline preferences and NDC requests, airlines can provide more relevant and competitive offers.

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GLOSSARY OF KEY TERMS

adjusted offers — Dynamic offers created when a dynamic pricing engine uses an airline's unique business logic to apply dynamic price adjustments or product adjustments to predefined prices and products. With adjusted offers, humans are assisted by science like artificial intelligence and machine learning. There are dynamic adjustments made to the price or content at the time of the shopping request based on each airline's internal business rules, leveraging science for precision pricing and offers.

Airline Catalog — Contains all potential airline products and services

Airline Profile — Permissioned subsets shared with specific distribution channels

aggregator — An entity who distributes a seller's shopping request to multiple airlines and aggregates subsequent responses.

bundle — Individually defined atomic products (services or items) that are grouped together to form a package of atomic services and/or items to be delivered to a consumer. A brand is a type of bundle. Traditional fare and related data (fare, change flexibility, refund flexibility, and stopover flexibility) are a type of bundle

continuous offers — Dynamic offers created when a dynamic pricing/offer engine uses an airline's unique business logic that is not dependent on predefined prices and products. Products are chosen dynamically from a catalog of potential offerings. Prices are determined dynamically and may be chosen from a predetermined range or by direct link to an airline's revenue management system. Advanced data science creates real-time offers and pricing; fares are not filed at all, and the traditional fare management tools are transferred to offer and order management systems.

dynamic bundle — A bundle of atomic products that is created (or grouped together) at the time of shopping.

dynamic offer — The information presented to a customer before a sale (including the fare product, price, attributes, ancillaries, and other data) that was dynamically assembled and priced using dynamic pricing methods (optimized, adjusted, or continuous pricing).

dynamic pricing — The methodology that is used for a price that is adjusted or created at the time of shopping.

New Distribution Capability (NDC) — An IATA-established standard that enables the travel industry to transform the way airline products are distributed to the market.

optimized offers — Dynamic offers created from predefined products and price points with dynamic availability. They are created using traditional ATPCO data (such as fares, rules, and services), airline availability, and Routehappy content. With optimized offers, humans use some automation and better technology to optimize managing data.

product — Any item that can be offered to a customer (such as air or other types of transportation, any goods, and amenities, etc.). For example, a product can be the actual transportation service (right to travel), a hard product (such as seats and meals), or a soft product (such as flexibility and priority boarding). Also called *atomic product*.

GLOSSARY OF KEY TERMS (CONTINUED)

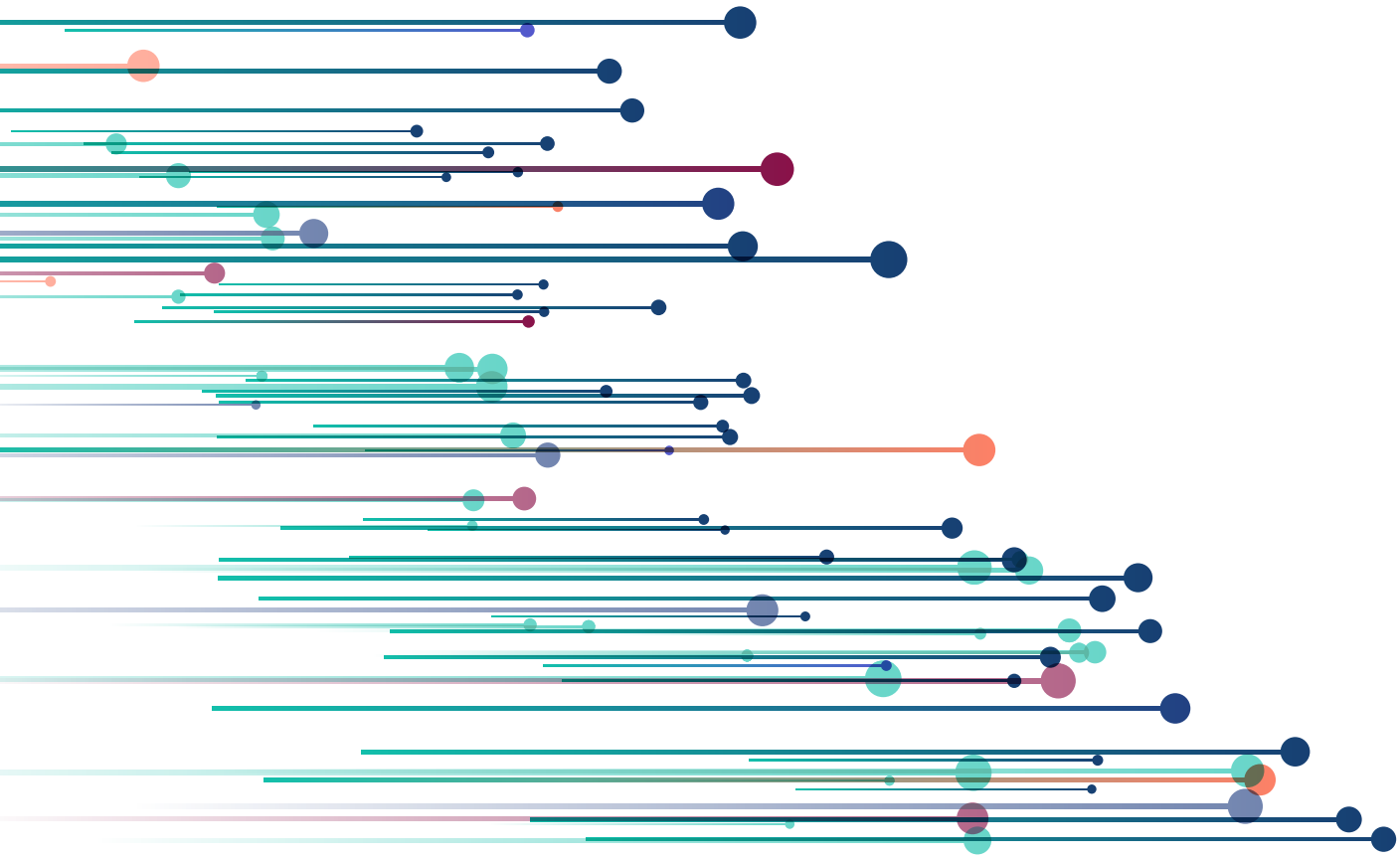
Product Catalog — The Product Catalog is an electronic record of potential airline products and services, serving as a central repository for product details, characteristics, dependencies, and compatibility rules. It facilitates seamless and accurate sharing of product information across internal teams, suppliers, and distribution channels.

retailer — A company (airline) that sells services directly to customers or through agreed sellers. These services may be owned by the retailer itself or may be obtained from the supplier and sold to the customer, either individually or as part of a bundle, at a price determined by the retailer.

seller — A company that sells services to customers on behalf of a retailer. The price of the offer remains determined by the retailer.

supplier — A company that provides or contributes to services in exchange for settlement values to a retailer and is responsible for delivery of those services.

Supplier Catalog — Permissioned subsets of the Airline Catalog for designated partners.

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