



The vendors' view on the transition to a world of Offers and Orders

A white paper by

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Introduction

The path to 100% Offers and Orders—Vision 2030

Based on present trends, we believe it will be possible for some airlines and their partners to see a world of 100% Offers and Orders by 2030. This means that full capabilities, based on global open standards and a modular architecture, need to be ready and available for any airline that wishes to embark on this journey. In partnership with key industry players, IATA has published a vision of a world with 100% Offers and Orders.

The New Distribution Capability (NDC) has been a catalyst in this journey to airline retailing. However, many implementations still rely on legacy artefacts such as filed fares, booking classes, PNRs and E-Tickets/EMDs. Vendors are developing retailing platforms in this context, however, so far, none of them propose a completely legacy-free environment with Offers and Orders only.

This journey is complex and the transition to “Offers and Orders only” is a massive undertaking but equally rewarding for the industry and customers. We welcome the work Travel in Motion have carried out to begin exploring, at a generic level, the current state, and ambitions of the vendors.

Sebastien Touraine, Head, Airlines Commercial Systems, IATA

October 2022

The vendor's view on the transition to the world of Offers and Orders

Status and challenges from the vendors' perspective.

Abstract—It's all in the word—Dynamic

The word **dynamic** has been omnipresent in our industry over the past years, even before the global health pandemic. There are high hopes tied to that simple word. Looking at the Cambridge Dictionary¹⁾, we see that there are three definitions for the word:

- having a lot of ideas and enthusiasm
- continuously changing or developing
- relating to forces that produce movement

When the commercial teams within the airlines and the airline technology vendors talk about dynamic, there is often a lot of the first definition involved, however it would seem a lot of fear of the second, resulting in not too much of the third.

While the above statement may seem somewhat pessimistic, it is meant to be provocative. From TiM's experience working with airlines and vendors on airline retailing and digital transformation, there is initially a lot of enthusiasm related to dynamic offers until the initial effort and complexity is realised. Those bold and brave enough to venture on will realise that the continuous change not only in the offering – product and price – but in the organisation can bring great benefits. And that is why, as an industry, we are all excited about the prospects of the word “dynamic”.

Dynamic offers have exciting potential. Revenue potential is often what airlines think of first, however just as many focus on the customer experience and customer engagement potential as well. Best is to take all these aspects combined to understand the value of dynamic offers.

The way we have been looking at dynamic offers from a simplistic perspective is based on two axes of capability. The vertical axis relates to the dynamic product determination, the horizontal axis to dynamic price determination. An airline can choose to follow the price determination axis, which has the potential to optimise revenue and increase conversion. Another airline may choose the vertical, product-focused axis which improves the offer, making it more targeted and relevant to the audience. This, in turn, should increase engagement, loyalty, wallet-share spend as well as conversion.

Most airlines have started on the path of the horizontal, price-focused path. However, there is nothing stopping airlines in finding a path that tackles both axes at the same time.

This paper does not aim to prove the value of dynamic offers – there are others which have done that. This section is intended more as a reminder of what the focus of dynamic offers is, and perhaps a small push to analyse the concepts and ideas a bit more. Rather, this paper serves to understand the readiness of the technology vendors which are supplying solutions to the airlines.

¹⁾ Source: <https://dictionary.cambridge.org/dictionary/english/>

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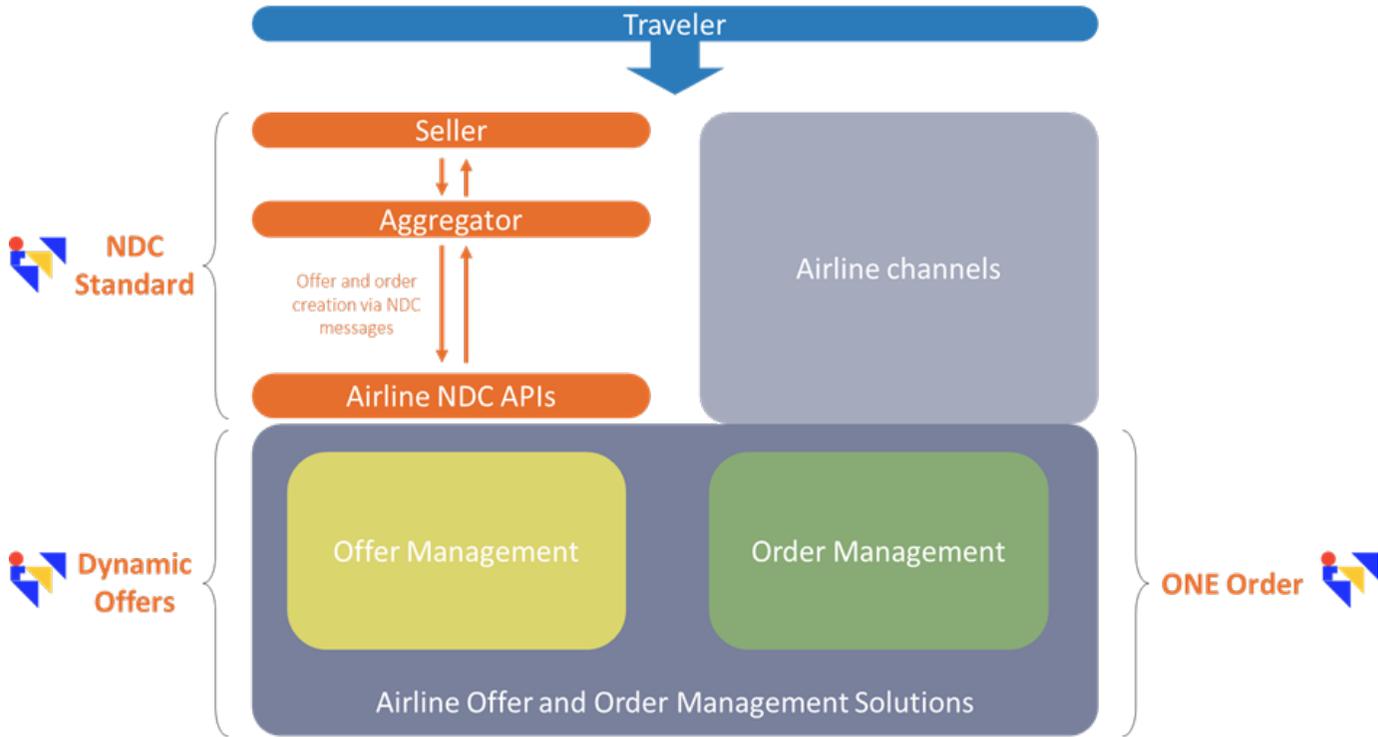
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Introduction and background

Over the past decade, IATA and its member airlines embarked on what was to become known as the airline retail transition, or the transition to offers and orders. Initially, the focus was on evolving the distribution channel to a modern, API-based method called the “New Distribution Capability”, or NDC as it is known. Beginning in the middle of the last decade, the ONE Order programme was started to move the industry to modernised data structures, moving from Passenger Name Records (PNRs), electronic tickets and electronic miscellaneous documents (EMDs) to a single customer order record with all relevant data, removing the risk of duplication of data and situations where the data is out of sync and empowering airlines to simplify and automate more business processes. The final initiative to follow the retail transformation is dynamic offers, a programme to help airlines gain maturity in dynamically determining what to offer, to whom and at which price, with the aim to have the ability to be more customer centric and increase revenues.

To be successful, the dynamic offer programme relies on airlines and vendors working together to define the needs of the airlines, and to ensure that the airline methodologies can be implemented and applied. It further relies on the airlines, jointly with IATA, to review the regulatory aspects of dynamic offers together with governments and regulatory bodies – a role which falls into IATA’s facilitation activities.



Simplified view of IATA's Airline Industry Retailing programme

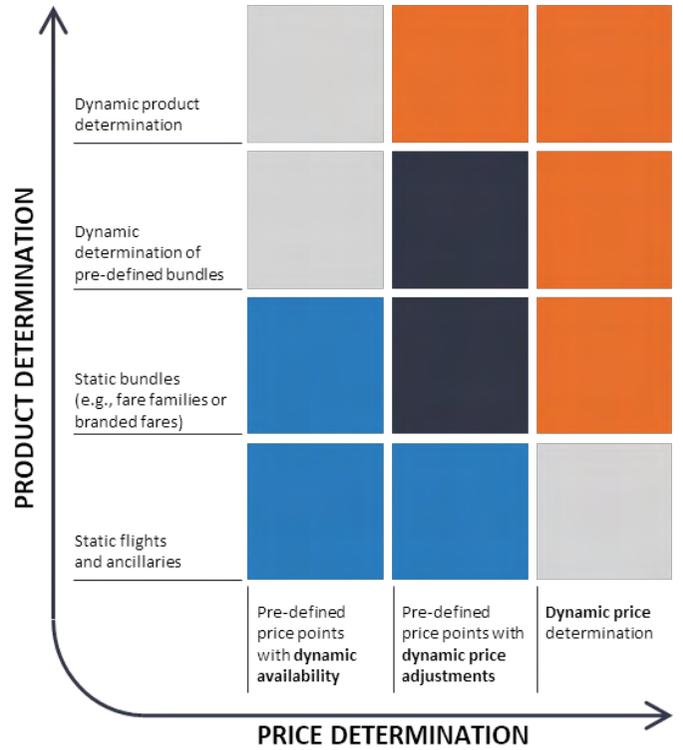
TiM's THOUGHTS

Since the inception of NDC and later ONE Order, the people involved from airlines, technology vendors, IATA and other stakeholder have been working tirelessly on creating a standard. This is not easy when industry consensus is required, and there are changes in technology, standardisation mindset and business processes. What has been achieved to date may, for many, seem to take far too long. At Travel in Motion, we are impatient as well and would love to see more progress. However, being involved in these projects on a day to day basis both with airlines and vendors, and supporting IATA in various aspects of this transformation, we see the complexity and challenges arising first hand and with many of the involved stakeholders. And this may come as no surprise, but the challenge each of the stakeholders, including the ones I have not explicitly listed such as Travel Agents, are completely different.

Measuring capability

To measure the capability of dynamic offer creation, IATA defined a matrix referred to as the “Dynamic Offer Capability Matrix”. This matrix serves multiple purposes. Airlines can plot a path from their current state to their aspired future state. Vendors can utilise the matrix to demonstrate their capability set and to communicate to the airlines where their target state is. Finally, the whole industry can use the matrix to align the language and understanding of what the use cases are and can define the value of each quadrant, helping to remove ambiguity in conversations between parties, mainly vendors and airlines.

The vertical axis of the matrix outlines the product creation maturity while the horizontal axis describes the pricing maturity. The colouring (blue, black, and orange) shows groupings of maturity levels, based on earlier assessment of where airlines are now or have as mid- to long-term targets.



“Today, at Amadeus we already do a lot of dynamic offers with our PSS. While Offer is quite evolved already, what we’re seeing is an evolution in travel retailing which requires a move to native Orders in order to overcome the limitations of current standards, and reach dynamic offers full expected value. Moving forward, new technologies and capabilities will be key to accelerate the transition to modern offers and orders and unlock further benefits for airlines, travellers and industry players as a whole.”



Amadeus

Assessing the vendor status

The aim of this paper is to assess the current state of the industry from the solution provider’s perspective, as well as to understand the development direction they are taking and the challenges the providers see. To analyse this, Travel in Motion conducted a survey with key vendors in the industry, complemented by interviews with representatives from several of the companies surveyed. These companies were instrumental in being able to assess the overall industry status, trends and challenges related to the offer and order transition. An overview of the participating vendors can be found on page 13.

The survey which was conducted in June and July 2022 and interviews which were held in August 2022, were targeted not at showing individual vendor capabilities but the overall status and trends, as well as highlighting the vendor’s challenges moving to a more dynamic world of offer creation. The main challenge is, of course, that there are only a limited number of vendors in our industry, and even less which are working specifically on aspects of dynamic offers and the resulting order creation. Thus, from a quantitative perspective, the data merely reflects the opinions and status of a subset of industry vendors.

The contents of the survey were focused on the following areas:

- Current capabilities
- Target capabilities
- Key challenges

The interviews were used to solidify the findings with qualitative data.

Current state of the vendor landscape

The vendor landscape for airline offer (and order) management solutions is limited. While it goes beyond the companies which took part in the research, it is also not significantly bigger. When we refer to “airline offer management solutions”, we are referring to solutions which can partially or fully ingest a request (for travel or travel services), determine who is asking (individual or by customer segment), how the person is asking (channel) and what they are asking for. Then, based on the data, decide which products and services are to be offered and at what the value proposition is. The solution may solve all the challenges internally or rely on other systems to supply parts of the solution. The orchestration of these various tasks and queries is all part of the offer management process. Some vendors may only offer pricing solutions, others may not offer airfare pricing, but the orchestration to a pricing solution and on the other hand, offer a highly capable product catalogue and intelligence for creating the offers. Many of the offer solutions will then trigger the order creation process either to an external system, or as a part of their overall product.

In reviewing the state of the industry, it was important not to focus on the offer creation capabilities in detail. What happens, and how, shall remain the secret sauce of each solution provider or of the airlines. The question is rather, how well the solutions for dynamic offers fit into the overall airline commercial landscape, and whether the capabilities of full dynamic offer creation can be exploited.

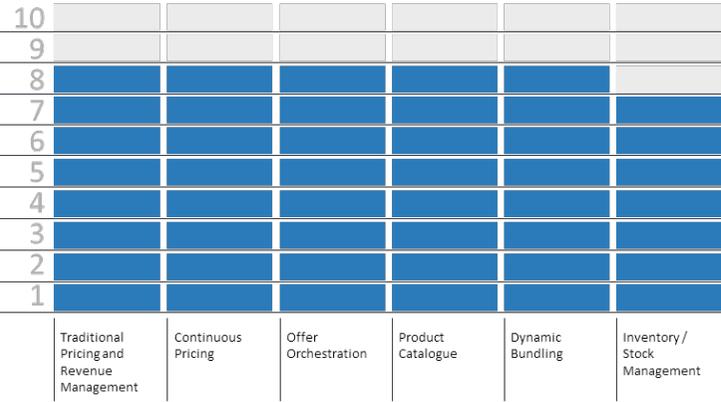
Most vendors involved clearly have a focus on both offer management and order creation. Post order creation, Service Delivery and Accounting, are typically not the remit of these companies. This is as expected, as the servicing ability typically comes from Ground Handlers, often with bespoke solutions. Accounting is also a somewhat specialised solution set provided by third parties. However, TiM also is of the opinion that this is a weakness of the overall transformation, as it forces the industry

to rely on further third parties to enhance their solutions and capabilities as downline systems.

A small number of vendors did indicate that expanding into the Service Delivery area was on their mid-term roadmap, however it seems that this will, for the time being, remain outside the scope of most vendors focusing on offer creation and offer management.

“Obviously generating Dynamic Offers without assisting airlines with the Order process is not enough so we will gradually focus on the Order fulfilment and servicing.”

Charles Ruesch, Head of Offer and Distribution, Flyr Labs



OFFER MANAGEMENT SUPPORT



ORDER MANAGEMENT SUPPORT

The graphs above indicate how many vendors support the various core functional areas within offer management and order management. It must be noted that:

- a) There is a very equal level of support within offer management, however the numbers do not well reflect the different types of vendors, whereby a number are focused on revenue management and pricing while others are focused on the wider retailing and ancillary products.
- b) Especially within Order Management, but also within Offer Management, TiM has found that the vendor’s capabilities differ considerably. A vendor indicating they offer Order Servicing does not show to which extent, and this may be somewhat misleading.
- c) Service Delivery and Order Accounting are not as widely supported, meaning that an “end-to-end” order management offering is only available with a small subset of vendors.

VENDOR SELF-ASSESSMENT

To understand the vendor capability related to the Dynamic Offer Capability Matrix, the vendors were asked to self-assess their current placement in the matrix versus where they see themselves in three years, by the end of 2025. The matrix is divided into twelve quadrants, labelled A1 to D3. The vertical axis stands for the product determination capabilities and is labelled alphabetically A to D with increasing capability. The horizontal axis is the price determination capability and is labelled numerically from 1 to 3 with increasing capability towards dynamically determined prices.

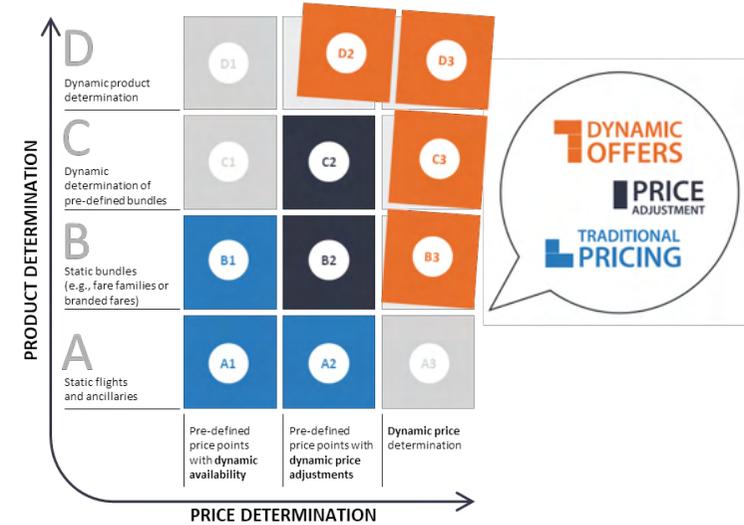
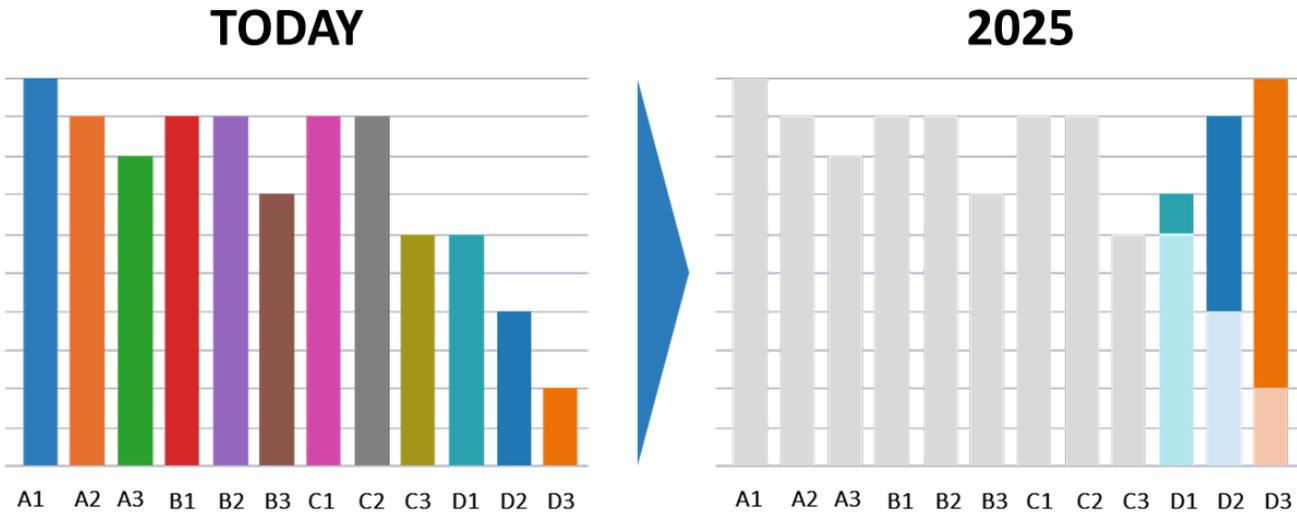
As is visible in the graphic bar chart below, the vendors feel confident and comfortable with the capabilities they provide to match the quadrants A1 to A3, B1 to B3 and C1. When we get to C2 and C3 where there are two dimensions of dynamicity in offer creation, there is less support. This is even more true once we get to D1 to D3. This is not surprising, and part of the industry evolution we are going through.

The view of the target state does, however, show clear intent to focus very strongly on enhancing the capabilities to move towards D2 and D3 – the ultimate levels of capability in dynamic offers, in the next three years.

Further, the surveys and interviews showed that 80% of the vendors do not have a reliance on ATPCO filed fares and could determine airfares without ATPCO today. Some 60% of vendors are already applying machine learning and artificial intelligence for price determination in real-time, while only a handful apply these advanced techniques for product determination. For most vendors with no AI/ML capabilities today, these advances are on the roadmap for 2023 and 2024.

Based on a final question on the status quo related to actual production rollout of the dynamic offer determination with airlines which go beyond a proof of concept or a beta release, it is clearly visible that that the actual capabilities used by the airlines are behind what the vendors have stated they could do. This is not surprising for several reasons:

- Primarily, there is still a lot of experimentation ongoing with the capabilities at the upper range of each scale. And, while dynamic or continuous pricing is no longer a mystery, the combination of dynamic pricing and product brings a set of complexity which has not yet been tested in the market.
- Second, there are a number of very practical reasons which range from countries' regulatory bodies requiring filing of fares and declaration of product prices to the challenges of fully servicing an offer which was dynamically created and fulfilling the corresponding product rules.
- And finally, there is still a challenge of aligning this retail-focused offer creation methodology with the underlying core PSS and DCS systems which rely on fragments of the past such as Reservation Booking Designators (RBDs), fare constructions, fare basis codes and many other data elements which have been used through the systems for half a century.



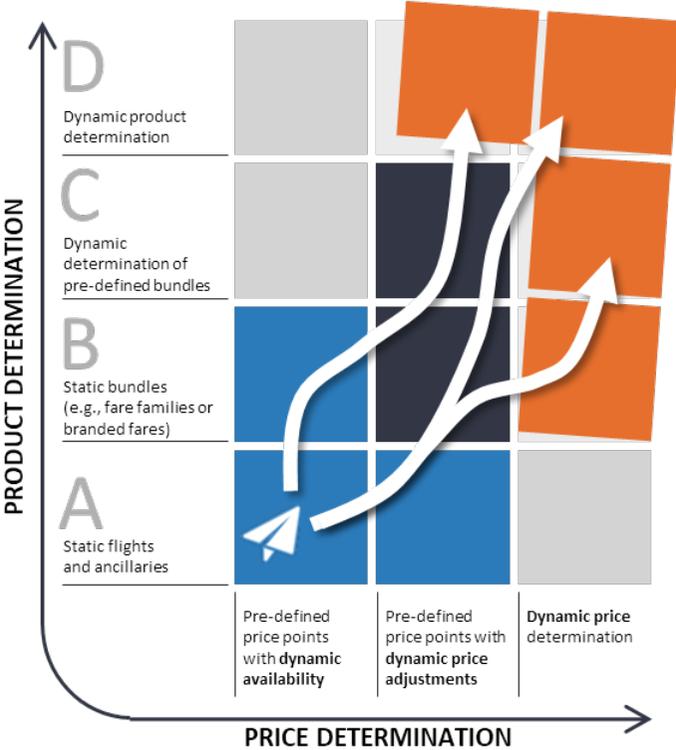
Industry Challenges

Moving to a world of dynamic offers poses many challenges. Of course, where there are challenges, there are opportunities. Airlines and vendors alike will weigh off the prize of the opportunity versus the cost and risks of the challenges.

To understand the level of challenge when moving upstream in the capability matrix, the challenges were looked at in two steps. First, the challenges to move from the “blue zone” to the “black zone” in the capability matrix—meaning from traditional pricing to utilizing what IATA refers to as “price adjustment methods”. Next, the challenges in moving from the “black zone”, the price adjustments, to the “orange zone” - fully dynamic offers.

“The airlines - together with the overall industry - need to build their internal business case to justify such a move which may take several steps with incremental delivery along the way. This is even more challenging in a time of disruption for our industry after 2 years of pandemic situation and overall operational chaos at airports we’re experiencing this year. All stakeholders need to be involved as early as possible in the journey, including the ones not yet in the picture, within and outside of the airlines.”

Survey participant (anonymous)

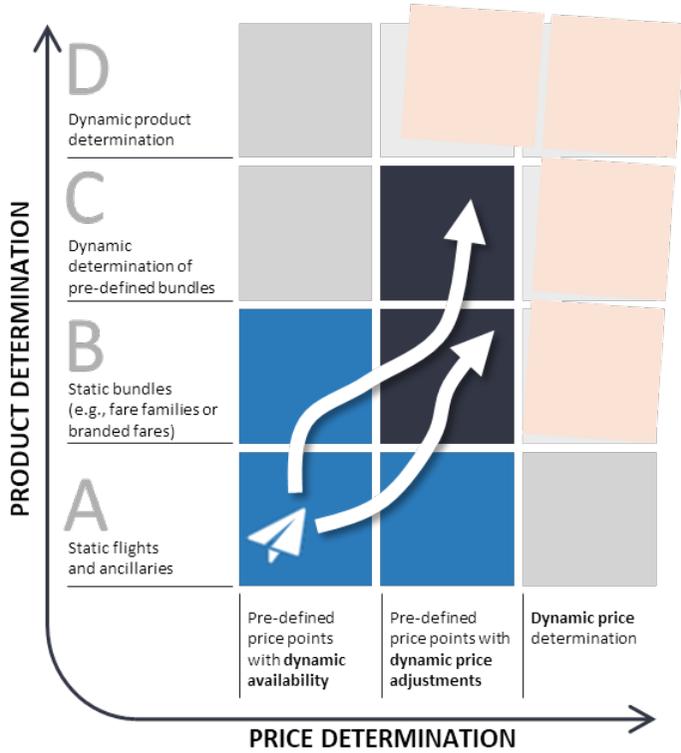


FROM TRADITIONAL PRICING TO DYNAMIC PRICE ADJUSTMENTS

When giving the vendors a list of core challenges and asking to have them ranked in order of the size of the challenge, four topics were identified as similarly difficult. These were the ability to re-shop, overall industry reliance on ATPCO, the investment at industry level, and the lack of order accounting capabilities. Almost of no relevance were the ONE Order implementation status and regulatory concerns, the latter only being seen as a major concern by a single vendor.

When discussing the topics with interviewees, it became apparent that the concerns about the ability to reshops relate to how prices may be discounted based on filed fares, and that dynamic adjustments of fares and dynamic changes to fare rules would hinder a high level of automation in this area, tossing airlines back to more manual processes when it comes to ticket changes. The dependency on ATPCO was discussed at length, and in the end, we would summarise this as not only the dependency on ATPCO which is the concern, but all the constraints which come with the methodology and data required with filed fares, the corresponding rules, and the resulting data

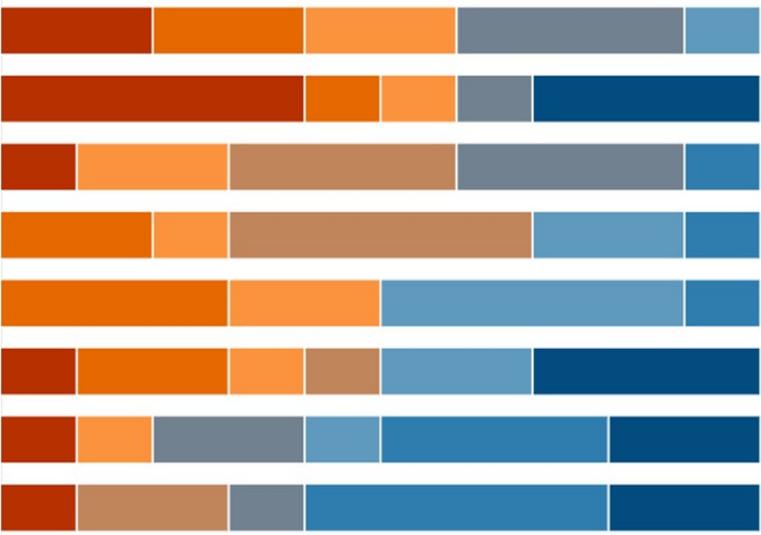
elements such as Reservation Booking Designators (RBDs), fare constructions, fare basis codes and similar. In fact, the confidence level of the vendors for the industry to move away from RBDs, tickets and filed fares is under 20%. The third point highlighted was the industry investment. This is a collective of investments from airlines, vendors, industry bodies and other suppliers. Post-Covid, the investment aspect is even more critical to analyse and justify as airlines are clearly investing their money where there is either an operational reason or a satisfactory return on investment. Thus, it will be up to the vendors to support airlines with business case justifications and clarifications to move the whole industry forward. The final highlighted challenge mentioned was the order accounting ability. With the variability of prices and product components in an offer, current revenue accounting and settlement solutions will need to be adapted or may no longer be suitable. This, in turn, drives additional investment, however, also provides an opportunity to take a further step towards ONE Order and Settlement with Orders.



Rank Options

- 1 Re-shopping
- 2 Reliance on ATPCO pricing
- 3 Industry investment (\$)
- 4 Order accounting capability
- 5 PSS orchestration / integration c...
- 6 Offer and order interline capabil...
- 7 ONE Order implementation stat...
- 8 Regulatory framework (governm...

First choice ■ ■ ■ ■ ■ ■ ■ Last choice



“As the industry moves towards dynamic offers, it is essential to support airlines’ business requirements while providing the right guidance and solutions to accompany them in their transition, at their own pace.”

FROM DYNAMIC PRICE ADJUSTMENTS TO DYNAMIC OFFERS

The second phase of the capability evolution moves towards a greater level of dynamicity as well as an expected reliance, to a considerable extent, on artificial intelligence and machine learning support for offer creation.

In this phase, there are still more challenges, and a more equal weight distribution between six factors. Only the PSS orchestration and alignment as well as the regulatory framework are of little concern.

Aside from the four factors already seen as a challenge in the first phase of a transition to dynamic offers, there is more concern in two areas – interline capabilities and the ONE Order implementation status of the industry. This comes as no surprise, as in this phase the vendors expect less reliance on the traditional business processes related to interline, ticketing and settlement, and expect that the move to full NDC and ONE Order will ease the move to Dynamic Offers as well.

The vendors are convinced that they are not the bottleneck, and that their solutions will support the industry growing forward.

The vast majority of the vendors feel their solutions have no reliance on ATPCO fares, current pricing methodologies, tickets, and the underlying PSS. However, they do see a considerable dependence and challenge in these areas to move forward for the industry.

When asking specifically for challenges which, in the vendor’s opinion the airlines have in the transition to dynamic offers and the related offer to order transition, a wide array of other challenges were raised.

- Justifying the investment over existing operational headaches in the business
- PSS do not want to communicate/integrate with Dynamic Availability engines
- Refinement of end-to-end standards (ONE Order, etc.), and the implementation thereof
- NDC adoption still to take off in some part of the world
- Organisational acceptance: organisational changes needed

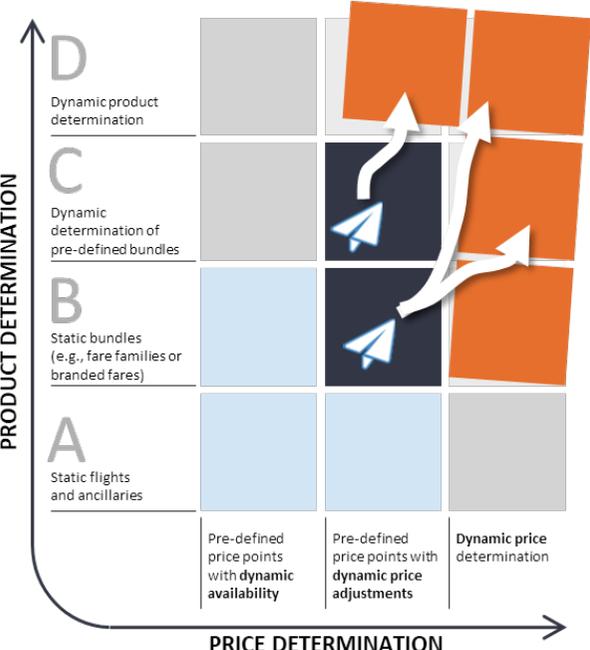
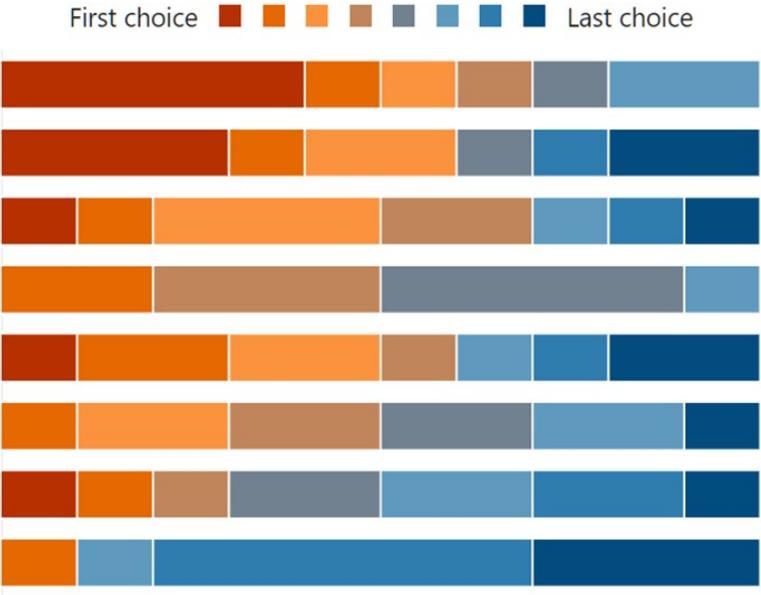
- (Lack of a) transformational mindset and the willingness to change
- Time taken of the transformation project.
- Willingness of all ecosystem partners to accompany the offer order journey.

“One benefit of AI/ML is that the increased complexity of dynamic offers can be managed by similar size teams, where if we didn't use AI/ML with the added complexity, we would need much bigger RM teams.”

Niels Colémont, Head of New Optimization Programs, Flyr Labs

Rank Options

- 1 Industry investment (\$)
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TiM's call to action—one step at a time!

Considering the outlined challenges and the slow-moving industry we are in, the transition to the more complex dynamic offers, paired with the offer to order transition, will be a challenge we must address as an industry, with as many stakeholders involved as possible. A key part of addressing the challenge is realising that to make the dynamic offers work, we must initiate the offer to order transition. This cannot and should not be done as a big bang. At the same time, it is like a road – if it doesn't start, there is no journey and no end.

As avid industry observers and an “involved” industry consultancy, we discuss many of these topics every single day. These discussions usually take place with a lot of enthusiasm and many ideas and lead to formulating huge ambitions. And often, this results in a somewhat “down-to-earth” ending, with the realisation that the project is just too big to conquer in one big block.

That is why we believe that a solid way forward is to plot a path through the matrix, step-by-step, realising small benefits and taking limited and controlled risks. We also believe that it is the combination of ideas from the various affected organisations within an airline which, jointly with the vendors, will help find the path easiest to tread while at the same time having the greatest effect.

Each quadrant in the matrix will pose new and different challenges, but also open new doors and opportunities. To add to the complexity, various distribution channels will have to be addressed differently for each quadrant, and the abilities and possibilities may differ. There will be constraints to some of this differentiation however based on, for example, distribution contracts, underlying solutions (e.g., PSS or Revenue Accounting). Once again, with baby steps, these will be easier to address.

However, as mentioned, all of this will typically result in the larger offer to order transition for an airline. We urge airlines to ensure that you start by looking at the end-to-end business

processes. There is no value in having dynamically priced products which have to be manually serviced, or which accounting will struggle to understand. At TiM, we would recommend to follow a multi-step process as follows:

- Analyse the need and the potential benefits
- Identify the affected business units and departments
- Engage in a business process re-engineering exercise to understand the implications and all affected parties and departments
- Conduct design workshops to address specific use cases, identifying the ones which provide most business value or have the ability to address risks
- Create an overall plan for the offer and order transition, with considerable detail in the short term, some planning for the mid-term and a vision for the longer term
- Ensure all business stakeholders and the tech teams are involved in each step
- Scour the market to understand what is available from the multitude of vendors.

Done that? Great, now you can start an execution project. Sound complex and overloaded? It will pay off.

We have all seen large scale projects fail, so the final recommendation from TiM is to break this programme into bite-sized pieces. Each digestible, and each providing added value to the business, to the technology stack or to the transformation programme.

Bon Voyage!

“Change doesn't start with the vendors alone. We need the airlines to move, the standards and we need to work amongst airlines and vendors to tackle this together, and not be scared to address the complex topics.”





Participating Vendors

TiM would like to thank the vendors which took part in the research for this paper. Without their collaboration, this would not have been possible. It is always additional time and effort the vendors put into activities like this, and thus greatly appreciated.

The supporting vendors are:

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Travel in Motion GmbH is a consulting firm offering advisory services to the travel industry. With expertise and a focus on PSS, digital retail (or offer and order) transformation and consumer retailing, Travel in Motion GmbH can help create, outline and articulate strategies for distribution, ecommerce and customer experience, and support the execution thereof.

With many years of experience in the travel industry, we have been working for and with airlines, GDSs and IT vendors. We bring a wealth of knowledge and have previously held roles in software development, project management, product management, airline system migrations, solution architecture, business process modelling, business consulting and business development.

We understand the vendor perspective and the airline needs, and have played an important role in the past bridging the gap between the two.

We strive to deliver business value to key stakeholders by aligning business and IT concepts, strategies and solutions.

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