

---

**From:** Tim Reiz  
**Sent:** Wednesday, June 1, 2016 9:18 PM  
**To:** Jim Davidson; Theo Kruijssen  
**Subject:** PSS White Paper  
**Attachments:** FLX Delta PSS JV White Paper.docx

Attached a first draft. Please have a look before I send it to the team for review.

Theo, we still need to fill in the market opportunity numbers.

Thanks,  
Tim



# Farelogix/Delta Airlines PSS JV

White Paper

May, 2016

Author: Tim Perez

Proprietary & Confidential



Copyright Farelogix 2016



farelogix.com



# TABLE OF CONTENTS

I.	BACKGROUND.....	1
II.	BUSINESS CASE.....	1
III.	PROPOSED SOLUTION .....	2
1.	INTRODUCTION .....	2
2.	RESERVATIONS.....	4
3.	NDC OFFER AND ORDER MANAGEMENT.....	4
4.	NDC DISTRIBUTION.....	4
5.	LEGACY DISTRIBUTION AND COMMUNICATIONS.....	5
6.	SHOPPING AND PRICING.....	5
7.	MERCHANDISING AND DYNAMIC BUNDLING.....	5
8.	E-TICKETING (ETKT AND EMD).....	5
9.	SCHEDULES AND AVAILABILITY.....	6
10.	SEATING.....	6
11.	INVENTORY .....	6
12.	DEPARTURE CONTROL (CHECK-IN, BOARDING).....	6
13.	LOYALTY PROGRAMS.....	6
14.	CRM.....	7
15.	AIRLINE CALL-CENTER APPLICATION FOR SERVICING .....	7
16.	AIRLINE.COM WHITE LABEL WEB AND MOBILE APPLICATION .....	7
17.	WEB SITE CONTENT MANAGEMENT .....	7
18.	IRREGULAR OPERATIONS / REBOOKING.....	7
19.	REVENUE MANAGEMENT.....	7
20.	REVENUE ACCOUNTING .....	8
21.	PARTNER MANAGEMENT .....	8
22.	OTHER REQUIREMENTS.....	8
IV.	FUTURE DIRECTION .....	8
V.	CONCLUSION .....	9

## I. BACKGROUND

Farelogix is a technology provider with innovative solutions for airline commerce and distribution. Farelogix believes it has developed many software components that would be an integral part of a modern Airline Computer Reservations System ("CRS") or also referred to as Passenger Services System ("PSS"), and is evaluating the development and marketing of such a product.

Delta Airlines has acquired the intellectual property of Deltamatic, the in-house reservations system, which is also made available to joint venture and equity partners as the rebranded Air4 system. The system comprises multiple passenger services technologies, from reservations to ticketing and departure control, as well as enhanced web, kiosk and mobile capabilities, featuring customer-centric options such as automated bag drop and disruption management.

This document discusses the possibility of a Joint Venture ("JV") between Delta Airlines and Farelogix to create a comprehensive independent PSS offering, embracing new and upcoming industry standards such as IATA NDC and IATA One Order.

## II. BUSINESS CASE

Currently the competitive landscape is limited and the market is dominated by two providers, Amadeus and Sabre, with steady growing market share. Amadeus and Sabre are also the two largest GDS providers, who leverage their control over the PSS to protect or compensate for decreasing GDS revenue:

- Excessive scan and polling charges for 3<sup>rd</sup> parties accessing the system
- Claim to ownership of customer and booking data
- Blocking of new sales and distribution initiatives commercially and technically
- Community model with enhancement priorities driven by largest customers

Navitaire, the main Low Cost Carrier PSS provider was acquired by Amadeus, and other PSS providers such as HP, SITA and UNISYS have not played a significant role in the market recently.

An independent solution would allow airlines to take back control and ownership of their inventory, distribution and technology, and integrate with emerging solutions, including but not limited to current and future Farelogix products. The current PSS technology is outdated and the incumbents block integration with any new technology feature where the provider is considered a threat.

There are two major challenges to this project:

1. Airlines are locked into long term agreements for their PSS, so the market opportunity is very small.

2. The process of a migration to a new system is usually costly for an airline, with some significant operational risks.

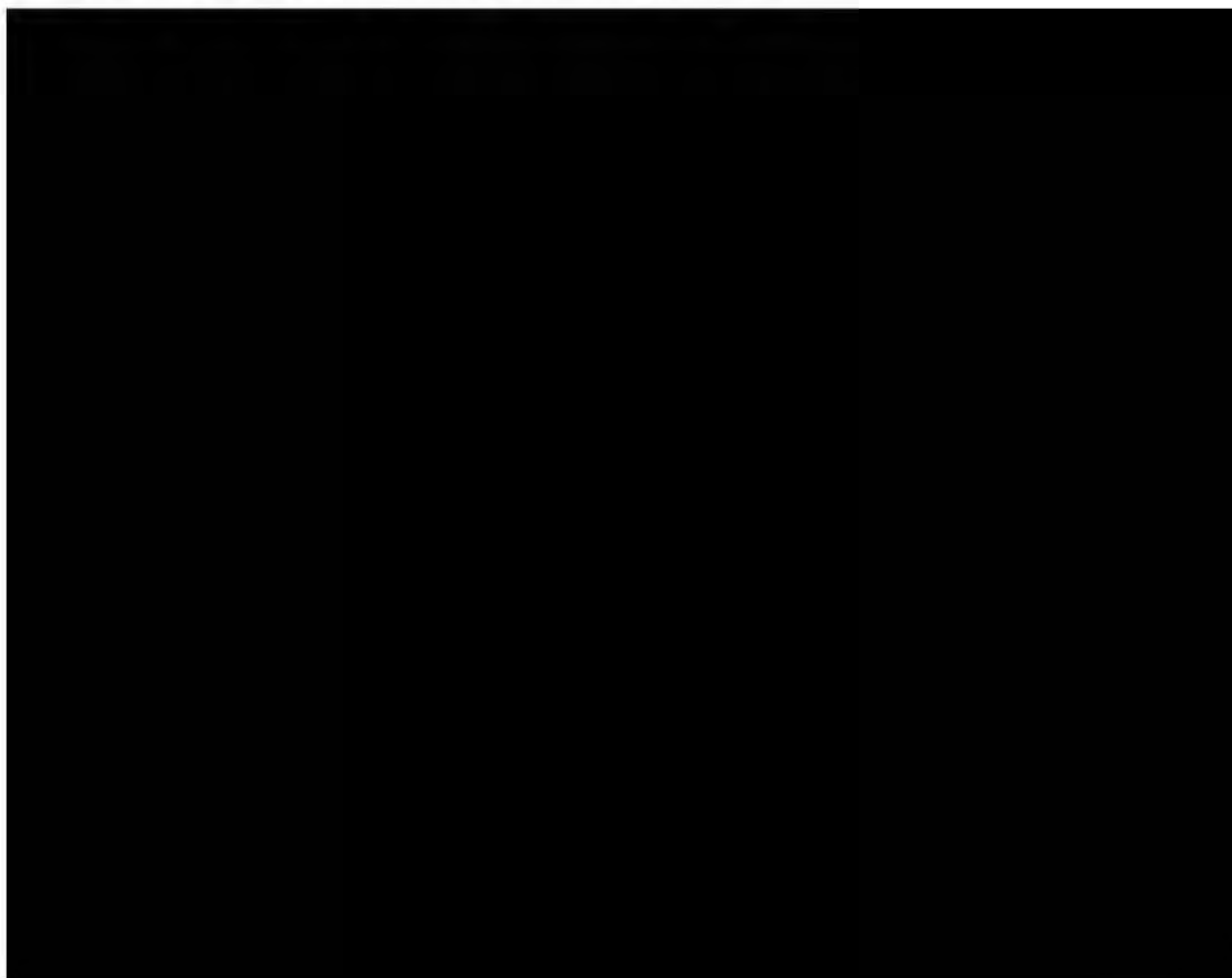
The following tables outline the current market size.

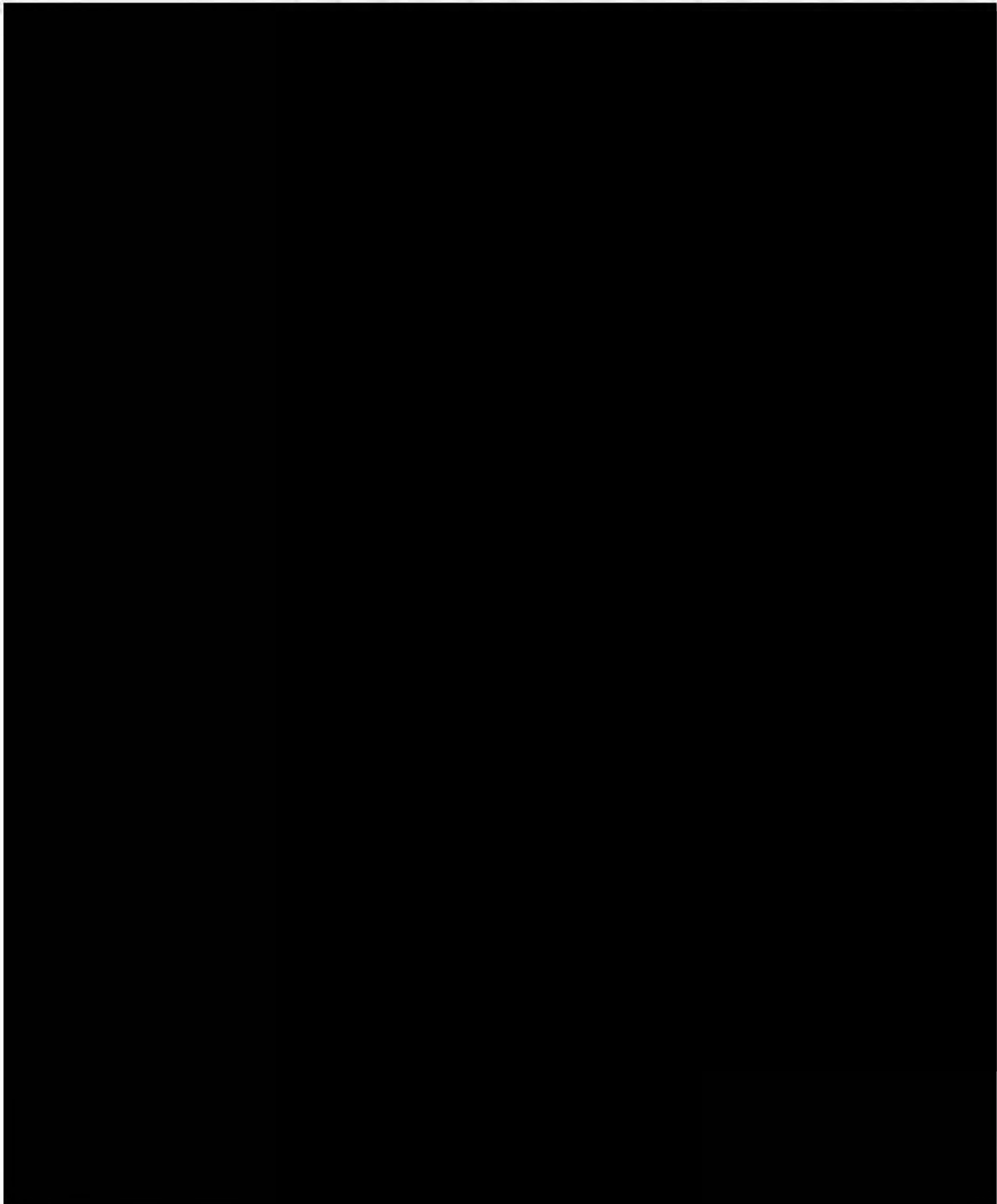
TODO: TABLE WITH COMMON PB-CHARGES FOR PSS AND REVENUE OPPORTUNITY

### **III. PROPOSED SOLUTION**

#### **1. INTRODUCTION**

In Farelogix' view a PSS offering consists of the following components.







### 3. NDC OFFER AND ORDER MANAGEMENT

NDC (New Distribution Capability) is a new data format standard governed by IATA that will enable the travel industry to transform the way air products are retailed to corporations, leisure and business travelers, by addressing the industry's current distribution limitations: product differentiation and time-to-market, access to full and rich air content and finally, transparent shopping experience. In the NDC world the selected Offer from a shopping result is directly converted into an Order.

ONE Order is the IATA concept of a single Customer Order record, holding all data elements obtained and required for order fulfilment across the air travel cycle - such as customer data, order items, payment and billing information, fulfilment data and status.

Farelogix is currently enhancing the [REDACTED] product to fully support NDC Offer and Order management, with a seamless integration of legacy PNRs.

### 4. NDC DISTRIBUTION

The Farelogix FLX-DM (Distribution Manager) manages multiple sources and interline itineraries. Both shopping aggregation and multi-source booking management are supported for the entire functionality around creating and servicing a reservation. Currently Farelogix is certified by IATA on NDC level 2. Once development for Order Management is completed, Farelogix software will be fully compliant.

## **5. LEGACY DISTRIBUTION AND COMMUNICATIONS**

A PSS solution will need to be integrated with current distribution channels and partner carriers using legacy communications, data protocols and work flows. These are typically defined by IATA PADIS Type-A and AIRIMP Type-B standards. The Farelogix software is already integrated with every major host PSS and supports most of these standards.

## **6. SHOPPING AND PRICING**

FLX Shop & Price is a state-of-the-art airline pricing engine for comprehensive handling of pricing and fareing requirements, including published fares from ATPCO, private fares, and merchandising/ancillary offers generated directly by the airline. The solution is highly scalable and designed to support high volume searches in support of new NDC based concepts. Also currently in development is a patent pending NDC compliant offer management component with dynamic and personalized price guarantee.

## **7. MERCHANDISING AND DYNAMIC BUNDLING**

FLX Merchandise a highly flexible and efficient merchandising solution from Farelogix that puts airlines squarely in control of how their product is differentiated and branded in terms of ancillary services and flight merchandising. This solution supports retailing and personalization across multiple sales channels, including airline.com, check-in kiosks, call centers, and travel agencies (direct or via GDS). FLX Merchandise takes personalization and merchandising to new heights. The system's limitless choices of products, attributes, and dynamic business rules enable airlines to design and communicate targeted offers to customers with unprecedented flexibility and speed to market. FLX-M offers can be dynamically bundled with fares from FLX Shop & price. Also included with FLX-M is a sophisticated baggage allowance and fee calculator, as well as an integrated inventory system for inventory controlled services.

## **8. E-TICKETING (ETKT AND EMD)**

Even though IATA's long term ONE ORDER vision is a ticketless purchase process, E-Ticketing support will still be relevant and required for years to come. FLX Docs is a Farelogix solution providing airlines full flexibility to ticket, settle, and report each transaction that today handles e-ticketing and ticketless carriers and is certified in both ARC and BSP. Farelogix, which supports both EMD-A and EMD-S documents, is an industry leader with BSP certification for EMDs in over 100 markets. In addition, the system can handle all standard reporting methods, including ARC SPRF, BSP RET, TCH, HOT, and CAT. The solution is unique in its cross-channel flexibility, giving the airline control of its method for ticketing, settlement and reporting for each channel.

## 9. SCHEDULES AND AVAILABILITY

NDC distribution will require airlines to handle large volumes of shopping requests, which are steadily increasing due to NDC Affinity shopping, Calendar shopping and mobile shopping for re-booking. Farelogix has just complemented the development of a new highly scalable schedule builder that meets these requirements. Airline availability for these schedules is designed as plug-in driver and are currently being built out. The Farelogix schedule builder is tightly integrated with FLX Shop & Price.

## 10. SEATING

The seat management system allows the airline to configure seating charts and occupation for different aircraft types and configuration, and manage the allocation and seating by flight.



## 11. INVENTORY

The system contains all the airline's flights and the available seats. The main function of the inventory system is to define and track how many seats are available on a particular flight by opening or closing an individual booking class in accordance with rules defined by the airline.



## 12. DEPARTURE CONTROL (CHECK-IN, BOARDING)

The departure control system is the system used by airlines and airports to check-in a passenger. The DCS is connected to the reservation system enabling it to check who has a valid reservation on a flight. The DCS is used to enter information required by customs or border security agencies and to issue the boarding document. In addition, the DCS may also be used to dispatch baggage, cargo and to optimize aircraft weight and balance.



## 13. LOYALTY PROGRAMS

The FLX-M product contains advanced functionality for Redemption and Award calculation across multiple loyalty programs, related to both fares and ancillaries. Farelogix has developed the entire back end for Air Canada 'Rewards for Business' program. Most of the components can be used to build out a Frequent Flyer program system.


#### **14. CRM**



#### **15. AIRLINE CALL-CENTER APPLICATION FOR SERVICING**

The Airline customer service center will require a graphical user interface to service bookings. Today, the Farelogix SPRK web application covers the entire functionality for shopping, booking, ticketing, exchanges and refunds, including support for group bookings and traveler split.

#### **16. AIRLINE.COM WHITE LABEL WEB AND MOBILE APPLICATION**

Farelogix is currently partnering with  for building white label airline applications that are integrated with Farelogix systems.

#### **17. WEB SITE CONTENT MANAGEMENT**



#### **18. IRREGULAR OPERATIONS / REBOOKING**

Flight delays and cancellation may require the customer to be rebooked or accommodated. Such a



#### **19. REVENUE MANAGEMENT**



[REDACTED]

Airline offers are becoming more customer centric and revenues driven by bundles and ancillaries add significantly to the bottom line. This requires new methods of demand forecasting based using Big Data and application of dynamic pricing, and the Farelogix Shopping and Merchandising products provide a solid foundation.

## 20. REVENUE ACCOUNTING

[REDACTED] but the system should easily integrate with 3<sup>rd</sup> party software specialized on revenue accounting and finance. The farelogix Shop & Price and FLX-M products provide fully itemized details including taxes and fees which can be used for real-time revenue tracking. FLX-M also provides an airline Pro-Rate calculation feature that follows IATA standards.

## 21. PARTNER MANAGEMENT

All of Farelogix existing software has been designed to support Interline and Codeshare relationships, which can be managed and configured using sophisticated tools and rules processors. Integration with partner loyalty programs and alliance compliance will require some new development. NDC participating/offering airline concepts will be covered through current NDC related Farelogix development.

## 22. OTHER REQUIREMENTS

[REDACTED]

The system should facilitate a migration from legacy systems.

[REDACTED]

[REDACTED]

## V. CONCLUSION

A PSS JV by Delta Airlines and Farelogix offers benefits to both partners and the airline community in general. Delta Airlines will benefit from Farelogix flexibility and intellectual property, while Farelogix benefits from Delta Airlines experience and resources.