

## Case Study:

# NTT DATA and JAL ONLINE Federate Business Travel Expense Reporting

### Company

NTT DATA is one of Japan's preeminent systems integration companies with a reputation for innovation and technology excellence. NTT DATA traces its corporate roots to 1967 when it was the data communications bureau within Nippon Telegraph and Telephone Public Corporation (present day NTT).

### Application

B2B

### Challenge

With more than 7,500 employees, NTT DATA was looking for a way to improve the efficiency of their travel expense reporting lifecycle from report submission to reimbursement. They sought to:

- Access accurate and detailed statistics of expenses in order to better understand and lower costs
- Better manage employees' itineraries
- Improve employee service through online reservation and ticketing
- Provide a means of cashless reimbursement
- Reduce costs through e-ticketing and discount offers

“ In order to seamlessly integrate a valuable commercial service like JAL ONLINE with corporate internal business processes, we noticed it was critical to federate different identities on two different systems - the service provider and the user company. Liberty Alliance's specification was the best working solution for this challenge.”

**Mr. Naoya Saito**

Project Manager of NTT DATA Corporation

### Solution

NTT DATA decided to adopt JAL ONLINE, a B2B services solution provided by Japan Airlines, the largest airline in Japan. JAL ONLINE provides ticketing, scheduling, and other services to domestic businesses. JAL ONLINE was introduced in 1999 and is currently has more than 12,500 companies as their customers.

At the time, JAL ONLINE was looking at application service providers as a way to better serve customers. NTT DATA, on their end, was working to improve the efficiency of the travel expense reporting lifecycle. Because both companies have different identity mechanisms such as mileage service account numbers (JAL) and employee

identification numbers (NTT DATA), they agreed that federated identity was an ideal solution to meet their individual needs and manage identities between organizations.

Additionally, the new solution easily scales for other organizations seeking federation. This is one of the key reasons the Liberty specification was adopted by JAL ONLINE as standard technology.

## The Issues Around Federating Two Different Systems

Today, NTT DATA seamlessly federates its corporate authentication systems with JAL ONLINE.

### Key challenges included:

- Establishing that specific applications “spoke” only to other specific applications. For example, NTT DATA ran business travel expense reporting on their internal corporate system and they wanted this particular application and nothing else to “talk” with JAL ONLINE.
- Insuring that no changes could be made on NTT DATA’s corporate authentication system.
- Creating a way for NTT DATA’s business travel expense reporting application to work easily with both NTT DATA’s and JAL ONLINE’s individual user authentication systems.
- Establishing security to federate both systems.

### Definition of Terms

**Identity** (n) 1. The most basic element in a high value relationship. 2. The individual characteristics by which a person, business, business partner, government agency or other entity is recognized or known.

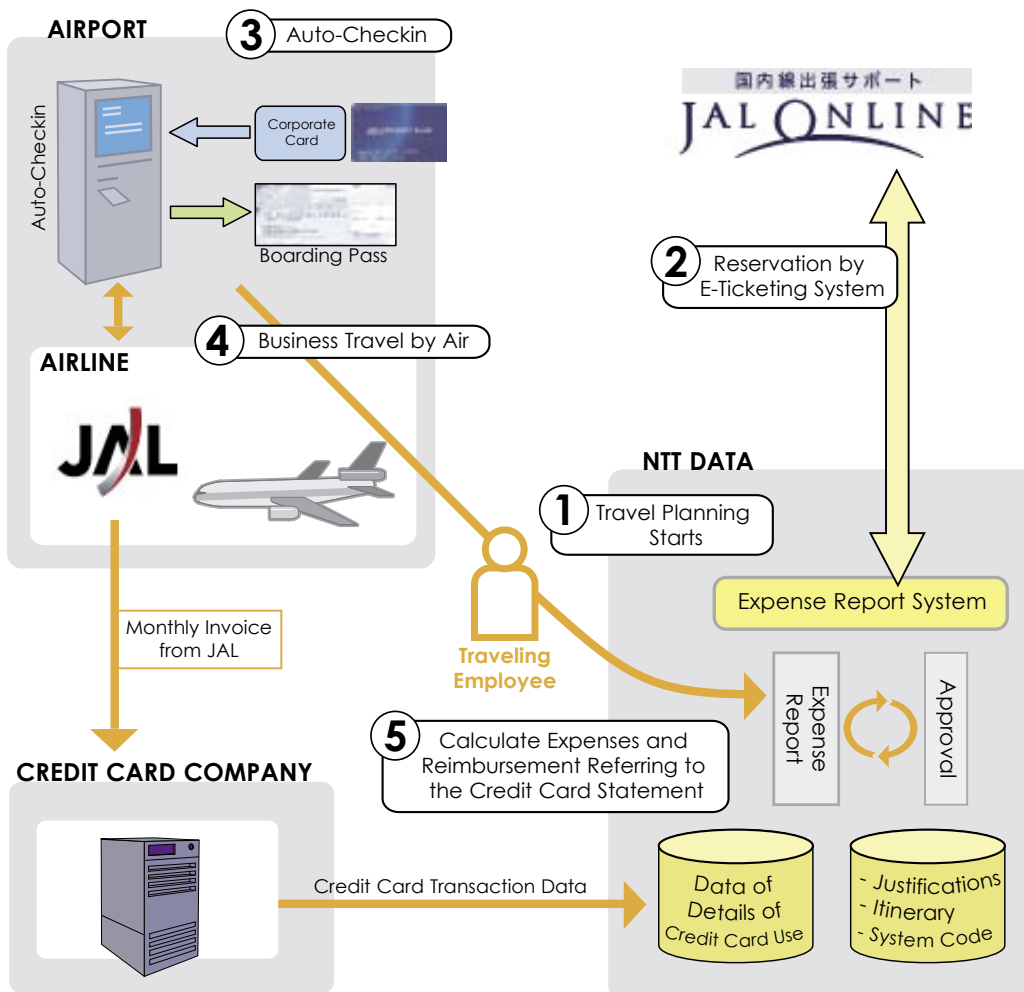
**Single sign-on** (n) 1. having the capability of accessing an online system once and having that authentication honored by other system entities, often service providers.

**Identity Provider** (IdP) (n) 1. a service that authenticates identity, often a trusted party such as a bank, mobile operator or an Internet Service Provider (ISP).

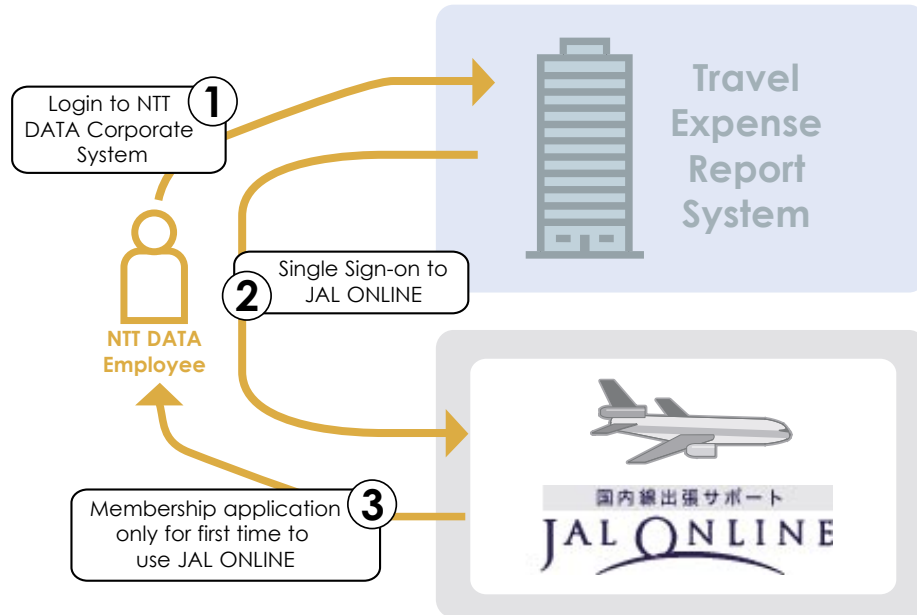
**Federation** (n) 1. an association comprising of any number of service providers or organizations 2. a model based upon trust in which user identities and security are individually managed and distributed by the service providers or member organizations. 3. where the individual organization is responsible for vouching for the identity of its own users and the users are able to transparently interact with other trusted partners based on this first authentication 4. resembles the credit card model in that vendors accept an individual’s ability to pay and then that ability is authenticated/verified through a single location.

**Circle of Trust** (n) 1. a trusted group of identity and service providers who share linked identities and have pertinent agreements in place regarding how to do business and interact with identity providers 2. where an individual or a business inputs a password once and credentials are shared among the circle of trust’s members 3. A step strongly linked to federation, where multiple entities are involved, and there are business, policy and technical relationships in place.

Diagram 1. How it Works



**Diagram 2. JAL ONLINE Seamless Login**



## Single Sign-on in Action

The Liberty Alliance's ID FF 1.1 was adopted to enable single sign-on and seamless integration.

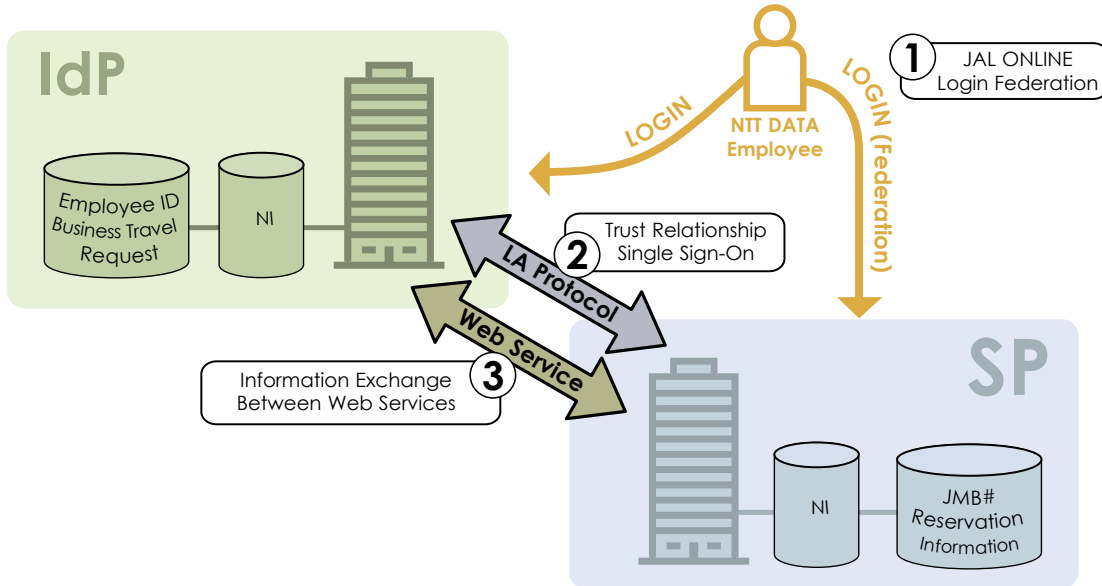
Today, when an NTT DATA employee wants to log into JAL ONLINE for the first time, that employee is asked to apply for the JAL ONLINE membership as part of NTT DATA for identity federation. After the application is accepted and authenticated on NTT DATA's end, that employee can seamlessly log into JAL ONLINE. In this environment, PKI and use of digital certificates provides additional security for both organizations.

NTT DATA's corporate system can process the transactions via Web services without knowing the frequent travel numbers assigned to each employee, while JAL ONLINE can work with NTT DATA's corporate system without knowing each employee's formal NTT DATA ID.

Additionally, real-time reservation information reference and business travel plan itineraries are available via JAL ONLINE. This service fetches reservation information on JAL ONLINE and sends it to the NTT DATA travel expense report system via a SOAP to link within the respective business travel request.

The Web service infrastructure behind the federation is not Liberty's ID-WSF specification. When JAL ONLINE started implementing federation, Liberty's ID-WSF was still in the works. But ID-FF, the federation specifications, are designed to work with all Web services systems, one of the benefits of open standards. So JAL ONLINE and NTT DATA went ahead with the Web services portion of the project.

**Diagram 3. How ID-FF v1.1 and Web Federation Work**



### The Benefits to NTT DATA Employees

For employees at NTT DATA, the benefits associated with establishing a federated identity solution are considerable. Travel plans and reservations can be made 24/7 from cellular phones, PDAs, computers and other devices--- and frequent flier miles and other bonus points are added directly to the employee's personal account. On the ground, e-ticketing and automatic check in have eliminated long lines and streamlined the boarding process. Credit statements now include all flight information making it easier create expense reports.

In addition, NTT DATA is only billed when an employee actually "boards" a flight. This means that an NTT DATA employee can reserve seats for a couple of flights (4PM, 6PM), board the one which is most convenient and then only be billed for that particular flight.

### The Benefits to NTT DATA

NTT DATA can now use JAL ONLINE's exclusive discount plan to reduce total travel cost. They can apply monthly reimbursements to employees for flights actually boarded. Additionally, by using JAL ONLINE, fees are saved because there's no extra charge for reservation changes or last minute cancellations.

#### **In this new environment, additional cost savings have been realized by improved operations:**

- Day-to-day management of mapping employee IDs to their mileage number has been eliminated
- No special arrangements are required when each system—either NTT DATA's corporate system or JAL ONLINE--performs maintenance or makes a password change.
- Increased system availability

#### **Security is also improved:**

- PKI secures login
- Web services on NTT DATA's corporate system and JAL ONLINE are federating without accessing confidential ID information

#### **Scalability is supported:**

- Possible feature enhancements include Liberty ID-WSF

### About the Liberty Alliance

The Liberty Alliance ([www.projectliberty.org](http://www.projectliberty.org)) is an alliance of more than 150 companies, non-profit and government organizations from around the globe. The consortium is committed to developing an open standard for federated network identity that supports all current and emerging network devices. Federated identity offers businesses, governments, employees and consumers a more convenient and secure way to control identity information in today's digital economy, and is a key component in driving the use of e-commerce, personalized data services, as well as web-based services. Membership is open to all commercial and non-commercial organizations.