

出國報告(出國類別：考察)

參訪日本關西機場與出席加氫站開幕典禮

## 出國報告書

服務機關：桃園國際機場股份有限公司

姓名職稱：費鴻鈞 總經理

鄭鴻龍 副理

派赴國家：日本

出國期間：民國105年1月28日至1月29日

## 公務出國報告提要

出國目的：參訪日本關西機場與加氫站開幕典禮出國報告書

頁數：

主辦機關：加氫站開幕典禮 The opening Ceremony of Hydrogen Gas Station in Kansai International Airport、日本關西機場

出國人員姓名：費鴻鈞、鄭鴻龍

服務機關：桃園國際機場股份有限公司

職稱：總經理、副理

出國類別：5.考察(參加國際會議)

出國期間：民國105年 1月 28日至 1月 29日

分類號/目：

關鍵詞：日本關西機場、加氫站、機場

內容摘要：

日本關西國際機場(Kansai International Airport)將於 105 年 1 月 29 日舉辦加氫站開幕典禮，並邀請本公司費總經理鴻鈞擔任開幕嘉賓。為促進桃園機場公司國際能見度，積極參與國際間機場相關會議及活動係為趨勢所引，而關西機場此次針對替代能源-氫氣發電站做一示範開幕，實可為本公司參考依據。

桃園機場公司現正積極推動之第三航站區建設計畫，以提升機場各項服務水準，創造更優質的機場服務與旅客使用經驗，並將以 Smart, Green, Culture 為設計主軸的 Mega-Terminal 更將結合第一、第二航廈一同升級，進一步發展成為集觀光、購物、人文、藝術及科技為一體永續經營的智慧機場，打造旅客全新的旅行經驗，並成為全體國人的驕傲，強化桃園機場的國際競爭優勢，達成機場開發及環境保護之永續發展為目標。

關西國際機場公司為日本國內首個配備商用給燃料電池車 (FCV) 補充氫燃料的加氫站之機場，其經驗值得作為桃園機場公司未來發展之借鏡。

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## 壹、 目的

日本關西國際機場(Kansai International Airport)將於 105 年 1 月 29 日舉辦加氫站開幕典禮，並邀請本公司費總經理鴻鈞擔任開幕嘉賓。為促進桃園機場公司國際能見度，積極參與國際間機場相關會議及活動係為趨勢所引，而關西機場此次針對替代能源-氫氣發電站做一示範開幕，為日本國內首個配備商用給燃料電池車 (FCV) 補充氫燃料的加氫站之機場。

依「臺灣桃園國際機場園區實施計畫」其近期目標除提升桃園國際機場之各項服務水準外，首要發展項目為第三航站區之興建計畫，並以宏觀且具前瞻性之思維，打造符合世界級水準之旅客航廈，提供優質之機場服務與使用經驗。為創造更優質的機場服務與旅客使用經驗，機場公司現正積極推動之第三航站區建設計畫，以 Smart, Green, Culture 為設計主軸的 Mega-Terminal 更將結合第一、第二航廈一同升級，進一步發展成為集觀光、購物、人文、藝術及科技為一體永續經營的智慧機場，打造旅客全新的旅行經驗，並成為全體國人的驕傲，強化桃園機場的國際競爭優勢，達成機場開發及環境保護之永續發展為目標。

2015 英國評級機構 Skytrax 調查結果，關西機場因員工細心、有效率及做事認真的突出表現，加上該機場過去廿一年營運以來，從未失過一件行李的佳績，獲選為全球十大運送行李最妥當機場榜首。桃園國際機場自行政機關改制為公司型態後，為因應亞太地區經濟及航空客貨運量之快速成長趨勢，正積極提升之各項服務水準，關西國際機場其經驗值得作為本公司未來發展之借鏡。



## 貳、 行程說明

### 一、 行程規劃（活動議程表）

#### （一）1/28

上午 08:10 搭乘中華航空 CI 156 班機前往日本關西機場

下午 參訪日本關西機場旅客服務設施

#### （二）1/29

上午 09:00 參加日本關西機場加氫站開幕典禮

下午 12:50 搭乘中華航空 CI 157 返台

## 參、 參訪過程

### 一、 關西國際機場簡介

(一)關西國際機場是日本第二大國際機場，也是日本第一個 24 小時營運的機場，更是全世界第一座採民營方式營運的國際機場，距離大阪市約 38 公里，距離大阪市中心只需 1 小時的車程。機場於 1987 年動工興建，於 1994 年 9 月 4 日完工啟用。機場的營運單位為新關西國際機場株式會社。

(二)關西國際機場簡介請參閱附件一。

### 二、 關西國際機場航廈參訪，可供桃園機場參考：



➤入境：旅客護照檢查等待區，明顯大型標語

因應全球反恐，機場安檢嚴格

**Strict Inspection being carried out for the prevention of terrorism**

---

入境旅客證照查驗等待區，設置明顯大型標語



設置旅客安檢等待區



機場工作人員協助旅客進入安檢動線





機場安檢動線設置簡易綠牆，舒緩旅客等待安檢緊張情緒；另植栽下為垃圾桶空間，方便旅客

於安檢前，丟棄禁帶登機物品



機場設置大眾運輸看板，方便讓旅客購票搭乘





機場航廈間接駁巴士時刻表簡單易懂，方便讓旅客使用搭乘



2015 年機場標示系統改採黑底白字，旅客方向指引明顯





機場商業設施與在地產業緊密合作，售價與日本國內一致，方便讓旅客離境前進行最後採購





進行中工程妥善防護

### 三、 加氫站開幕典禮

關西國際機場為日本國內首座配備商用加氫站的機場：

- 由岩穀產業公司負責運營：
- 加氫站占地面積約 2500 平方公尺
- 每小時能給 6 輛車加滿燃料
- 使用氫或含氫物質及空氣中的氧通過燃料電池以產生電力，再以電力推動電動機，由電動機推動車輛，有效減少了其他燃油的車造成的空氣污染問題及能源開採限制
- Unlimited：氫大自然界含量豐富
- 未來推廣計畫：

機場間行駛的 shuttle bus 機場巴士燃料電池加氫

預計 400 部升降機採用加氫發電營運



加氫站開幕典禮





加氫站開幕典禮前，費總經理鴻鈞與谷川眾議員交談



加氫站開幕典禮前，費總經理鴻鈞與新關西機場總經理 Mr.Keiichi Ando 會面

#### 四、 建議

本次參加日本關西國際機場召開加氫站開幕典禮，除促進桃園機場公司國際能見度，積極參與國際間機場相關會議及活動，其經驗值得作為桃園機場公司未來發展之參考，建議如下：

日本關西機場為了因應越來越多的廉價航空，已經著手興建「第三航廈」，專門提供廉價航空公司的班機起降，預計在二〇一七年三月完工，目前關西機場將第二航廈，挪給廉價航空使用，不過廉航公司越來越多，班機越來越密集，因此關西機場決定，為廉價航空公司興建專用航廈。

依桃園機場公司統計資料顯示，2016年1~2月旅運量高達近688.3萬人次，較去年同期增加了97.5萬人次，成長率高達15.34%在亞洲各主要機場之間表現相當亮眼，也顯示桃園機場作為東亞航空樞紐機場的重要地位。為因應未來的成長需求，除已完成2條跑道的整建，目前也積極整建滑行道及停機坪，另持續推動第三航廈的細部設計與後續興建作業；本公司為國營事業，受政府採購法及預算法的規範，在機場建設及人力進用方面，未來如能有更彈性的作為，能持續在全球航空運輸領域扮演更重要的角色，並對國家的經濟發展持續貢獻。

肆、 附件

一、 關西國際機場介紹簡報



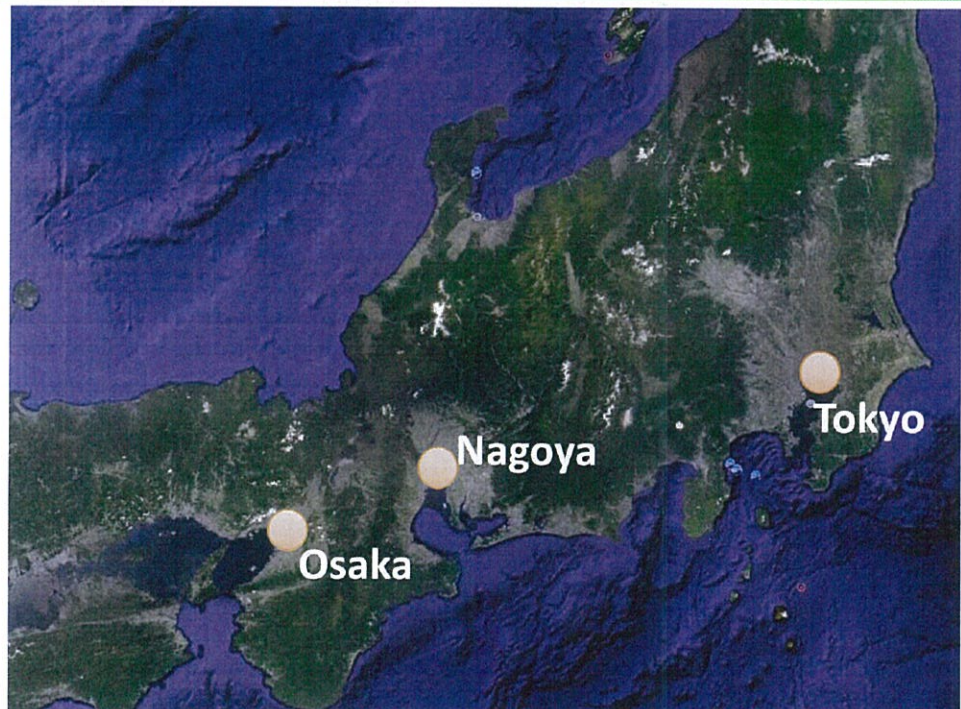


## 1. NKIAC / KIX Overview

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2

### Location of Osaka



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3



## Location of Kansai and Itami Airport



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## Kansai - Our Home Land



Population of 20 million.

Gateway to World Heritage sites and other popular destinations → Prospect for Growth

**Himeji-jo (World Heritage)**

**Kobe Beef**

**Osaka food culture**

**Universal Studios Japan**

**The Wizarding World of Harry Potter – July 2014**

**Historic Monuments of Ancient Kyoto and Traditional Culture (World Heritage)**

**Historic Monuments of Ancient Nara (World Heritage)**

**Sacred Sites and Pilgrimage Routes in the Kii Mountain Range (World Heritage)**

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# Overview of KIX and ITM (FY 2014)



## KIX KANSAI INTERNATIONAL



## OSAKA ITAMI ITM



20,040,000 (111%)	<b>Annual Passengers</b>	14,620,000 (104%)
145,000	<b>Annual Aircraft Movements</b>	139,000
740,000t	<b>Annual Cargo Volume</b>	133,000t
24 hours	<b>Operating Hours</b>	14 hours (7:00-21:00)

★ *KIX and ITM are Japan's largest international and domestic airports outside Tokyo.*

\* Based on Japan's Fiscal Year 2014 (2014/4/1-2015/3/31)





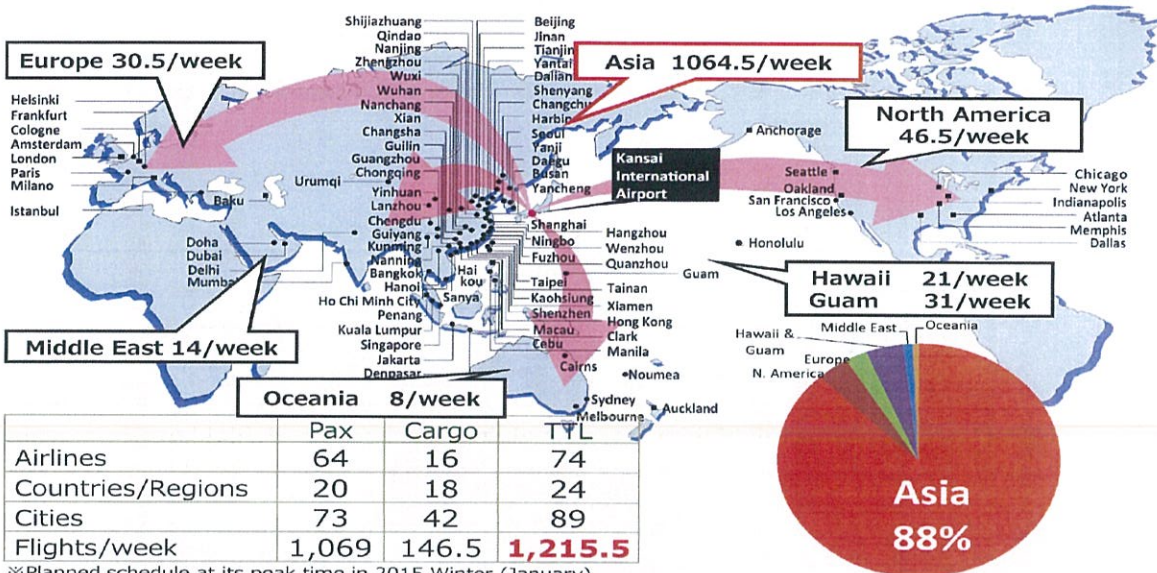
## Overview of Existing Facilities



## 2. Flight Network



## Network of KIX (INT), 2015 Winter



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## Domestic Flight Network of KIX and ITM

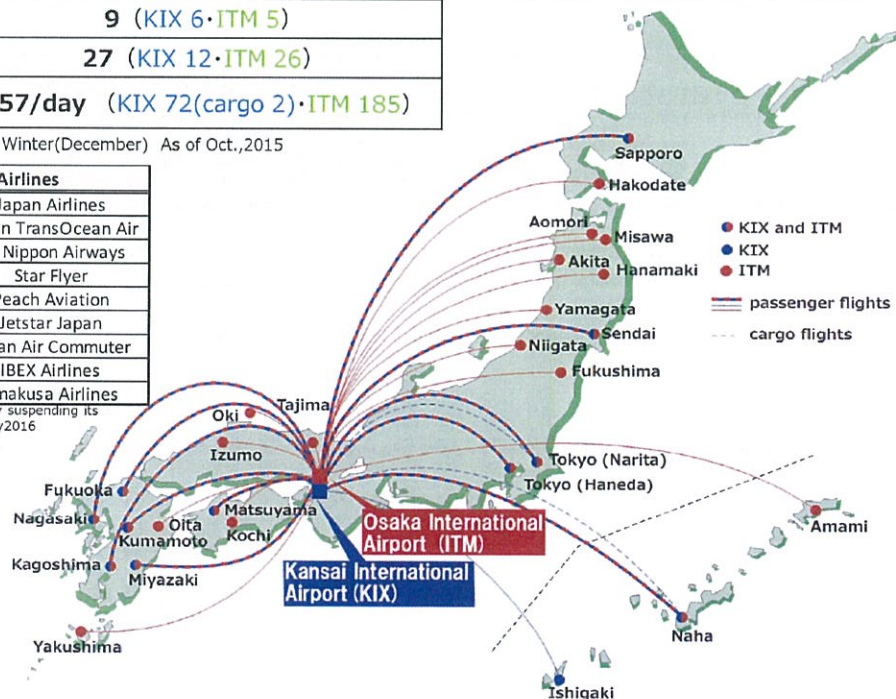


Airlines	9 (KIX 6・ITM 5)
Cities	27 (KIX 12・ITM 26)
Flights	257/day (KIX 72(cargo 2)・ITM 185)

at its peak time in 2015 Winter(December) As of Oct.,2015

KIX	ITM	Airlines
★	★	JAL Japan Airlines
★		JTA Japan TransOcean Air
★	★	ANA All Nippon Airways
★		SFJ Star Flyer
★		APJ Peach Aviation
★		JJP Jetstar Japan
	★	JAC Japan Air Commuter
	★	IBX IBEX Airlines
	★	AHX Amakusa Airlines

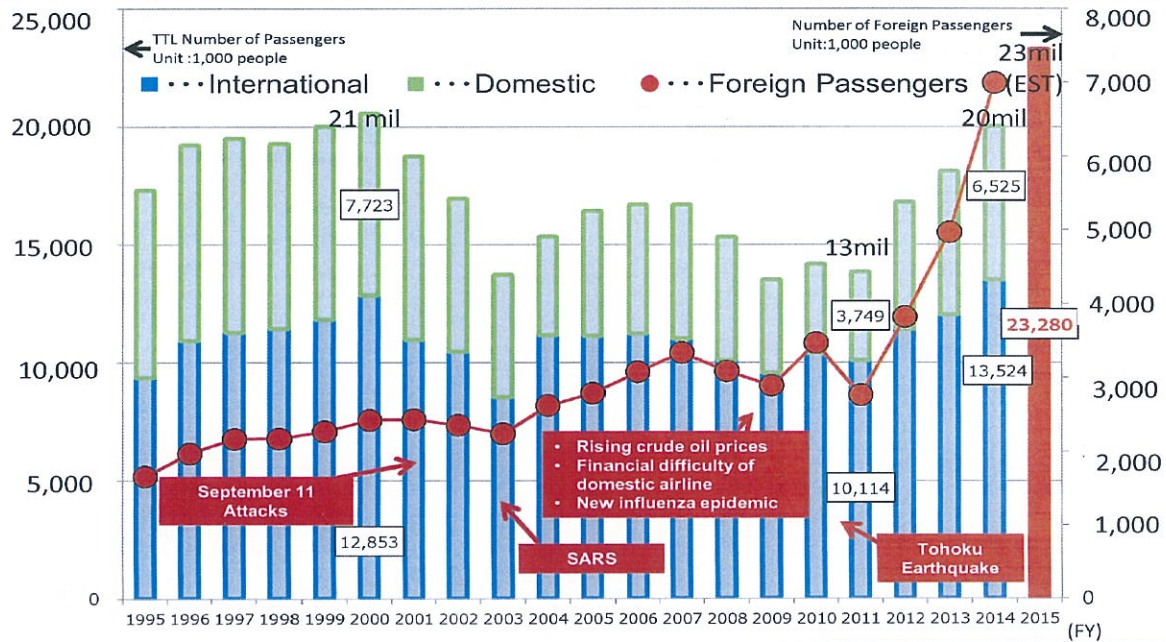
※Amakusa Airline is temporary suspending its flight until the end of January2016



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## Transition of Aircraft Movements and Number of Foreign Passengers at KIX



## Dramatic growth of LCC at KIX



Peach Aviation, Jetstar Japan and Spring Airlines have established their base at KIX.

### Overview of LCC business based at KIX

“Peach” was launched as Japanese first LCC in May 2011 hand-in-hand with construction of LCCT (T2) at KIX. LCC hub operations started in March 2012 at T1 & moves to T2 with its opening in October 2012.

Peach is expected to have 17 aircrafts and 6 million annual passenger traffic at the end of 2015.



Copyright © Peach Aviation Ltd.

Jetstar Japan started operation in July 2012 at KIX (T1).  
Established secondary hub at KIX in June 2014.



Copyright © Jetstar Japan Co., Ltd.

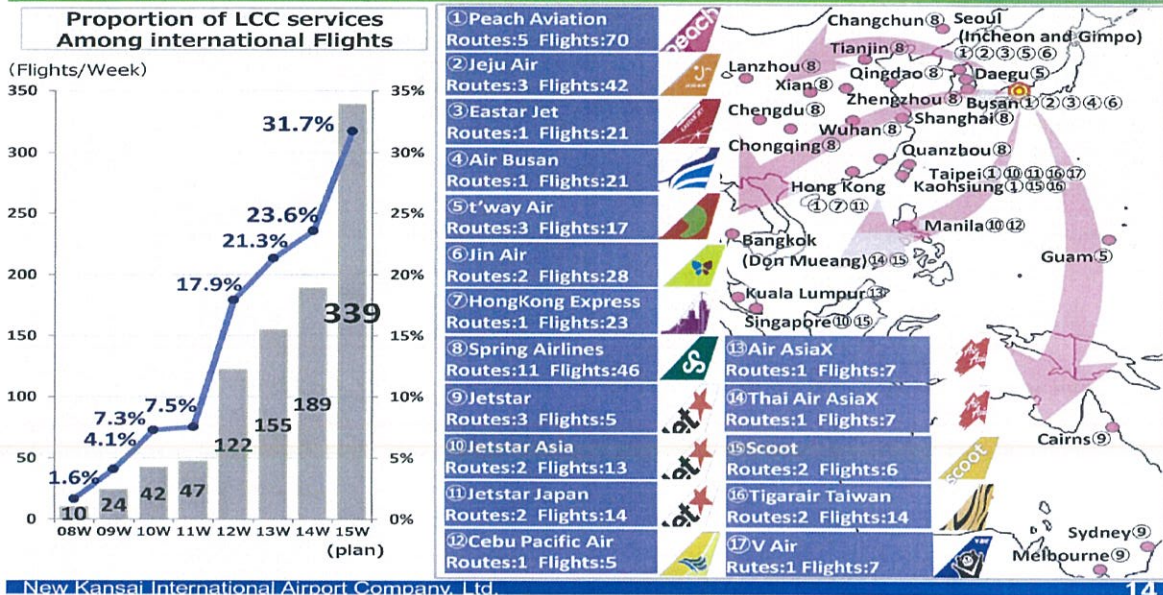
Spring Airlines (China) started operation in March 2014 at KIX (T1).  
Dramatically increasing its mainland China destinations.



Spring Airlines established its secondary hub at KIX which was their first hub outside mainland China.

Copyright © Spring Airlines Japan Co., Ltd.

## Continued Growth of LCC at KIX



## 3. Overview of Terminal 1, 2, 3



## Overview of Terminals at KIX



### 【Terminal 1】 (for FSC)



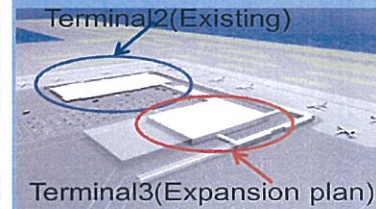
- Approx. 303,000m<sup>2</sup>
- 4 stories
- 41 spots with PBB
- Opened in 1994

### 【Terminal 2】 (for LCC)



- Approx. 30,000m<sup>2</sup>
- 1storey (partially 2 stories)
- 9 spots (in case of code-c)
- No PBB
- Self spot in and spot out is possible.
- Opened in 2012

### 【Terminal 3】 (for LCC)



- Approx. 33,000m<sup>2</sup>
- 1storey (partially 2 stories)
- 11 spots (in case of code-C)
- No PBB
- It will open in 2016

## Overview of Terminal 1



**Building area** 116,126m<sup>2</sup>

**Total floor area** 303,443m<sup>2</sup>

**Total length** 1,672m

>Main terminal building (MTB) 318m

>North and South wings 677m×2

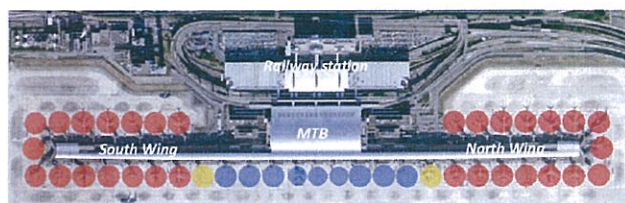
**Contact Gates** 41

> International flights 30 ●

> Domestic flights 11\* ●

- ● incl. 2 gates available for international flights (Swing gate)

### Effective and efficient facility layout





## Overview of Terminal 2



**Building area** 28,806m<sup>2</sup>

**Total floor area** 29,680m<sup>2</sup>

**Contact Gates** 9

> International flights 2 ●

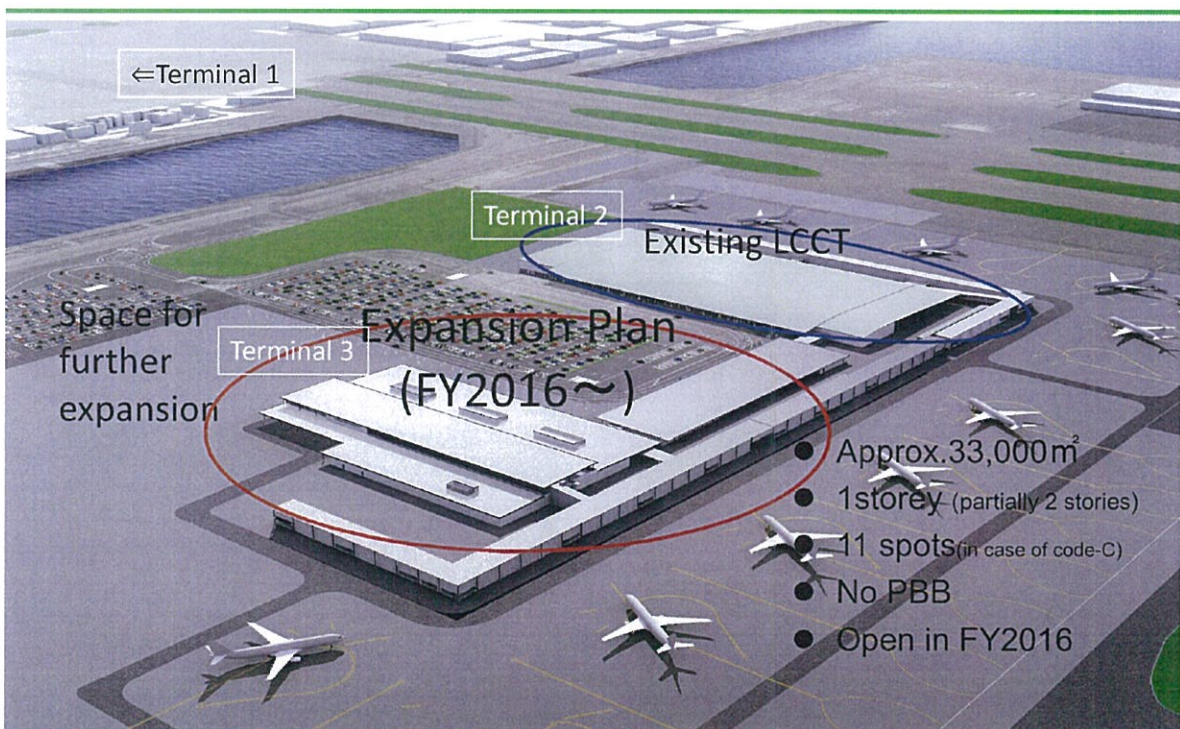
> Domestic flights 7\* ●

- incl. 3 gates available for international flights (Swing gate)

- ✓ The lowest construction cost of LCCT in Japan
- ✓ Self spot in and out is possible



## Overview of Terminal 3



- Approx. 33,000m<sup>2</sup>
- 1storey (partially 2 stories)
- 11 spots (in case of code-C)
- No PBB
- Open in FY2016

## Our LCC Terminal



Terminal 2



Terminal 3(image)



## 4. Commercial Business



## History of Terminal 1 Renovation (0)



### Opening



## History of Terminal 1 Renovation (1)



### 1st Renovation (2000)



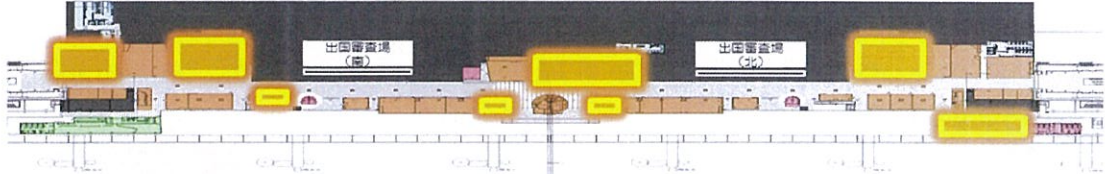






## History of Terminal 1 Renovation (4)

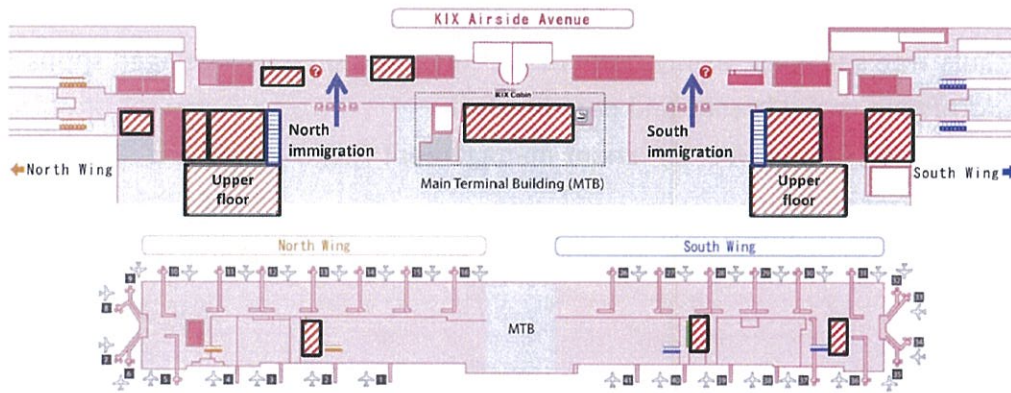
### 4<sup>th</sup> Renovation (2015)



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## Directly-managed shops



legend Directly-managed shop



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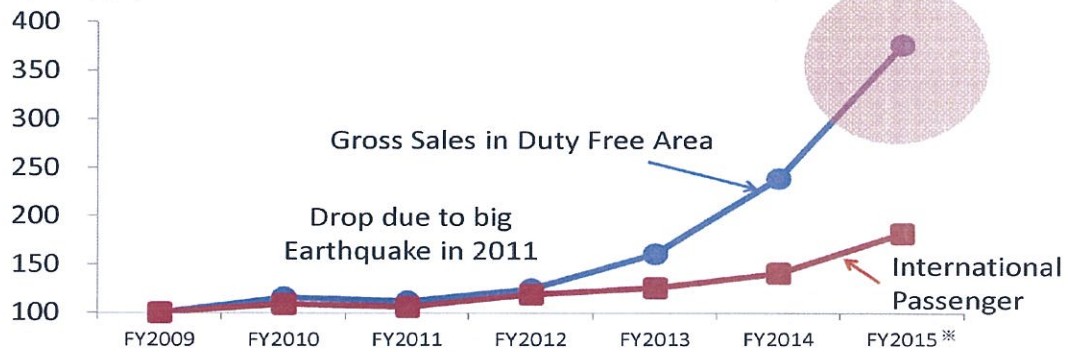
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## Growth rate: Retail Sales > Int'l Pax



- ✓ Directly-managed shops and tenants are well balanced in our facility.
- ✓ Duty free shops are highly profitable. → Introduce directly-managed shops
- ✓ Attracting major brands and popular stores
- ✓ Enhancing sales power by tenant management (Regular meeting, Regulation)

(Growth Index)

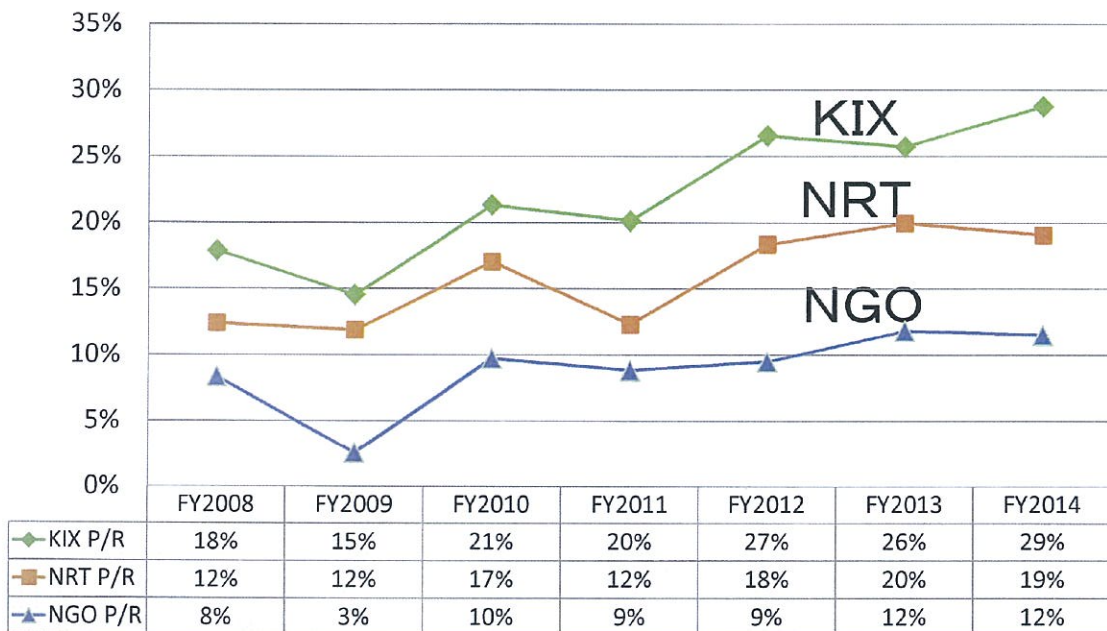


\*\*Growth rate of FY2015 indicates the rate of the first half of FY2015, comparing with that of FY2009.

## Profit ratio: Profit/Revenue



### Highest Profit Ratio among 3 Japanese Airports



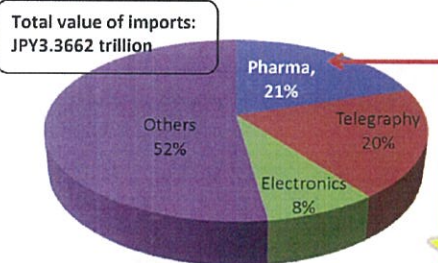


## 5. Cargo Initiatives

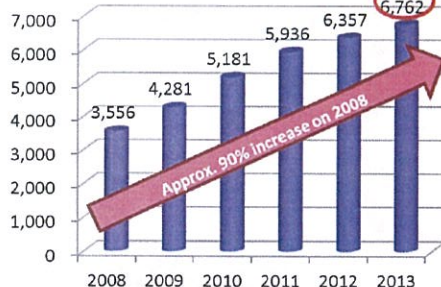
### KIX Medica - Temp-controlled warehouse for pharmaceuticals



Value of Pharmaceuticals Imports at KIX and Ratio to All Imports

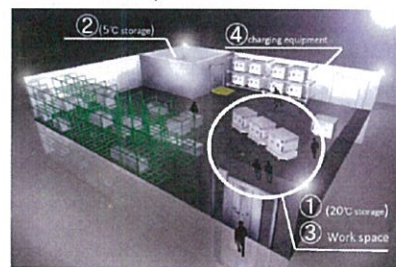


(Units: JPY100 mill.)



Record Figures

Combined thermal storage for pharmaceuticals (KIX Medica) was opened in 2010 in Japan for the first time at the airport.



#### Outline of Facilities

KIX Medica is located adjacent to the airside so that shipments can immediately be placed in storage after unloading from the aircraft.

- ①: 20°C fixed temperature storage(650m<sup>3</sup>)
- ②: 5°C low temperature storage(100m<sup>3</sup>)
- ③: Cargo build up and break down duties can be performed in the warehouse
- ④: Container charging equipment(20 locations)
- ◆ Capability for direct aircraft loading(bonded storage accepted)

## Perishable Cargo Handling Facility



Can offer an integrated, temperature-controlled service incorporating picking, packing, Bounded import & export warehouse handling, storage and delivery duties.



### Outline of Facilities

- ◆ Fixed temperature storage (+15°C~+20°C 3,240m<sup>2</sup>)
- ◆ Refrigerator (-5°C/+1°C/+5°C 323m<sup>2</sup> 3units)
- ◆ Bonded warehouse(5,156m<sup>2</sup>)



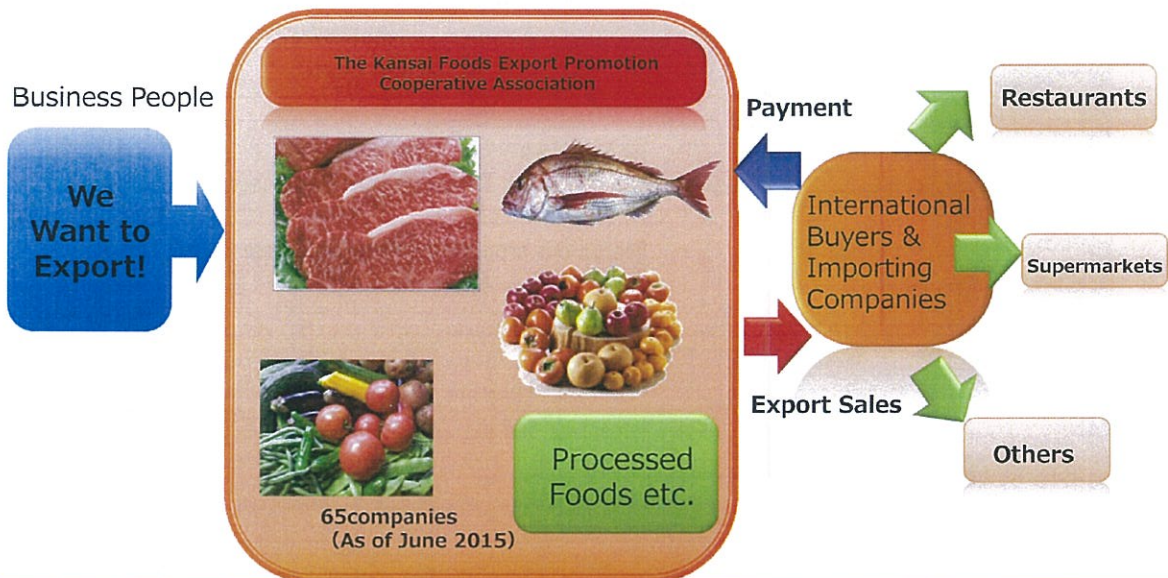
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## Food Export &

## Branding Association (FEB)



New style of food export produced by merging  
Sales Channels & Physical Distribution from Kansai !



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## Online Order System “ITADAKIMASU. Japanese Food Market”



ITADAKIMASU. Japanese Food Market



**Up to date product information.**  
Easy to check Recommended & In season items!

**Search our products even through your mobile.**  
Order anytime & anywhere!

PDF catalogues are available online.  
Importers can set selling price for their own customers.

ITADAKIMASU. will be one of importers' sales tools!

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## Online Order System “ITADAKIMASU. Japanese Food Market”



**Find us on  
Facebook**



*Scan this QR code with your cellphone  
or tablet to find us on facebook.*

**Also search :**



**ITADAKIMASU. Japanese Food Market**

New Kansai International Airport Company, Ltd.

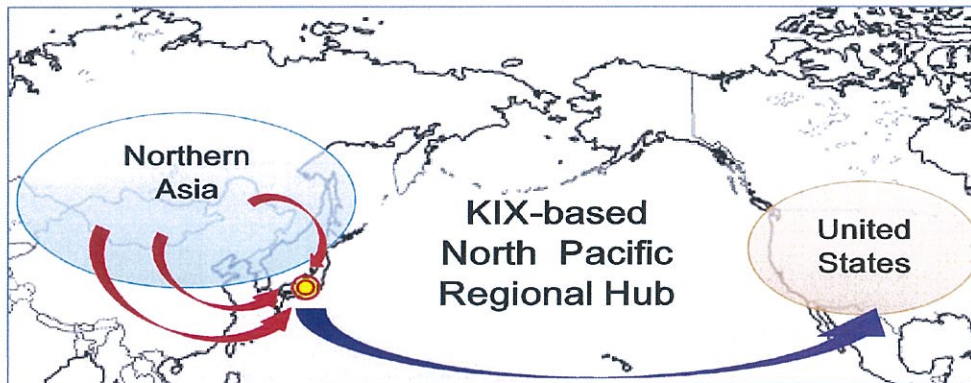
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## Cargo Initiative



- KIX** ■ One of the world wide cargo company "FedEx" established North Pacific Regional Hub at KIX to serve as a consolidation point for shipments from Asia to the U.S. on April 1, 2014.

### Business Model



## 6. Environmental Initiatives



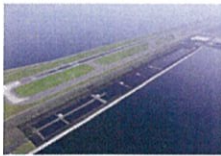
## Environmental Initiatives



Striving toward “World’s Leading Eco-friendly Airport” NKIAC is undertaking next-generation projects such as Photovoltaic Power Plant, Wind Power Generation and Hydrogen Grid Project, in addition to conventional environmental measures (noise & air quality monitoring, water recycling etc.).

### Photovoltaic Power Plant

- 72,000 solar panels installed adjacent to B-runway and on the roof of cargo warehouse since 2014. (Total Area:120 thousands m<sup>2</sup>)
- Generates 12,000MWh/year equivalent to about 8% of the total electricity consumed at KIX.
- Additional facility underway in cargo area is expected to increase the ratio to 10%.



### Wind Power Generation

- First wind power generation system in Japanese airport installed in 2014 to verify its effect on aircraft operation. Generates 9MWh/year.
- No negative effect has been observed and currently planned to increase the number of facilities.



### Hydrogen Grid Project

- Initiated pilot project of fuel-cell forklifts and introduced Japan’s first commercial fuel-cell vehicle “MIRAI (Toyota)” in 2015.
- The first commercial hydrogen gas station in Japanese airport to be opened in Jan. 29<sup>th</sup> 2016.



## Environmental Initiatives



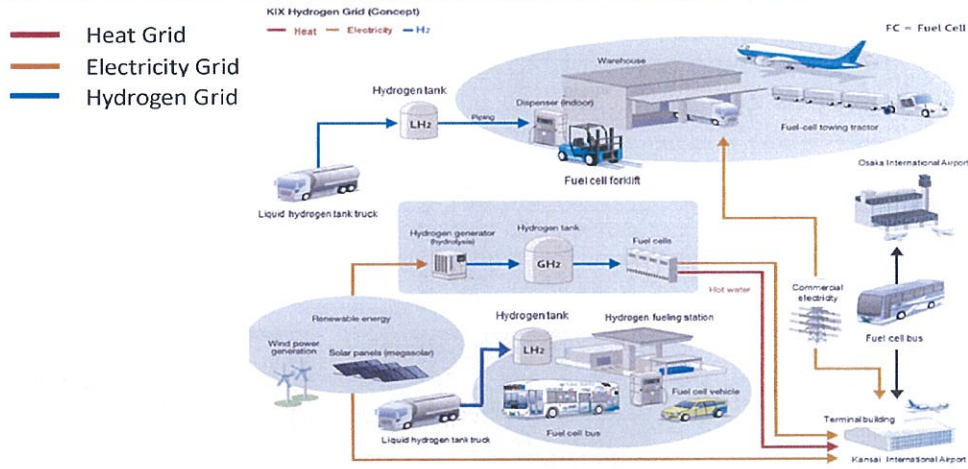
- The first commercial hydrogen gas station in Japanese airport will be opened soon (Jan. 29<sup>th</sup> 2016).
- This project is undertaken in collaboration with Toyota Corporation, Iwatani Corporation etc., with support from Japanese central and local governments.
- Japanese Government has set out a target of installing 100 commercial hydrogen gas stations by end of March 2016, and the one at KIX would be among the first of these facilities to start its operation.



## Future Vision: “Zero-emission Resilient Airport”



- Future vision is to store electricity generated from photovoltaic and wind power plants by water-hydrogen conversion.
- The idea includes using stored hydrogen for fuel-cell generator in case of major disaster with power cut.



## 7. Other Topics



## Awards (2014-)



**Best Airport for Baggage Delivery & World's Best Low Cost Terminal (SKYTRAX 2015)**



**Airport Staff Hospitality No. 1 in Asia**

Lost Baggage has never occurred in the airport for 20 years since its opening!!



**OAG Punctuality League 2014 (Mid-size Airport) (OAG 2015)**



**Best Airport staff in Asia (SKYTRAX 2014)**

ITM honored to have the world's best On-time Performance Rating with an on-time performance of 93.2%

**Air Cargo Award of Excellence (Air cargo world 2015)**



**Asia Pacific International Airport of the Year (Mid-size Airport) (CAPA 2014)**



the first airport in Japan to be awarded.

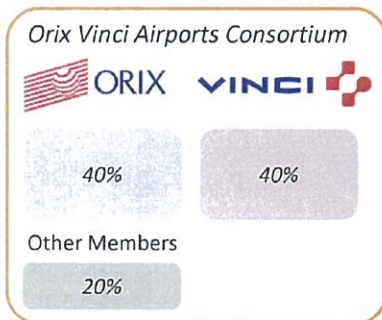
Wins award for nine consecutive years and wins the first place for the seventh time in total.

## Concession(Full Privatization)



### Project Scheme

Founding Formation (Capital Stock)



Operating rights for 44 years



New Kansai International Airport Company, Ltd.

Consideration for Operating rights

**Business transfer will be done by end of March 2016**

Thank you very much.



New Kansai International Airport Company, Ltd.