



# MARKETING INTELLIGENCE TRACKING TOOL

PROYECTO FIN DE CARRERA — PLAN 96

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- 2. Estado del arte
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  - Análisis de fuentes de información
  - Módulos de información
  - Procesos de carga
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### PLANTEAMIENTO DEL PROBLEMA

#### **CONTEXTO Y MOTIVACIONES**

Departamento de marketing: Global Sales Planning (GSP)



- Uno de los principales GDS del mundo (Global Distribution System)



- Empresa internacional: +16.000 empleados en 195 países:
  - Madrid: sede central
  - Sophia Antipolis, cerca de Niza (Francia): desarrollo de SW
  - Erding, cerca de Munich (Alemania): base de operaciones
  - Varias ACO (Amadeus Comercial Organizations) repartidas por diferentes países en todo el mundo

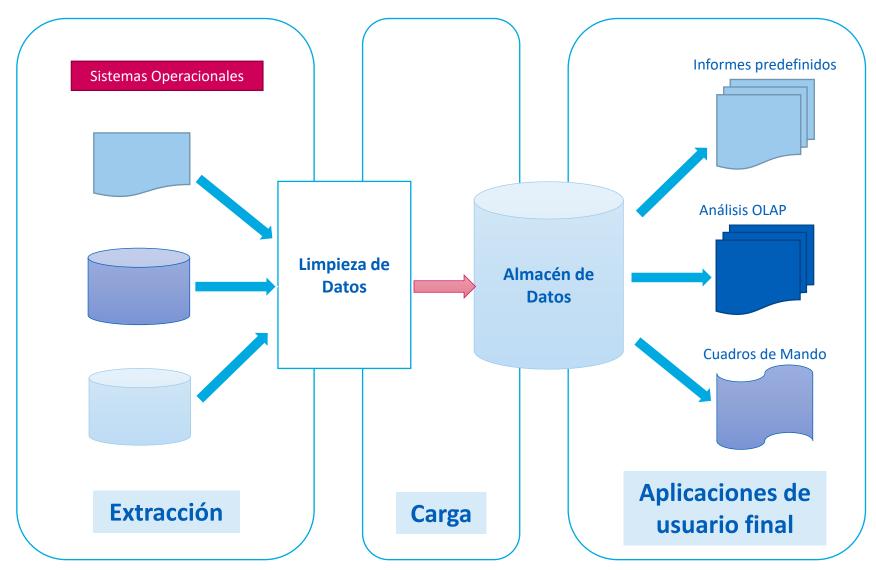


Empresa de analítica de datos que desarrolla sistemas de medición, previsión y decisión con los datos de operación de sus clientes

### PLANTEAMIENTO DEL PROBLEMA

### DESCRIPCIÓN DEL PROBLEMA

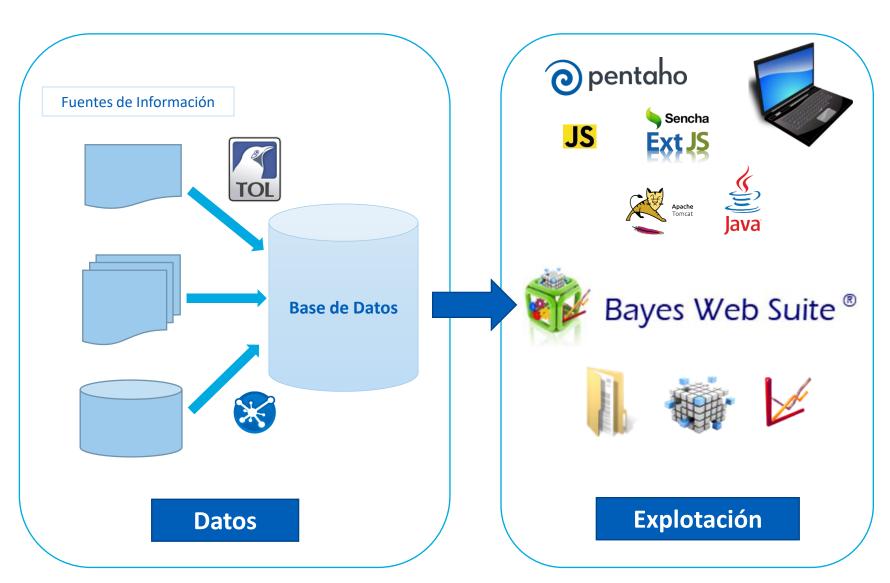
- \_Proyecto de BI
- Desarrollo de una base de datos analítica
- \_Procesos de carga de datos
- Explotación de la información: herramienta web



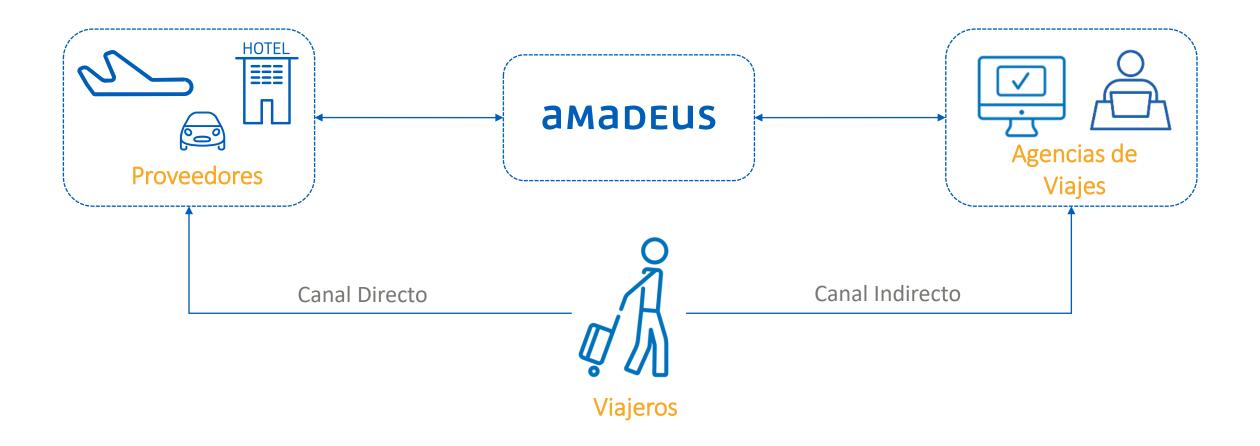
### PLANTEAMIENTO DEL PROBLEMA

### SOLUCIÓN PROPUESTA

- \_Nueva base de datos con información del negocio
- \_Procesos de carga
- \_Aplicación web basada en un producto existente en el portfolio de Bayes Forecast: Bayes Web Suite (BWS)



#### MODELO DE NEGOCIO



#### SISTEMA ACTUAL

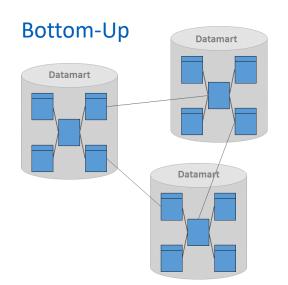


#### TÉCNICAS Y METODOLOGÍAS

DATA WAREHOUSE (DW): repositorio de datos corporativos estratégicos, tácticos y operativos. Información de interés generada por la actividad de una empresa u organización

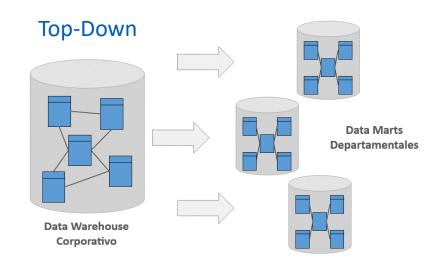
\_DATA MART (DM): subconjunto físico/lógico del DW preparado para la consulta y análisis de la información de un área específico del negocio

\_PROCESOS ETL (Extract, Transform y Load)



#### Características:

- Orientado a temas
- Integrado
- Variante en el tiempo
- No volátil



### TÉCNICAS Y METODOLOGÍAS

#### MODELO MULTIDIMENSIONAL

- Hechos
- Dimensiones SCD

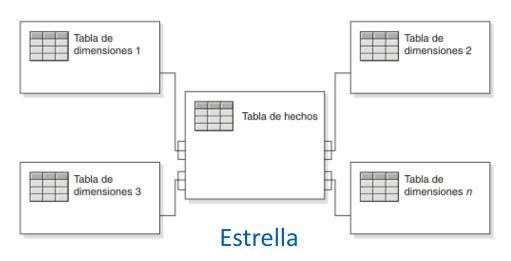






### **ESQUEMAS DE DISEÑO**

- Estrella
- Copo de nieve





#### **TECNOLOGÍAS**

BASE DE DATOS:

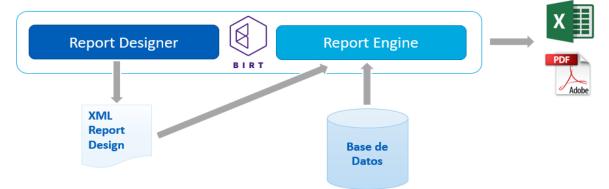


#### PROCESOS ETL

- Pentaho Data Integration (PDI)
- TOL (Time Oriented Language)
  - Process Manager: centralización y gestión de procesos ETL
- \_CUBOS OLAP: Mondrian
  - Motor de consulta de cubos OLAP (ROLAP)



#### **INFORMES: BIRT**



#### \_DESARROLLO WEB:

- HTML
- CSS
- JS
- JAVA



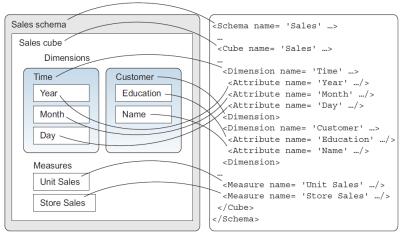






JS

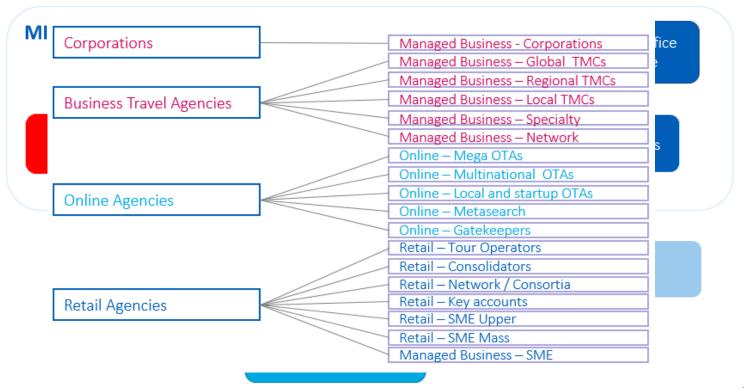




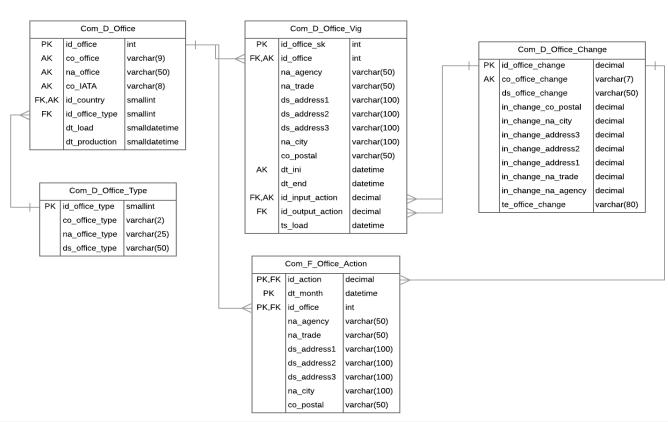
MARKETING INTELLIGENCE TRACKING (MIT) **MIT Tool Amadeus and Competitors Activity information** CBI amadeus AllStats / Home **MIT ETL Database ABI Data Mart Amadeus Billing** Net Information Ticketed Segment **CRM** OneView CX Segmentation, **Travel Agencies** and Office IDs

#### ANÁLISIS DE FUENTES DE INFORMACIÓN

- \_CBI (Competitive Business Intelligence): actividad aérea agencias de viajes en GDS
- \_ABI (Amadeus Billing Information): **facturación** transacciones agencias de viajes en sistemas de Amadeus. Negocios Air, Hotel, Car y Rail
- \_NET TICKETED SEGMENT: **tickets** actividad aérea emitidos por agencias de viajes clientes de Amadeus
- \_CRM ONE VIEW CX: relación oficina-agencia de viajes y segmentación de marketing



### MÓDULOS DE INFORMACIÓN



СВІ	ABI y TICKETING							
Country Code	Billing Country							
GDS Code	Amadeus							
GDS Office Code	Office ID							
GDS Office Name	Office Name							
	Office Type							
IATA Number	IATA Number							
Account Name	1							
Trade Name								
Address Line 1								

SCD – reemplazo de valores

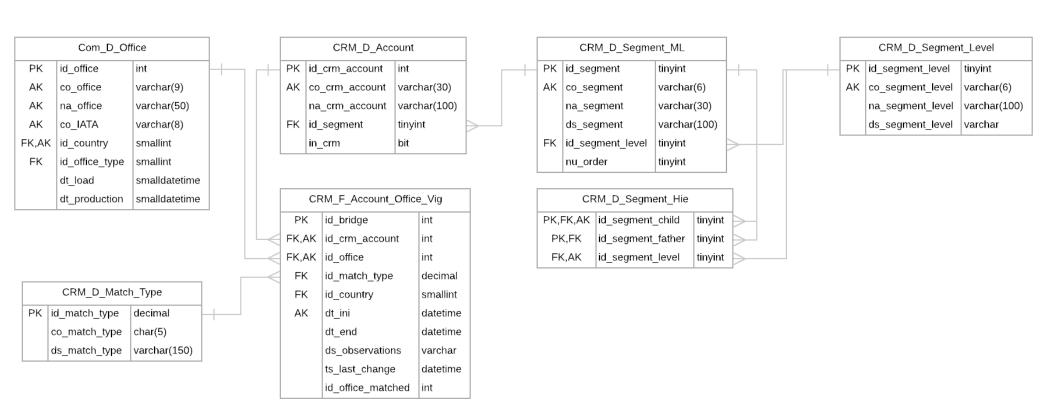
Address Line 2

SCD – historial de cambios

Country	Office ID	Office Name	IATA	Agency Name	Trade Name	Address1	Address2	Address3	City	Postcode	Office Type	Change		Start office	End office
ES - SPAIN	SVQEL2118	EL CORTE INGLES	78222325	EL CORTE INGLES		AVENIDA DE KANSAS CITY S/N SAN	41007 SEVILLA	SEVILLA - SEVILLA	SEVILLA		02	Change	Ad1	01/2005	07/2006
ES - SPAIN	SVQEL2118	EL CORTE INGLES	78222325	EL CORTE INGLES		AVENIDA DE KANSAS CITY S/N SANTA	41007 SEVILLA	SEVILLA - SEVILLA	SEVILLA		02	Change	Tra	08/2006	08/2006
ES - SPAIN	SVQEL2118	EL CORTE INGLES	78222325	EL CORTE INGLES	EL CORTE INGLES	AVENIDA DE KANSAS CITY S/N SANTA	41007 SEVILLA	SEVILLA - SEVILLA	SEVILLA		02	Change	Cit Ad3 Ad2 Ad1 Tra	09/2006	05/2009
ES - SPAIN	SVQEL2118	EL CORTE INGLES	78222325	EL CORTE INGLES		SEVILLA					02	Change	Cit Ad3 Ad2 Ad1 Tra	06/2009	06/2009
ES - SPAIN	SVQEL2118	EL CORTE INGLES	78222325	EL CORTE INGLES	EL CORTE INGLES	AVENIDA DE KANSAS CITY S/N SANTA	41007 SEVILLA	SEVILLA - SEVILLA	SEVILLA		02			07/2009	

#### MÓDULOS DE INFORMACIÓN





#### MÓDULOS DE INFORMACIÓN

#### Bkg (Bookings)

- Air
- Car
- Hotel

DIMENSION

**GDS** 

**GEOGRAPHY** 

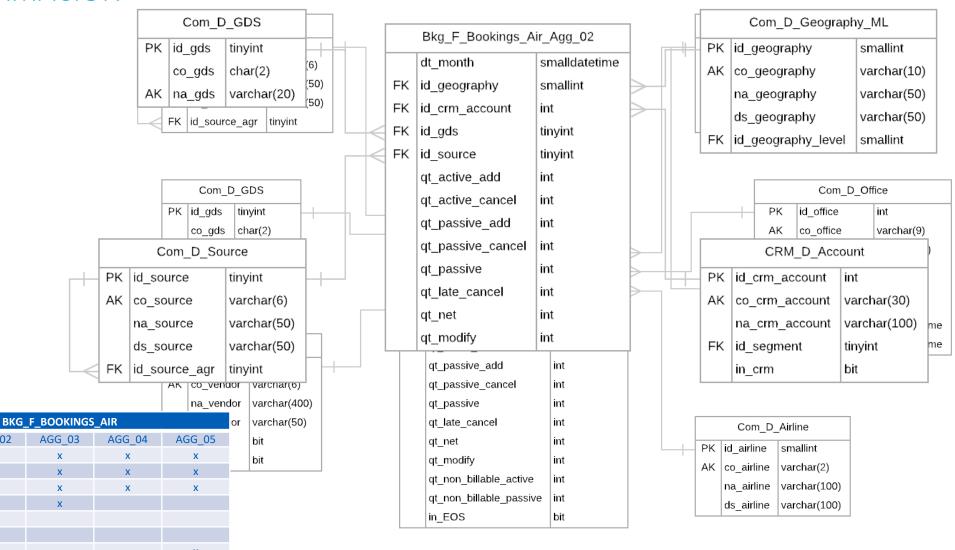
SOURCE

**AIRLINE** 

OFFICE ACCOUNT SEGMENT AGG 01

AGG 02

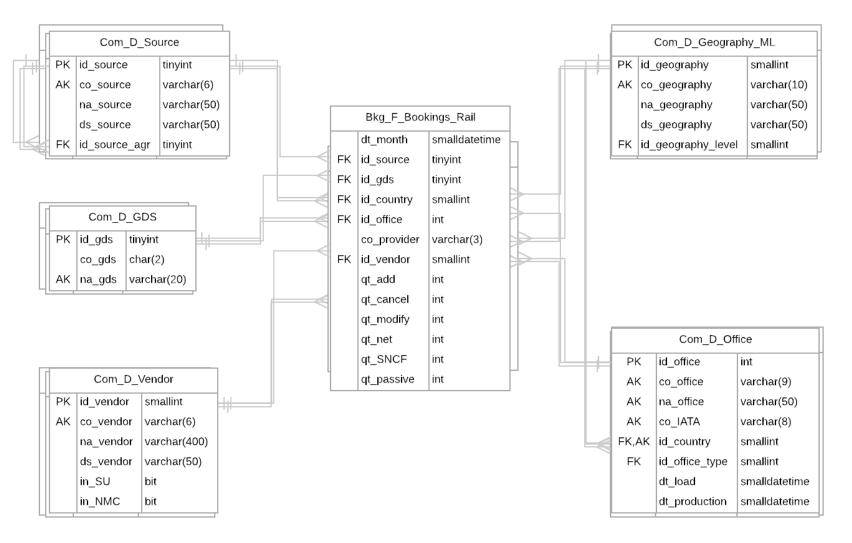
Rail



#### MÓDULOS DE INFORMACIÓN

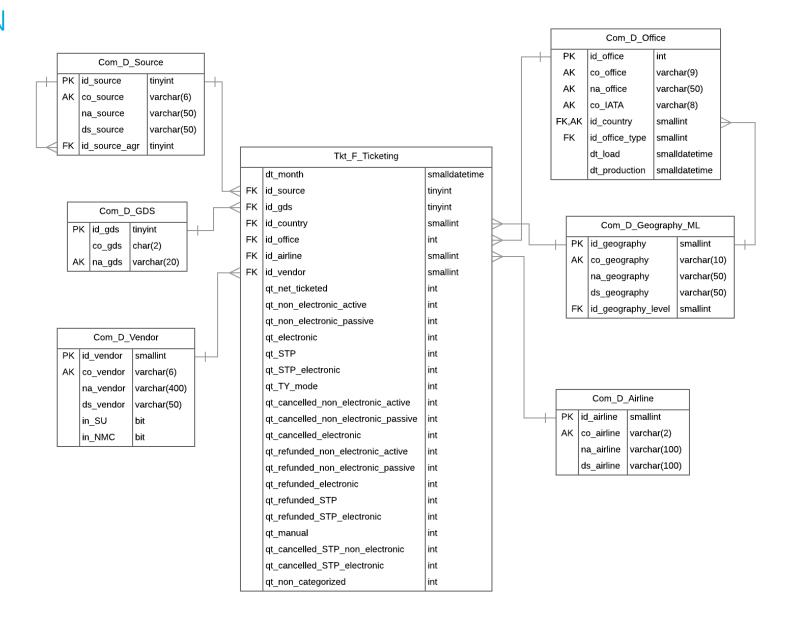
#### Bkg (Bookings)

- Air
- Car
- Hotel
- Rail



MÓDULOS DE INFORMACIÓN

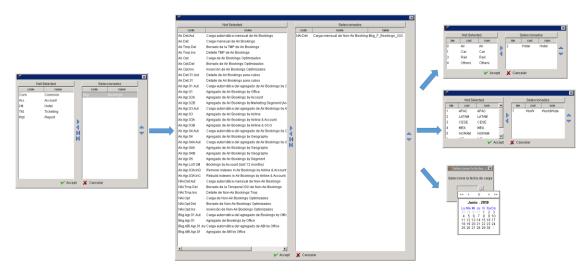
Tkt (Ticketing)



#### PROCESOS DE CARGA

### Procesos ETL en TOL

- Manual
- Automático
  - Mensual: nuevos datos (CBI, ABI, Net Ticketed Segment)
  - Diario: CRM, recarga de agregados



#### **TOL Process Manager**



#### Bkg (Bookings)

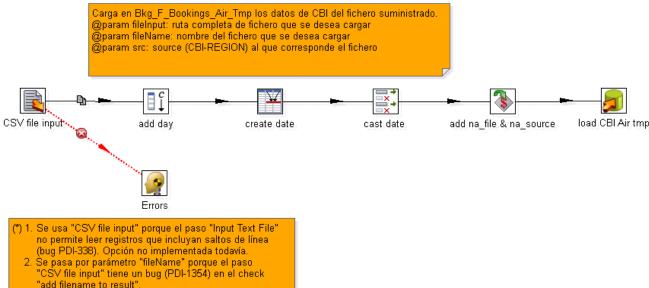
- Air.Det
- Air.Det.Aut
- Air.Agr.01
- Air.Agr.01.Aut
- Ξ.
- Air.Agr.05
- Air.Agr.05.Aut

#### Tkt (Ticketing)

- Tkt.Det
- Tkt.Det.Aut
- Tkt.Agr
- Tkt.Agr.Aut

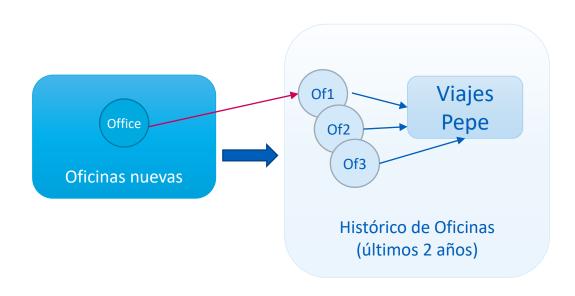
#### CRM y Común

- Off
- Off.Vig
- Off.DPr
- CRM.Acc
- CRM.Off
- CRM.Off.Aut



#### PROCESOS DE CARGA

\_Match Type: asignación automática de oficinas



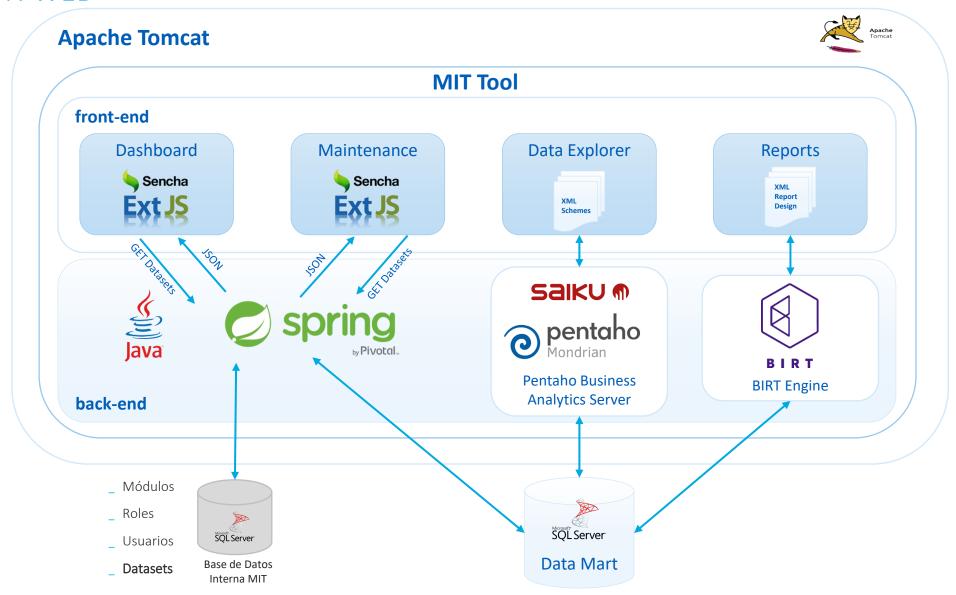
c.	•				0	0	0	1	1	0.3	City Name, Postal Code
e oti	cinas				0	0	1	0	0	0.4	Trade Name
0 0	011140				0	0	1	0	1	0.5	Trade Name, Postal Code
					0	0	1	1	0	0.6	Trade Name, City Name
	COM	D OFFICE	_		0	0	1	1	1	0.7	Trade Name, City Name, Postal Code
	COIV	_D_OFFICE		OFFICE	0	1	0	0	0	0.8	Some Address(es)
OFFICE ID	<b>AMADEUS</b>	OFFICE NAME	IATA NUMBER	OFFICE TYPE	0	1	0	0	1	0.9	Some Address(es), Postal Code
	_				0	1	0	1	0	1	Some Address(es), City Name
1	1	1	0	1	0	1	0	1	1	1.1	Some Address(es), City Name, Postal Code
1	1	1	0	0	0	1	1	0	0	1.2	Some Address(es), Trade Name
_					0	1	1	0	1	1.3	Some Address(es), Trade Name, Postal Code
1	0	1	0	0	0	1	1	1	0	1.4	Some Address(es), Trade Name, City Name
4	4	0	4	4	0	1	1	1	1	1.5	Some Address(es), Trade Name, City Name, Postal Code
1	1	0	1	1	1	0	0	0	0	1.6	Agency Name
1	1	0	1	0	1	0	0	0	1	1.7	Agency Name, Postal Code
					1	0	0	1	0	1.8	Agency Name, City Name
0	N/A	1	1	N/A	1	0	0	1	1	1.9	Agency Name, City Name, Postal Code
1	0	0	1	0	1	0	1	0	0	2	Agency Name, Trade Name
-					1	0	1	0	1	2.1	Agency Name, Trade Name, Postal Code
0	N/A	1	0	N/A	1	0	1	1	0	2.2	Agency Name, Trade Name, City Name
1	4		0	4	1	0	1	1	1	2.3	Agency Name, Trade Name, City Name, Postal Code
1	1	0	0	1	1	1	0	0	0	2.4	Agency Name, some Address(es)
1	1	0	0	0	1	1	0	0	1	2.5	Agency Name, some Address(es), Postal Code
					1	1	0	1	0	2.6	Agency Name, some Address(es), City Name
1	0	0	0	0	1	1	0	1	1	2.7	Agency Name, some Address(es), City Name, Postal Code
					1	1	1	0	0	2.8	Agency Name, some Address(es), Trade Name
					1	1	1	0	1	2.9	Agency Name, some Address(es), Trade Name, Postal Code
					1	1	1	1	0	3	Agency Name, some Address(es), Trade Name, City Name
					1	1	1	1	1	3.1	Agency Name, some Address(es), Trade Name, City Name, Postal Code

**CAMPOS COINCIDENTES** 

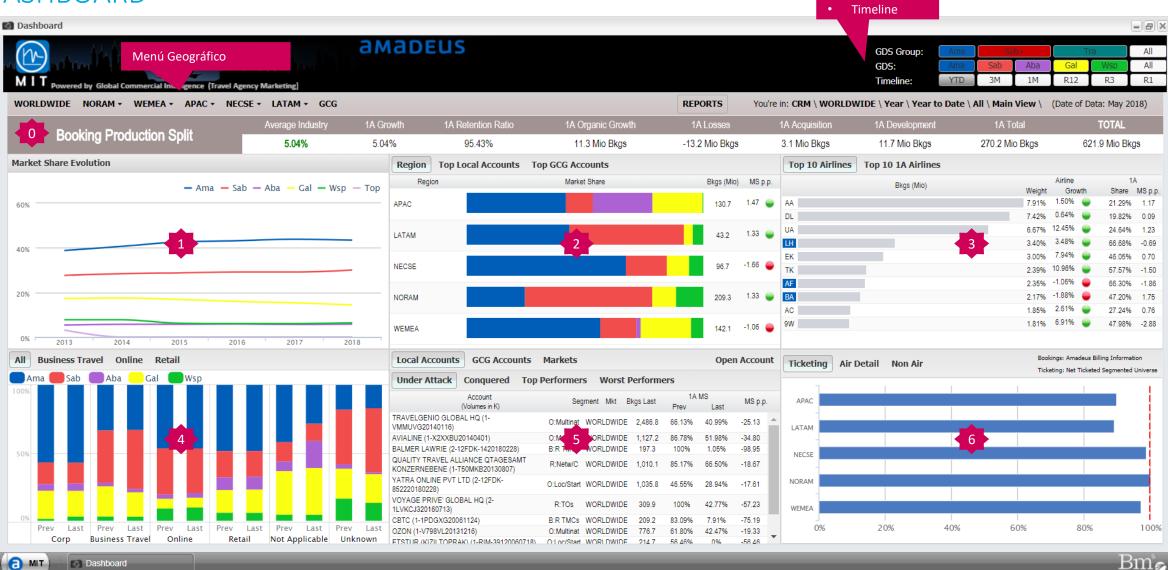
0.1 Postal Code

0.2 City Name

### APLICACIÓN WEB



DASHBOARD

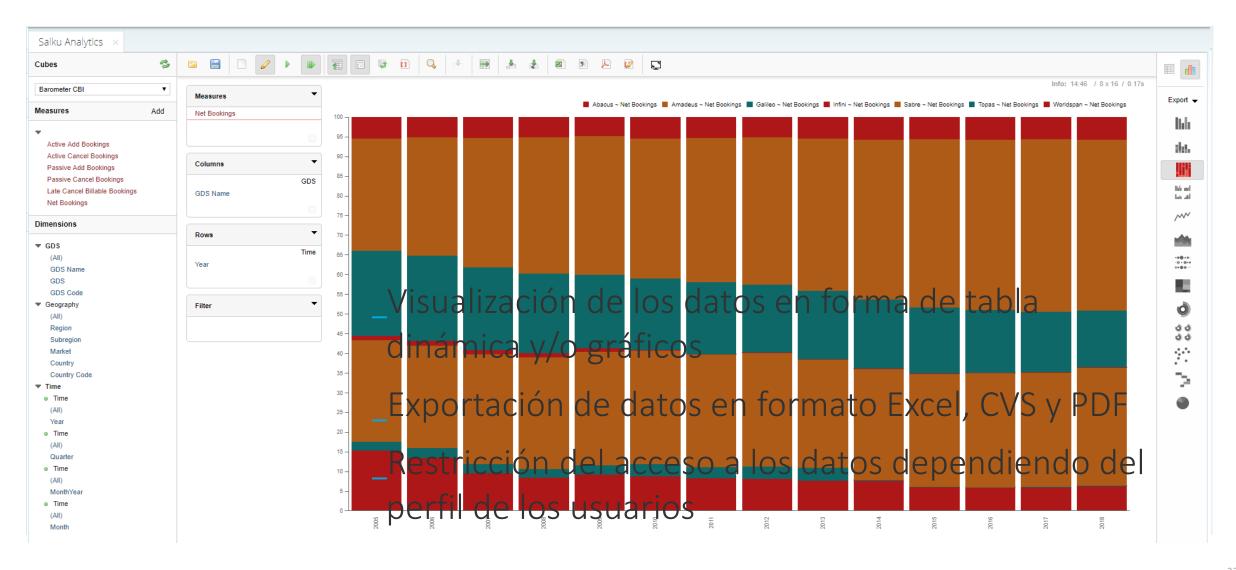


Selectores:

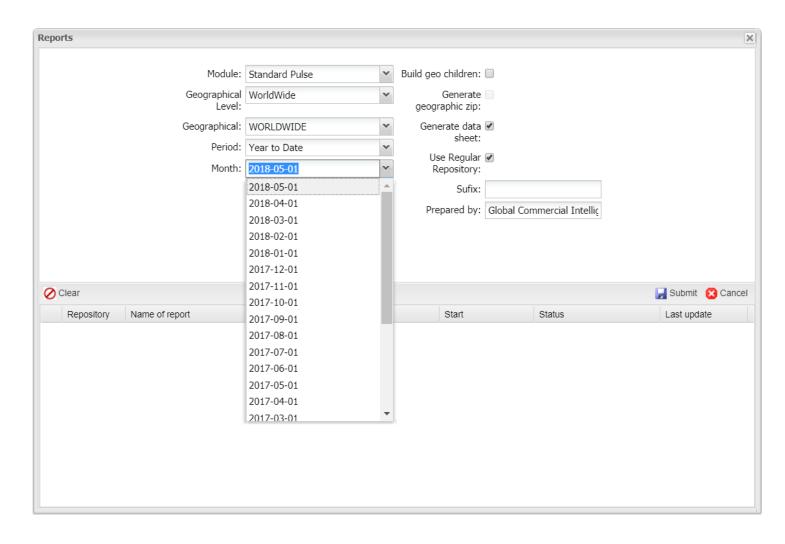
GDS

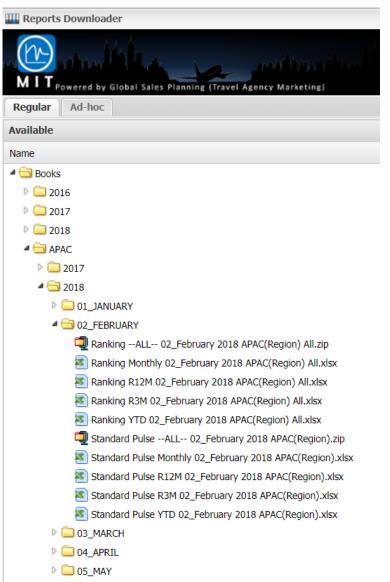
GDS (groups)

#### DATA EXPLORER



#### **REPORTS**





#### REPORTS

#### **STANDARD PULSE**



#### **WORLDWIDE Standard Pulse: Amadeus top wins**

Prev: January 2016 to October 2016

Last: January 2017 to October 2017

Prepared By: Global Commercial Intelligence

Rkg	Country	Account Segment Subsegment January 2016 to October 2016										January 2017	o October 20	17		
					Amadeus	Abacus	Galileo	Sabre	Worldspan	TOTAL	Amadeus	Abacus	Galileo	Sabre	Worldspan	TOTAL
1	US, CA, GB, JP, DE, FR, AU, CH, MX, IT and 13 others	EXPEDIA INC (1-TQL20030618)	Online	Online-Mega OTAs	42,283,243	-	1,981,043	70,724,720	10,381,129	125,370,135	44,198,421	-	221,766	69,454,925	9,076,345	122,951,45
2	FR, DE, ES, GB, IT, PT, US, MX, FI, SE and 6 others	ODIGEO (1-JNEFKA20111222)	Online	Online-Mega OTAs	19,478,909	-	-	28,268	-	19,507,177	19,300,252	-	-	2	-	19,300,25
3	SE, DE, NO, DK, FI, NL, FR, CH, GB, ES and 28 others	EUROPEAN TRAVEL INTERACTIVE (1- 5WGICG20081028)	Online	Online-Multinational OTAs	8,942,576	-	-	2,734,420	-	11,676,996	10,417,087	-	-	2,676,506	-	13,093,59
4	US, CA, GB, MX	FAREPORTAL (2-OQ5EGX20151118)	Online	Online-Mega OTAs	9,259,256	-	6,663	7,719,491	-	16,985,410	9,284,312	-	6,648	8,007,187	-	17,298,14
5	US, DE, GB, NL, MX, SE, BE, FR, CA, AL and 36 others	<sup>J</sup> BCD TRAVEL HQ (1-J5TQB20060421)	Business Travel	Managed Business- Global TMCs	8,645,187	174,747	4,086,405	12,943,424	714,960	26,564,723	8,474,943	186,969	4,325,257	12,916,434	794,574	26,698,17
6	US, FR, AU, GB, DE, CA, MX, AT, SE, BE and 29 others	E AMERICAN EXPRESS GLOBAL BUSINESS TRAVEL HQ (1-TS320030618)	Business Travel	Managed Business- Global TMCs	8,046,455	521,437	6,838,351	26,342,058	9,573	41,757,874	8,450,457	467,497	6,111,833	28,394,582	9,256	43,433,62
7	US, CA	VOYAGES A LA CARTE (2-2K57KW020170320)	Online	Online-Multinational OTAs	6,226,993	-	71,450	23,318	-	6,321,761	8,222,401	-	10,324	303	-	8,233,02
8	US, NO, FR, SE, MX, DE, DK, GB, AU, BB and 18 others	EGENCIA GLOBAL HQ (1-1N00L20041129)	Business Travel	Managed Business- Global TMCs	7,051,284	1,642	12,456	5,852,621	8,199	12,926,202	7,694,074	1,116	981	6,585,721	9,666	14,291,55
9	US, DE, FR, GB, ES, AU, CA, FI, CH, SE and 38 others	CARLSON WAGONLIT TRAVEL GLOBAL HQ (1- SWE20030617)	Business Travel	Managed Business- Global TMCs	7,683,026	15,386	7,334,654	21,481,111	6,078	36,520,255	7,620,883	7,859	7,088,024	21,650,086	4,737	36,371,58
10	DE, US, NL, AT, ES, FR, CH, IT, GB, TR and 3 others	AERTICKET/FTI (2-2BSBD0L20170123)	Retail	Retail-Consolidators	5,831,573	-	388,965	1,741,691	28,513	7,990,742	6,854,538	-	268,383	1,703,527	107,314	8,933,70
11	NL, US, DE, CH, BE, SG, FR, GB, AT, ES and 8 others	TRAVIX HQ (1-GZMS3Q20110520)	Online	Online-Multinational OTAs	6,653,119	-	14	-	88,369	6,741,502	6,768,371	-	18,762	6	2,027,315	8,814,45
12	DE, FR, NL, CH, AT, BE, ES, GB, SE, PT and 14 others	TUI AG (1-TG720030618)	Retail	Retail-Tour Operators	6,532,888	-	84,535	363,770	831	6,982,024	6,447,391	-	99,812	305,266	1,957	6,854,42
13	AU, GB, NZ, US, CA, ZA, AR, BR, SG, AT and 33 others	FLIGHT CENTRE LIMITED GLOBAL HQ (1- 407A1G20080529)	Business Travel	Managed Business- Specialty	3,180,560	3,166	16,295,153	2,967,334	341	22,446,554	5,961,157	4,094	11,971,898	5,790,871	62	23,728,0
14	IN, BH, US	MAKEMYTRIP	Online	Online-Multinational OTAs	5,282,370	-	-	-	-	5,282,370	5,686,672	-	-	-	-	5,686,67
15	CA, US, DE, GB, NO, SE, BR, CH, BO, FI and 43 others	HRG GLOBAL HQ (1-7RP-020041109)	Business Travel	Managed Business- Global TMCs	5,027,748	123,926	3,766,273	5,569,827	-	14,487,774	5,053,176	146,737	3,320,125	5,001,905	-	13,521,9
16	DE, CH, BE	DER TOURISTIK GROUP (1-1QDLP20041214)	Retail	Retail-Key Accounts	4,682,114	-	358,451	19,492	47,126	5,107,183	4,906,286	-	304,035	12,357	115	5,222,7
17	ES, MX, CL, PT, CO, PE, AR, FR, PA, EC and 3 others	GRUPO EL CORTE INGLES (1-1G8Q-4420070507)	Retail	Retail-Key Accounts	4,290,674	-	-	16	-	4,290,690	4,368,291	-	-	-	-	4,368,2
18	AR, BR, CO, CL, MX, PE, EC, US, CR, PA and 3 others	DESPEGAR - LATIN AMERICA (1-KITSZH20120131)	Online	Online-Multinational OTAs	2,954,417	-	-	5,230,622	1,352,321	9,537,360	4,196,441	-	-	5,683,041	2,175,341	12,054,8
19	SA, EG, AE	AL TAYYAR TRAVEL GROUP-MENA (2- 2DLSN0V20170205)	Business Travel	Managed Business- Regional TMCs	1,549,716	-	845,408	158,889	99,848	2,653,861	3,574,153	-	744,827	230,657	85,212	4,634,84
20	FR, GF, RE	SELECTOUR (1-G4W1Cl20110310)	Retail	Retail-Network / Consortia	3,470,763	-	202,420	186,278	-	3,859,461	3,438,505	-	205,317	261,282	-	3,905,10
21	DE, FR, ES, IT, DK, SE, AT, GB, FI, PT and 11 others	TRAVELGENIO GLOBAL HQ (1-VMMUVG20140116)	Online	Online-Multinational OTAs	2,931,134	-	1,119,980	24	-	4,051,138	3,314,246	-	1,394,781	13	-	4,709,04
22	SE, NO, FI, DK, IT, AU, NL, ES, MT, IE	TICKET LEISURE TRAVEL (1-WZ4WGI20140326)	Retail	Retail-Key Accounts	2,176,000	_	_	_	_	2,176,000	3,130,377	_	_	_	-	3,130,37
	Query   WorldWide   /			losses   1A Lost d	ead   1A l	Inderdeve	lop   1A I	Developme	ent   1A H	unting	(+)	: 4				

#### REPORTS

#### **MARKETING PULSE**

#### **amadeus** Worldwide Pulse Marketing: Segment Quantification



Prev: November 2015 to October 2016 Last: November 2016 to October 2017

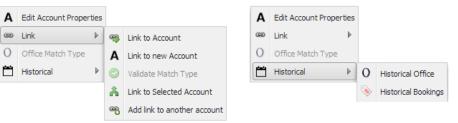
Prepared By: Global Commercial Intelligence

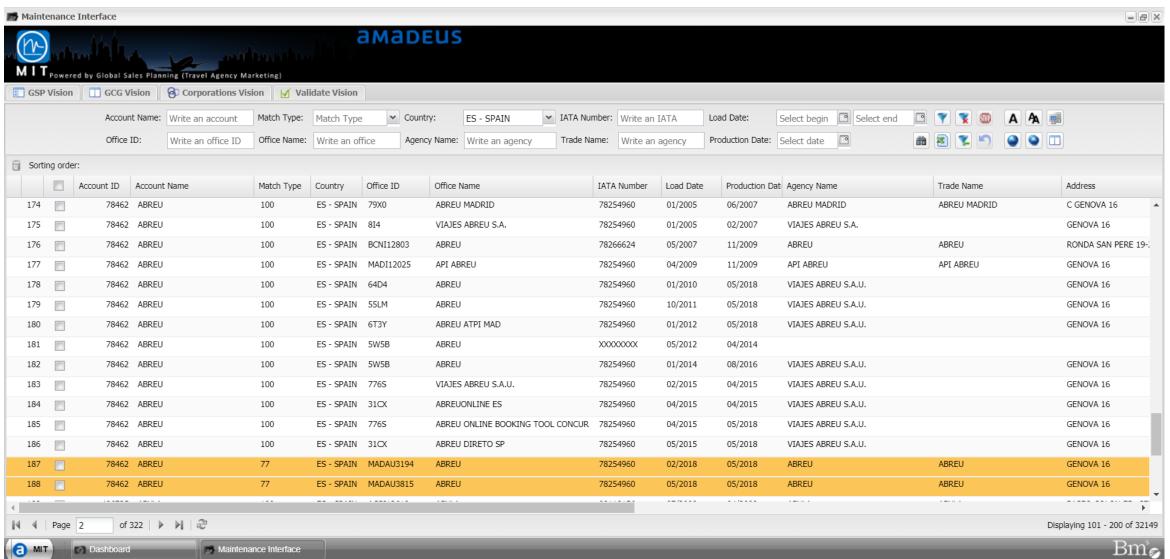
					Corp							
Region	Total GDS Accounts	Total GD	S Booking Volume	s ('000)	9	Segment Weight			Amadeus Market Share			
	November 2016 to October 2017	November 2015 to October 2016	November 2016 to October 2017	Trend	November 2015 to October 2016		Trend	November 2015 to October 2016	November 2016 to October 2017	Trend	November 2016 to October 2017	
APAC	8	56	58	1	0.0%	0.0%	1	68.8%	69.1%	<b>1</b>	3.7%	
LATAM	3	29	27	1	0.0%	0.0%	1	-	0.0%	1	-	
NECSE	16	102	88	1	0.0%	0.0%	1	9.9%	8.9%	1	(22.7%)	
NORAM	2	2	1	1	0.0%	0.0%	1	-	-	1	-	
WEMEA	130	314	335	1	0.1%	0.1%	<b>1</b>	62.5%	59.5%	1	1.4%	
WORLDWIDE TOTAL	159	503	509	1	0.0%	0.0%	1	48.7%	48.5%	1	0.7%	

	Corp: Managed Business-Corporation													
Region	Total GDS Accounts	Total GD	S Booking Volumes	s ('000)	Su	ubsegment Weight		Am	Amadeus Growth					
	November 2016 to October 2017	November 2015 to October 2016	November 2016 to October 2017	Trend	November 2015 to October 2016	November 2016 to October 2017	Trend	November 2015 to October 2016		Trend	November 2016 to October 2017			
APAC	8	56	58	<b>↑</b>	0.0%	0.0%	1	68.8%	69.1%	1	3.7%			
LATAM	3	29	27	1	0.0%	0.0%	1	-	0.0%	1	-			
NECSE	16	102	88	1	0.0%	0.0%	1	9.9%	8.9%	1	(22.7%)			
NORAM	2	2	1	1	0.0%	0.0%	1	-	-	1	-			
WEMEA	130	314	335	<b>1</b>	0.1%	0.1%	<b>↑</b>	62.5%	59.5%	1	1.4%			
WORLDWIDE TOTAL	159	503	509	<b>↑</b>	0.0%	0.0%	1	48.7%	48.5%	1	0.7%			

Business Travel													
Region	Total GDS Accounts	Total GDS	6 Booking Volumes	('000)		Segment Weight		Am	Amadeus Growth				
	November 2016 to October 2017	November 2015 to October 2016	November 2016 to October 2017	Trend	November 2015 to October 2016		Trend	November 2015 to October 2016	November 2016 to October 2017	Trend	November 2016 to October 2017		
APAC	225	59,647	64,772	1	24.4%	24.1%	1	27.8%	28.1%	1	9.9%		
LATAM	42	17,365	17,720	1	19.2%	18.3%	1	24.2%	26.0%	<b>↑</b>	9.6%		
NECSE	111	51,666	53,134	1	25.0%	24.4%	1	83.7%	82.4%	1	1.3%		
NORAM	159	137,543	141,746	1	32.3%	32.3%	1	3.6%	3.7%	<b>↑</b>	7.9%		
WEMEA	219	70,669	73,861	<b>↑</b>	23.5%	23.8%	<b>↑</b>	49.1%	54.7%	1	16.4%		

#### **MAINTENANCE**





# CONCLUSIONES Y LÍNEAS FUTURAS

#### **CONCLUSIONES**

#### \_Optimización del modelo de datos

- Data mart
- Reducción de la cardinalidad de los datos de oficinas
- Match Type

#### Procesos de carga

- Reducción de tareas manuales
- TOL
  - poco extendido
  - difícil introducir mejoras

#### Nuevas fuentes de información

- Ticketing
- CRM

#### \_Aplicación web

- Dashboard: mejora notable al explotar la información
- Reports: migrados pero sin valor añadido
- Cubos OLAP: problemas de rendimiento
- Maintenance: simple y ágil

#### LÍNEAS FUTURAS

#### \_Opción 1

- Cubos OLAP SQL Server Analysis Services
- Actualizar las librerías utilizadas
  - Ext JS
  - HighCharts
  - Spring

#### \_Opción 2

- Apuesta tecnológica de Amadeus
  - HPE Vertica





- Relacional y columnar
- Data warehouse corporativo



Qlik<sup>®</sup> Sense

- Qlik Sense
  - BI self-service: dashboard, tablas, informes

# ¡Gracias!