

## ***Airline Distribution Costs***

Examination of direct versus indirect distribution costs for airlines

**Full Report, 24 October 2017**



Commissioned by the European Travel Technology Services Association (ETTSA) and ECTAA (European Travel Agents and Tour Operators Association)

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All data in this study has been sourced from publically available sources or ETTSA member companies on a confidential basis. The confidential data has been anonymized and aggregated to ensure the source data cannot be identified and the data cannot be 'reverse' engineered.

The widely promoted narrative that direct distribution is 'cheaper' for an airline than indirect distribution is extensively reported and used by airlines to support their position with respect to competition authorities and the general public.

However, no rigorous testing of this assertion is available in the public domain. This report aims to address this point. In particular, this report examines the drivers of cost in the distribution process.

A number of key drivers are effecting change in distribution behaviour and costs:

**Customer acquisition, competitive on-line landscape:**

Airlines that want to drive direct sales via their own websites have to replicate the advertising and reach of the online travel agencies and 'meta' search companies.

This is proving expensive and is not effective for certain markets and the European major LCCs, EasyJet and Ryanair, are now distributed via travel agencies (through the GDS) in order to access the business market.

**Customer service:**

Travel Management Companies and Online Travel Agencies provide substantial back office support for businesses and customer service for the wider market.

They offer 24 hour multi-language service centres globally. This cost will fall upon the airlines if not provided by these companies.

**Technology:**

The GDS and OTA have invested massively in a range of consumer-facing and back office technology that greatly enhances the consumer experience and provides service for business passengers.

The airlines are finding it challenging to offer the same service; Lufthansa has hired 17 business partner companies to help develop its direct product

**Payment, finance costs and administration:**

Major costs such as credit cards and other processing costs are paid by the OTA and agents.

These costs will fall on the airlines if they move traffic directly to their websites.

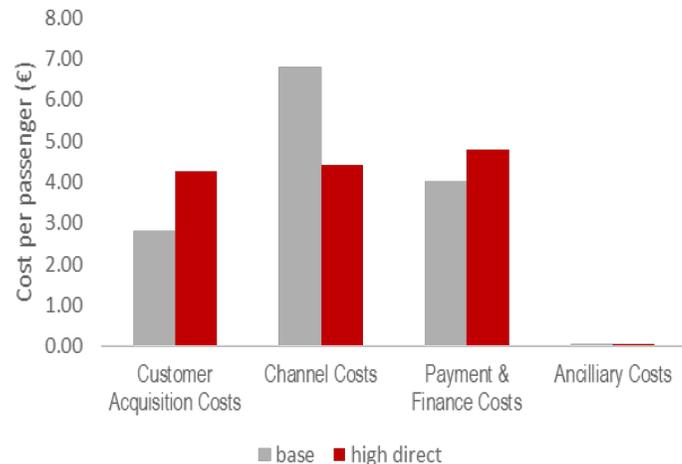
**Websearch:**

'Ads' are dominated by the OTA who have invested intensively in non-branded ads creating a step-change in transparency and customer service for passengers but at a cost per ad that will have to be matched by the airlines to attract direct sales.

# Executive Summary: Detailed modelling shows limited impact of increasing direct sales

This report has looked at the distribution landscape and drivers and has modelled objectively and accurately (subject to data limitations) the impact of moving sales from indirect to direct channels. The cost differential is presently much smaller than airlines contend. For network carriers the cost of direct distribution is €12.56 versus €14.21 for indirect.

## Network airlines full distribution cost per booking €



The main model assumption used is that airline websales increase to 60% from the base of 40% and direct sales increase from 47% to 67% including the use of airline call centres, ATO and CTO.

The impacts are complex with a number of key dynamics:

- Substantial increase in average ads cost to pull consumers from their current channels
- Some costs are reduced due to lower GDS booking fees and less agents commission.
- Increased costs of customer service that agents provide for customers and the credit card costs, some fraud costs and the cost of managing customer changes would fall on the airline.
- The final estimate is a reduction of total cost per booking of €0.11 but with substantial risks of losing market share, especially in the business market, and a major organisational challenge.

*The ultimate loser may be the consumer due to less price transparency and potentially worse customer service.*



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The analysis in this report is based on detailed knowledge and data of the travel industry's business model and the players that operate within.

However, every player in the industry operates the model slightly differently and has differing level of access to privileged information which impacts their costs base. Whilst the authors had access to specific data to populate the cost model, other data required 'considered' estimation.

As a consequence, any numbers provided in this report will be the average number derived from within a range for a particular cost.

The methodology to produce this report has included the following stages:

<p><b>Desk research:</b></p> <p>There is a wide body of literature covering airline sales, marketing and distribution. Infrata has undertaken a comprehensive review of literature from industry bodies, trade press and academia.</p> <p>A full list of the sources and literature search is provided in the appendix.</p>	<p><b>Primary research:</b></p> <p>Infrata has sourced information and characterised the issues through a series of confidential interviews with industry representatives including airlines, distribution companies, travel agents and other industry bodies.</p> <p>A list of participants is provided in the appendices although some respondents wish to remain confidential.</p>	<p><b>Data platform:</b></p> <p>Infrata has developed a platform of the key data that impact upon distribution cost.</p> <p>Some data was relatively straightforward and easy to source, such as the cost of processing bookings or credit card costs.</p> <p>Other data, such as airline 'ads' cost was more opaque and assumptions have been made where necessary. The data platform allowed the derivation of sensitivities of certain costs to distribution channels used.</p>	<p><b>Data modelling:</b></p> <p>Infrata developed a model that took into account all the costs of distribution, some of which are not typically included in distribution cost model.</p> <p>The modelled applied 'unit rates' of cost and channel sensitivities to hypothesise aggregate airline distribution costs according to their chosen distribution mix.</p> <p>Different costs applied to the three main types of carriers analysed.</p>	<p><b>Reporting:</b></p> <p>The results are presented as a range of costs that can be compared to see the magnitude of difference between the varying levels of direct distribution.</p>
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- Detailed Cost Summary

### *Supporting Facts and Analysis*

- Airline Distribution *Market Dynamics*
- Airline Distribution *Customers and Revenues*
- Airline Distribution *Channels*
- Airline Distribution *Model Output*
- Appendices and Model Assumptions



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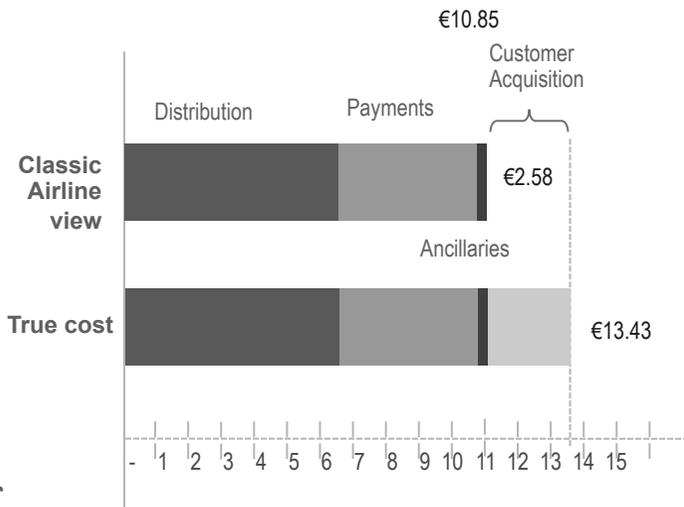
# Airline Distribution *Detailed Cost summary*



## Network Airline

(Large Home Market- 47% Direct\*)

Total Distribution Cost per booking (€ )



The majority of airlines believe the cost of “direct’ distribution” (e.g. own website and sales office) is “*significantly*” lower than selling via ‘third party intermediaries’ such as travel agents and online travel agents using GDS. This assertion is backed up by various studies.

Our analysis in the chart (left) illustrates the gap between the airlines’ usual view of distribution cost and our view of the full cost. The ‘classic’ airline view of distribution usually contains the following:

- ‘Distribution’ - comprising mainly agents’ commission, GDS booking fees, reservation hosting fees;
- Payment and finance - credit card costs, fraud costs, BSP costs, other IT costs;
- Ancillary services - reservation and IT related costs supporting the sale of ancillary services.

This ‘classic’ airline view typically excludes:

- Online cost of customer acquisition including web-search (Google ads);
- Offline marketing costs such as newspaper and TV advertising;
- Cost of technological development and product enhancement;
- Cost of customer service, sales offices, agents’ back office and merchant costs.

**This study shows that these additional ‘non-accounted for’ costs substantially narrow and for some types of airlines eliminate entirely the gap**

*The following analyses are based upon a model of ‘typical’ airlines with average costs. The results will vary considerably by individual airline.*

\* Direct Sales comprise:  
Web sales (40%) and ATO/CTO/CC (7%)

Source: Infrata

## Further, three sets of inter-related 'drivers' need to be modelled as they materially 'impact' outcomes for the airline

In developing a comprehensive cost /impact model, this study needed to take into account three interrelated cost drivers:

(1) Market dynamics, (2) Customers and revenue and (3) Cost per channel

### (1) Market dynamics:

Costs are impacted by the shifting structure and ongoing developments in the airline industry:

#### • **Booking Direct:**

The airline industry is shifting online and there is a trend towards moving traffic to booking direct on airlines' websites. The online winners are increasingly those who can drive traffic to their website.

#### • **Online advertising:**

Google and other websearch ads are now the main way to drive traffic to websites. 'Ads' are the first touch point of the consumer. The most effective ads are paid, unbranded but these are expensive with growing costs. They are 'owned' mainly by the major OTA (Expedia, Travelocity) not the airlines.

#### • **Technology:**

Technological upgrades/innovations to enhance the consumer product and keep in touch with the consumer are being developed by companies including Amadeus, Sabre, Travelport and Expedia. Development is now being concentrated on mobile technology. These are expensive and long term investment programmes.

- **Airline network development:** airlines seeking to grow in non-base regions have to contend with the market power of base airlines. The most cost-effective way to reach the market is to use all distribution channels.

### (2) Customers and revenue:

The effectiveness of the channels to market is driven partly by the types of passenger that particular channels work for and the average revenue per passenger of customers by channel. There continues to be a paucity of information that would allow a more accurate modelling of the market taking into accounts factors such precise revenues by channel.

Passenger channel shifting is a key factor in the model with, we believe, major cost and revenue impacts:

- revenue will change as higher revenue customers from TMC are resistant to moving to airlines' websites
- airlines selling direct may claw back some discounts previously shared with travel agents

### (3) Costs by channel:

There has been a close examination of the costs of distribution through all the different channels.

The model allows the shifting of passengers from one channel to another. Early important observations are that:

- internal airline distribution systems costs appear relatively fixed by channel, notably
- commissions, search engine marketing (SEM), GDS are variable by channel

The report presents a full cost evaluation of using each distribution channel.

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**Model:** the data has been incorporated into an initial channel cost model showing the expected relativity of costs per booking by channel. The model has been developed for three different types of airline: (1) Network - large home market, (2) Regional and (3) Network – small home market.

# The full cost impact of moving bookings from *indirect* to *direct* is negligible for network carriers (large home market) and negative for regionals and network carriers (small home market)

Our study modelled a specific 'what-if' scenario: Shifting the percentage of bookings from the airline's current 'indirect' channel ('47%') to higher percentage of 'direct' channel ('67% direct') by carrier type. The percentage shift represents estimated 'real world' examples.

## Cost per passenger booked (€ per booking) – per carrier type, per level of direct booking

Carrier type	Network (large home market)			Regional			Network (Small home market)		
	47% direct	67% direct	Variance	47% direct	67% direct	Variance	47% direct	67% direct	Variance
Customer acquisition €	2.58	3.56	0.98	2.64	4.0	1.52	3.77	6.21	2.44
Channel cost €	6.75	5.11	(1.64)	7.3	5.83	(1.47)	7.75	5.73	(2.02)
Payment, finance and admin €	4.04	4.59	0.55	3.46	4.09	0.63	4.04	4.59	0.55
Ancillary costs €	0.06	0.06	0.00	0.06	0.06	0	0.10	0.10	(0.00)
<b>Total €</b>	<b>13.43</b>	<b>13.32</b>	<b>(0.11)</b>	<b>13.46</b>	<b>13.98</b>	<b>0.52</b>	<b>15.66</b>	<b>16.73</b>	<b>1.07</b>

For a network carrier with a large home market, the net effect of the channel shift is a reduction in 'total' distribution cost of up to €0.11. This comprises a €1.64 reduction in 'Distribution' but compensatory increases in 'Customer acquisition' of €0.98 and payment, admin and finance' of €0.55.

\* 47% & 67% Direct Sales comprise:  
Web sales (40% /60%) and ATO/CTO/CC (7%)

Source: Infrata, \* IATA

# Home market versus non-home is a vital driver of distribution cost **Infrata**

In modelling network carrier distribution dynamics, two important distinctions exist: (1) the concept of home market (versus a non-home market) and (2) whether the home market is large or small

## Characteristics:

- A network carrier's home market is where the carrier has its primary client base and where it normally originates from
- Large network carriers are often legacy national flag carriers who used to enjoy a monopoly or quasi-monopoly in their legacy national market (what we now call their 'home market')
- These flag carriers were frequently also state-owned or state-controlled
- Large network carriers often still enjoy a disproportionately strong brand position in their home market (vs. non-home market). This position relates to reputation, recognition, national identity, cultural heritage and commercial presence

## Implications:

- Carriers with a strong brand position have a much lower cost of customer acquisition when distributing direct. This is because customers tend to 'default' their travel searches to carriers they know, recognise and relate to
- This means that direct distribution for the carrier in its home market will be lower cost to develop and maintain than in its non-home market
- Further the cost of indirect distribution in the carrier's home market will also be lower (than in the non-home market). This is because the value (and hence bargaining power) of intermediaries will be relatively lower in the airline's home market compared to non-home markets

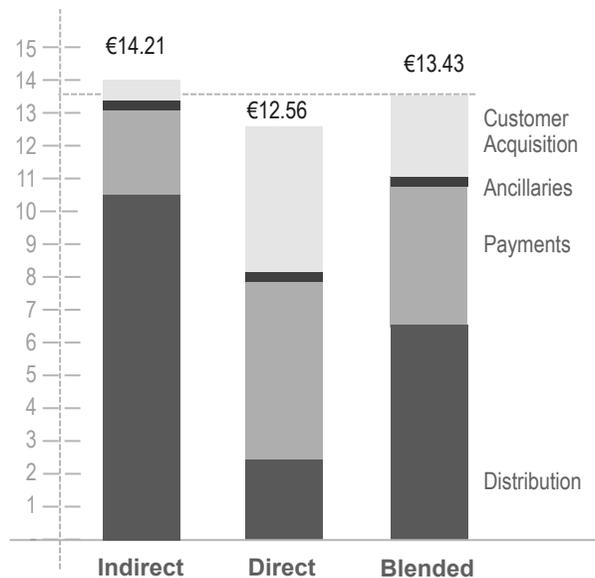
Two consequences of the above are:

1. The difference between **direct** and **indirect** distribution costs will be further reduced (or completely eliminated) in a network carrier's home market (on a fully allocated cost basis); and
2. Network carriers with a larger home market will have lower overall indirect distribution costs than carriers with smaller home markets

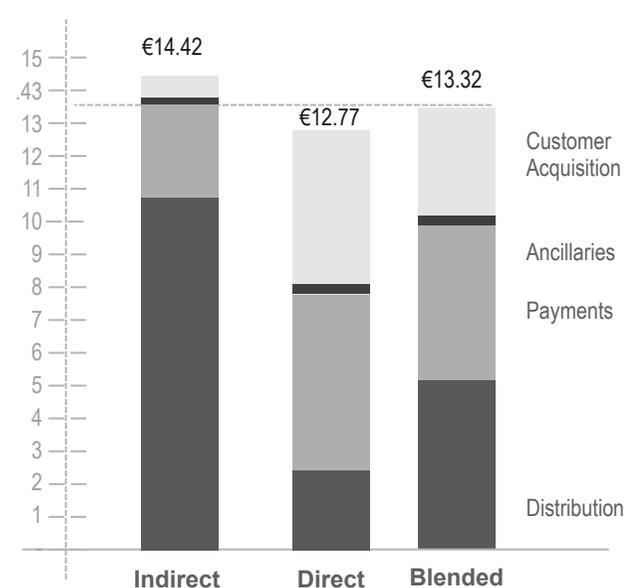
# The blended difference in total booking cost per booking for Network Carriers (large home market) is 'immaterial' and remains largely unchanged as airlines move to greater direct distribution

The cost of the direct and indirect distribution channels between the low-direct and high-direct scenarios

47% Direct Channel Distribution Cost per booking (€)



67% Direct Channel Distribution Cost per booking (€)

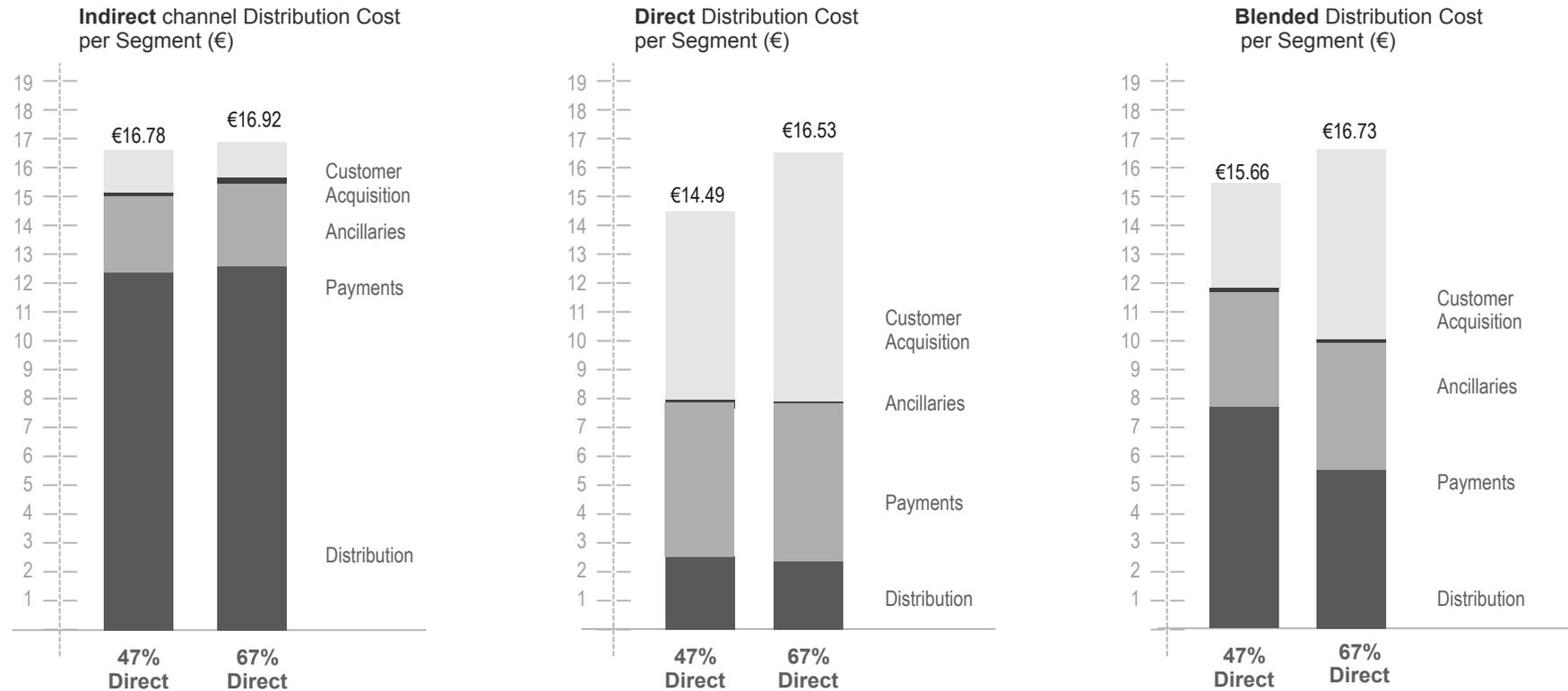


## Network Airline (Large Home Market)

Channel costs €	47%			67%		
	Indirect	Direct	Blend	Indirect	Direct	Blend
Distribution	10.48	2.56	6.75	10.65	2.38	5.11
Payments etc	2.84	5.39	4.04	2.90	5.42	4.59
Ancillaries	0.06	0.06	0.06	0.06	0.06	0.06
Cust Acquisition	0.83	4.55	2.58	0.81	4.91	3.56
<b>Total</b>	<b>€14.21</b>	<b>€12.56</b>	<b>€13.43</b>	<b>€14.42</b>	<b>€12.77</b>	<b>€13.32</b>

\* 47% & 67% Direct Sales comprise:  
Web sales (40% /60%) and ATO/CTO/CC (7%)  
Source: Infrata

# For Network Carriers (small home market) the impact of moving bookings from indirect to direct distribution channels increases costs



## Network Airline (Small Home Market)

Channel costs €	Indirect		Direct		Blended	
	47%'	67%'	'47%'	'67%'	'47%'	'67%'
Distribution	12.35	12.53	2.56	2.38	7.75	5.73
Payments etc	2.84	2.90	5.39	5.42	4.04	4.59
Ancillaries	0.10	0.10	0.10	0.10	0.10	0.10
Cust Acquisition	1.49	1.29	6.34	8.63	3.77	6.21
<b>Total</b>	<b>€16.78</b>	<b>€16.92</b>	<b>€14.49</b>	<b>€16.53</b>	<b>€15.66</b>	<b>€16.73</b>

\* 47% & 67% Direct Sales comprise:  
Web sales (40% /60%) and ATO/CTO/CC (7%)

# Little difference exists between 'distribution' costs of the Indirect channel and Direct Channel when fully allocated costs are compared Infrata

## Network Airline (Large Home Market-47% direct)

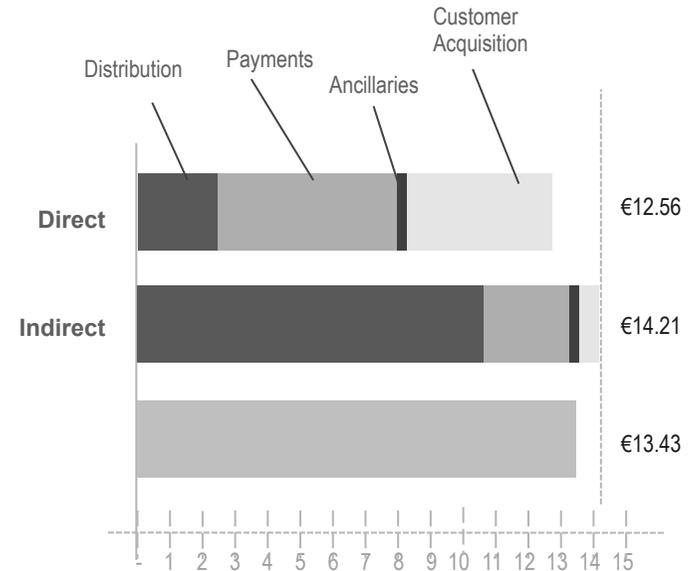
### 'Distribution' only cost comparison

(Blended: home and non-home market)

Cost per Segment booked by channel



### 'Properly' allocated cost comparison



Channel costs €	Large Home Market-47% direct		
	Indirect	Direct	Blend
Distribution	10.48	2.56	6.75
Payments etc	2.84	5.39	4.04
Ancillaries	0.06	0.06	0.06
Cust Acquisition	0.83	4.55	2.58
<b>Total</b>	<b>€14.21</b>	<b>€12.56</b>	<b>€13.43</b>

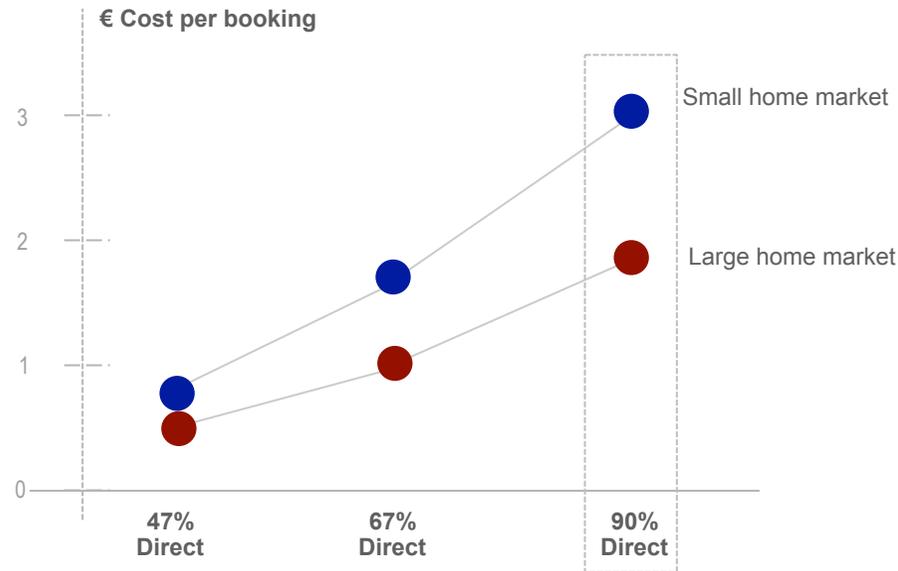
\* Direct Sales comprise:  
Web sales (40%) and ATO/CTO/CC (7%)

Source: Infrata

# Online advertising (e.g. Google) costs grow exponentially for a Network Carrier (small home market) as it moves to greater direct distribution and for network carriers with large home markets, it increases by nearly 70%.

For carriers operating in large home markets (>60% bookings originating from within its home territory) ads cost increase from an estimated at €0.61 per booking at 'low' level of direct sales (47%) to €1.01 where there is a greater emphasis on direct sales (67%) - as incremental direct sales are picked up in the home territory where there is market and brand pull.

However for Carriers with small home markets (where <30% of the airline's sales are inside its home market ) the cost is projected to increase from €0.82 to €3.00 (47% to 67% direct sales respectively)



90% levels included to illustrate the impact of dynamics

	47%	67%	90%
Large home market (>60% originating traffic)	0.61	1.01	1.8
Small Home Market (<30% originating traffic)	0.82	1.71	3.0

\* 47% & 67% Direct Sales comprise:  
Web sales (40% /60%) and ATO/CTO/CC (7%)

Source: Estimates based upon ads industry sources and airline specific data



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# Airline Distribution *Market Dynamics*





The development of distribution approaches by airlines and distribution costs is a function of the dynamics of the overall aviation market.

The research undertaken in the course of this study has revealed the major external factors that impact distribution costs for individual airlines and for the industry overall.

These major factors have been analysed in the following pages and their potential impact has been quantified where possible.

However, some of these issues, whilst informing the study, are not easily quantified and would require more research and dialogue, especially with airlines.

Various industry studies suggest that traditional distribution costs have fallen in recent years from an average of 16% to well under 10% but these exclude the growing cost of 'customer acquisition'.

This has been facilitated by a major sub-industry of software providers providing an array of solutions in optimising ways of:

1. providing consumer choice
2. presenting airline product to the market
3. efficient allocation of seat capacity.

The major areas of cost increase pertain less to the logistics of taking reservations, decrementing inventory and issuing tickets and more to communicating with potential customers.

The modelling process used a detailed knowledge of these systems and processes to model present and potential future airline distribution regimes

# Airline distribution costs are impacted by online sales, customer acquisition and technological development

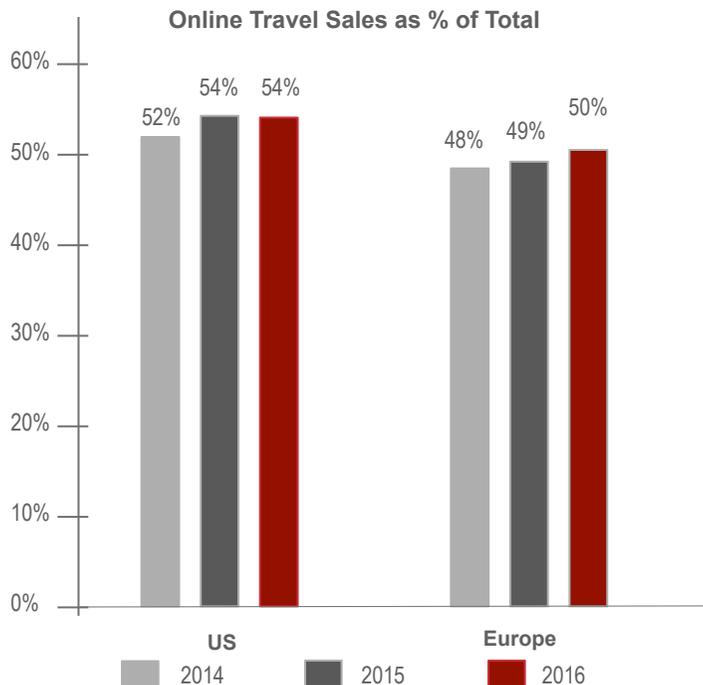
Key market dynamics impact airline distribution costs. These dynamics either simplify the 'chain' thus reducing certain cost (e.g. online booking) whilst other dynamics increase 'complexity' (e.g. increased advertising costs and distribution technology).

Category	Dynamic
Online	Airlines aim to increase bookings via their own websites including 'direct connect' (led by LCC and American Airlines in US).
Search Engine Ads	Airlines needs to 'invest' heavily in customer acquisition via Google ads (others also exist) to ensure traffic to own-brand.com site.
Ancillary revenues	Alternative business models and declining average ticket prices drive revenue enhancement activity to a wide range of 'ancillary' revenue activity.
Technology (1)	Airlines aim to optimize their bookings on their most profitable channel mix - employing sophisticated revenue and channel management tools.
Technology (2)	Airlines are facing new distribution players (e.g. speedmedia) which employ new technology (e.g. mobiles) and business models (e.g. Google's Trips).

# Online sales are now over 50% of tickets and growing

Airline web sales are the largest individual channel used for distribution and provides the greatest lever of 'disintermediation'

**Online Travel Sales 2015 and % of Market (including airline web sales and OLTA)**



## Key trends

Online sales overall have continued to grow in the last three years as a percentage of total travel sale (see table). Global online travel sales exceeded \$523bn in 2016, over half of the global total.

Airline direct sales are growing fastest in emerging markets and are growing less quickly in 'mature' US and European markets.

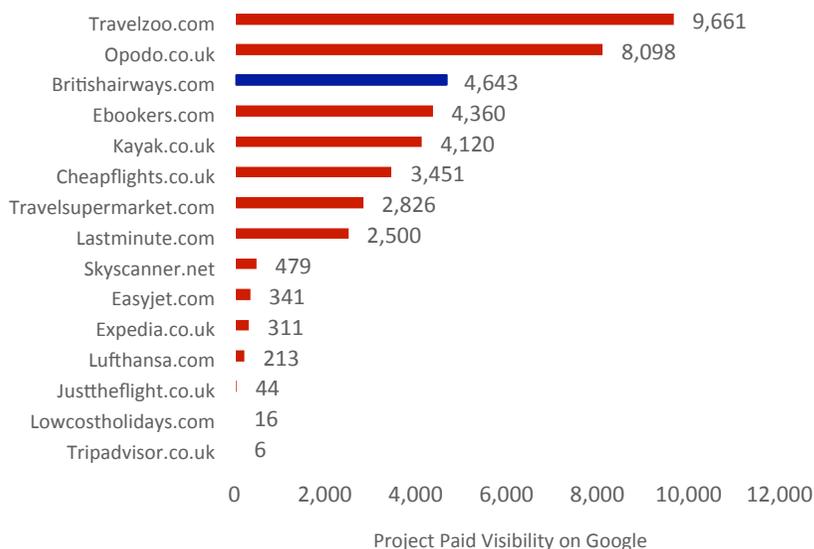
Issues around direct sales produced by the research are:

- Airlines consider websales as an efficient way to bypass Travel Agents
- Websales are most effective at selling on ancillary products although IATA's NDC and other processes are enabling TMC/TA to do this
- Business passengers require the 'high value' services delivered by TMCs; this channel has proved resilient due to the requirement for value added services like back office, customer service and payment on account
- Airlines are being outspent and are losing visibility online due to heavy marketing push by OTA and meta
- Airlines with heavily concentrated markets can rely upon native search but expansion or more widely distributed markets will require very substantial advertising cost.
- Lufthansa is pushing its direct channel by 'penalising' the indirect channel with a €16 surcharge on GDS bookings

**Two differing levels of Websales by airline group are modelled (base and high direct) in the model**

# Airlines need to compete with 'heavy-spending' OTAs and Metas to secure online sales (1 of 2)

## Top 15 Flight Company Paid Search UK – 2014



### Key trends

- 'Ads' are a key tool in online sales
- OTA and airlines agree keywords with the search engines and pay to appear when these words are typed by the passenger into their browser
- Passengers routinely use common keywords to begin their search for a flight and the best fare
- Paid ads should ensure that the OTA or airline appears on the first page
- Not appearing on the first page can badly affect airlines' sales

### The analysis of keywords provides three main lessons

- the OTA / Meta are outspending the airlines heavily
- Foreign airlines are relatively 'invisible' in non-base markets
- Using OTA/Meta allows travel providers to reduce their keyword spending

- 'Project Paid Visibility' on Google shows the visibility of an entered internet address in the advertisements area on Google compared with an applied keyword set.

The main advertisers in UK and Germany are OTA / Meta

- In UK 12 OTA / Meta compete with 3 airlines
- In UK 8 companies dominate paid search, 5 dominate in Germany
- EasyJet appears low on paid search – success of long term branding will have pushed native
- In Germany 12 OTA / Meta v 2 airlines, 1 tour operator appear on equivalent list
- Only LH appears as a foreign airline in either list

Source: Morningstar, searchmetrics

# Airlines need to compete with 'heavy-spending' OTAs and Metas to secure online sales (2 of 2) Infrata

## US Ad spend and click through 2014 – Top Travel Keywords

Keyword	Spend (\$m)	Impressions (m)	Avg. Clickthrough Rate	Avg. Cost/Click (\$)	# of Advertisers
Cheapflights	9.9	191	3.1%	1.70	74
Flights	2.7	59	3.3%	1.41	52
Expedia	2.6	53	13.5%	0.36	4
Cheap Tickets	1.8	69	2.8%	0.92	67
Priceline	1.7	22	18.2%	0.43	8
Orbitz	1.6	21	19.6%	0.40	4
Travelocity	1.6	26	15.8%	0.40	13
Cheap Airline Tickets	1.5	22	3.8%	1.79	72
Airline Tickets	1.5	44	2.5%	1.37	74
US Airways	1.3	18	14.6%	0.49	12
Southwest	1.2	19	14.3%	0.45	3

## Key trends

Ads are complex for airlines to manage effectively.

- Cost of paid ads are growing and conversion costs getting very close to third party fees the airlines are trying to escape from.
- Some airlines do not appear in the top results for their brand searches including searches in home markets.
- Potentially space for competitors and OTA's to generate the majority of brand impressions and traffic.
- Brand traffic is the highest converting due to loyal customers - generally representing majority of revenue generated by the channel.
- Airline websites are heavily competing with OTAs and adding other traditional travel agency products like hotels, rent a car, etc.

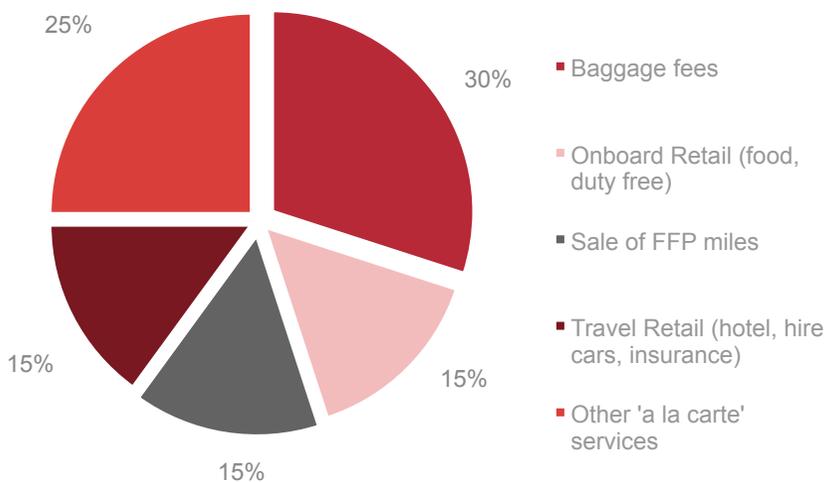
*The average cost per click in Google AdWords is between \$1 and \$2 on the search network. The average CPC on the Display Network is under \$1. The most expensive keywords in AdWords cost \$50 or more per click. If a consumer searches 22 times for the best flight there is the potential to incur (in a most extreme case) up to around \$50 in ads cost for the airlines or the online travel agent and ultimately the air passenger.*

**Ads are one of the major cost drivers of the airline direct distribution cost model**

# Distribution companies are making major investments to sell ancillary services for the airlines

Airlines websites are currently the best channel for selling ancillary products. Airlines can tailor the display to promote their products – airlines claim that this is not possible at the moment on the OTA and on agents’ GDS screens. However, recent innovations have led to increased sales of ancillaries by TA.

**Airline Ancillary Revenues 2014 by Main Category**  
**Total Non-US Ancillary Revenue 2014 Estimated \$36.5 bn**



## Key trends

Ancillary revenues for the top 10 performing airlines globally rose to almost \$26 billion in 2015 compared to \$8.4 billion generated in 2008, a CAGR of 17.5%. Total global was \$59.2bn.

US low cost airline Spirit generated the highest amount of ancillary spend per passenger at \$51.80.

Ancillary revenue is generated by activities and services that yield revenue for airlines beyond the simple transportation of customers from A to B.

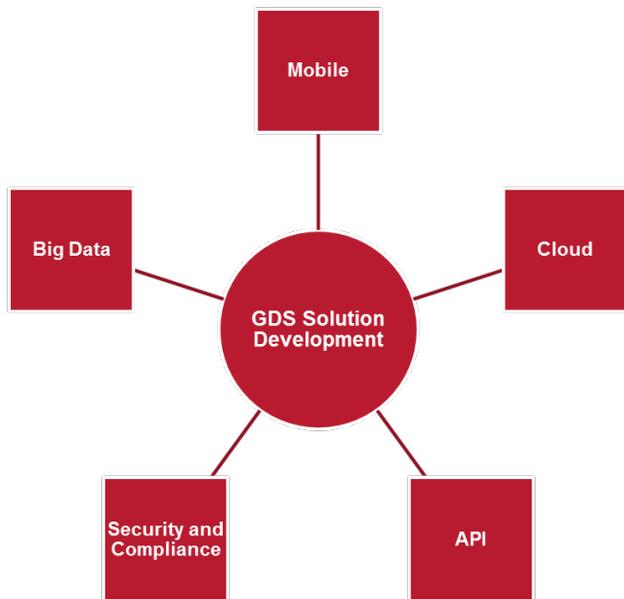
Revenue from optional services including onboard sales of food and beverages, checked baggage, premium seat assignments, and early boarding benefits, was \$36.7 billion of the projected global 2015 total.

The remaining share, at \$22.5 billion, comes from non-fee activity such as the sale of frequent flier miles to program partners (a major revenue in the US) , and commissions earned on the sale of services to travelers, such as hotel accommodation and car rentals.

The IATA NDC project and other initiatives aim to facilitate the sale of ‘ancillaries product’ for GDS and OTA.

**Ancillary revenues will be an important factor in future distribution channel development**

# Airlines need to match similar levels of investment made by GDS to continually ensure satisfactory levels of functionality and connectivity



*“Travel technology providers can spread development and maintenance costs over dozens or hundreds of travel providers, thus increasing capabilities and reducing costs”  
Leading industry analyst*

Major investment by GDS, OTA and other major IT providers spread over areas of mobile, ‘big data’, Cloud, API and compliance. Ongoing service offering includes:

- **Data Centre (Amadeus used as example):**
  - 37 Petabytes+ of storage and over 16,500 infrastructure devices.
  - peak processes 39,000+ end user transactions per second and over 47 billion SQL executions daily.
  - 5,500+ IT changes and over 540 application software loads daily
- **Airlines products:**
  - GDS connectivity
  - inventory hosts
  - revenue management
  - e-commerce
  - ticketless access, merchandising solutions and self-booking tools.
  - cloud availability, NDC compliant XML connectivity, revenue optimisation and financial suites
- **Travel agencies, meta-search engines, travel management companies and corporations products:**
  - cloud-based new generation selling platform
  - search engines
  - front-office customisation and conversion tools
  - merchandising solutions
  - ancillary services
  - fare families
- **Other travel providers**
  - data, connectivity and solutions for hospitality, rail etc.

# For true cost comparison, the costs associated with the technology development of 'Direct' needs to be included

Lufthansa 'Direct Connect' project lists 17 technology partners from 5 countries – providing connectivity and functionality across numerous markets, affiliates, channels etc. is one that requires expertise and careful management. Carriers seeking to replicate reach and functionality of direct connect can expect similar required effort and investment. IATA NDC ancillary product implementation may ultimately require a similar scale of effort. These costs may be absorbed by LH or passed on to the consumer via the Travel Agent.

## Sample selection of LH Direct technology partners

	<p>Platform for booking business trips, online booking engine, travel management system.</p>
	<p>Content Aggregator - GDS Content and Direct connections with airlines and other travel suppliers in the business travel eco-system</p>
	<p>Midoffice for the international travel industry.</p>
	<p>Multi GDS B2C /B2B booking engine, XML API, Low cost carriers, Payment services, PCI DSS proxy solutions and fraud prevention solutions.</p>
	<p>Travel production and distribution platform; solutions for dynamic travel production</p>
	<p>Back office &amp; reporting systems for the travel sales segment, with interfaces to all common front and middle office providers, tourism service providers and credit card companies.</p>

## Key trends

Technologies provide solutions for areas including:

- Internet booking engine (IBE)
- Content aggregator
- Mid-office
- Back office
- XML, API (programming languages and interfaces)
- Payment services

The systems integration of multiple technology providers provides substantial challenges to airlines:

- Integration with existing platforms
- Quality control
- Guaranteed supply, ongoing product investment and innovation
- Internal team familiarity with technology provider products



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# Airline Distribution: *Channels*



# Distribution, Sales and Marketing goals vary by airline type



The modelling process has segmented the airline market into three main types; clearly this is subjective and different categorisations are possible.

## Network (Large home)

BA, Air France, American

### Characteristics

Widely dispersed market, high levels of business traffic, major trunk routes, targeting all market segments. Requires 'comprehensive' distribution and sales and marketing effort utilising all available channels

## Network (Small home)

Finnair, Icelandair

Highly distributed market across global markets. Distribution and sales and marketing goals or maximising penetration across numerous markets. Need to build/maintain consumer awareness but control cost.

## Regional

Flybe, Aer Lingus, Alaska

'Local' highly targeted market and important relationship with partner carriers. Distribution goals of low cost and ease of access for major corporate accounts and business market.

These customer groups formed the basis of the distribution cost model



The Infrata business model has been designed to hypothesise and assess the impacts of changing distribution regimes by different customer types.

The complex airline market has been segmented into three airline types

1. Network
  - a. Large home market
  - b. Small home market
2. Regional airlines

The major market characteristics of each is described herein with the potential distribution impacts.

The airline market is changing and one of the key dynamics is the growing share of LCC. These have 39% of the intra-European market in 2016 although their growth has slowed.

The structure of the network airlines is changing in response with the development of LCCs by BA/IAG (Vueling), LH (Eurowings) and a regional airline Air France's (Hop).

Key dynamics of the customer base that drive the model are the fares by channel and the mix of fares by carrier type.

Further dynamics are the variances in fares by area of sale and by point-to-point and connecting passengers.

Fares actually collected are a closely guarded airline business secret and there have been considerable restrictions on data.

## 'Channel Complexity' is driven by the market dynamics and interaction between 6 main channels to consumer bookings

*"...the increasing sophistication of passenger services systems, the complexity of each transaction is growing significantly."*

*Amadeus Global Business Report 2013*

Airlines have 6 main channels to market including:

- Web
- OTA
- TMC
- Call centre / ATO /CTO
- Affiliate
- TA

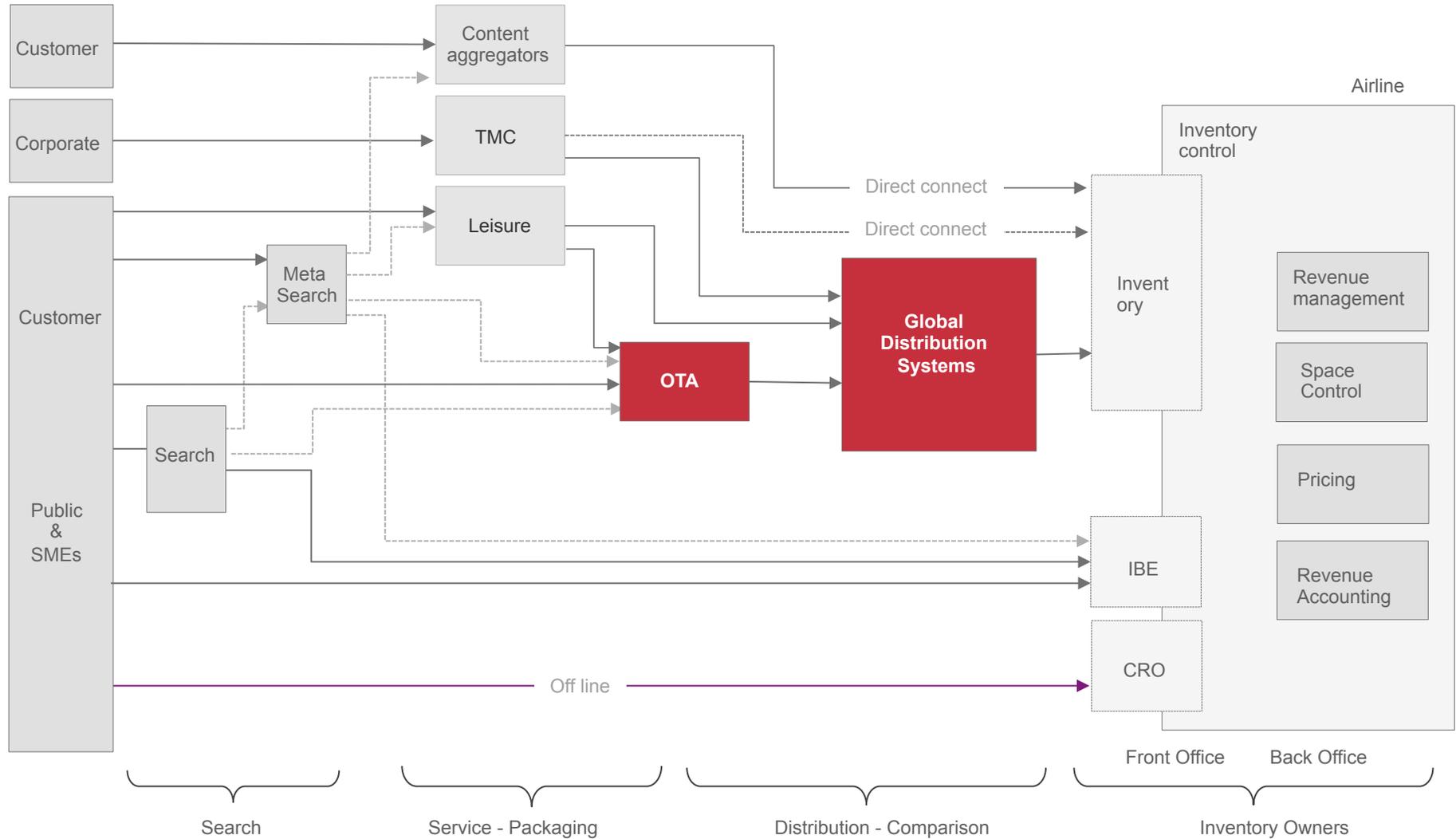
GDS are also discussed in this report as a channel although it exists as a facilitator serving the business to consumer contacts of the TA, OTA and TMC.

Airline internal costs are also examined as a major cost and one that changes according to channel mix.

Customer acquisition costs impact on all channels and are sensitive to and driven by channel mix.

Ancillary revenues and the cost of distributing ancillary products is an area of growing concern for the airlines.

# Consumer have several direct and indirect (primary and secondary) channels by which they can access airline bookings



# Airlines employ a range of channel to achieve sales. This mix varies by Airline type



Channels To Market (%) Used by Airline Groups

Airline Type	Web	CC /ATO /CTO	TA	OTA	TMC
Network- large	40	7	10	18	25
Regional	35	10	10	25	20
Network-Small	40	7	10	18	25

### Channel analysis

The channel mix of these groups are a major driver of cost in the distribution cost model.

Network carriers targeting business market and more distributed market typically utilise more channels.

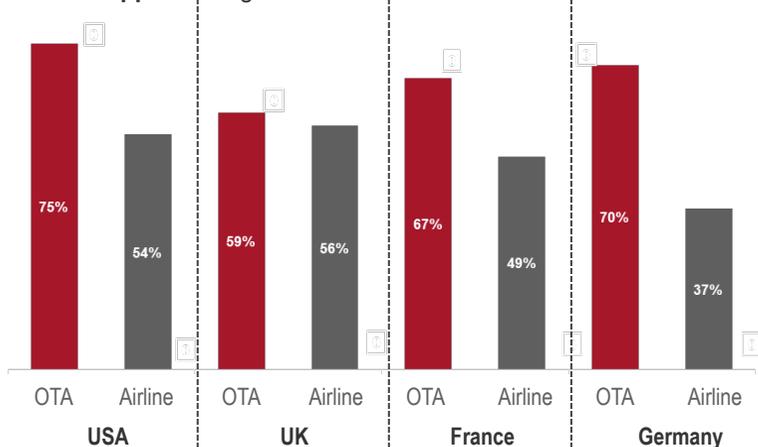
Agents / TMC are important channels into business market

Opportunities for direct connect increase with higher 'local' sales as the airline is likely to have greater brand presence and marketing effectiveness.

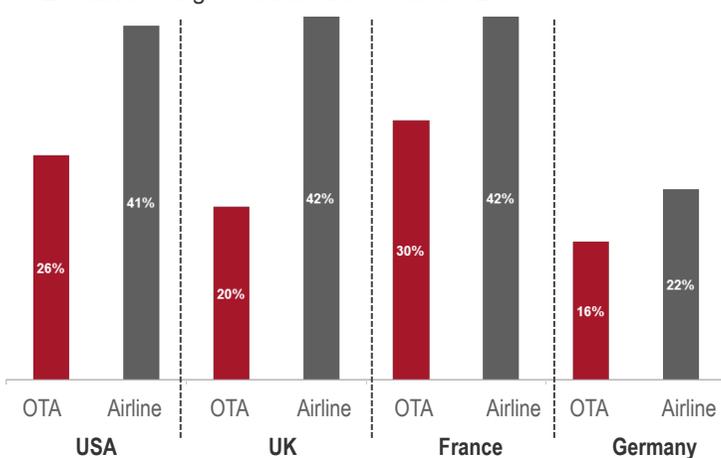
The channel mix shown will form the 'base' scenario for the distribution cost model

# Shoppers have a greater propensity to ‘comparison shop’ using OTAs, than on Airline websites – Airlines website convert more bookings

**Comparison Shopping**  
% Shoppers Using OTA and Airline Website 2015



**Purchase**  
% Bookers Using OTA and Airline Website 2015



Websales are averaging around 50% in the US and the major European markets:

- Network airline websales estimated to account for 35%.
- 80% of LCC sales.
- 42% Regional
- Network (high connecting) and Network (high non-base) are expected to have lower websales at 30%

Airlines concentrating on websales as a sales channel due to following ‘pros’:

- Perception that airline ‘owns’ the customer
- High conversion % - see charts
- Avoids GDS costs
- Avoids agents commission, incentives, overrides, special fares
- Superior channel for promoting ancillary products
- Improved cash flow
- Avoidance of direct price comparison

‘Cons’ often understated by airlines are:

- High cost of customer acquisition – ads to drive traffic to the website
- Significant investments in technology by competitor OTA
- Significant investments by OTA in ads and other customer acquisition

Presently the trend is for shoppers to browse OTA but more ‘bookers’ use airline website, see charts.

**The conclusion for modelling purposes is that web sales will increase as a % but will have to be supported by significant advertising. Airlines’ costs are reduced by OTA providing service**

# The online Travel Agents / Meta business model is based on a low-margin, high-volume sales

OTA sales are characterised by large volume of traffic driven though paid search

### OTA Size and Performance 2015

Company	Total Visits (m)	Bounce Rate	% Traffic From Search	From Paid Search	From Social Networks	From Display Ads
Booking.com	218	30%	34%	53.3%	1.36%	2.45%
Expedia	70	37%	33%	31.6%	0.95%	1.85%

Notes

- Bounce Rate: where the user left site from the entrance page without interacting with the page
- Percent of traffic from search: the amount of visitors from organic search
- Percent of traffic from paid search: the amount of visitors who entered the page via keyword bought to increase the visibility. I.e. "Cheap Flight"
- From social networks: the amount of visitors who entered the page via ad/reference on Facebook, Instagram etc.
- From Display Ads: paid ads on (for instance) Google Display Network.

### OTA analysis

OTAs offer airline products often in conjunction with hotel and other components of the travel.

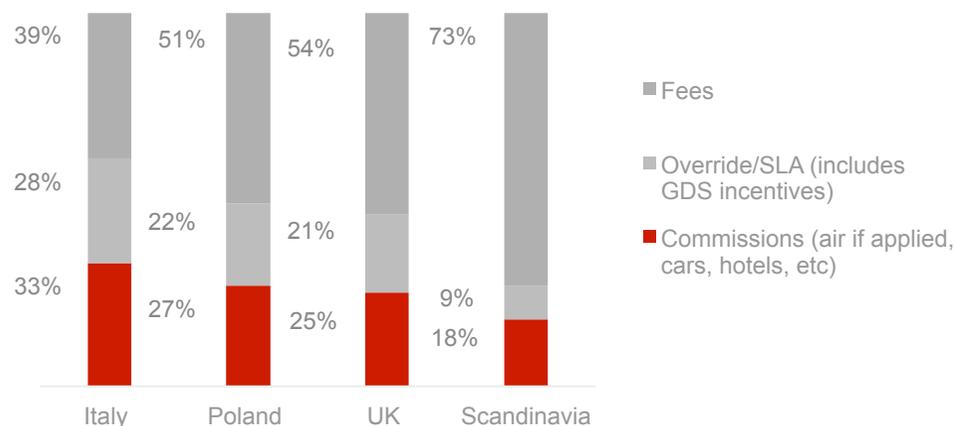
- Predominantly leisure-oriented and their business model is based on the commissions earned by OTA at the moment of the booking and revenue coming from advertising.
- Some OTA have business affiliates
- Traffic comes to some OTA mainly from paid search (53%)
- OTA tolerate a high 'bounce rate': their costs are spread over a large number of visits
- OTA content is provided by both GDS and through airline API and 'screen scrapping'.
- OTAs aggregate the results into a single list or display them according to their source.
- Meta searches generate revenues through advertising and referring clients.
- Customers then can purchase the travel product via OTAs or by accessing the supplier website.

**Analysis of the scale of paid ads to OTA supports our assumption that airlines will have to invest heavily to drive traffic to their websites especially in non-base markets**

# TMCs experience strong corporate customer loyalty who require high value services. TMC services are not easily replicated by airlines



## Revenue Sources Mix for Business Travel Agencies



## TMC analysis

Overall TMC estimated to take 25-50% of the market outside of the LCC (source: Infrata)

TMC market is 'loyal' due to business service offering:

- Manage travel supply contracts
- Procurement programmes
- Help establish & enforce policies
- Cost reduction & productivity enhancing services
- Travel expense reporting
- Travel policies
- Visas and passports
- Out of hours services
- Offer important assistance in times of disruption.
- Corporate agency and inplants: supplies specialist travel services to business customers
- The business travel community sees great value in TMC service; this would be difficult for the airlines to replicate.

**TMC traffic is considered to be difficult to channel shift due to the service requirements of the business market**



*Call centre, ATO, CTO increase with higher 'other end sales'*

## Call centre analysis

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Call centres: typically taking 3-5% of airline bookings as most direct sales 'encouraged' to website. Costs are difficult to ascertain, costs per call estimated at €20-30 per ticket issued.

Call agents estimated to handle 7-10 calls per hour

ATO/CTO: increasingly a sales support function with a greater requirement for airlines with large international destinations. May also be fulfilled by a General Sales Agent.

TMC/TA/OTA currently process majority of calls. Expedia has 15,000 call centre staff.

**Airline costs have been derived from a number of sources and have been incorporated into the model. Assumptions have been made regarding cost development in each scenario**

# Affiliate programs are a growing but is an 'obscure' distribution channel. Costs to airlines may have 'escaped' previous studies

Affiliate activity is performance-based marketing in which a business rewards one or more affiliates for each visitor or customer brought by the affiliate's own marketing efforts.

Affiliate programs extend airline's reach through using partner's platforms. Affiliates include other travel providers, agencies and meta search. Examples of airlines using affiliates are Singapore Airlines using Affiliate Futures and the Turkish Airlines program described below.

## Turkish Airlines Affiliate programme

Ticket Type	Commission Rates in All Classes
Domestic Ticket Sales	€0.50 (per PNR**)
International Ticket Sales	€5 (per PNR**)

*\*Cookie period: valid for visitors' immediate session on price comparison sites. Permission is granted for a 30 minute cookie period.*

*\*\*Reservation code (PNR): the same reservation code can include more than one passenger.*

## Affiliates analysis

Affiliate partners have the rights to distribute airline products by agreement. There is an emerging body of affiliate networks serving the airlines including Affiliate Future, Commission Junction and Google Affiliate Network.

The British Airways Affiliate Marketing programme is an advertising programme that rewards media or site owners for displaying British Airways affiliate advertisements that link directly to ba.com for purchase on the site.

Affiliates earn commission on qualifying transactions which include a valid flight, holiday, car rental, or hotel booking made on ba.com. The link must be the last one used to direct the customer to make their booking on ba.com. Commissions vary by product, site type and region.

Turkish Airlines operates its Affiliate program with Digitouch in Turkey and Tradedoubler worldwide. Turkish Airlines only deals with price-comparison (meta-search) websites and have agreements with all local and global meta-search websites through its Affiliate program.

Commission is earned through online customers purchasing air tickets. Commission claims are generated when a passenger buys a ticket online. No commission is earned if the passenger only makes a reservation. Also, no commission is earned if the purchased ticket is cancelled within 30 days.

**Affiliate programs have been included in the model with assumptions on commission rates and channel percentage derived from web search and discussions with airlines**

# Travel agents provide services to clients which would otherwise have to be covered by airlines

## Travel agents undertake considerable number of customer service functions on behalf of airlines – not paid by airlines

### Selected TA activities performed for airlines and consumers

- 80% of UK bookings with itinerary changes are never ticketed - huge amount of uncharged time spent by agents preparing and amending itineraries never confirmed, ticketed and billed. These costs are borne by the agents, not the airlines.(1)
- 42% of UK bookings are changed prior to ticketing. This could be due to a number of reasons: agents asked to hold multiple flights, routes, classes and dates. (1)
- Agents required to utilise multiple distribution channels to obtain data, acquire best price and meet client product requirements.
- Offer important assistance in times of disruption.
- Fees paid by airlines to agents have been reduced to nil in many markets and 1-3% in others. (2)

### Travel Agents analysis

Agencies have seen airline ticket commissions steadily diminish since 2000.

This put pressure on the agency community to re-invent their role, their service and their value to the end customer whether this be a corporate or leisure traveller.

Travel agents now receive the majority of their income (fees) from clients not airlines.

Travel agents have changed their revenue model from supplier-led commissions to a client services and retail model where the end user pays for the service they purchase.

Travel agents not booking much scheduled leisure travel, estimated 5% of their sales. Leisure passengers flying on scheduled services not as part of a group will book mainly on OTA. (Source: Infrata).

### The impacts of airlines selling a smaller share through TA sold are:

- Some lower costs due to agents commission, payment processing
- Some higher costs due to increased burden of customer support, merchant costs, fraud costs that would normally have been provided by TA

(1) Source: Travelution / Infrata

(2) Source: Amadeus 'Service Fees and Commission Cuts'

# Airlines internal departments support distribution and marketing. Many of these costs increase when going 'direct'

## Processes and infrastructure required to support distribution

Internal Function	Distribution Cost Impact	Model Factor
Customer support	Major switches: agent to direct increases airline work	Derived estimated cost per call and calls per passenger
Fraud	Some impact of switching from agents to direct	Adjustment to % of passenger revenue
Credit card	Credit card commissions sensitive to direct sales	Credit card cost as % of revenue adjustment
Cash flow	Some increase in payment speed with direct sales	Cash flow factor
Revenue accounts	Minimal impact on administration	Small adjustment to model
Revenue management	Minimal impact on administration	Small adjustment to model
Other costs	Minimal impact on administration	Small adjustment to model

## Airline internal costs analysis

Airline internal costs covers a range of activities required to process bookings and revenue.

They also include commercial structures although these are included in customer acquisition in the model.

The major internal support functions in terms of cost are

- Credit card commissions
- Fraud
- Customer service

These costs are particularly 'channel sensitive' as they are largely provided by the TA, TMC, OTA – moving to direct sales will bring them in-house.

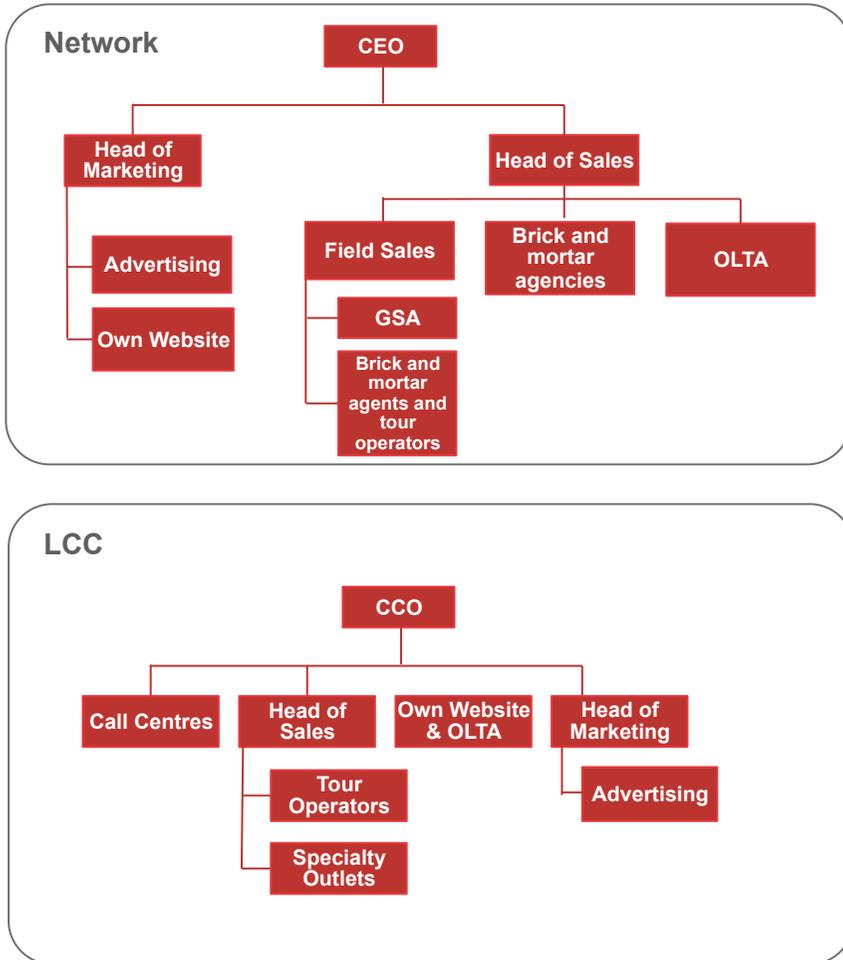
The other costs such as revenue accounts, revenue management are largely insensitive to channel used.

**Airline internal expenses will move with channel and are a major driver of cost**

# Commercial structures are often not fully considered when allocating contribution to distribution costs

The differing commercial structures impact the way airlines allocate budget and report on costs

## Typical 'Network' Airline and LCC Structures



## Airline commercial structures analysis

The number and cost of the support staff and infrastructure varies greatly with the legacy airline having 100-200 and the low cost having fewer than 50. The legacy airlines have several thousand call centre staff are the LCC have far fewer.

The distribution cost implications are:

- Different structures are required to support different channel mixes
- LCC typically award higher seniority to websales support
- Network carriers have more expensive field sales, GSA and group sales team
- Customer support function higher level of seniority and proportion of cost for LCC (network passengers may use TAT/MC)

**There is a generalised relationship of airline structure to higher levels of direct distribution.**

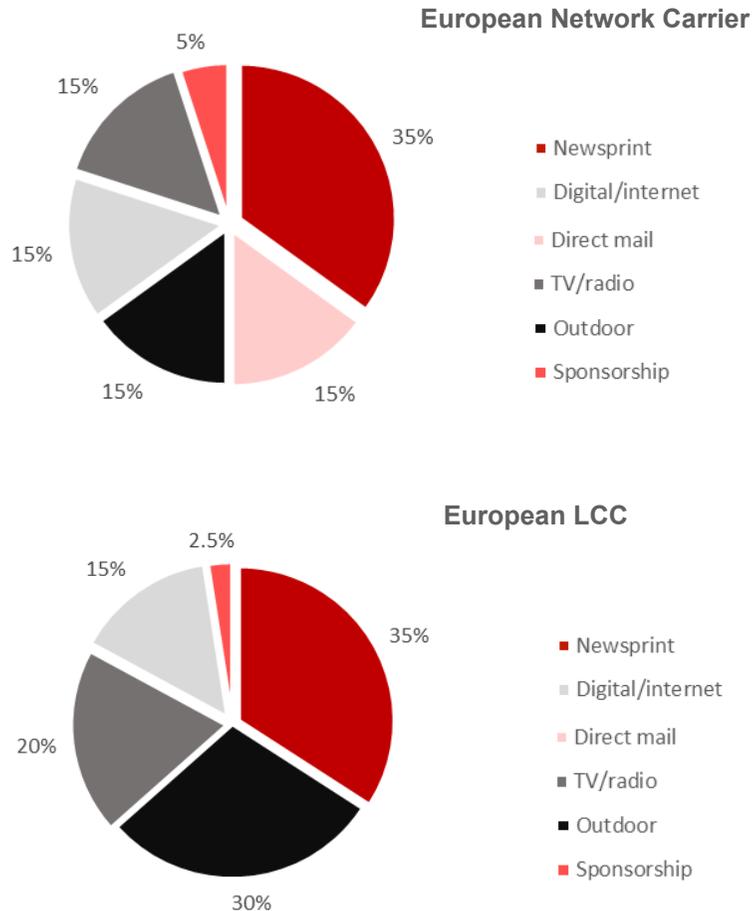
- **Costs down:** payment processing, field sales, agency support, GSA support
- **Costs up:** customer support / call centres

Note that these are representative structures and they vary among airlines even in the same category.

# Offline and online display use a wide range of media – buying and managing this is a major cost - rarely included in analysis

Offline sales and marketing is vital to raise awareness and vital to drive 'native search' traffic to airlines' websites

Distribution Channel Mix of Network and LCC (2010)



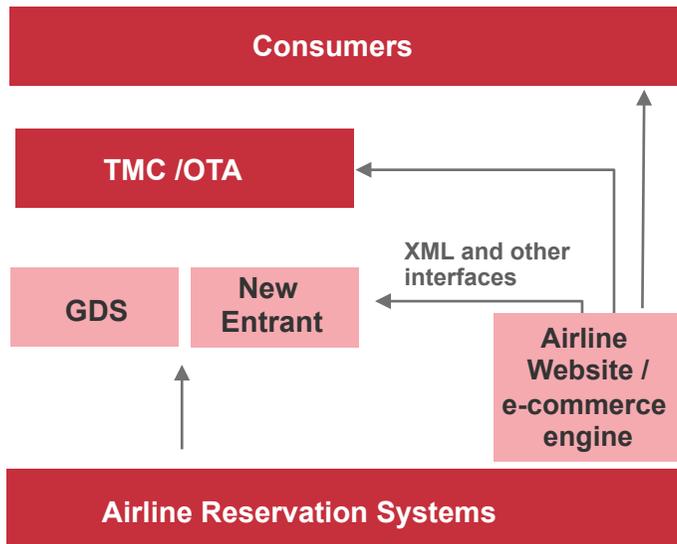
## Offline media analysis

Airlines spread marketing between offline and online: Major categories of marketing spend are:

- Online: Digital / internet display costs has plateaued (excluding google ads)
- **Offline:** Newsprint still largest spend group
- Other categories starting to decline for network but growing for LCC
- TV major growth area for LCC competing in leisure market

Offline channel costs based upon information derived from airline/published sources are used in the model

**Ancillary Services Distribution**



**Ancillaries analysis**

Ancillary services are becoming more important to many airlines, depending on their competitive environment. These services are either flight-related (extra legroom, priority boarding) or additional non-airline products like car rental, hotel, or insurance.

Airlines choose to sell these services predominantly through their own websites, to maximize upsell and increase loyalty.

Realising that travel agencies represent a key distribution channel also for flight-related ancillary services, an increasing number of airlines are distributing this content either directly from their own inventory, via an aggregator, or via GDSs. Rich ancillary content is being enabled by XML messages, including those defined as part of the IATA NDC XML standard.

**Ancillary revenues vary considerably by airline. The model used 'mid point' ancillary revenue per passenger for network and regional**



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# Model Output



Five categories of variables were modelled to identify the cost impact by carrier type:

1. Internal organisational structures leading to differing reporting and budget lines
2. Differing airline levels of connecting and point-to-point traffic
3. Differing geographic markets (home market versus non-home markets)
4. Differing marketing arrangements with the indirect channel
5. Non standard allocation of full loaded costs

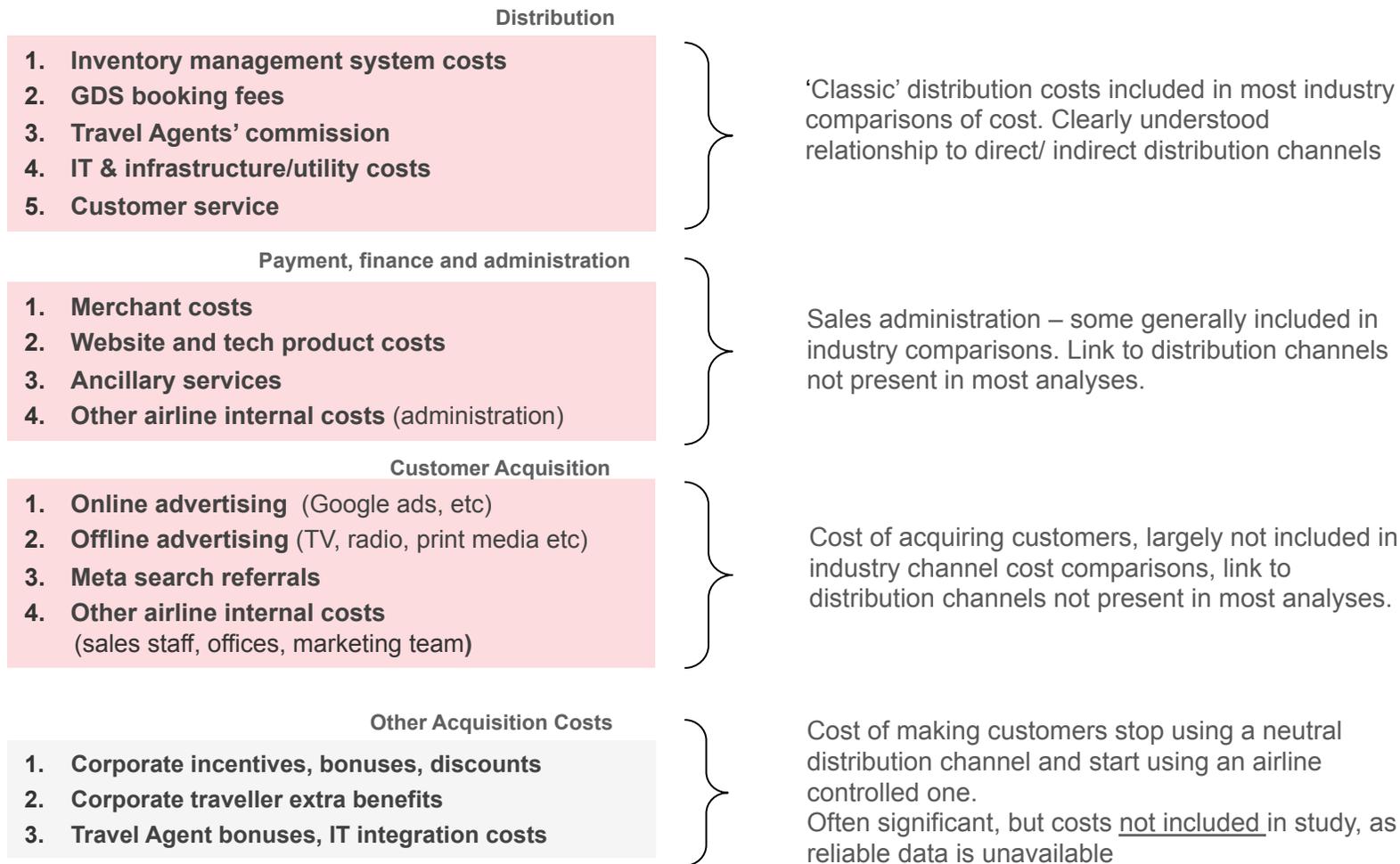
The model aims to quantify these dynamics in a fully allocated cost manner to demonstrate the possible impacts of different regimes of direct / indirect distribution.

*The following pages show:*

- *The composition of the model*
- *The headline results and a comparison of all airline types impact of moving to more direct distribution*
- ***Analyses of the impact of moving to more direct for all the airline types shown is a series of results charts***

# Airline sales & distribution costs 'fall' into 3 main categories

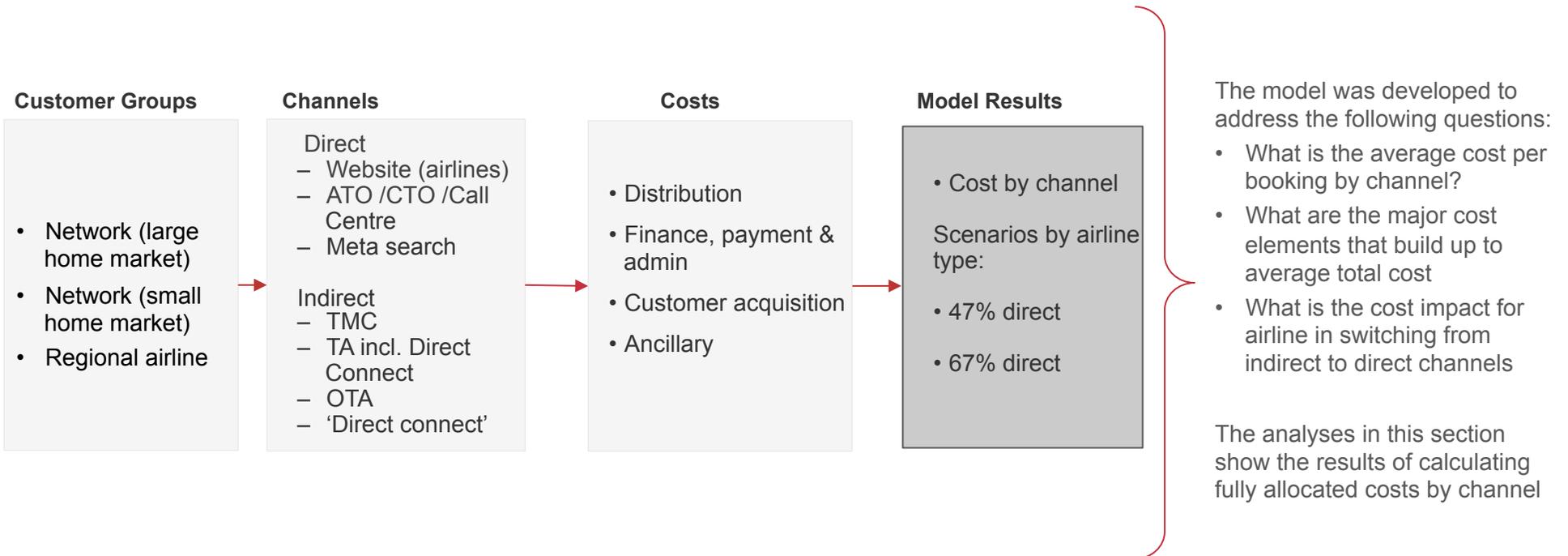
Our model uses a dynamic relationship between the three known areas of cost – Distribution, Payment and Customer Acquisition.



In addition there is a growing separate cost and revenue stream meeting the needs of Ancillary services

# In addition to the costs, the model is driven by the interaction between customer groups and the channel

The airline distribution model comprises 3 sets of variables. Effective modelling required detailed understanding of each sub-component.



In the modelling we tested the impact of flexing different components to see the impact on the 'system' including customer group, channel mix and cost per booking per channel

# The model is based around three types of airline

The model was used to assess distribution costs for each of the four categories of airline

	Airline Type	Characteristics
1	Network (large)	'Baseline' group with typical mix of channels
2	Regional	Managing channels to deal with less market power than larger rivals
3	Network (Small)	More distributed market with challenging 'customer acquisition'

- The model considered the following channels:
  - Airline website
  - Call centre / ATO / CTO and field sales
  - Affiliates
  - Travel agents
  - Online travel agents and meta
  - Travel management companies
- The model considered customer acquisition costs
  - Online
  - Offline
- The model considered internal 'distribution-associated' costs:
  - Merchant and credit card costs
  - Customer service
  - Fraud
  - Airline internal costs: revenue management, revenue accounts, other departments

Source:

- Data to populate the model has come from airlines, travel agents, TMC, OLTA, metasearch engine providers, ET TSA and its affiliated members.
- Data has also been sourced from websearch and journal reviews.

# Network airlines (large home market) have 0.8% reduction in total distribution cost with shift to more direct sales

Network airlines full distribution cost per booking €



The charts and data show the present full cost of distribution separated into the four main cost groups. The main assumption is that airline websales increase to 60% from the base of 40% and direct sales increase from 47% to 67% including call centre, ATO and CTO.

*The model assumes an increase of 0.5% average ads cost for every 1% increase in web share due to the difficulty in attracting the more resistant consumers.*

The analysis shows that some cost groups decrease with a move to more direct sales. Distribution costs are reduced as fewer bookings go through the GDS and incur booking fees and there is also savings from less agents commission.

The benefit is negated to some extent because the airlines have to increase their advertising, in particular websearch ads to drive traffic to their website.

Also there are increased costs of customer service that agents provide for customers and the credit card costs, some fraud costs and the cost of managing customer changes would fall on the airline.

Total cost per booking **decreases by €0.11** due to:

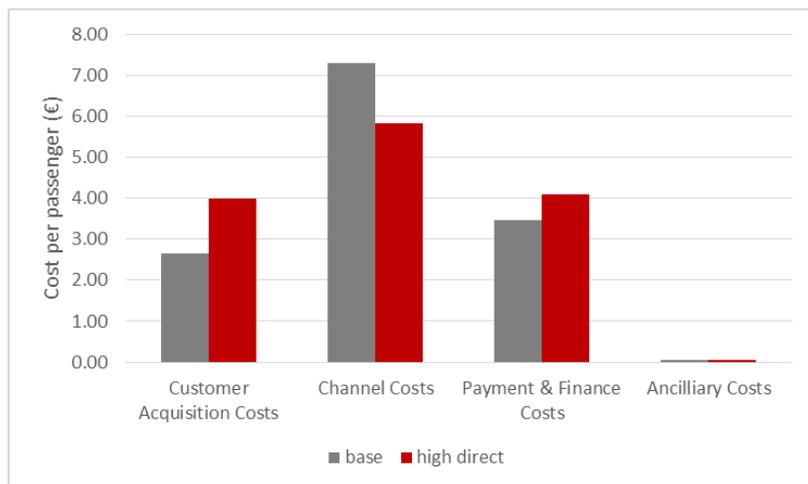
- Higher customer acquisition
- Credit card costs imposed on the airline, not TMC/OTA
- Distribution cost reduces with less GDS booking fees

**The analysis indicates that Network carriers (large home market) experience immaterial benefits from a major shift away from indirect channels.**

Scenario (Channel %)	Base 47%	High 67%	Variance
Customer acquisition (€)	2.58	3.56	0.98
Channel distribution (€)	6.75	5.11	(1.64)
Payment, admin., finance (€)	4.04	4.59	0.55
Ancillary (€)	0.06	0.06	0.00
<b>Total (€)</b>	<b>13.43</b>	<b>13.32</b>	<b>(0.11)</b>

# Regional airlines have 3.9% increase in total *distribution* cost with shift to more direct sales

Regional airlines full distribution cost per booking €



The charts and data show the present full cost of distribution separated into the four main cost groups. The main assumption is that airline websales increase to 60% and total direct sales to 67%.

*The model assumes an increase of 0.5% average ads cost and advertising cost for every 1% increase in web share due to the difficulty in attracting the more resistant consumers.*

The analysis shows that some cost groups decrease with a move to more direct sales. Distribution costs are reduced as fewer bookings go through the GDS and incur booking fees and there is also savings from less agents commission.

The benefit is negated to some extent because the airlines have to increase their advertising, in particular websearch ads to drive traffic to their website.

Also there are increased costs of customer service that agents provide for customers and the credit card costs, some fraud costs and the cost of managing customer changes would fall on the airline.

Total cost per booking **increases by €0.52** due to:

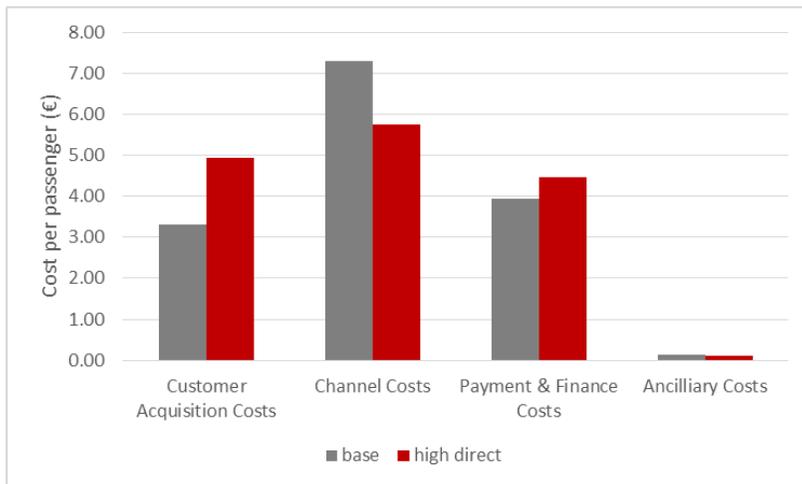
- Higher customer acquisition
- Credit card costs imposed on the airline, not TMC/OTA
- Mitigated by distribution cost reducing with less GDS booking fees

**Customer acquisition costs and payment costs eliminates the benefit of the shift to direct.**

Scenario (Channel %)	Base 47%	High 67%	Variance
Customer acquisition (€)	2.64	4.0	1.52
Channel distribution (€)	7.3	5.83	(1.47)
Payment, admin., finance (€)	3.46	4.09	0.62
Ancillary (€)	0.06	0.6	0
<b>Total (€)</b>	<b>13.46</b>	<b>13.98</b>	<b>0.52</b>

# Network airlines (small home market) have 3.9% increase in total distribution cost with shift to more direct sales

Network airlines (small home market) airlines full distribution cost per booking €



The charts and data show the present full cost of distribution separated into the four main cost groups. The main assumption is that airline websales increase to 60% and total direct sales to 67%.

*The model assumes an increase of 4% average ads cost and advertising cost for every 1% increase in web share due to the difficulty in attracting the more resistant consumers.*

The analysis shows that some cost groups decrease with a move to more direct sales. Channel distribution costs are reduced as fewer bookings go through the GDS and incur booking fees and there is also savings from less agents commission.

The benefit is negated to some extent because the airlines have to increase their advertising, in particular websearch ads to drive traffic to their website.

Also there are increased costs of customer service that agents provide for customers and the credit card costs, some fraud costs and the cost of managing customer changes would fall on the airline.

Total cost per booking **increases by €0.6** due to:

- Higher customer acquisition
- Credit card costs imposed on the airline, not TMC/OTA
- Mitigated by distribution cost decreasing with less GDS booking fees
- Very high cost of attracting 'marginal' passengers in markets where the airline has a relatively weak marketing position

**Customer acquisition costs and payment costs eliminates the benefit of the shift to direct.**

Scenario (Channel %)	Base 47%	High 67%	Variance
Customer acquisition (€)	3.32	4.93	1.62
Channel distribution (€)	7.3	5.74	(1.56)
Payment, admin., finance (€)	3.94	4.47	0.53
Ancillary (€)	0.12	0.11	(0.02)
<b>Total (€)</b>	<b>14.69</b>	<b>15.26</b>	<b>0.57</b>

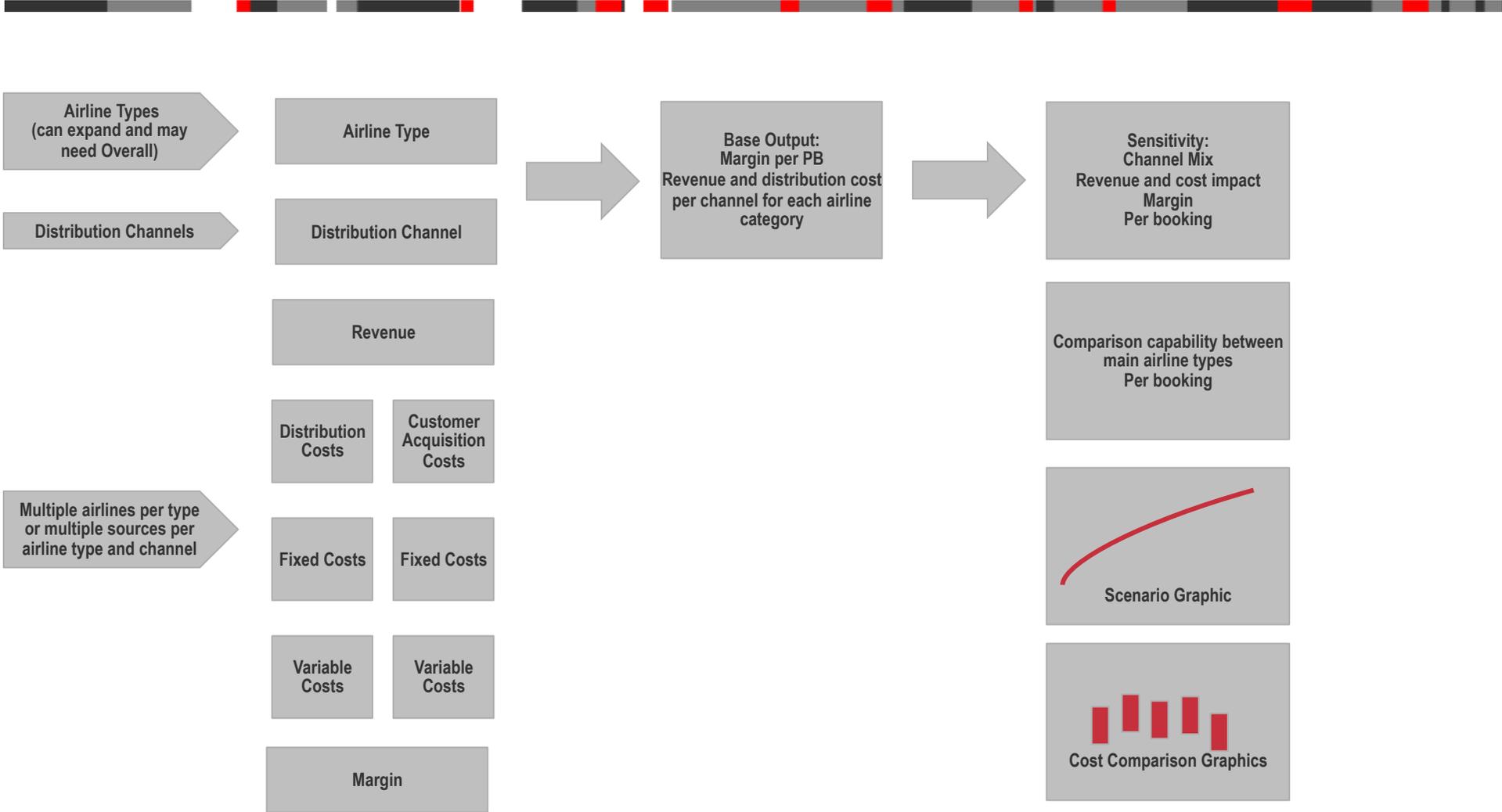


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## Appendices and Model Overview



# Description of Airline Distribution Cost Model



# Description of Airline Distribution Cost Model

Major dynamic	Flex factor	Impact	Source
Websearch ads cost	Increased cost per click and number of paid clicks per booking	Increased cost as direct websales increases	Analysis of ads cost for six major European airlines
Airline sales share by home/ non-home market	Increased ads cost and offline marketing cost	Increased cost per booking as non-home sales increase	Analysis of ads cost for six major European airlines Analysis of airline offline advertising costs in Europe and US
Offline marketing costs (TV, radio, press)	Increased in line with direct sales	Cost per booking increases as direct sales increases	Analysis of airline offline advertising costs in Europe and US
Credit card costs	Increased in line with direct costs	Higher direct sales leads to higher credit card costs	Journal search, GDS, airlines
Call centre sales and customer support	Increased in line with direct costs	Higher direct sales leads to higher call centre costs	GDS, GSA, journal search
GDS booking charges	Decreased in line with less travel agent / OTA sold	Increased direct sales reduces cost	GDS
Agents commission	Decreased in line with less travel agent / OTA sold	Increased direct sales reduces cost	Travel agents, GDS, airlines

Data has been supplied in confidential interviews with airlines and ETTSA members including GDS, OTA, meta and TMC.

Published data sources include:

Airline E-commerce	M Hanke, 2015
Agency Universe Grows Total Volume,	Bilotkach, Rupp, Pai, 2013
Airline Ancillary Fees	Ideaworks/Car Trawler
Airline Ticket Distribution	Michael Ng, 2015
Alaska Airlines 'Success Story'	Alaskair, 2010
Ancillary Revenue	Simplifying, 2016
Ancillary Revenues report	Airplus, 2013
ASTA Travel Market Report	ASTA, 2015
Capa Analysis Report	CAPA, 2016
Jetblue Media Plan	Jetblue
Lufthansa Direct Connect	Lufthansa, 2016
Priceline Investor Presentation	Priceline, 2016
Reputation, Search Costs and Airfares	Boehmer, 2015
Streamlining Airline Financial Processes	Hermes Management Consulting , 2010
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UK Airline Financial Data	CAA, 2016
Understanding Online Travel Agencies	Frost & Sullivan, 2015
United Airlines Media Plan	UAL, 2012
Value of a Platform to a Seller: Case of	
American Airlines and Online Travel Agencies	Bilotkach, 2010
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Everymodo	Various reports
Morningstar	Various reports
Phocuswrght	Various reports
Similarweb	Various reports

Interviews have been conducted with the following organisations: Amadeus, Travelport, Sabre, Booking.com, Expedia.com, Uniglobe, Flight Directors, 6 airlines that wish to remain anonymous.



Ads	Paid advertisements used on web pages
Ancillaries	Additional products to the air journey such as extra legroom or meals
API	A set of functions and procedures that allow the creation of applications (such as for booking tickets)
ATO	Airline Ticket Office
CC	Call Centre
Channel costs	GDS booking fees, commission
Channel to market	Means of passenger booking e.g. through travel agent, airline website etc.
CPC	Cost per Click (of paid ads)
CRS	Computerised Reservation System
CTO	Airline City Ticket Office
GDS	Global Distribution Systems: Amadeus, Sabre, Travelport
Hosting	IT system processing airline seats and bookings
IBE	Internet booking engine
LCC	Low Cost Carriers
Meta	Search engines that trawl the internet for lowest fares, allows the passenger to click through to an airline or travel agency site to make the booking
OTA	Online travel agents such expedia, Travelocity
Petabyte	Unit of information equal to one thousand million bytes
Segment	One air journey with the same flight designator
SEM	Search engine marketing
SEO	Search engine optimisation
SQL	Structured Query Language used in programming and designed for managing data
TA	Travel agencies serving the leisure market
TMC	Travel management companies serving the business market
XML	Extensible Markup Language, a programming language



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