IATA NDC and Direct Connect
Opportunities and Challenges for Travel Agencies and Airlines
Prof. Dr. Stephan Bingemer
Agenda

- Direct Connect and IATA NDC – What is the difference?
- Disruption in Airline Distribution
- Change drivers towards Direct Connect
- Major gaps in the implementation of IATA NDC
- Call for action: What do travel agencies need to do?
What has happened, so far?

- **2009**: AA announces Direct Connect
- **2010**: AA GDS Fee
- **October 2012**: IATA Reso 787/NDC approved
- **August 2014**: DOT approves IATA Reso 787/NDC
- **September 2015**: LH Direct Connect
- **September, 2015**: LH GDS Fee
- **July, 2015**: BA Direct Connect (BA API)
- **April 2018**: AF GDS Fee
- **November 2017**: BA GDS Fee
- **2017**: AF Direct Connect

Sources: IATA, AA, AF, BA, LH
NDC is a standard for modern travel distribution

better consultancy

customer experience

customer knowledge

NDC is about giving travel agents the same capability as airline websites

Source: IATA

individual products

imagery and visuals

more functionalities
IATA NDC – a closer look

IATA Resolution 787

- „New Distribution Capability“ (NOT: Channel)
- Approved at the IATA PSC 2012 in Abu Dhabi

A Standard for Distribution Messaging

- NOT a product
- NOT a software

Based on eXtensible Markup Language (XML)

- Looks similar to HTML
- Machine and human readable
EDIFACT, XML, JSON – what is the language of travel distribution?

**UN/EDIFACT**

```
UNH:0000:7:INVDOC:1:92:A:UN
BG:380:INVOICE:NER:9
DTMH:137:20000101:1:102
RFF:ON:1:CUST_ORDER:10
NAD:RE: ::92:+MANUFACTURER NAME' RFF:VA:DE1291720 6'
CTA+AR:1:JANE DOE
CMH:00 49 89 0232-1:2:43:18:274
NAD+ST: ::92:+COMPANY COMPUTER CORP.
NAD+BY: ::92:+COMPANY COMPUTER CORP.
CUX+2:USD:4'
ALC+H:6:AB'
PCDH:12.5'
MHA:204:200.00'
LTH+L+10:240:152:AB'
GTY+47:3:00:EA'
PRI+AAA:1310.00:CT'
UNR+5'
MDA:77:4378.28:USD'
TAX+7:VAT+++000000545S'
MHA:176:248.28:USD'
UNT+2:00001
UNZ+1:000000000000001
```

**XML**

```
<empinfo>
  <employees>
    <employee>
      <name>James Kirk</name>
      <age>40</age>
    </employee>
    <employee>
      <name>Jean-Luc Picard</name>
      <age>45</age>
    </employee>
    <employee>
      <name>Wesley Crusher</name>
      <age>27</age>
    </employee>
  </employees>
</empinfo>
```

**JSON**

```
{
  "empinfo": {
    "employees": [
      {
        "name": "James Kirk",
        "age": 40
      },
      {
        "name": "Jean-Luc Picard",
        "age": 45
      },
      {
        "name": "Wesley Crusher",
        "age": 27
      }
    ]
  }
}
```

Source: https://www.sunnyhoi.com/json-vs-xml-format-use-api/
Direct Connect vs. GDS explained using the analogy of CD Player vs. Record Player

<table>
<thead>
<tr>
<th>CD Player terms</th>
<th>Corresponding Direct Connect terms</th>
<th>Corresponding GDS terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD player</td>
<td>Direct Connect system</td>
<td>Record player</td>
</tr>
<tr>
<td>Compact Disc</td>
<td>Internet</td>
<td>GDS system</td>
</tr>
<tr>
<td>Chinch plug</td>
<td>API</td>
<td>Proprietary Intranet</td>
</tr>
<tr>
<td>CD Music</td>
<td>Direct Connect Content</td>
<td>Record</td>
</tr>
<tr>
<td>Digital MPEG recording standard</td>
<td>NDC XML standard</td>
<td>DIN plug</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Webservice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Record Music</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GDS Content</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Analogous recording standard</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UN/EDIFACT standard (in future: NDC standard?)</td>
</tr>
</tbody>
</table>
Offer Creation and Offer Aggregation are the key functionalities of the GDS.
In the IATA NDC setup Offer Creation is done by the provider, Offer Aggregation remains with the GDS.
How do Airlines build a Direct Connect?

sphere of airline control

Direct Connect Engine

- Schedule
- Availability
- Fare Product
- OFFER
- Ancillary

Merchandise & Rules Engine

API

Ideal world „One ‘plug’ fits all“
What is an Application Programming Interface (API)?

An API enables connected systems to access the operating system’s functionality via a documented set of functions.

Can you send me the file please?

Sure. Here it is!
1. Direct Connect and IATA NDC – What is the difference?
2. Disruption in Airline Distribution
3. Change drivers towards Direct Connect
4. Major gaps in the implementation of IATA NDC
5. Call for action: What do travel agencies need to do?
Disruption in Airline Distribution
Technology cycle based on Anderson & Tushman (1990)

<table>
<thead>
<tr>
<th>Era of Incremental Change</th>
<th>Era of Ferment (Era of Fluent)</th>
<th>Era of Incremental Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>elaboration of a dominant design</td>
<td>design competition and substitution (no clear standards)</td>
<td>elaboration of a dominant design</td>
</tr>
</tbody>
</table>

- **GDS era**
- **New Entrants**
- **DC**
- **GDS**

**New Design**
- Agency-integrated aggregation
- New NDC GDS landscape
- New non-NDC GDS landscape
- Mixed NDC DC/GDS landscape
- DC Dominance
- New aggregation formats
- New E-Commerce platforms from outside the airline industry
- [...]

Technological Discontinuity

Dominant Design

Technological Discontinuity
Agenda

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• Disruption in Airline Distribution

• **Change drivers towards Direct Connect**

• Major gaps in the implementation of IATA NDC

• Call for action: What do travel agencies need to do?
Direct Connect – drivers and inhibitors

- **Commercial model**
  - GDS fee
  - Incentive payments
  - Business models

- **Search capabilities**
- **Offer differentiation**
  - Offered content
  - Fare bundles
  - Individualized ancillary services
  - Better display options
  - Easy to use processes

- **Technological readiness**
- **Dominant design convergence**
  - NDC standard usage
  - Number of carriers participating
  - Degree of adaption to the standard by each airline

- **GDS Market power**
- **GDS resistance**
- **Dependency of travel agents**
- **Cooperation vs. Confrontation**

- High search performance
- Capability to search for new items (e.g., WLAN)
- Ancillary shopping

- Full application of all elements of the NDC standard
- Completeness of the NDC standard for volume use
- Mid- and back office processes available

- Fare bundles
- Individualized ancillary services
- Better display options
- Easy to use processes

- NDC standard usage
- Number of carriers participating
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- GDS resistance
- Dependency of travel agents
- Cooperation vs. Confrontation

- GDS fee
- Incentive payments
- Business models
The lack of a clear commercial model is an inhibitor of successful direct distribution models

- Airline
  - ticket + 8 USD*
  - ticket + 4 USD*
  - Booking
- GDS
- Travel Agency

- DC with incentive
  - Airline
  - ticket + 5 USD*
  - Booking
- Travel Agency

- DC without incentive
  - Airline
  - ticket + 0 USD
  - Booking
- Travel Agency

* Exemplary values
If no incentive is paid then content needs to be the new currency

Without Direct Connect incentives, content is the currency!

- Exclusive fare products for Direct Connect customers
- Additional ancillary products exclusively available via Direct Connect
- Easier processes that allow quicker turnaround
- Access to dedicated personalized content
- Access to better availabilities and/or fares
- Direct Connect promotions
- Better search and display options
- Better after sales service

BUT: Technical capability?
Even for the middlemen, the commercial models need to be revisited.

- **As is**:
  - Airline: Ticket + 8 USD*
  - GDS: Ticket + 4 USD*
  - Travel Agency

- **Pure aggregation model**:
  - Airline: Ticket + 0 USD
  - New entrant: Ticket + 1 USD*
  - Travel Agency

- **Fair share model**:
  - Airline: Ticket + 4 USD*
  - New entrant: Ticket + 4 USD*
  - Travel Agency

*Exemplary values*
An analytic view on potential models reveals the options of future business models

- **Airlines**
  - **pays**
    - Fair share model
    - Low cost GDS
    - Classic GDS model
  - **-**
  - **gets**
    - Aggregation model
    - Direct Connect with exclusive content
    - New models with excl. content and paid incentive
    - Third party pays from other sources (data access, ad models, ...)

- **Travel Agencies**
  - **pays**
  - **-**
  - **gets**
    - Exclusive content deals for TA
    - Aggregator pays exclusive access fee and earns from volume

- **driven by LCC**
- **DC with content**

Less incentive than GDS fee
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There is a lack of consistent implementation and completeness of the NDC standard, today!

Incoherent NDC standard implementation throughout the chain of distribution!

grey: lacking NDC functionalities, replaceable by proprietary API functionalities

blue: lacking NDC functionalities replaced by proprietary API functionalities
The lack of coherence in the implementation of NDC is a burden to its success as it drives agency IT cost up.
Search will be key to success in future distribution

How can you find something that you are not able to search for?
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Be where your customer is ... on the Internet!
Travel Agencies need to build omnichannel capability
There are always reasons why to do nothing and wait...

Barriers to adapt e-commerce in the classic tourism industry:

- limited knowledge of available technology
- lack of awareness
- cost of initial investment
- lack of confidence in the benefits of e-commerce
- cost of system maintenance
- shortage of skilled human resources
- resistance to adoption to e-commerce

And there are reasons why not to wait any longer...

- eCommerce is coming – independent of Direct Connect!
- The distribution landscape will change – there is no way back in time!
- Disruption happens quickly and it doesn’t wait for you!
- The customer is more important than ever – you need more differentiation, soon!
- Get the right people aboard for your digitalization journey!
- Build distribution know-how and get into the topic!
- Get your IT setup right – omnichannel sales is not possible with older systems.
- Work on your strengths – no one is better in personalization than you are – use it!
The current implementation of the NDC standard throughout the distribution chain is a major hurdle for travel agencies as currently, there is no such thing as “ONE PLUG”.

Current business models in the marketplace are not sufficiently attractive for travel agencies. Airlines willing to use Direct Connect concepts shall review their commercial models.

However, it is time to move for travel agencies as changes will happen quickly. Waiting is not a true option.

Invest in own customer-oriented capabilities and online capability first and in distribution next. Keep your own flexibility by applying a multi-source approach.
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