ASESSMENT OF THE IMPACT OF NEW DISTRIBUTION CAPABILITY ON GDS'S AND TRAVEL AGENCIES

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Abstract
The evolution of the distribution capability in aviation has reached a point where the International Air Transport Association decided to implement a new standard that promises greater benefits for all actors. In the light of the positive aspects of this program, described by its initiators, important facilities for the entities involved/that will benefit from the IATA standard are outlined, but it seems that a large number of the parties directly or indirectly involved, are not fully aware of the conditions, implications or even what this new approach represents. The current research aims to clarify aspects about the new distribution capability that were misunderstood, outline the program's possible drawbacks and assess its impact on the traditional GDSs and the travel agencies, with a focus on Romanian market. In this regard, studies have been conducted on different actors: travel agencies, airlines, handling agents, airports, etc. and on people working in the aeronautical industry in order to discover the behavior of aviation employees in purchasing tickets/ancillary services and to identify aspects related to the awareness and possible implications of the new distribution capability.

Keywords
IATA New Distribution Capability, Global Distribution System, travel agencies, ancillary services, standard.

JEL Classification
L93, M11, M30, O20, O30, Z32, Z38

Introduction

The emergence of a new distribution capability in the aerospace industry has launched a series of controversies among the traditional global distribution systems and travel agencies. The standard developed by IATA was meant to provide an improved distribution system for airlines, including more services; but the concerns that this program will replace the traditional distribution systems turned into a threat for a number of actors in aviation.

The evolution of the distribution capability has gone through several changes, following the scheme: CRS (computer reservation system) vs. GDS (global distribution system) vs. NDC (new distribution capability). Surely, the complex processes of booking a flight ticket and other services prior to the existence of the GDSs have been simplified; and the NDC implementation promises even greater benefits based on uniformity of procedures.

The modern development of distribution capabilities implies new commercial formulas, considering important criteria for product commercialization (table no. 1); and by promoting various services for the benefit of the passenger, it fulfils the distribution system's significant social function.

Table no. 1 Criteria for product commercialization

Criteria	Product complexity	Product standardization	Number of customers	Information importance	Price
Importance	Direct	Indirect	Indirect	Direct	Direct

Source: the authors work

Since the possible participants in development of the new program have specific roles and interests, the question that arises is whether only the global distribution systems will be affected, or even the travel agencies, as primary clients of the GDSs.
The research will be sustained by various studies: assessment of the passengers' options to buy airline tickets and additional services and on the industry's knowledge about NDC and it's implications. The surveys have been conducted with the help of professionals from the aviation industry, either airlines, ticketing services, airports, departure control system employees, travel agencies, check-in agents, ground handling services, general services administration, APG BSP coordination services, ABCS Consolidators, etc., among which can be listed Tarom, Blue Air, Wizz Air Hungary, Regional Air Suport, Romanian Airport Services, NCBA (the National Company Bucharest Airports: the international Henri Coandă and Băneasa Airports), RCAA (Romanian Civil Aeronautical Authority), Paravion Tour SRL Bucuresti, eSky Search Travel SRL, Pavel Travel SRL, etc.

Implications of implementing the NDC program on the Romanian market

An important aspect of NDC is that all the shopping demands are sent to the airline in real-time in order to be evaluated, which outlines the concept of dynamic pricing (Westermann, 2013). Thus, the shopping experience of purchasing a flight ticket and other services is meant to be accomplished without the intervention of an intermediate link.
IATA provides a direct booking platform for multi-channel retail, which shows airline fares and ancillary options in a dynamic manner (Hoyles et al., 2017). The new-built capability facilitates a quicker standardized shopping experience, by selling airline services to customers through agency channels (Skift Report, 2016).
Starting from 2012, when the NDC standard was launched, information provided to GDSs and travel agencies was limited especially in terms of prices/costs, and even 6 years after the start of the program, a great segment of the mentioned parties is not aware of the conditions, implications or even what this new approach represents. Surely, the NDC program is still under development, so it hasn't reach a final agreement on pricing policies or other conditions.
The next study regarding the impact of the new distribution capability on the Romanian market was accomplished within six months by means of questionnaires sent to a target group consisting of professionals from the aviation industry with direct connections in sales, marketing, promotion or airline representatives and support.
The ensuing two questionnaires helped the authors identify more easily the issues related to the awareness and the possible implications of the IATA NDC program on travel agencies and GDSs operating in Romania. The subjects for this study were asked to provide answers for two forms consisting of a series of questions regarding the knowledge about the new distribution capability and the passengers' behavior for purchasing airline tickets and ancillary services. Prior to completing the questionnaire, those surveyed had to communicate their name, age, gender, city and county of residence, the name and core

activity of the organization they are working for, but also their agreement to use the data provided for statistical analysis.
As ways of administering the questionnaire chosen by the authors were: handing directly the paper form to the participants on both opinion polls and when this manner couldn't be chosen, the questionnaires were send via email. Only in the case of 19 companies, the completion of questionnaires was achieved after being contacted by telephone.
The first research tool represents the product of sending 200 forms to a focus group consisting of exponents of different areas in aviation (mentioned previously). Only 61.5% of the people targeted have chosen to respond to the authors' invitation to complete the form. Three out of the 77 who did not respond (i.e. 3.89% or 1.5% of the targeted group) mentioned not having data about the subject of concern, therefore declined the request; the rest refused to reply.
The limitations of this study mirror the restricted number of entities in Romania dealing directly with airline product sales, distribution platforms or travel agencies.
The qualitative analysis evaluates 4 issues of interest, two questions narrowed at 2, respectively 7 answer options (dichotomous and ordinal-polytomous interrogations) and two open questions (table no. 2). The questionnaire was completed by a group consisting of 123 subjects-representatives of aviation organizations.

Table no. 2 Questionnaire on New Distribution capability knowledge

<table>
<tr><td>No.</td><td colspan="7">Question</td></tr>
<tr><td>1.</td><td colspan="7">Do you have knowledge about the IATA NDC standard?</td></tr>
<tr><td></td><td colspan="3">Yes</td><td colspan="4">No</td></tr>
<tr><td>2.</td><td colspan="7">When did you first learn about this standard?</td></tr>
<tr><td></td><td>2012</td><td>2013</td><td>2014</td><td>2015</td><td>2016</td><td>2017</td><td>2018</td></tr>
<tr><td>3.</td><td colspan="7">How did you find out about the IATA NDC standard?</td></tr>
<tr><td>4.</td><td colspan="7">Do you think this standard will influence the activity of the company you are working for? How?</td></tr>
</table>

Source: the authors work

Although the program was launched in 2012, only 76.42% of the respondents (n=94) are aware of the IATA NDC standard, the rest of 23.57% (n=29) responded negative to the first (dichotomous) question. Of the 94 respondents who have knowledge of the NDC, 17.02% (n=16) first learned about the standard in 2012, 12.76% (n=12) in 2013, 2015 or 2016 and 11.70% (n=11) in 2014. In the last two years, the number has increased, 14.89% (n=14) in 2017 and 18.08% (n=17) in 2018, this being directly proportional to the amount of information released in the industry in Romania and that can be found on specialized websites (i.e. iata.org, ndc.developer.iata.org, www.amadeus.com, www.travelmarketreport.com, tnooz.com, https://buyingbusinesstravel.com, etc.)
An interesting aspect considers the approximately equal number of subjects who found out about IATA's standard in 2012 and 2018. Between these years, it seems that there was a lack of interest in the program, but the year it was initiated, the International Air Transport Association launched conferences and bulletins to exhibit NDC's directions of development.
For the following open queries, the subjects were asked to formulate the answers based on their experience and information from work. Regarding the way interviewees found out about the standard in question, the answers indicated notifications via APG Network (30.85%, n=29), ATPCO conferences and bulletins or IATA's information messages (43.61%, n=41), operating systems (6.38%), internet (1.06%) or by participating to a specialized course or to specialized conferences with foreign partners (13.82%). Very few

representatives of the companies surveyed responded (4.25%) they discovered the characteristics of this norm from colleagues in other services (i.e. distribution).

It seems that airlines are less informed than travel/ticketing agencies or other parties questioned, such as distribution platforms. Although they mainly found out about this program from the beginning (i.e. 2012), they do not have a clear image and don't master the directions in which it will develop.

In the latter question, 97.87% (n=92) of the people surveyed during this study considered that the new standard will influence the activity of the company they are working for in a good manner. They think the program will ease the interaction between the company and its partners will optimize reservations and will create a better communication between airlines and ticketing or travel agencies, the latter being able to diversify to some extent the offer and better adapt to the demands of the customers.

Only 2.12% noted they cannot provide an answer, since are not fully informed about the case, but none of the companies reckoned that the implementation of the standard will have a negative influence (agencies have been considered particularly).

Subjects working at implementation and maintenance of departure control system (DCS) (20.21%) consider that NDC will amend product sales, will entail transparency and will lower the costs. Some (21.27%) of the respondents also noted that they do not think GDSs will disappear, but the tendency is to create their own ecosystem. 37.23% of those who agreed to respond to the questions above, admitted that at their company level, the implementation of this system has not yet been discussed, so actions in this regard do not exist at the time. This was mainly the case of airlines. However, both airlines, travel agencies, airports assignees, departure control system staff, check-in agents, general sales agents/administration, noted that in their opinion, NDC will reduce distribution costs, increase sales, change product conception, imply product customization and pricing dynamic, and lastly, will modify standards and distribution channels for the final client.

Since there are no preoccupations or concrete actions at present regarding the implementation of the new capability, this category of subjects opinion is that NDC will mean reorganization (or revision) of working procedures and processes.

As resulted from the inquiry previously developed, one of the reasons airlines support the new distribution platform, is that direct advanced passenger information integration doesn't involve costs or commissions.

NDC impact on travel agencies and analysis of ancillary revenues for legacy and low-cost carriers

As the number of the ancillary services is constantly developing, dynamic packaging and pricing represents a good approach to produce airline revenues (Williams et al., 2011). The module that brings highest value to airlines is represented by air ancillary services (almost 90%), while dynamic pricing is ranked 3rd (i.e. 45%) (Sia Partners, 2019).

Increased revenue is reflected in customer loyalty and long-term value (Von Martens et al., 2011), therefore, criteria for product commercialization must consider dynamic pricing and product complexity, to meet different passenger needs. The constant concern on the quality of passenger ancillary services that meet the requirements and social needs of the beneficiaries implies major changes to information systems and adoption of new type of strategy. (Keynes, 2009) showed that low cost carrier's sources for increasing revenues (i.e. ancillary products) represented 16% of Ryanair's incomes in 2006, and for EasyJet they are reflected in 41.3 % of their earnings.

Unlike other methods used by passengers for buying a flight ticket, purchasing services from an agency is not only about looking for deals in the system. Client counseling by a travel agent about airlines travel conditions, hotels, car rental, etc. cannot be provided by other channels. Lately, agencies have booked 26% of their reservations outside a global

distribution platform, describing this method of booking ancillary products as complex (15%), limited (33%) and time consuming (29%) (Harteveldt, 2015).
In Romania, there are 2639 licensed travel agencies, from which 2065 are different entities, 854 (32,36%) of them have their headquarters in Bucharest (see table no. 3).

Table no. 3 Criteria analyzed for Romanian licensed travel agencies (2017)

Criteria	Evaluation
Total agencies	2639
Number of different agencies	2065 (78.24%)
Number of agencies in Bucharest	854 (23.36%)
1st Travel agency (with most units)	Touring EUROPABUS
Number of travel agency with most units	80 (3.03%)
2nd Travel agency (with most units)	Cristian-Tour
No. of units for the 2nd travel agency (with most units)	34 (1.28%)

Source: based on data from Ministry of Tourism, 2018. http://turism.gov.ro/

Travel agencies concerns are based on a series of changes that they have experienced, going from modifications in fixed commissions which were usually 10%, to lower values and even elimination of commissions. For example, Romania's national airline Tarom commission for agencies is 1%, because the national legislation assumes that since a contract between two parties implies a material benefit, one of the contracting parties must pay a commission (in this case, the lowest percent of 1% has been applied). Thus, travel agencies adaptability presumed cross-selling products and services.
Ancillaries have helped airlines raise their revenues, this sales were evaluated $42.6 Bn in 2013, with an increase of about 20% over the previous year (Balimane, 2014), and this trend is being kept. Surely, low-cost carriers (LCCs) are in top in terms of ancillary products sold, Wizz Air and Ryanair occupying 3rd and 5th places with 36.4%, respectively 24% of total revenues (Sorensen & Lucas, 2016), but for legacy airlines, U.S. airlines is the first one generating most ancillary revenues (i.e. $6,199,000,000) (Johanson, 2013).
A research conducted in 2016 on passenger booking preferences reveled that in the case of Eurowings airline, 45% of the consumers choose to pay for more than basic services (Sorensen, 2016). Smart fares have been chosen in 40% of the cases, which include snack and drink, a bigger luggage and preferred seating; and only in 5% of the bookings, passengers elected more ancillary services provided by Best fare choice.
For this section, the authors collected the opinions of 285 "educated" passengers (working or having studies in aviation) about how they choose to buy airline tickets and other services. The judgment of such passengers is relevant, more so as they have solid knowledge of the range of methods by which aviation services can be purchased. Being aware of the weaknesses or benefits provided by each distribution channel and knowing the conditions on which ticket pricing varies, makes the participants of the study valuable for the author's research.
The form mainly consists of open questions and the authors questioned individuals, not companies. Therefore it can be noted that the 285 subjects were divided between 61.75% men (n=176) and 38.24% women (n=109).
Those surveyed carry out their professional activity in Romania, mainly working for airlines or on airports in different areas, for instance 32.29% in Craiova, Constanța, Bacău, Braşov, Sibiu, Târgu Mureș, Oradea, Satu Mare, Iași and 67.71% of the participants work in Bucharest. The subjects were aged between 21 and 48, with an average age of 34.5. For the

285 respondents, the age analysis reveals the subsequent results: 19 (6.66 %) had ages between 21 to 25, 47 (16.49 %) between 26-30, 96 (33.68%) between 31-35, 75 (26.31 %) between 36-40, 39 (13.68 %) of age 41-45 and only 9 (3.15%) of the subjects were aged in the 46-48 range. Although the opinions of youngsters in the 21-25 range are considered significant for the research, not many of them are employed in aviation at this age, since they usually expect to have a master degree prior to deciding on their career.
All participants elected for this study had high education level (EQF level 5, 6, 7 or 8) and were asked to provide answers to 9 specific questions regarding the type of elections they make when purchasing aeronautical services, based on specialty knowledge with respect to distribution channels and new capabilities in distribution.
The questionnaire is divided into two parts, the first 7 questions are related to the methods/options for buying various services and also, regarding the passengers judgments in conjunction with opting for a distribution channel in the detriment of another. The hindermost inquiries are directed towards the knowledge of several distribution concepts and the new NDC standard (table no. 4).

Table no. 4 Criteria analyzed for Romanian licensed travel agencies (2017)

No.	Question
1.	Have you ever traveled by airplane?
2.	What are the modalities through which you can buy an airplane ticket?
3.	What are the ways you have chosen to buy airplane tickets?
4.	Have you purchased other services besides buying a ticket (e.g. rent-a-car, hotel, etc.)?
5.	Have you ever purchased airline tickets from travel agencies?
6.	Why do you choose a way to purchase a ticket in the detriment of another?
7.	Do you think the price of a flight ticket varies depending on the way/channel through which it is purchased? In what way?
8.	Do you know what a Global Distribution System (GDS) represents?
9.	Do you have knowledge about the IATA NDC standard?

Source: the authors work

The first dichotomous query is decisive for the further completion of the form. Only 3 (1.05%) persons responded negative, it is the case of 2 men (aged 21 and 22) and one woman (aged 21). Next, among the modalities through which passengers can buy airplane tickets, subjects mentioned 2, 3 or 4 choices: airline's web page, the internet (aggregator sites), travel agencies or airport ticketing desks. 31 (10.99%) mentioned 2 choices, 204 (72.34%) mentioned 3, and 47 (16.66%) mentioned 4 ways for buying airline services. However, the preponderant preferences indicated different sites on internet – 69.14% (n=195) or the airline's web page 17.37% (n=49). The last places were occupied by travel agencies or airport ticketing desks (32 and 6 choices, i.e. 11.34%, respectively 2.12%).
Although the respondents outlined the above mentioned channels for purchasing tickets and ancillaries, when asked what were the ways they usually choose, they mainly indicated the Internet (either aggregators or airlines sites). Solely a percentage of 25.17 have turned to travel agency services, but in a great measure, for business purposes (see questions 3 and 5).
40.78 % (115 people) purchased other services besides buying a ticket; and their choices (in the following order) were: hotel (59.13%, n=68), rent-a-car (35.65%, n=41) or transfer airport-hotel-airport and luggage insurance (6 subjects-5.21%).
The answers to the questions number 6 and 7 provide insights on the grounds for selecting a manner to purchase a ticket in the detriment of another. Passengers tend to choose the channel which seems quicker and more convenient. In this respect, they mentioned selecting different sites because these platforms don't involve intermediaries.

One of the characteristic the respondents want to find in a distribution channel is the rapidity to perform different operations. In their opinion, choosing between different travel packages and completing the transaction, seem more comfortable to perform from their desk. Also, financial considerations were mentioned among the first issues taken into account. Almost all of the subjects (96.80%) think the price of a flight ticket varies depending on the way/channel through which it is purchased, in the way that it is cheaper if it's purchased online, earlier than the date of the trip.

Not only that on-line platforms show better prices, but participants think this method is also safer (meaning that the information is provided directly by the airline and there are no confusions or hidden costs). While agencies add a commission for the operations performed, so the ticket would be more expensive, by accessing the internet themselves, passengers can research the market much better and can find offers from which they can choose the best.

Through the last two questions, the initiators of this research intended to check the awareness on global distribution systems and the new distribution capability among aviation professionals. In this matter, 93.61% (n=264) noted they know what a Global Distribution System (GDS) represents, the rest of 18 subjects were for the most part in the 21-15 age range. However, the case was different regarding the new distribution capability awareness, since 159 (i.e. 56.38%) participants to the study know about IATA's standard, while 43.61% (n=123) never heard about NDC.

The author's research has shown that the vast majority of educated passengers between the age of 21 and 48 are not willing to buy travel tickets from agencies, as they consider it more expensive, since agencies apply various commissions. More on, other distribution channels, can give a clear idea of prices and a direct presentation of ancillary services from which the passengers can choose themselves.

Companies usually resort to agencies for purchasing travel services for their employees, in order to minimize time and costs (by not hiring staff dedicated for travel activities). This practice has proven to be somehow abusive in the direct relationship between agencies and clients; costs have raise uncontrollably for the companies without complying with a travel policy, given the agencies commercial interest that is in the detriment of companies business interests (the customer does not get the lowest prices as he wants). Also, research has shown that agencies' flight booking (75-80%) represent a choice between the first two airlines from the displayed flights (Seaton & Bennet, 2004).

Unless accessing NDC connection via GDS, other parties willing to access the reservation system through IATA NDC will have to complete a certification process (British Airways, 2017). Although it requires booking API and trial markets, the results of NDC implementation are reflected in an upsell rate of 15%-25% (Williams, 2016). How long and what it will take for agencies to adapt to this new standard, will have to be clarified soon. But organizations will have to be more manageable in order to improve specific features that conduct performance in the entire system, rather than carrying out independent actions which amend departmental parameters (Zylstra, 2006), in order to optimize the distribution system in aviation and adapt to changes in the industry.

Conclusions

The outgrowth of the paper highlights various aspects regarding the awareness, perception and the complexity of the new distribution capability related issues and its importance among the Romanian aviation professionals and the aeronautical market.

In the context of implementing a new distribution model, the standard must establish the responsibilities of the participants in the distribution channel and must aim at harmonizing the objectives and regulate the relationships between different members. Also, the International Air Transport Association must adjust its program to the needs and critics in the aeronautics sector, taking into account that the managerial concept of distribution must

focus on orientation towards the consumer requirements; therefore it must adapt its strategy to the passenger needs.
On the other hand, assuming the induced risks is not characteristic only to new capability of the distribution program, but also for the involved parties who will need to transform the current threats into business opportunities.
Overcoming the impact on GDSs, travel agencies or other parties, the new program must focus on the implications for the final link in the distribution chain, since considering the buyers needs and preferences represents the fundamental component of the commercialization process.

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