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## BUSINESS MODEL OF REGIONAL AIRLINES

**Summary.** This study aims to identify key phenomena and regularities in the business models of regional airlines in the context of a decreasing number of players in this market despite the development of regional airport infrastructure. Since previous studies have focused on the analysis of supra-regional aviation, this paper focuses on specific elements of regional airline business models and the identification of key elements that are crucial for particular conditions on the aviation market. This work contributes to development of aviation management and specifically to the construction of business models, but can also be useful for practical implementations in small- or middle-size airlines. This research is qualitative in nature, based mostly on interviews with managers of regional airline companies. This approach has some limitations in the context of representativeness due to its retrospective nature and the potential bias of the respondents; therefore, it requires further verification. However, this study allowed us to establish recommendations for practitioners in the area of key business model elements for these kinds of carriers and further research.

### 1. INTRODUCTION

Previous research on enterprises in the regional air connections market [1-4] indicates difficulties in conducting business in this area, including the bankruptcy of several enterprises in the last few years. Despite the major development of regional carriers at the end of the 20th century [5], researchers in the following years have identified major difficulties in the functioning of this model [6, 7].

Previous studies on this issue are characterized by two strands of research. In the first of these, the authors suggest that the existing business models of regional carriers have collapsed, which may consequently lead to the disappearance of this aviation sector as a result of inadequate competition with companies operating in the LCC (Low-Cost Carrier) model. Knibb empirically confirmed that, currently, operating solutions in this area do not work, and consolidation remains the solution for carriers; this, in practice, involves takeover by larger (non-regional) carriers [6].

In the second strand of the study, the authors suggest that regional business models have been transformed by the combination of two other models in aviation, i.e. LCC and FSNC (Full Service Network Carriers), but despite operating difficulties, regional airlines still operate independently of the other market segments [8]. The new research problem is the low efficiency of such enterprises despite the growing number of tools optimizing their operations [9].

The concept of the "business model" first emerged in the literature as a description of a multiplayer business game developed for training management staff by the American Management Association [10]. One of the initial, recognized definitions of the business model was described by P. Timmers in his article on Internet enterprises as the architecture of the product, services, and information flow, taking into account the characteristics of various stakeholders and their roles, together with the identification of potential benefits for various economic entities and the description of revenue sources [11]. The scientific literature has already reported more than 100 different characteristics of the

business model, although only 45 of these included a comprehensive, actual description of the concept [12]. In the field of research on business models, the work of A. Osterwalder and Y. Pigneur represented a breakthrough that changed the way of understanding this idea [13]. In their definition, the business model describes how an organization creates, delivers, and captures value. It is also a template for identifying key elements of the activity, not a constant and homogeneous picture. This makes it possible to describe and compare models from different companies effectively. The authors named this model “canvas”.

Business models in aviation have been subject to scientific analysis for years. This industry is considered by some researchers to be less profitable or unprofitable because the actual profit has moved away from the relevant product of this sector, i.e. air services [14]. The first studies describing business models in aviation focused on the emergence of a new business formula, LCC, at the end of the last century. They undermined the existing solutions of FSNCs, and, at the same time, determined the potential for their improvement and examined the basis for the rapid acquisition of a significant share of the passenger transport market by carriers operating in the LCC formula [15]. They also analyzed the potential for further development of this model and its limitations [16]. However, it should be emphasized that the previous studies have mainly covered the large, supra-regional carriers [5, 8, 17, 18]. They focused, among others, on the ongoing trends and changes in airline business models [4, 19, 26]. A good example of a comprehensive analysis of the development of an airline business model is the Ryanair case described by R. Casadesus-Masanella and J. Ricart [20, 21]. The research gap in the field of regional aviation management has been confirmed in previous studies [22, 23].

As indicated above, there are few analyses directly related to regional aviation companies, even though they service around 16% of the entire passenger air transport market [24]. These analyses indicate a regional aviation crisis [1-3]. Some researchers point out that one can see many airlines on this market going bankrupt or being acquired by larger entities [6]. In this strand, it is recognized that regional carriers are only needed as subcontractors supplementing the network of connections with smaller cities. Independent companies served point-to-point connections, but nowadays, they lose with LCCs, which have taken over secondary airports. In practice, this means that the business model of regional carriers is broken and should be changed to a subsidiary element of the business model of FSNCs.

Other researchers suggest that the regional business model no longer exists because it has been transformed by the combination of LCC and FSNC models [8]. This means that there is no specific business model of regional aviation; however, some companies use a hybrid LCC/FSNC model to operate on regional routes.

Despite the trends mentioned above, approximately 200 airlines in the world call themselves regional, which is a good rationale for an extensive analysis of how their models work. Moreover, in wide-ranging studies, such a business model does appear [25], and regional airlines are occasionally taken into account in some research on single elements of the aviation business model [18, 26]. This confirms the legitimacy of the analysis that will verify the actual separate nature and scientific validity of such a model.

The main aim of this paper is to identify key phenomena and regularities in the business models of regional airlines in the context of a decreasing number of players in this market.

This paper makes some contributions. First, it presents the business model of regional aviation companies and its key elements. Second, this work complements research on business models in general. Third, it shows the importance of new technologies in the aviation sector. This paper is organized as follows: the first section is a review of previous research on the subject presented in the paper; the second section includes a description of the research and method applied. This part reports empirical evidence obtained from interviews with managers of regional carriers. The next section presents the results of the conducted analysis and the business model scheme. Moreover, the paper contains a discussion section. The last part presents managerial implications, the limitations of the research, and recommendations for future research.

## 2. RESEARCH AND METHODS

The research conducted was qualitative and was preceded by a study in the field of strategic management. The criteria for selecting entities for the study included the conditions for being a regional airline, i.e. performing most air operations on a distance shorter than 450-500 km and/or in less than 1 hour of flight [5], and operating for longer than ten years. The last assumption is aimed at ensuring that well-established enterprises, and not start-ups, are considered in the study, as the latter's market situation could be different. Moreover, to maintain the diversity of results and to introduce a broader perspective, the assumption was to conduct field studies on different continents, taking into account the diverse economic environments where the studied entities operate.

The first task was to select carriers for the study that would fulfill the above-mentioned criteria. Most of the queries directed at managers of such companies remained unanswered. This was further partly explained by the exclusion of some of the respondents (12 of 50 requests) due to closure of operations. Finally, five relevant consents were obtained (the rest refused or ignored the invitation to participate in the study), and case studies were carried out in April 2019 – July 2021. The selected enterprises are located in Africa, Europe, the Americas, and Australia. All of them were established before the year 2005. The design of the study was based on the canvas business model, developed by Osterwalder and Pigneur [13] and applicable for aviation [27]. The condition for obtaining statements was ensuring the anonymity for carriers.

The research included in-depth interviews with key managers of regional airlines or other entities involved (IDI/FGI - Individual In-depth Interview/Focus Group Interview) and a comparative analysis of the results of these interviews as a next step in the research procedure. The interviews were factual and conceptual, and partly structured. Three interviews were carried out in person and two were conducted online due to the travel restrictions in 2020. All of them were recorded. The study did not include hypothesis testing due to its explorative nature, but was rather intended to capture important issues for discussion about model running and capabilities in general. Irrespective of the interviews carried out, an analysis of secondary data was conducted, i.e. of available materials and organizational documentation of entities included in the study. It involved reading press interviews, media information, reports, and information available on the Internet. This part of the research analysis allowed partial verification of information collected during interviews. The main annotations and research suppositions are summarized in Table 1, which includes the elements of the canvas business model for the five airlines tested.

Furthermore, the statements obtained undermine the argument about the end of regional aviation. They indicate that these enterprises can operate in the long run even in extremely difficult conditions:

*“... we have worked during rebellions [...] volcano eruption [...]. Breaks were very short...”*

Moreover, they express a significant separation between the LCC and FSNC models, emphasizing the companies' ability to diversify sources of income and their flexibility to meet emerging needs:

*“We do what we have in aviation around us [...] like area survey, [...] volcano analysis, flight training, tourism, general aviation, sales aircraft, [...] what is profitable at the time [...], public transport, [...] flying ambulance...”*

Despite analogy to other airlines, the distinctiveness of the business model of regional carriers is confirmed by the fact that they offer an exceptional product:

*“ [our] biggest competitive advantage is, that the customers that we serve don't have a lot of other choices...”*

All interviewees reported the persistence in pursuing their goal, lack of long-term strategies, and readiness for frequent and immediate changes. Analyzed enterprises are constantly looking for new markets taking both localization and services rendered into consideration. Furthermore, in the opinion of interviewees, the market they operate in is challenging and demanding, but at the same time, very attractive and offering rare excitement. Moreover, they treat aviation as a passion – in all analyzed companies, owners/CEOs are pilots. Perhaps this, combined with the pilots' ability to act in the face of uncertainty, may influence the lack of a long-term strategy and the attitude of regional carriers to respond flexibly to a changing and often surprising environment [28].

Table 1

Elements of the business model characterizing airlines analyzed in this study

	Airline 1	Airline 2	Airline 3	Airline 4	Airline 5
Description	Regional operator from Equatorial Africa, operating three turboprop aircraft (average age exceeding 50 years)	Regional carrier from Central and Eastern Europe, providing services based on 18 turboprop aircraft (average age ~30 years)	US regional airline, operating nine turboprop aircraft (average age ~20 years)	Australian regional airline that uses 18 turboprop aircraft (average age ~20 years)	Regional carrier from Central America, operating thirteen turboprop, aircrafts and one jet (average age ~20 years)
Customers	Local SMEs (small and medium enterprises)	European enterprises, other airlines, brokers	Passengers, local communities, SMEs	Passengers, SMEs	Passengers, SMEe
Value Propositions	Cargo/charter flights to places that are difficult to access	Fast cargo, <i>ad hoc</i> passenger charter, or schedule subcontracting	Schedule/charter flights on regular routes.	Schedule/charter flights on regular routes and sightseeing flights	Schedule/charter flights on regular routes.
Channels	Local agents, own office on the main airport	Brokers, trade fairs, industry conferences	Internet, GDS (global distribution systems), own office.	On-line, local agents, own office	On-line, local agents
Customer Relationships	No homogeneous channels, fast changes	Permanent direct contacts based on own staff	Dedicated sales employees, On-line forms	On-line forms, contacts based on own staff	On-line forms, call center
Revenue Streams	Local agents, own office, bank transfers	Direct bank transfers	Credit cards, on-line payment, cash, bank transfers	Online payment	Credit cards, on-line payment, cash, bank transfers
Key Resources	Very old planes and qualified staff – 30 pilots (lack of pilot schools in the country)	Planes and staff – 124 employees (both easy to get, but relatively expensive)	Employed workers (374 people; more than 100 pilots)	Planes and staff (30 people)	Planes and staff (60 people)
Key Activities	Flights in extremely difficult conditions and circumstances (e.g. local riots, volcanic eruptions, etc.)	Fast cargo services, 24/7 readiness, flexible charter services in different variants	Flights to a remote areas	Passenger and sightseeing flights, touristic packages	Passenger and sightseeing flights, remote areas services

Key Partnerships	Local trade agents	Other airlines	GDS	Tourist offices	Local agencies
Cost Structure	Airplanes (loans, leasing), pilots (salary is approximately 15,000% of the average salary in the country!), aircraft inspections	Airplanes (leasing and depreciation), salaries, aircraft inspections, fuel	Labor costs, fuel.	Airplanes (leasing), salaries, aircraft inspections, fuel	Airplanes (leasing), salaries, fuel
Additional comments	The airline lost four airplanes in serious accidents (8 fatalities). The carrier is on the EU “blacklist”.	The relatively large number of employees results from the company itself providing technical maintenance and handling.	The airline lost six airplanes in serious accidents (26 fatalities).	The carrier lost one plane in the accident (1 fatality).	The airline lost one plane, but without fatalities.
Key success factor	Flexibility, quick adaptation to changing needs and conditions, diversification/change of revenue sources	Flexibility, quick adaptation to changing needs, and diversification/change of revenue sources, e.g. by establishing a flight training organization	Unique destinations, adjusting the offer to local needs	Flexibility, quick adaptation to changing needs, introduction of new services, e.g. “golf” flights	Business resistance, flexibility, loyal staff

Table 1 has been structured based on the canvas business model [13]. In addition, it was supplemented with a general description of the case, commentary, and key success factors.

### 3. RESULTS

The airlines studied conduct operations in completely different surroundings, although some similarities may also be identified. They need efficient equipment and qualified staff to successfully conduct their business. Depending on the availability of equipment and staff and the requirements of aviation supervision in the given area, these elements constitute various components in the carriers’ cost structure. Surprisingly the remuneration of an African carrier’s pilot is higher than that of an Australian one, although the average salary in Australia is several times higher than in Africa.

The key strength of the studied airlines appears to be flexibility and the ability to adapt quickly to the changing environment and customers’ needs. Companies are constantly looking for new sources of income and attempt to adjust their business profile to the current situation. One example of such adaptation is the possibility of transporting both goods and passengers, often with the same planes. Regional carriers cannot afford six-month cycles of planned operations – as is the case with LCCs or FSNCs. Orders are sometimes placed ad hoc or, for example, planned operations are repeated at two-month cycles. Despite this, due to the specifics of the operations, which are also often scheduled, regional carriers operate in a model different from such companies as, for example, air taxis, in terms of the use of small aircraft to provide an on-demand “point-to-point” air travel service [29].

The growing importance of ICT (information and communications technology) tools in customer communication channels, order and payment services, as well as in operational activities can also be observed. This applies to carriers operating in a digitally developed society to a greater extent, but also to other cases. The financial barrier to entry to global booking systems is a serious limitation reducing the willingness to create own IT booking systems. Despite this, the interviews did indicate the need to develop such tools. This is also consistent with remarks presented in previous research. Areas in which regional airlines may potentially use IT solutions include airline management systems [30] and the generation and sales of tickets (e-tickets), including using mobile applications [31].

The research described in this paper focused on the identification of key phenomena and regularities in the business models of regional airlines. Finally, the results presented here provide a reasonable base for proposing an autonomous diagram of the business model for this specific kind of entity, which is presented in Fig. 1. The pattern was based on literature examples derived from the analyses of business models in aviation [20, 21] and was adapted to the obtained research results.

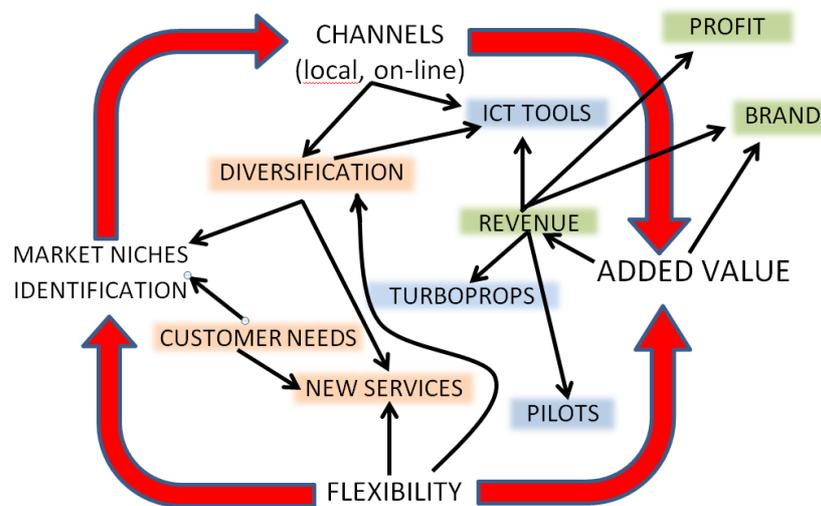


Fig. 1. Scheme of the proposed business model for a regional airline

The scheme was based on four key elements: flexibility, market niche identification, channels, and added value. It shows their relations (red arrows) and links (black arrows) with areas of influence (marked pink), resources (blue), and aims (green). The pattern presents cause and effect relationships.

What is essential for the conduct of any aviation business is appropriate equipment and qualified personnel. In the case of carriers, these are turboprop aircraft and certified pilots. Without planes and the staff, flight operations are impossible. According to the above analysis in this section, flexibility is a key element of the business model of such carriers. It enables the creation of added value to business, and enables continuous identification of market niches. These niches determine the channels to reach customers and the manner in which they can be served. This generates added value again, which creates the company's revenue and brand.

Flexibility may be manifest in the form of diversification, which involves various elements of operations: services, channels, tools used, and markets (both geographically and generically – due to the specificity of the services provided). Similar to other types of businesses, the correct identification of customer needs is an important factor for success. It involves, among others, defining new services and seeking new business markets.

#### 4. DISCUSSION

This work partly fills a research gap in the field of regional aviation management, which has been confirmed in previous studies [22, 23]. The results are not limited only to the regional aviation sector because they present some previously unidentified regularities and limitations of business models at

the same time [32]. Attempts to describe regional air carriers through these models are still not satisfactory.

Based on the presented research, two key elements of the regional carrier business model can be identified: flexibility and diversification. They are important in the context of day-to-day operations and the ability to survive in a changing and challenging aviation market. There can be many more factors determining success or failure in a particular case, but research described in this paper indicates rather that the business model of regional airlines can be efficient, providing several key elements, including flexibility and diversification. Since key factors are very different from those characteristics for a different kind of carrier, the research indicates that characteristics of regional airlines should be considered as a separate business model. This notion is also different from the view that the model of regional airlines is only a mix of other airline models [8].

The strategy for regional carriers, based on flexibility and diversification, shapes the conditions for business development, which, unlike for LCCs and FSNCs, is not based on economies of scale [21]. Simultaneously, it is associated with an increased risk of operations and limited possibilities for changing the model from a regional to a supra-regional one. However, such cases also occur – e.g. with Ryanair [33].

The research was qualitative in nature, which enabled a deeper understanding of business models and the phenomena occurring in enterprises (field research), drawing scientifically justified conclusions [34]. The field approach allowed the establishment of the hypotheses that would reach beyond the surveyed enterprises and industry sector [35]. It can be assumed, therefore, that those small enterprises operating on a market dominated by large entities should base their strategy on flexibility and diversification of revenue sources. Otherwise, they are at high risk of being susceptible to the actions of other business players.

For regional airline managers, the results have the following implications. Practitioners should focus on the constant search for new revenue opportunities, and avoid using standard activities only. They should skillfully identify emerging threats and new circumstances that affect the services offered, and use global digitization trends by increasing the ICT solutions not only in operations but also in the management and organizational processes of conducted operations. Managers should constantly monitor the market situation and actions taken by various groups of stakeholders involved in the process of generating value in the industry but also outside of it. Land transport is a key competitive sector, but it may be a source for the identification of new market niches. The opportunities resulting from the business model defined above may create new development strategies [36].

Business models in regional aviation are not stable structures. This means that there is a need for continuous business development with respect to various elements of changing models. It is important to avoid copying solutions from "large" aviation models, as they are inadequate to the operations of regional carriers. There are cases where the adoption of, for example, a network model for a regional airline led to its bankruptcy (eq. DirectFly – polish regional carrier, which has bankrupt in 2007).

## 5. LIMITATIONS AND FUTURE RESEARCH

This work includes proposals aimed at enriching the understanding of business models in the aviation industry, in particular, regarding regional carriers. Qualitative research is appropriate to better understand phenomena in this area, and to identify regularities and correlations between the adopted assumptions of the models of the analyzed enterprises and the effectiveness of their operations on the market. Despite the significant added value of such analysis and its adequacy to the inductive analysis of phenomena occurring in management processes, it should be emphasized that its results are limited in the context of representativeness (only 5 case studies out of about 200 companies of this type), the retrospective nature, and potential bias of the respondents. To eliminate the last element, the analysis was expanded to include available data sources for the surveyed carriers. The findings may, therefore, be partial and biased, but they present the actual situation in the analyzed enterprises and are the basis for drawing broader, more general conclusions that apply to the entire sector, and not only to these

airlines [35]. The hypothesis in this paper, that small enterprises operating on a market dominated by large entities should base their strategy on flexibility and diversification of revenue sources, should be verified in future research conducted in various sectors.

To carry out this research, maximum transparency was assumed, enabling verification of the results obtained. However, the situation on the analyzed market segment (including regulatory restrictions and frequent bankruptcies) is a limitation for general conclusions. For practical reasons, it was not possible to carry out research on bankrupt enterprises, which means that the results achieved are not complete (they are based on success stories, but do not include failed cases). Nevertheless, they contribute to the knowledge of business models and the functioning of regional aviation, and form the basis for further analysis in this respect. In particular, they should include the selection of appropriate measures and scale for business models for the aviation sector, in-depth analysis of bankruptcy cases, and optimization of these models in terms of market expectations.

## 6. CONCLUSIONS

This research focused on the isolation and description of the foundations of the business model for regional air carriers. The results obtained confirmed the legitimacy of such a model and indicated its key elements: flexibility and diversification. The analysis also showed the growing importance of ICT tools in this sector of the economy.

The objectives of this work were to identify key phenomena and regularities in the business models of regional airlines in the context of decreasing numbers of players in this market. This goal has been achieved, although it does not explain the difficulties of the operation of regional airlines. However, the results obtained constitute a contribution to management sciences and a good basis for managers to profile the activities of their regional airlines, toward making their operations more flexible, and diversifying their sources of income. In addition, the added value of the work is the design of a scheme of the business model of regional air carriers that can be analyzed in terms of efficiency and compliance with the profile of a particular company.

The research effect also allowed formulation of the hypothesis on the importance of flexibility for the business model of SMEs operating in other markets dominated by large entities. Thus, the results are not limited to the aviation sector, but can be verified in the context of other sectors of the economy.

The business model presented in this paper includes the key elements of the model and the dependencies between them. This allowed the identification of areas for further research in management sciences, as well as specific indications for practitioners.

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