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Developing a strategic framework of analysis for air transport management

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Abstract

This paper looks at the development and use of a strategic level framework of analysis tailored to air transportation management studies. Generic strategic frameworks designed for industry level analysis do not always capture the core factors and forces impacting and shaping the contemporary global aviation industry. The proposed strategic framework covers three key categories; namely politics, economics and geography, resulting in the acronym PEG. Three of the most commonly employed generic strategic frameworks in management research, including air transport management, are SWOT, PEST (PESTE/PESTEL) and Porter's five forces. However, these do not readily encourage all three of the PEG categories, with geography not explicitly featuring in any of these generic frameworks. Where an airline is based in the world matters in global aviation as the industry is underpinned by the bilateral system – a bundle of restrictions and limitations covering airline nationality/citizenship, ownership, control and home base requirements. The paper concludes by contending that PEG is an easy to remember and apply strategic framework for air transportation management studies and builds on the strengths and possibilities of generic strategic frameworks, but in a manner which helps to ensure that key industry-specific drivers and forces are brought to the fore. Figuratively speaking, the PEG strategic framework is situated at the center of the global aviation industry, rather than having to be retrofitted or modified to more closely align with the sector.

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1. Introduction

This paper details the design and development of an airline industry specific strategic framework for industry level analysis which contains the key categories of politics, economics and geography (PEG). The PEG framework is intended to mirror the key attributes of generic alternatives, chiefly by being easy to remember and straightforward to apply. Although generic strategic frameworks for industry level analysis are commonly employed in air transport management research, there are none dedicated and tailored specifically to the particularities of the global airline industry. This deficit is most noticeably acute in terms of geography which plays a pivotal role in global aviation (O’Connell, 2011); however, geography needs to be retrofitted to these established frameworks as none explicitly include it as an identified factor or force.

Industry level analysis – linked broadly to external environmental analysis – is predicated on understanding and planning based on investigating the key factors or forces shaping and impacting the industry context of a company, organization or other business entity. Even so, industry level analysis typically involves a deeper inspection than a less focused and targeted environmental scan (Grant, 2013). Both factors and forces are employed interchangeably throughout the strategic management and wider business literature, as are a host of other regularly used terms such as drivers, indicators, metrics, considerations and categories. Whatever term or terms are selected, an industry level analysis represents an important way for airlines and others to better understand and plan for the marketplace environment in which they operate, including those they intend to operate in. Such an analysis is also salient for industry and academic researchers as they seek to unravel the mysteries of global aviation. Using an established strategic framework helps to streamline and support any aviation industry analysis by greatly reducing seemingly endless options and information overload (Itani, O’Connell & Mason).

2. Air transport management research and strategic frameworks

The air transport management literature regularly calls upon strategic frameworks of analysis to guide, scaffold and support scholarly research in the field. Three of the most commonly selected and applied frameworks are the strengths, weaknesses, opportunities and threats (SWOT) analysis, along with the political, economic, social, and technological (PEST) analysis, and Michael Porter’s five forces of competition model (Shaw, 2016).

2.1. SWOT analysis

Throughout the business world and beyond SWOT continues to have an enduring presence and is arguably the most widely used strategic framework of its kind (Grant, 2013; Grundy, 2006). It is simple, easy to remember and intuitively logical to use. The only required knowledge, outside of knowing the full name for the category associated with each letter in the acronym, is for users to be able to divide these into internal (SW) and external (OT) factors. Some argue that a simple division into internal and external actually works just as effectively; however, this has not diminished the popularity of SWOT (Grant, 2013).

2.2. PEST analysis

A number of air transport academics refer to the PEST framework as “the most notable” of all the generic strategic frameworks (Itani et al., 2014, p. 126; Shaw, 2016). More recently, adding ‘E’ for environmental factors, creating PESTE, has become commonplace (Shaw, 2016). Meanwhile, the addition of ‘L’ for legal to make PESTEL is also becoming popular, though in aviation this tends to confuse the appropriate application of political as so much of the industry is founded on international treaties, agreements and standardized practices (Shaw, 2016; Havel & Sanchez, 2014). A fairly broad view of social is taken to include demographics and cultural considerations, which can enhance and deepen an investigation into the aviation sector, especially around factors driving air traffic demand (Lohmann & Vianna, 2016).

Despite technology having a significant impact on aviation, from long-range aircraft to complex revenue management systems, almost all technological advances can be equally adopted by airlines around the world. In the case of extended range aircraft, for instance, this may benefit some airlines more than others; however, this is more

likely to do with geography (i.e. an airline's home base) and economics (ability to buy or lease an aircraft), than with the underlying technology itself. Technology on its own does little to help explain an industry's core underlying forces (Porter, 2008).

2.3. Porter's five forces

Well known Harvard University academic Michael Porter developed his five forces of competition framework to gauge the level of profitability in an industry or sector. Centered around industry rivalry are the bargaining power of suppliers, the bargaining power of buyers, the threat of substitutes and the threat of new entrants (Magretta, 2012). The airline industry is typically located toward the bottom of any ranking of industries (Bisignani, 2013). The one force that gets quite a bit of airline industry attention is the threat of two regularly cited substitutes; high speed rail (HSR) and videoconferencing technology. However, beyond some very localized examples, on aggregate both of these do not tend to decrease demand for air travel (Committee on Climate Change, 2009).

Porter's framework is able to discover and explain to some extent why the airline industry has historically experienced low profitability, but it does not readily capture the hand of government (Magretta, 2012; Porter, 2008), nor explicitly highlight the importance of geography. On this latter point, however, Porter argues that his five forces framework requires the delineation of the geographical boundaries of an industry before being applied (Magretta, 2012). Although Porter has certainly demonstrated the utility of his framework for the US domestic airline industry (Magretta, 2012), according to the former head of the International Air Transport Association (IATA), Giovanni Bisignani, when it came to the international industry Porter remarked that he had "never come across such a mess as aviation" (Bisignani, 2013, p. 213). Bisignani (2013) observed that Porter "meant that it was the industry structure that was wrong – all the uncoordinated, outdated regulations, the monopoly suppliers, the inability of airlines to act like a normal business" (p. 213).

3. Background to PEG

This paper is based on the author's professional teaching and research experiences in higher education in both Australia and the United Kingdom. Nearly two decades of postgraduate study and work in higher education underpin the evolution of the ideas that inform the PEG framework covered here, including the experience gained across three lecturer positions; firstly in management (both undergraduate & postgraduate), then aviation (undergraduate level), and currently in air transport management (postgraduate level). In addition, a Master of Aviation Management research project completed in 2011 on the three major Gulf carriers (Emirates, Etihad & Qatar), which employed both SWOT and Porter's five forces, also makes a contribution to this paper. Likewise, the author's subsequent doctoral study on the future of the global airline industry conferred in late 2017, which employed both PESTE and Porter's five forces as strategic scaffolds, also played an instrumental role in the creation of the PEG framework. These professional experiences and learning repeatedly revealed the central importance of geographical location and international relations to better understanding the global airline industry, while also highlighting the need for an industry specific approach which could lessen reliance on generic strategic frameworks often misaligned to the unique characteristics found throughout global aviation.

Onion-style frameworks which attempt to merge key elements from two or more strategic models have been championed by some in management and business studies (Grundy, 2006); however, these still do not capture geography as a key factor. A strategic framework in essence can be seen as on par with theoretical, conceptual or analytical frameworks. Such frameworks are commonly employed tools to scaffold and organize research, including in aviation (Alderighi, Cento, Nijkamp, & Rietveld, 2012). At its heart, a conceptual framework can be viewed "as a set of broad ideas and principles taken from relevant fields of enquiry...to assist a researcher to make meaning of subsequent findings" (Smyth, 2004, p. 1). A conceptual framework can support the extraction of meaning and insight from data, communicate findings in a structured fashion, and create "reference points back to the literature" (Smyth, 2004, p. 1). Conceptual frameworks also help to detail and map "the key concepts and factors to be investigated" to begin with, and provide a valuable way to capture "emerging, fragmented or broad themes" (Lohmann & Vianna, 2016, p. 200).

4. Unpacking the PEG acronym

4.1. Politics

Few global industries are as impacted by political decisions and considerations as global aviation (Ellis, 2018). The politics of the airline industry are best appreciated at two main levels; national (aka domestic) and international. Most of the airline industry continues to operate on a nationally-based structure with national sovereignty at its epicenter. Each national air market then interacts with other national air markets on a predominately bilateral country to country basis, giving way to the bilateral system that then underpins the global industry (Havel & Sanchez, 2014). Europe remains the only exception to this general bilateral rule in global aviation, although its multilateral single air market essentially acts as a single nation internally, with a more fragmented approach followed externally (Knibb, 2015; Ellis, 2020). International relations in the form of air service agreements (ASAs) – international trade treaties in essence – act to bind countries all around the world into a web of agreements constituting the contemporary commercial aviation industry (Rhoades, 2014; Havel & Sanchez, 2014).

4.2. Economics

Economics has a somewhat problematic relationship with the airline industry as it is typically not difficult to apply economic metrics, concepts, assumptions and theories to national/domestic air markets, but very challenging, to the point of close to impossible at times, to conduct a traditional economic analysis of the global airline industry (Doganis, 2019). To achieve the latter, one must acknowledge and include a range of political and geographical factors and caveats. Added to this, the global airline industry has historically found profitability difficult to achieve, while industry exit for national “flag” carriers has also been rare (Ellis, Guira & Tyers, 2020). This reality does not readily conform to well-established economic thought and practice, particularly notions surrounding free market capitalism. A range of macro-economic factors, combined with key performance indicators (KPIs), are typically utilized in air transport economics, with a key competitors analysis often part of any economic assessment of the industry (Vasigh, Fleming & Tacker, 2013).

4.3. Geography

Geography is a very important factor for global aviation, particularly the role of geographical location in explaining the scope and global reach of airline networks (Lykotrafiti, 2020). In essence, geography helps to reveal where and why airlines are able to operate (Ellis, 2018). Notions of a level playing field in global airline competition often fail to acknowledge the vital role played by geography, with some arguing that “the geographical location of an airline should be seen as a natural asset and a comparative advantage (or disadvantage) and should not be a concern” in air agreements between countries (Gergely, 2020).

At its apex, geography in an air transport context can be divided into northern and southern hemispheres. It is not surprising that the world’s biggest air markets are in the northern hemisphere where most of the global population are situated, and where airline networks in North America, Europe, the Middle East and Asia can leverage west/east and east/west traffic flows. Meanwhile, the southern hemisphere has understandably less dense air networks given its lower population, with so-called end-of-line carriers (e.g. South African Airways & Qantas Airways) afforded less global capacity in consequence (Warne, 2011). However, it should be noted that a number of sizeable domestic air markets are located in the southern hemisphere including in South Africa, Indonesia, Australia and Brazil.

Holloway (2008) states that airline industry competition occurs across “four geographical levels” (p. 226); this paper chiefly incorporates the first two:

1. Region to region;
2. Country to country;
3. City to city; and
4. Airport to airport.

Airlines based in some countries or jurisdictions can benefit from a home base with both domestic and international air market access (e.g. US, Canada, Australia & Brazil), or may only have international air markets to operate in (e.g. United Arab Emirates (UAE), Hong Kong & Singapore). Establishing the geographical boundaries of an industry analysis is key to determining how each category is applied. For instance, ‘politics’ becomes international relations when two or more air markets are assessed, including those air markets with no domestic component (Ellis, 2019). Meanwhile, ‘politics’ remains focused on a national government when an individual domestic market is concerned.

4.4. Visualizing PEG

Much like SWOT, PEST and Porter’s five forces (to name a prominent few), the PEG strategic framework can be visually represented to aid with its use. A locator maker, or map marker, can be employed to graphically demonstrate its core categories, and to also encourage their accurate application. As shown in Appendix A, the three core PEG factors can be visualized with politics at the heart of the airline industry, surrounded by economic factors and focused on geography; with geographical location being particularly important here.

The PEG framework invokes images of a locator peg, or a tent/marquee peg, and as such helps to encourage a strong sense of the importance of location when applying it to the airline industry. Given that nationality and home base requirements effectively anchor airlines to their country or jurisdiction of origin, making them in effect “nation-bound” (Mifsud, 2011, p. 117), this pinning action should be visualized as the first step in using PEG.

4.5. Applying PEG

The essence of PEG is action. Like with all strategic frameworks, practical application is central. The following six key steps to conducting a PEG analysis for a specific airline are intended as indicative and not prescriptive; however, a PEG analysis should generally involve:

1. Establish an airline’s home base (G);
2. Articulate the geographical parameters of the analysis (G);
3. Delineate the political domain (i.e. domestic politics or international relations) (P);
4. Gauge the role, power and impact of government/s (P);
5. Measure the key economic indicators (E); and
6. Conduct a key competitor analysis (E).

In this manner, PEG begins with a downward motion aimed at anchoring the framework in a home base ready to start the analysis. The geographical boundaries of the analysis (which can extend beyond this point) then become the starting point for a political delineation and analysis, before heading finally into an economic assessment of the air market/s involved, including the key competitors therein. This process is not designed to minimize the importance of economics in helping to explain the industry context and environment that airlines operate in, but rather to reduce the risk of economic factors and forces sidelining geography and politics to begin with. These latter two categories of analysis are often relegated to secondary roles in favor of primarily economic assessments, when in reality they are fundamental in successfully conducting a holistic strategic analysis of the airline industry and must be first understood before the economic considerations can be more fully appreciated.

4.6. Real-world examples using PEG

Applying the PEG framework in the real-world with an individual airline as the core focus in essence revolves around whether the airline (including the network to be analyzed) is domestic or international (or both). For instance, a domestic network analysis of US-based Delta Air Lines would almost certainly need to consider its main Atlanta hub (geography), the role and power of the Federal Aviation Administration (FAA) including key regulations and requirements (politics), along with the key economic indicators and metrics in the US and across the domestic aviation sector more specifically (economics). Meanwhile, when applying the PEG framework to a carrier

with a limited to no domestic air market such as Qatar Airways, the central geographical location of its hub airport in Doha, and associated hour-glass shaped balanced global network, are vital to consider (geography). Government ownership and support (politics) are also key factors, while international trade, financial and tourism flows and trends are also crucial to better understanding the airline's context and trajectory (economics).

When employing the PEG framework to air markets more broadly, bilateral, multilateral (including regional) and global parameters need to first be established around any analysis. For example, the trans-Tasman air market between Australia and New Zealand (geography) is based on a bilateral air services agreement (international relations/politics), underpinned by the Closer Economics Relations (CER) agreement and free trade area (economics) (DFAT, 2020). On a much larger scale, the European Common Aviation Area (ECAA) is a multilateral regional single air market comprising almost 40 member states (Ellis, 2020), with ambitions to reach “50-55 states with a total population of up to 1 billion inhabitants” in future (European Commission, 2020). The ECAA remains a unique regional multilateral accomplishment in global aviation (international relations/politics), aided and supported by the 27 member European Union (EU) single market, of which 19 are members of the Eurozone single currency (economics). In addition, trade, financial and tourism flows (economics) all play important roles in better understanding this large and diverse single air market.

Any attempt at analyzing the global airline industry using PEG requires an understanding and appreciation of the extent of passenger flows across the globe. These passenger movements are strongly influenced by international relations (politics) as over 190 nation-states and aviation jurisdictions interact with each other via trade, immigration, tourism and the like. Financial centers like New York, London, Tokyo and Shanghai drive higher rates of business traffic into and out of their airports, while tourism often dominates in others such as in Spain, Egypt and Thailand (economics). As noted above, most global airline passenger traffic occurs throughout the northern hemisphere linking the major regions of North America, Europe, the Middle East and Asia (geography). As the COVID-19 pandemic continues to impact the world and greatly reduce air travel from 2019 levels, international relations, economics and geography are likely to be as important as ever in better understanding the global aviation industry in future (Kobierecki, 2020; Suau-Sanchez, Voltes-Dorta & Cugueró-Escofet, 2020). The PEG framework could certainly assist in this endeavor.

5. Conclusions

Established strategic frameworks for industry level analysis like SWOT, PEST and Porter's five forces of competition are somewhat limited in their capacity to examine the international air transport industry. This is due in large part to the fact that they do not explicitly include geography as a key factor or force. Although geography can be retrofitted to all such frameworks, and while acknowledging Porter's insistence that his five forces model can only be successfully applied after the geographical boundaries of an industry have been articulated, the exclusion of geography does represent a core limitation of generic frameworks from the vantage point of the air transport industry. With this in mind, this paper has outlined the merits of the PEG framework, an easy to remember and intuitive acronym which elevates geography (G) alongside politics (P) and economics (E). All three factors heavily impact and shape the air transport industry. The PEG framework also readily invokes a sense of pinning or anchoring the analysis to a geographical location, and as such helps to ensure that geography maintains a central role.

5.1. Limitations of PEG

Like its counterparts, particularly SWOT and PEST, the PEG framework's simplicity is not only an asset but also a potential flaw. This is evident in how the framework is applied, with merged categories like geopolitics missed or downplayed unless a creative and expansive approach is adopted. Likewise, socio-economic and demographic considerations are only made possible when each category is stretched beyond the confines of a narrow and prescriptive definition for each. Evidently, the PEG framework expands the conversation and options available covering decisions around which strategic framework to use for airline industry level analysis; however, it is not a panacea. For instance, with concerns mounting over the airline industry's contribution to climate change, the

PEG acronym might prove too restrictive for this important factor to be adequately captured. Unlike PEST, simply adding an additional ‘E’ for environmental to account for this may not be as practical or straightforward for PEG.

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Appendix A.

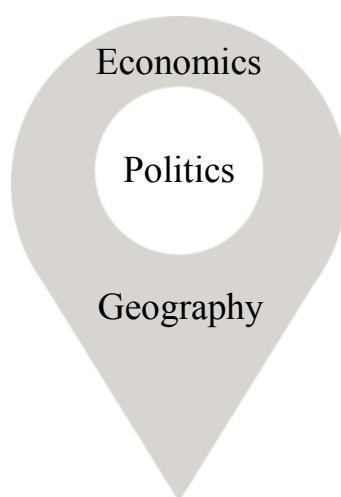


Fig. 1. The PEG framework. Source: Author compilation using Pixabay, 2020.

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