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Thinking through the meteoric rise of Middle-East carriers from Singapore Airlines' vantage point

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ABSTRACT

The rise of Middle East carriers in the past decade has been nothing less than meteoric. Based on the notion of generic strategy, we analysed the potential for competitors of the leading Middle East carriers to respond in terms of market scope and product characteristics, using Singapore Airlines as a reference. We found that it was generally difficult for Singapore Airlines to compete in terms of market scope, and thus it should concentrate on offering different degrees of differentiation in its products. While the latest small, long-haul aircraft could help increase Singapore Airlines' market scope, this impact would be marginal at best. We compared the product offerings and prices for the Business and Economy cabins, and noted the intensive competitive pressures the leading Middle East carriers exerted on Singapore Airlines. Improving specific product qualities such as guaranteeing a horizontally flat bed in Business and the overall quality in Economy helps competitors command higher prices, while other niches are still possible.

1. Introduction

The rise of several Middle East carriers, namely Emirates Airline, Qatar Airways and Etihad Airways, or 'ME3', in providing full-service scheduled international air transport has been nothing less than meteoric. While there are subtle differences in strategy among the three, all expanded their capacity to cater to primarily passengers originating from and destined to places outside of their home bases (Carey, 2015). These three carriers flew a combined total of fewer than 20 million passengers in 2004. Only eight years later – definitely less than a decade, these three carried more than 75 million passengers in 2012 (Dresner et al., 2015). The aggregate passenger growth rate for these three carriers combined over these years was an impressive 24% per year. ME3's route network at the end of 2015 covered most primary and secondary cities in Europe, much of Africa, Asia, North America, an increasing number of cities in Latin America, as well as extensive trans-Tasman coverage (between Australia and New Zealand). In 2014, the number of passengers (70 million) flying out of Dubai, home of Emirates, surpassed that of London Heathrow (Critchlow, 2015).

Meanwhile, many competitors claimed that the rise of ME3 led to significant losses in traffic. Reports suggested that when Dubai overtook Singapore as the airport where most passengers on the London-Sydney route stopped *en route*, the rise in passenger numbers in Dubai coincided with a comparable drop for Singapore (Raghuvanshi, 2013). Thai Airways suffered losses since 2013 and Malaysia Airlines since 2010, with both seeing tremendous growth in capacity by ME3 to their home countries but little in their flag carriers (Jittapong, 2014; Kedmey, 2014; Nguyen, 2015). For travellers based in the home countries of these three South-east Asian carriers, ME3 offer flights both westward to Europe and Africa and eastward to Australasia – a compelling alternative to their respective flag-carriers. In Europe, Lufthansa claimed that its Frankfurt hub lost almost a third of its market share on routes between Europe and Asia in a decade since 2005 (Carey, 2015). Even U.S. carriers claimed that the growth of ME3 had begun to threaten the viability of the entire U.S. airline industry (Critchlow, 2015).

How can ME3's competitors respond? Porter (1980) proposed the notion of generic strategy as a way for companies to think through how they can position themselves relative to competitors. Once a company decides to be in an industry, 'the second really fundamental question on strategy is positioning within the

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industry...because you can't be a superior performer in any industry without some kind of competitive advantage' (Porter, 1987: p.3). In other words, generic strategy lets competitors adopt different positions relative to one another, softening the need for direct, cut-throat competition – a prospect any for-profit entity would be loath to face. We examine in this paper how competitors like Singapore Airlines can apply the notion of generic strategy to differentiate themselves from the fast-growing airlines of the Middle East.

Generic strategy describes an array of positions firms can adopt in relation to two orthogonal dimensions: market scope (on the vertical axis) and product characteristic (on horizontal axis). Vertically, a broad market scope (higher on the axis for market scope) means that a company's products are offered to a wide swathe of customers. A narrow market scope (lower on the vertical axis) means that a company's products are offered only in certain market niches. Horizontally, a low-cost strategy for a product (toward the left on the axis for product characteristics) is one that translates certain advantages to low prices, and often with few or no frills for the customers. Alternately, a differentiated position for a product (toward the right on the horizontal axis), is one that is often associated with superior reputation, premium services and, often, higher prices.

Based on the notion of generic strategy, we examine the relative positions between ME3 and Singapore Airlines as a representative competitor. We first analyse the market scope that ME3 could potentially attain, and then their product characteristics relative to Singapore Airlines. In this paper, we focus on routes linking Europe to South-east Asia and Australasia, where ME3 and Singapore Airlines present the most direct competition.

2. Market scope

2.1. Potential reach

The airline industry exhibits strong economies of scale in terms of traffic density (Gillen et al., 1990). Coordinating schedules such that flights from many cities arrive and depart at similar times at an airline's hub facilitates flight connections on many more city pairs than just the number of routes that the airline flies. This helps the airline better aggregate traffic to/from its cities served, in turn allowing higher frequencies to be deployed to these cities (Hansen, 1990; Adler, 2001; Gillen and Morrison, 2005). In the U.S. domestic airline network, such hub-and-spoke network designs have been shown to attract significant passenger traffic compared with isolated non-stop, hub-bypassing service (Hansen, 1990; Zhang, 1996). In a similar manner, the home-bases of ME3 and Singapore Airlines act as hubs for traffic between Europe and South-east Asia, and between Europe and Australasia (Oum et al., 1993). Thai Airways and Malaysia Airlines, with their home bases close to Singapore, and to a smaller extent Cathay Pacific Airways out of Hong Kong, also cater to this traffic.

The number of destinations and therefore city-pairs to which scheduled flights are offered is arguably the most representative measure of market scope for an airline. For an airline focusing on using its home base as a hub to facilitate flight connections to/from many other cities, cities around its hub naturally become part of its sphere of influence because passengers to/from these cities often do not have to detour significantly when making flight connections at that airport (Gimeno, 1999). Table 1 shows the flight distances between representative points in Europe and South-east Asia, and between Europe and Australia. These distances are similar whether or not the routing is non-stop or through Dubai, Singapore or Hong Kong. In other words, the detour necessitated by a flight connection in one of these three cities is small.

Because of geographical proximity, the focal airline can easily afford to operate higher frequencies to cities nearby, which in turn increase the attractiveness of its connecting services elsewhere. Meanwhile, cities within one airline's sphere of influence can provide important connecting traffic to that airline's hub, and in turn, that airline can seek to exert more presence and even higher pricing power for traffic to/from these cities (Borenstein, 1989; Brueckner and Zhang, 2001). In turn, serving many destinations within a region with frequent flights facilitates the focal airline to be marketed as a preferred carrier among corporate and individual customers from that region. In general, the larger the demand originating from an airline's sphere of influence, the easier it is to profitably increase its number of destinations.

With respect to traffic between Europe and South-east Asia, and between Europe and Australasia, the entire Europe, the Near East and the Middle East can be considered within ME3's sphere of influence. ME3 can serve most cities in Europe with a single aircraft on a daily rotation (e.g., flights between, say, Dubai and Paris would be about 7 h each way). This enables ME3 to aggregate traffic to/from a large number of cities in Europe. Likewise, airlines based in South-east Asia such as Singapore Airlines enjoy easier access within South-east Asia, and to Australasia (e.g., flights between, say, Singapore and Melbourne, Australia, averaged less than 8 h each way). This enables Singapore Airlines to aggregate traffic to/from cities in South-east Asia and Australasia, and consider cities in these regions as within its own sphere of influence.

The demand for air transport has long been shown to increase with the economic output of travellers' trip origin. In terms of Gross Domestic Product (GDP), the European Union alone reported a total of USD 18.5 trillion in 2014, other non-E.U. European countries like Norway and Switzerland reported another USD 1.2 trillion while near-East and Middle-east countries such as Turkey, Saudi Arabia and the United Arab Emirates contributed another USD 3.4 trillion (Wikipedia, 2016a). In comparison, Australia, New Zealand, countries in South-east Asia, plus Hong Kong and Bangladesh, added up to USD 5.2 trillion in GDP in 2014. In other words, the GDP for ME3's sphere of influence is more than four times that of the GDP for Singapore Airlines' sphere of influence: ME3 has a much larger economic 'hinterland' as a proxy measure of potential market scope than Singapore Airlines.

More specifically, studies have portrayed the demand for passenger air travel as a function of GDP per capita, and this relation occurs in logarithmic terms: halving a country's GDP per capita decimates its air travel demand per capita. Boeing (2015: 22) shows that on average, countries with USD \$10,000 in Gross Domestic Product (GDP) per capita take about one trip per person per year by air. The European Union alone reported a population of about 500 million. Summing up the population in countries in Europe, the Near-East and the Middle East with a GDP per capita over USD \$10,000 yields a total of 639 million. In comparison, Australia, New Zealand, and countries in South-east Asia with a GDP per capita over USD \$10,000 yields a total population of only 71 million (Wikipedia, 2016b, 2016c). Even when Thailand and Indonesia (with GDP per capita between USD \$3000 and \$6000) are included, the total population for countries in Singapore Airlines' sphere of influence is only 387 million, about half of that of ME3. The much larger population and air travel demand originating from within ME3's sphere of influence, as summarized in Table 2, provides a much stronger support for ME3 to profitably offer a far higher level of market scope than Singapore Airlines. In other words, Singapore

Table 1

Flight distances (km) between select origins and destinations.

	London-Sydney	London-Perth	Amsterdam-Jakarta	Frankfurt-Kuala Lumpur
Nonstop	17,016	14,499	11,353	10,001
Via Dubai	17,589	14,577	11,718	10,398
Via Singapore	17,176	14,783	11,395	10,577
Via Hong Kong	17,019	15,654	12,533	11,704

Source: www.gcmap.com**Table 2**

Summary statistics on the size of the airlines' sphere of influence.

Europe-S.E. Asia & Europe-Australasia corridors	ME3	Singapore Airlines	ME3 ÷ Singapore Airline
Sphere of influence	Europe + Near/Middle East	Australasia + South-east Asia	
GDP (USD Trillion)	19.7 + 3.4 = 23.1	1.6 + 3.6 = 5.2	23.1 ÷ 5.2 = 4.5
Population in millions (GDP per capita > USD \$10,000/year)	503 + 136 = 639	28 + 43 = 71	639 ÷ 71 = 9.0

Airlines – and its other competitors based in South-east Asia as well – will unlikely beat ME3 in terms of what the traffic feed the latter can amass.¹

2.2. Limits of bilaterals?

The previous section shows that the underlying economic product and population counts within ME3's sphere of influence overwhelm those within Singapore Airlines'. This allows ME3 to potentially achieve a far broader market scope than Singapore Airlines. In practice, however, bilateral air service agreements can limit the achievable market scope.

Note that flight connections offered by ME3 and Singapore Airlines are international in nature. As long as an airline obtains traffic rights between its home country and two foreign countries independently, it typically is allowed to arrange a connecting itinerary between the two foreign countries via its home country through two separate flight numbers. This has been the basis for airlines with small home markets, such as Singapore Airlines and KLM Royal Dutch Airlines, to grow (Carey, 2015).

One important feature of bilateral air service agreements is that air traffic rights are typically granted till perpetuity. Moreover, the overall trend has been for governments to progressively liberalize such agreements instead of imposing more restrictions over time. Limitations on aircraft performance until the late 1980s meant that flights between Europe and Asia required refuelling stops in the Middle East, and airlines (mostly European and Asian at that time) were keen to obtain traffic rights beyond their Middle East stops. For instance, Singapore Airlines operated multiple service to Europe via Dubai in the 1980s with full rights in the Dubai-Europe sectors. In return, similar air traffic rights were often accorded to countries in the Middle East – particularly the United Arab Emirates (where Emirates and Etihad are based).

Throughout the 1990s, the U.S. actively pursued liberal, so-called 'Open-Skies' bilateral agreements with other countries (U.S., 2016), with the ultimate goal of increasing capacity and reducing the cost for customers. The U.S. found allies in the Middle East, particularly since carriers based there were at the time unlikely to effectively utilize traffic rights enshrined in these agreements (Qatar Airways was getting a re-boot at the time, and Etihad had not been formed yet). The Open Skies agreements between the U.S. and the U.A.E., and between the U.S. and Qatar, were all

negotiated in this period. These agreements allow ME3 to make a stop *en-route* from their home country to U.S., and allow them to pick up traffic between this stop and the U.S., provided of course that the country of this *en-route* stop also allows this. From 2006 to 2008, Emirates operated a daily non-stop flight between New York and Hamburg, Germany, on its way to/from Dubai. Since 2015, Emirates has been operating a daily non-stop between New York and Milan, Italy, on its way to/from Dubai, although airlines typically have to offer lower prices for such 'fifth-freedom' routes (Drescher, 2015).

Many other countries followed the U.S. in signing more liberal bilateral agreements to increase consumer welfare, for both residents of their countries and inbound visitors. The case of trans-Tasman flights illustrates how ME3 is keen to expand its reach to cater to fifth-freedom traffic. In the mid-2000s, Emirates began adding trans-Tasman sectors to its Australia services. It gradually built up a daily wide-body service on each of these trans-Tasman routes: Auckland-Brisbane, Auckland-Melbourne, Auckland-Sydney and Sydney-Christchurch. For several years, the Auckland-Melbourne service was served as a part of the circuitous Auckland-Melbourne-Singapore-Dubai flight instead of a continuation of the Melbourne-Dubai non-stop, and Christchurch-Sydney was served as a part of the circuitous Christchurch-Sydney-Bangkok-Dubai flight instead of the Sydney-Dubai non-stop. This shows that ME3 has been keen to focus on fifth-freedom traffic.

In an even more striking example to show Emirates' focus on the fifth-freedom traffic, the August 2004 (p. 797, 1218, 1222) issue of the *Official Airline Guide (OAG)* shows that the daily flight EK404, originating from Dubai, departs from Singapore at 1520 and arrives in Melbourne at 0030 the next day, but departs from Melbourne at 0830 in the morning for Auckland. The Melbourne-Auckland sector, instead of departing shortly after the aircraft arrived from Singapore, stayed overnight in Melbourne before leaving at a more civilized time better suited for the local traffic. From Singapore to Auckland, the OAG did not even list EK404 as an option even though it was a same-plane service with the same flight number. In other words, the Melbourne-Auckland sector of EK404 was intended solely for the local fifth-freedom traffic instead of through traffic from Singapore or Dubai. In comparison, from the 1980s to 2015, Singapore Airlines did not serve any trans-Tasman routes.

Relative to Emirates, Etihad and Qatar Airways have been less conspicuous in exploiting fifth-freedom traffic rights. For some years, Etihad did serve Singapore-Brisbane as a continuation of its flight from Abu Dhabi. Neither Etihad nor Qatar Airways flew any trans-Tasman service. In late 2015, neither of these two airlines had any fifth-freedom flights out of Singapore, while Emirates continued to operate three daily fifth-freedom flights out of

¹ It is also worth noting that South Asia and Africa also contribute to ME3's sphere of influence from the perspective of travellers originating from or destined to Europe – further adding to ME3's inherent strength.

Singapore, one to Colombo, Sri Lanka, one to Brisbane, and one to Melbourne, Australia.

To reciprocate the liberal air traffic policies of other countries, the U.A.E. adopts a liberal stance in granting foreign carrier traffic rights beyond the U.A.E. Federal Express of the U.S. has taken advantage of these rights to set up a cargo hub in Dubai (Carey, 2015). For many years, Malaysia Airlines operated a thrice-weekly non-stop service from Dubai to Newark, and Singapore Airlines also operated several weekly non-stops from Dubai to Istanbul and Cairo.

In one situation where Canada stood firm to limit traffic rights accorded to Emirates, the U.A.E. subsequently disallowed Canada to use the U.A.E. as a staging area for the war in Afghanistan (Carey, 2015). Canada remained the only exception where the ME3 could not negotiate a daily service in the bilateral air service agreement. In many countries served by ME3, ME3 offered far more frequent service and capacity than the airlines based in these countries. For example, in late 2015, Emirates operated six flights a day on the Dubai-Bangkok route, while Thai Airways flew just one. On the Dubai-Kuala Lumpur route, Emirates operated four daily flights while Malaysia Airlines just one. On the Dubai – London, UK route, British Airways operated three daily non-stops while Emirates operated nine.

In summary, bilateral air service agreements have not thwarted

ME3 in their expansion to most countries. In fact, carriers such as Singapore Airlines simply cannot hope to even match ME3's broad market scope. While Qatar Airways and Etihad lagged behind Emirates in network reach, Emirates' network showed the extent their market scope could be. Table 3 shows all destinations served by Singapore Airlines in late-2015, as well as some destinations served by ME3, providing proof that Emirates' network has simply eclipsed that of Singapore Airlines'.

3. Product characteristics

3.1. Premium cabins

Since its inception, Singapore Airlines has focused on surpassing its competitors in its service. Reputedly, it has received the most awards among the world's airlines (Lee, 2016). It has consistently been a leader in its First and Business cabins. Singapore Airlines became the first carrier in 1998 to let travellers in its First and Business cabins to book entrees such as the famed lobster thermidor to be served in-flight in advance (Dykins, 2016). In Business class, most long-haul routes now feature the industry's widest seats that can turn into horizontally flat beds, and with every seat having direct aisle access (i.e., state-of-the-art four abreast seating).

Meanwhile, the ME3 have devoted significant resources to make

Table 3
All of Singapore Airlines' passenger flight destinations and some of ME3's.

Australasia		Southeast Asia		Europe	
Adelaide	S,E, Q	Bangkok	S,E,T,Q	Amsterdam	S,E,T,Q
Auckland	S,E	Brunei	S	Athens	E,T,Q
Brisbane	S,E,T	Denpasar	S, Q	Barcelona	S,E, Q
Canberra, 2016	S	Hanoi	S, Q	Birmingham	E, Q
Christchurch	S,E	Ho Chi Minh	S,E,T,Q	Brussels	E,T
Melbourne	S,E,T,Q	Jakarta	S,E,T,Q	Budapest	E, Q
Perth	S,E,T,Q	Kuala Lumpur	S,E,T,Q	Copenhagen	S,E,Q
Sydney	S,E,T,Q	Manila	S,E,T,Q	Dublin	E,T
Wellington, 2016	S	Phnom Penh	S, Q	Düsseldorf	S,E,T
		Phuket	S,E,T,Q	Frankfurt	S,E,T,Q
		Singapore	S,E,T,Q	Geneva	E,T,Q
		Surabaya	S	Glasgow	E
		Yangon	S, Q	Hamburg	E
				Istanbul	S,E,T,Q
				Larnaca	E,T,Q
				Lisbon	E
				London, UK	S,E,T,Q
				Lyon	E
				Manchester	S,E,T,Q
				Madrid	E,T,Q
				Malta	E
				Milan	S,E,T,Q
				Moscow	S,E,T,Q
				Munich	S,E,T,Q
				Newcastle	E
				Nice	E
				Paris	S,E,T,Q
				Prague	E
				Rome	S,E,T,Q
				St. Petersburg	E
				Stockholm	E
				Venice	E,T,Q
				Vienna	E,T,Q
				Warsaw	E, Q
				Zurich	S,E,T,Q

Served by Singapore Airlines (S), Emirates (E), Etihad (T), or Qatar Airways (Q).

Services to Canberra, Düsseldorf and Wellington commence in 2016 for Singapore Airlines.

Services to Kochi, Phnom Penh & Phuket by Singapore Airlines regional subsidiary Silk Air.

their premium cabins special. As a first in the industry, Emirates installed on-board showers on its A380 aircraft in its First cabin, while Etihad installed a three-room suite (with *en suite* shower and bathroom) on the A380 in its 'Residence' offering – above its First-class equivalent, the 'Apartment'. Both Emirates and Etihad offer complimentary chauffeur-driven rides for customers in their First or Business cabins to/from the airport. Further, customers in the First or Business cabins of Etihad and Qatar Airways can choose to dine at any time they wish. All three ME3 carriers have a social area for their First and Business customers on board the A380 aircraft with a bar and sofa. In reality, however, First class is offered only on a small subset of routes, and by the number of seats the Business cabin is by far much more available.

Table 4 compares several features of the First and Business cabins on ME3 versus on Singapore Airlines. It shows that ME3 offer slightly more features than Singapore Airlines in First class, but if a customer expects a seat in Business class that converts to a horizontally flat bed with direct aisle access, then Singapore Airlines beats Emirates and Qatar Airways but is eclipsed by Etihad. One of the most comprehensive ratings of airline quality and voted by passengers, the Skytrax rating (1–5 stars, 5 being the best) provides a more multi-faceted view of an airline's product, including service quality.

To examine the extent to which cabin features are reflected in the prices, we conducted a small fare survey on select routes in the Europe–South-east Asia and Europe–Australasia corridors. We sampled in mid-April 2015 all-inclusive return fares for one passenger departing on Wednesdays and returning the next Tuesdays, starting in two weeks in late April, as well as in the second week of May, June, July, August, September and October. The fares were taken from skyscanner.com – a meta-website linked to individual airline sites, and for travel originating in both ends of the routes.

We surveyed a total of eleven markets: five featuring daily or near-daily non-stops between Singapore and Europe (London UK, Paris, Frankfurt, Milan, Zurich), four other featuring near-daily service by European carriers but Singapore would be a logical connecting point (Jakarta – Paris, Jakarta – Amsterdam, Denpasar – Amsterdam, Kuala Lumpur – Frankfurt), plus two ultra-long routes of Sydney (Australia) – London (UK), and Singapore – New York (added because of ME3's increasing popularity). In particular, we surveyed the lowest fare for a carrier offering a connecting itinerary involving no more than one 4-h wait during flight connection (we excluded airlines that did not offer such a convenient connection). Because First class was not consistently offered in our sampled markets, we surveyed only the Business

airfares (as well as Economy ones) for consistency. In total, 251 carrier-route combinations and 1103 price observations were included. Unfortunately we were not able to systematically access corporate discounts for these airfares.

Fig. 1 shows the all-inclusive Business return fares for the Sydney–London U.K. market, averaged over all observations from Skyscanner.com. For trips originating in both Sydney and London, Singapore Airlines indeed charged comparable prices as Emirates and Etihad. This was consistent with Singapore Airlines' features in Business class being on par with those of ME3. Qantas of Australia consistently offered higher prices than others on this market, possibly reflecting its long heritage and direct flight (i.e., same flight number for the entire trip). British Airways only charged a small premium relative to Singapore Airlines, and only for trips originating in its home base of London, U.K. China Southern Airlines was a relative newcomer to this market, and this was reflected in its much lower prices.

Fig. 2 shows the all-inclusive Business return fares for the Milan–Singapore market, averaged over all weeks of observations as displayed on Skyscanner.com. In this market, Singapore Airlines was the only operator providing non-stop service, and hence was expected to enjoy a significant price premium even for trips originating in Milan – as was confirmed.

Economists have long designed ways to explain price differences for products that are differentiated, through the so-called 'hedonic price models' (e.g., [Goodman, 1998](#); [Griliches, 1971](#); [Rosen, 1974](#)). We applied the principle of hedonic price modelling to explain via regression analyses the price differences observed in our airfare survey as a function of service attributes.

When all the sampled Business airfares were put in ordinary least-squares regression with airfares by Cathay Pacific Airways as the reference, the estimated coefficients are shown in Table 5. Model 1 included specific trip characteristics and used airline-specific dummy variables to represent other service attributes. Here, trips originating in Asia-Pacific recorded a price premium of SGD \$854. Being able to guarantee a horizontally flat bed in Business is associated with a price premium of SGD \$735 – achieved by both Singapore and Etihad Airways on their long-haul flights, but not for Emirates and Qatar Airways.

Interestingly, the Skytrax cabin rating (between 1 and 5 stars, with 5 stars being the most desirable) for Business class did not correlate with the observed airfares, likely because airfare pricing in this cabin had other influences outside of specific cabin features. Originating a trip in a carrier's home country also did not guarantee a price premium, possibly as a result of the strong marketing

Table 4
Comparing features of Premium cabins.

	Emirates	Etihad	Qatar Airways	Singapore Airlines
First class (or above)				
On board showers	Yes	Yes	No	No
Horizontally flat beds	Yes	Yes	Yes	Yes
Guaranteed aisle access	Yes	Yes	Yes	Yes
Chauffeur drive	Yes	Yes	No	No
Dine on demand	No	Yes	Yes	No
Book entrée in advance	No	No	No	Yes
Skytrax star rating	4.5	4	5	5
Business class (long haul)				
Horizontally flat beds	Depends	Yes	Depends	Mostly
Guaranteed aisle access	No	Yes	No	Mostly
Chauffeur drive	Yes	Yes	No	No
Dine on demand	No	Yes	Yes	No
Book entrée in advance	No	No	No	Yes
Skytrax star rating	4	4	5	4.5

Depends – depends on aircraft types. Mostly – on most intercontinental services. Etihad and Qatar Airways' ratings were just prior to their selective withdrawal in 2014.

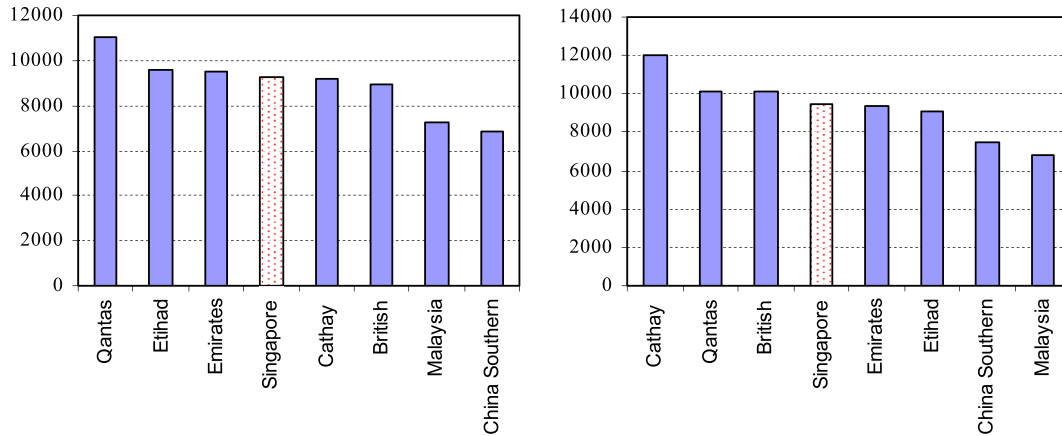


Fig. 1. All-inclusive Business return fares for Sydney-London, SGD (1 USD–1.3 SGD).

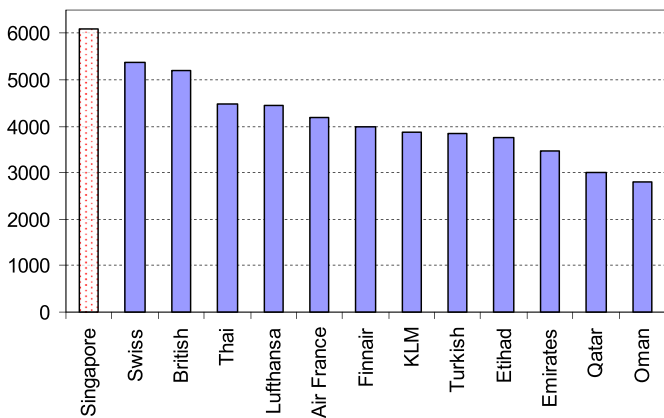


Fig. 2. All-inclusive return Milan-Singapore fares in Business, SGD (1 USD–1.3 SGD). Originating in Milan, Italy.

presence of ME3 in many countries. Even accounting for the different trip characteristics, Singapore Airlines was still able to charge a premium relative to ME3. It was also possible that ME3 or

other carriers may have a deliberate motive to price their Business products low to clear seat inventory (Hugon-Duprat and O’Connell, 2015). Unfortunately, we were not able to access data pertaining to the number of tickets sold, nor reasons of travel (Mason, 2005; Dresner, 2006).

Model 2 included only the airline, route and date dummy variables in the analysis. Here, Singapore Airlines was able to charge higher airfares compared with ME3 ($p < 0.001$), indicating that it adopted a more differentiated position compared with ME3.

3.2. Economy cabin

In comparison to First and Business, airlines generally have less room to manoeuvre on what to offer in their Economy cabins. ME3 and Singapore Airlines offered similar features in their Economy cabin such as an amenity kit, on-demand audio and visual entertainment, and on most aircraft types, in-seat electricity socket. Notably, both Emirates and Etihad installed 10-abreast seating in their 777 aircraft, and Qatar Airways announced it would follow suit. This meant that ME3 offered less room for each customer in Economy compared with Singapore Airlines, which continued to

Table 5
Business return airfare regression analysis (SGD, 1 USD–1.3 SGD).

Variables and estimated coefficients if significant	Model 1	Model 2
Itinerary-specific variables		
Originates in Asia-Pacific or Australasia (dummy)	+854***	–
Originates from airline’s home country (dummy)	–354†	–
Requires flight connection(s) (dummy)	n.s.	–
Total duration (hrs) less than fastest connection	n.s.	–
Total duration (hrs) more than fastest connection	n.s.	–
Guaranteed horizontally flat bed in long haul (dummy)	+735*	–
Airline-specific variables		
Skytrax cabin-specific rating (number of stars)	–556†	–
Singapore Airlines dummy	+1453***	+798***
Qantas dummy	+1377**	+1385**
Air France dummy	+895*	n.s.
British Airways dummy	+890***	+854***
Qatar Airways dummy	+526†	–775***
Emirates dummy	n.s.	–467*
Etihad dummy	n.s.	–758***
Oman Air dummy	n.s.	–662*
Turkish dummy	n.s.	–626**
Other airlines offering airfares on these routes	Included	Included
Other dummy controls on dates, route-markets	Included	Included

***p < 0.001, **p < 0.01, *p < 0.05, †p < 0.10, n.s. = not statistically significant.

1103 observations involving 26 airlines; R² = 0.67 for Model 1, 0.62 for Model 2.

The fastest one-stop connecting itinerary in each market is used as the reference for each market to calculate whether an itinerary incurs more or less time. Dummy variables: yes (1) or no (0). Airline dummies are relative to Cathay Pacific.

Table 6
Comparing features of Economy cabins.

	Emirates	Etihad	Qatar Airways	Singapore Airlines
Economy cabin				
Footrest available	No	Yes	Depends	Yes
In-seat electricity socket	Yes	Yes	Yes	Mostly
On-demand audio visual	Yes	Yes	Yes	Mostly
Amenity kit provided	Yes	Yes	Yes	Yes
Seat width	~17"	~17"	18.2" (to 17")	~18"
Skytrax star rating	3.5	4	5	4

Depends – depends on aircraft types. Mostly – on most intercontinental services. Etihad and Qatar Airways' ratings were just prior to their selective withdrawal in 2014. Qatar Airways has announced it would offer a similar configuration in Economy on 777's as Emirates and Etihad.

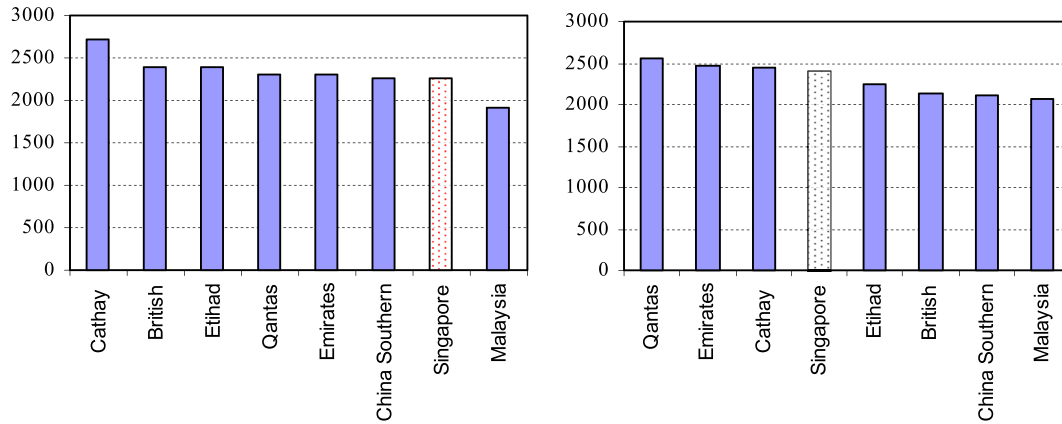


Fig. 3. All-inclusive return Sydney-London fares in Economy, SGD (1 USD–1.3 SGD).

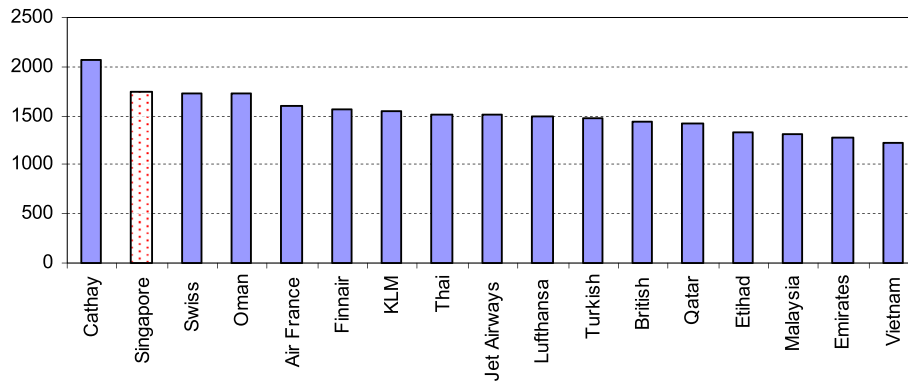


Fig. 4. All-inclusive return Singapore-London fares in Economy, SGD (1 USD–1.3 SGD). Originating in Singapore.

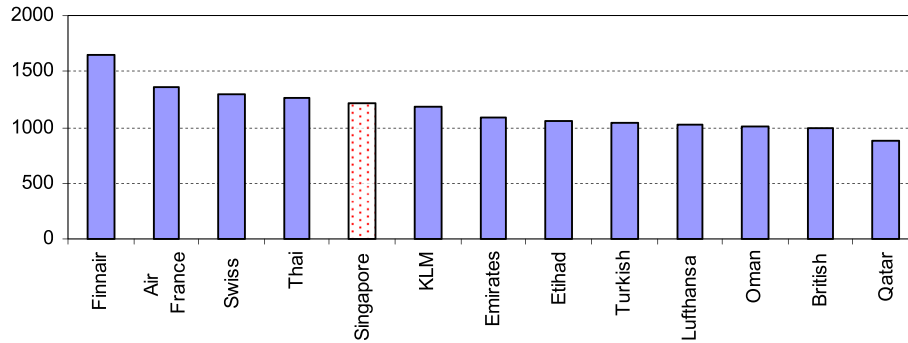


Fig. 5. All-inclusive return Milan-Singapore fares in Economy, SGD (1 USD–1.3 SGD). Originating in Milan, Italy.

Table 7
Economy return airfares regression analysis.

Variables and estimated coefficients if significant	Model 3	Model 4
Itinerary-specific variables		
Originates in Asia-Pacific or Australasia (dummy)	+223***	–
Originates from airline's home country (dummy)	n.s.	–
Requires flight connection(s) (dummy)	n.s.	–
Total duration (hrs) less than fastest connection	n.s.	–
Total duration (hrs) more than fastest connection	+14†	–
Airline-specific variables		
Skytrax cabin-specific rating (number of stars)	+934***	–
Singapore Airlines dummy	–290***	–124*
Air France dummy	+378***	–234**
British Airways dummy	n.s.	–286***
Emirates dummy	–126†	–443***
Oman Air dummy	–263***	–328***
Qantas dummy	–336*	n.s.
Turkish dummy	–397***	–441***
Etihad dummy	–576***	–398***
Qatar Airways dummy	–1582***	–466***
Other airlines offering airfares on these routes	Included	Included
Other dummy controls on dates, routes	Included	Included

***p < 0.001, **p < 0.01, *p < 0.05, †p < 0.10, n.s. = not statistically significant. 1172 observations involving 27 airlines; R² = 0.58 for Model 3, 0.51 for Model 4. The fastest one-stop connecting itinerary in each market is used as the reference for each market to calculate whether an itinerary incurs more or less time. Dummy variables: yes (1) or no (0). Airline dummies are relative to Cathay Pacific.

maintain a 9-abreast seating in their 777 aircraft (the difference in one inch of seat width can be noticeable on a very long flight). Table 6 compares the features in Economy at ME3 and Singapore Airlines.

If the wider seats in Economy compared with ME3's translated into better comfort and therefore meaningful differentiation in the eyes of customers, Singapore Airlines should be able to offer higher prices than ME3. The survey that was conducted for Business airfares was also conducted for Economy, for the same markets and itineraries.

Fig. 3 shows the average all-inclusive airfares for the Sydney-London, U.K., market in Economy from Skyscanner.com, originating from Sydney and from London. In the Sydney-London market, Singapore Airlines was somewhere in the middle in its Economy prices among many other competitors. In fact, Singapore Airlines' all-inclusive Economy return airfare was less than that of Emirates for trips originating from both ends of the route. Singapore Airlines' inability to price above Emirates in the Economy cabin is itself a significant sign of its weaker pricing power, especially in view of the former's wider seats.

Fig. 4 shows the average all-inclusive Economy return fares for the Singapore-London market. Here, Singapore Airlines had both the home market advantage and the highest non-stop frequencies

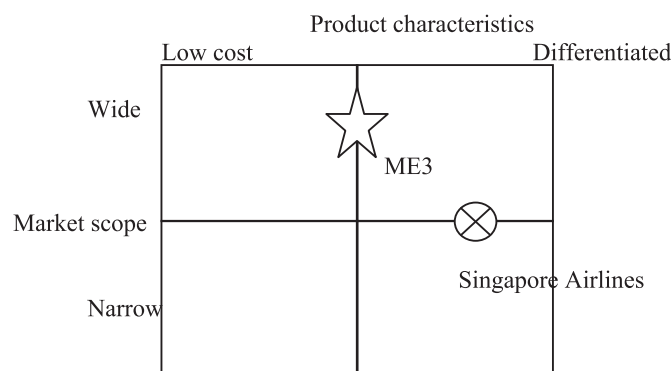


Fig. 6. Relative positions of ME3 and Singapore Airlines. Product characteristics.

Table 8
Singapore Airlines' average return fares for select routes (SGD, 1USD–1.3SGD).

Itinerary	Economy	Business	Itinerary	Economy	Business
AMS-CGK-AMS	1091	5159	CGK-AMS-CGK	2059	9385
AMS-DPS-AMS	1300	5436	DPS-AMS-DPS	2001	7685
FRA-KUL-FRA	1860	6771	KUL-FRA-KUL	971	4343
PAR-CGK-PAR	1111	5244	CGK-PAR-CGK	2044	7512
Average	1341	5652	Average	1769	7231

AMS = Amsterdam; CGK = Jakarta; DPS = Denpasar; FRA = Frankfurt; KUL = Kuala Lumpur; PAR = Paris.

(four a day versus British Airways' two a day). Expectedly, Singapore Airlines was able to price itself above most of its competitors in this market. ME3 offered significant discounts in this market based on i) their connecting itinerary as well ii) Singapore not being their sphere of influence. Still, the average airfare offered by Singapore Airlines in this market was similar to a number of its competitors, showing the intense competition it faced.

Fig. 5 shows the average all-inclusive Economy return fares for the Milan-Singapore market. As mentioned earlier, Singapore Airlines was the only airline with a non-stop service in this market, which should accord it a price premium. In reality, Singapore Airlines' airfare was not the highest in this market, and was only marginally higher than that of Qatar – showing Singapore Airlines' weak market presence and pricing power in Europe.

Table 7 shows the regression analysis of the Economy airfares surveyed on the same markets and itineraries as reported earlier. Model 3 included the different itinerary characteristics in the analysis. Here, itineraries originating in Asia-Pacific featured a price premium of SGD \$223. The Skytrax rating of the overall airline cabin became statistically significant, with each additional star representing SGD \$934 in return airfare. After considering other effects including the Skytrax rating, Singapore Airlines' dummy variable had a coefficient of SGD -\$290 with reference to Cathay Pacific's airfares – a discount relative to Emirates (SGD -\$126), but this was because Singapore Airlines enjoyed a higher Skytrax rating. Model 4 included only the airline, route and time dummy variables in the analysis. Here, Singapore Airlines offered airfares that were significantly higher than those of Emirates, Etihad and Qatar Airways (p < 0.001). In other words, Singapore Airlines took on a more differentiated position relative to ME3. Fig. 6 shows the relative positions of ME3 and Singapore Airlines in terms of market scope and product characteristics.

3.3. Other strengths of Singapore Airlines

Given the intense competitive pressures as evident in the airfare survey, it is important for Singapore Airlines to identify strengths that would be difficult for ME3 to copy. The airfare survey in fact uncovered Singapore Airlines' strong marketing power in its nearby countries. Table 8 shows Singapore Airlines' average prices in four markets where Singapore would have been a logical connection point. The average return fares in Economy originating in South-

Table 9
Qatar Airways' average return fares for select routes (SGD, 1USD–1.3SGD).

Itinerary	Economy	Business	Itinerary	Economy	Business
AMS-CGK-AMS	1108	3949	CGK-AMS-CGK	1950	6439
AMS-DPS-AMS	1120	5494	DPS-AMS-DPS	2101	5746
FRA-KUL-FRA	767	3180	KUL-FRA-KUL	801	4382
PAR-CGK-PAR	787	2627	CGK-PAR-CGK	1636	5492
Average	946	3813	Average	1622	5515

AMS = Amsterdam; CGK = Jakarta; DPS = Denpasar; FRA = Frankfurt; KUL = Kuala Lumpur; PAR = Paris.

east Asia were 32% higher than those originating in Europe, while those in Business originating in South-east Asia were 28% higher than those originating in Europe. Higher prices for itineraries from South-east Asia benefited Singapore Airlines more than ME3 as South-east Asia was well within the former's sphere of influence. Table 9 shows that Qatar Airways' prices in the same markets were generally not as high as Singapore Airlines'.

To leverage on this strength, Singapore Airlines can also further emphasize the relative merits of flying it to Europe versus ME3 for customers in South-east Asia. Itineraries offered by ME3, by necessity of having to stop in the Middle East, mean that the otherwise non-stop flight of 12–14 h has to be split two 7- to 8-h sectors. For a traveller wishing to sleep after an evening departure from South-east Asia and arriving in Europe the next morning, the non-stop long-haul sector allowed more flexibility on activities in-flight, and essentially a more restful flight before a productive day ahead. The same can be said of a late afternoon or evening departure from Europe, after which travellers may want to maximize rest after a meal on board. With the current structure of bilateral agreements governing intercontinental air traffic rights, it is highly unlikely that ME3 would be accorded the rights to fly non-stop between Europe and South-east Asia. It was perhaps with this in mind that ME3 had to offer more frills, especially in its premium cabins, to lure travellers away from the likes of Singapore Airlines. If this was indeed the case, then the likes of Singapore Airlines need not respond like-for-like in terms of frills offered vis-à-vis ME3.

Nevertheless, the same notion of a more restful flight is not as applicable for trips between Europe and Australasia. On this route, travellers have to endure a long (12–14 h) flight and a medium (7–8 h) one whether a stop is made in the Middle East or in East Asia. As a result, there is less unique value in Singapore Airlines' offering.

4. Lessons from the perspective of generic strategy

4.1. Viable strategies

The analysis on the potential and actual market scope shows that ME3 can beat Singapore Airlines hands-down. In fact, at least one of the ME3 carriers, Emirates, already enjoys a significant lead in terms of market scope relative to Singapore Airlines, serving many more destinations in Europe (over 30 compared with Singapore Airlines' 13) and comparable number of destinations in Asia and Australasia.

Going forward, Singapore Airlines and other carriers in a similar position vis-à-vis ME3 would have a tough fight meeting or exceeding the market scope reached or potentially reached by ME3. The latest generation of fuel-saving, small long-haul jets such as the A350 and 787 could help airlines marginally reach more small cities outside of their traditional 'sphere of influence'. Our airfare survey shows that there is some evidence in offering non-stop flights in that doing so helps the operating carrier command higher prices in Business class in specific markets. Combined with sufficient demand and skilful revenue management, the use of smaller aircraft can increase profitability (Fan, 2002). Airlines can understandably use such smaller, long-haul jets to link smaller cities to their homes, similar to how twin-engined aircraft became the norm in the trans-Atlantic market (Oum and Taylor, 1995).

For Singapore Airlines, this means the potential to increase its market scope in Europe with its own aircraft. For a smaller European city to sustain a new frequent direct flight from Singapore would itself be quite a feat, but even that may still pale with ME3's offer of multiple daily flights and hence more convenient schedules. Alternatively, working with an alliance or code-share partner could help bridge this gap, provided that a seamless experience

could be offered for the travellers.

Because of the difficulty for carriers like Singapore Airlines to compete on market scope with ME3, it is imperative that they compete on product characteristics. These airlines have to position themselves as either more differentiated compared with ME3, or have lower costs – and hence offer lower prices. Interestingly, ME3 offered more frills to its premium cabins (e.g., shower in First, complimentary airport transfers, etc.) than most other competitors, and yet at the same time packed their Economy cabins with the most seats across the aircraft width.

Accordingly, competitors have to be adept in choosing a differentiation or cost leadership position appropriate to a specific cabin. Noting the wide gap between the industry-leading Business and the cramped Economy products on ME3, at least two competitive positions may be viable. First, competitors like Singapore Airlines can offer a budget version of Business class, providing fewer frills but services that are still significantly better than standard Economy. Airlines with even less market scope and reputation than Singapore Airlines may want to pursue this market position. Airlines content with older-style seats in their Business cabins may also consider this market position.

Second, competitors can offer a more upscale version of Economy compared with ME3. Certainly, the pricing of these competitive products would still have to make sense for the focal airline concerned. Moreover, Premium Economy is also a good way to recover some revenue lost from their Business cabins as a result of more stringent corporate travel policies (Hugon-Duprat and O'Connell, 2015).

4.2. What Singapore Airlines has done

By early 2016, Singapore Airlines had taken a few steps in line with our analysis above, but more can and should be done. In terms of market scope, Singapore Airlines has over the years strengthened its position in Australasia, increasing its weekly frequency to this region by 40 as ME3 added 91 in the past ten years (Table 9). Singapore Airlines recently announced that it would start flying to a new destination in Europe – Düsseldorf – from mid-2016 with its new, fuel-saving long-haul jet A350. However, the proposed service, at three times weekly, would still pale in comparison to Emirates' existing twice daily service there. Singapore Airlines also announced a new non-stop service to Canberra, Australia, and an onward direct service to Wellington, New Zealand. These routes can help Singapore Airlines marginally increase its market scope on the Europe–Australasia corridor. However, compared with ME3's massive lead in Europe, it is unlikely that Singapore Airlines' new service to Düsseldorf would pose a significant threat to ME3's

Table 10
Increase in destinations and frequency to Europe and Australasia 2005–2015.

2005	Destinations served		Total	Weekly frequency		Total
	Europe	Australasia		Europe	Australasia	
Emirates	14	4	18	155	42	197
Etiihad	5	0	5	34	0	34
Qatar	12	0	12	65	0	65
Singapore	9	7	16	69	106	170
2015	Destinations served		Total	Weekly frequency		Total
	Europe	Australasia		Europe	Australasia	
Emirates	35	7	42	438	84	522
Etiihad	13	4	17	150	35	185
Qatar	25	2	27	270	14	284
Singapore	11	7	18	84	146	278

Source: Official Airline Guide, capacity by own aircraft

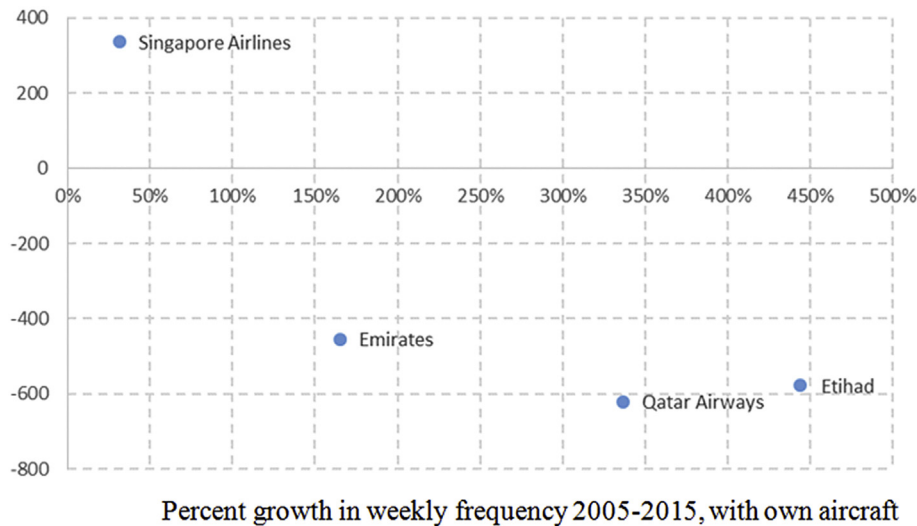


Fig. 7. Average fare premium vs growth in frequency to Europe & Australasia. Average fare premium from our airfare survey. Source: Official Airline Guide.

presence there in the foreseeable future. The markets for Canberra and Wellington are similarly small.

Knowing that it could not match ME3's market scope, Singapore Airlines has also begun to work more closely with alliance partner Lufthansa to better coordinate their prices and itineraries for the flights to/from Europe. For instance, more code-shared flights between these two airlines can allow Singapore Airlines to sell the same ticket to more small cities in Europe using Lufthansa-operated intra-European flights. This agreement has recently expanded to include Swiss, a subsidiary of Lufthansa. These airlines would have to ensure that travellers' experience on these flights ought to be as seamless as possible.

On product characteristics, Singapore Airlines has been wise to ensure its products are adequately differentiated from those of ME3's. In Business, its early adoption of the now state-of-the-art horizontally flat beds helped maintain a premium position in relation to Emirates' and Qatar Airways' offering. Our airfare survey showed that Singapore Airlines' Business Class commanded a premium relative to ME3 and many other competitors. In Economy, Singapore Airlines chose to maintain a more spacious seating configuration relative to ME3's on the 777's. At least for trips originating in Asia, Singapore Airlines enjoyed a pricing premium because of its high quality, but in general, the price premium was smaller compared to the Business cabin.

Note that even though Singapore Airlines continued to maintain a price premium relative to ME3, its capacity increase over the years severely lagged ME3's. Using information gleaned from published airline schedules, Table 10 shows the extent of ME3's dramatic expansion in both its destinations served and frequency of service to/from Europe and Australasia in the past ten years, in relation to Singapore Airlines'. To the latter's credit, however, Singapore Airlines has been able to increase its frequency to Australasia during this period to strengthen its presence.

Fig. 7 juxtaposes the average fare premium for ME3 and Singapore Airlines (average of Business and Economy airfares, as in Models 2 and 4 earlier, relative to Cathay Pacific) with their percent increase in weekly frequency to Europe and Australasia from 2005 to 2015, with the percent increase in parentheses. It shows that Singapore Airlines' price premium came at a cost of relatively subdued growth in the face of ME3's.

In fact, one of the reasons why Singapore Airlines managed to retain its cache of awards alongside the meteoric rise of ME3 was

that it sought to 'constantly innovate its products in order to stay ahead of the growing competition', as explained by its Senior Manager of Product Innovation (Huang, 2016). Notwithstanding that Singapore Airlines introduced its latest First, Business and Economy seats in 2013, the airline announced in early 2016 that it would launch a new generation of Suites (its above-First cabin) and Business products.

To further leverage on ME3's generally wide gap between their Business and Economy cabins, Singapore Airlines started a new Premium Economy cabin to entice its Economy customers to upgrade themselves. The large price gap between products from the Business and Economy (the former is about four times that of the latter for Singapore Airlines) likely minimized the potential overlap in prices in these cabins. Singapore Airlines offers one of the poshest versions of Premium Economy cabins, with a small leg/foot rest and access to some of the perks in Business such as noise-reducing headsets and entrées bookable in advance.

4.3. Other responses to ME3

Other carriers based in South-east Asia responded similarly to Singapore Airlines. In spite of losses, Thai Airways has expanded its network in Europe, flying non-stop to Oslo since 2009, and Brussels since 2011. In recent years, however, losses have forced Thai to stop serving Madrid and Moscow. Hong Kong-based Cathay Pacific Airways similarly launched non-stop service to Manchester, U.K., in 2014, followed by Düsseldorf and Zurich in 2015, and Madrid in 2016.

European carriers are arguably in an even stronger marketing position in Europe compared with ME3, helping increase traffic feed to their flights to Southeast-Asia and Australasia. The outgoing Chief Executive of Air France was also quoted to say that the priority for his successor would "be to keep developing long-haul operations" to Asia among other continents (Stothard, 2016). Air France started its Paris-Kuala Lumpur service in 2013 (but stopped in 2015), and extended its daily Paris-Singapore flights to Jakarta in 2014. After retreating for many years to just six cities in East Asia, British Airways started a non-stop service to Seoul in 2012, followed by Chengdu, China, in 2014 and Kuala Lumpur in 2015. Still, the pace at which these new flights have been added pales in comparison with ME3's growth.

True to the saying "if you can't beat them, join them", Qantas

chose in 2013 to turn its former foe Emirates into a strategic alliance partner after sustaining large losses in its European operations. It reduced its European presence from a dozen cities in the 1980s to just one in the same year, choosing instead to route its customers through Dubai onto Emirates' flights to these destinations. Meanwhile, it also closed its hub in Singapore and its long-standing daily non-stop Singapore-Frankfurt service. Similarly, Malaysia Airlines terminated its service to all other European cities except for London in 2015, and chose to code-share with Emirates to these and other cities in Europe.

In terms of product characteristics, airlines either have to improve their Business seats to be able to convert into horizontally flat beds on a consistent basis, or risk losing a price premium. Many other competitors to ME3, including Lufthansa, Cathay Pacific, Japan Airlines and All Nippon Airways and have also launched their Premium Economy products in recent years. In Economy, airlines seem to price their products according to objective service quality (Skytrax rating).

For some carriers such as Singapore Airlines and Qantas, the Premium Economy seats as of 2015 were in fact comparable to those found in many Business cabins in the 1980's or earlier. There exists significant opportunity for ME3's competitors to consider offering a slimmed-down version of Business seats offered at a small premium to the Premium Economy cabins by Singapore Airlines and Qantas.

Further, there is likely potential for ultra-low-cost carriers in the Europe-Asia and Europe-Australasia corridor. Low-cost Norwegian started several weekly non-stop flights to Bangkok from Copenhagen, Oslo and Stockholm. However, the long travel duration in these corridors would likely alter the economics of the regional version of these carriers. Put simply, few travellers on the Europe-Australasia corridor would plan for a just few days' stay at the destination – as in the case for many low-cost carriers in the short-haul market. It remains to be seen how quickly Norwegian would ramp up its service to Asian.

5. Limitations and future research

Our analysis was conducted from the perspective of generic strategy. We took as given the meteoric increase in capacity by carriers based in the Middle East, and that this growth would unlikely unwind itself. For example, Emirates already operated the world's largest fleet of about 60 A380 aeroplanes – itself the largest civilian aircraft for sale, and yet had another 80 on order (Critchlow, 2015). While large aircraft reduces unit costs (Fan, 2009; Lechner and Gudmundsson, 2014), fast expanding airlines typically face a drain on resources that increase their failure odds (Fan et al., 2014). We did not explore whether ME3's expansion was a result of favourable government policies that would not exist in many other countries (Critchlow, 2015; M.R., 2015). We also did not explore whether the home countries of airlines threatened by ME3's meteoric rise would be able to amend the traffic rights granted to these three carriers, or whether the rise of intra-Asia liberalization in traffic rights would change ME3's advantages (e.g., Fu et al., 2010; Forsyth et al., 2006). Future research could perhaps shed more light on these issues.

While we were able to articulate gaps in competitors' strategy, we were not able to examine whether certain strategy in fact resulted in higher revenues over others because we could not access passenger volume data. Researchers with access to such data can better analyse the quantitative trade-offs among these strategies. Our airfare survey also did not focus on the dispersion of airfares offered by ME3 and their competitors (Mantin and Koo, 2009; Obermeyer et al., 2013), but rather the lowest available in Business or Economy for a reasonably convenient itinerary at the point of our

sampling. Future research can help unpack any significant differences in the dispersion of fares offered by these airlines. In fact, we did include more service attributes in our regression, such as on-demand dining and complimentary chauffeur rides, but since these were offered by exceedingly few airlines, we could not simultaneously estimate the coefficients for these variables as well as those of the associated airline dummy variables. If more airlines offer these service in the future, researchers would then be able to simultaneously include these in the same regression as the associated airline dummy variables.

In parallel, ME3 themselves have been active in finding ways to increase their reach. While Emirates had preferred organic growth, its strategic alliance with Qantas gave it much a vaunted presence in Asia and Australasia. Qatar Airways joined Oneworld alliance at the end of 2013. Etihad Airways bought minority stakes into a host of airlines including Air Serbia, Air Seychelles, Alitalia and Jet Airways of India. There is yet no study that analyses which of these modes of growth would be most profitable.

Moreover, while this paper focuses mostly on the three leading Middle East carriers (Emirates, Etihad and Qatar Airways), Oman Air is at this writing beginning to spread its wings to connect Europe with Asia-Pacific. Turkish Airlines, technically based outside of the Middle East, has significantly expanded in the past decade to position its Istanbul home base as a hub connecting Europe with Asia-Pacific (Dursun et al., 2014). While we included dummy variables for Turkish Airlines and Oman Air in the fare survey and regression, we did not embed them more deeply in this paper because neither served Australasia with their own aircraft. Future studies can include these two airlines in analysing strategic options in the Europe-Asia corridor.

Further, our focus in this paper is on the Europe-South-east Asia and Europe-Australasia corridors – where the competition between ME3 and traditional full-service carriers in these markets has been most intense. A sizable part of Singapore Airlines' route network, namely intra-Asia routes, is still immune to the growth of ME3. There, Singapore Airlines still enjoys considerable pricing power against its competitors.

Lastly, because of lack of information, we did not address the extent to which ME3 or their competitors are effective in managing their costs. We took as an implicit assumption that the use of fuel-efficient aircraft and state-of-the-art crew scheduling tools allowed major airlines to properly manage their costs. Certainly, specific airlines, such as Air France-KLM (Stothard, 2016), have reported issues with their unions in adjusting their work rules. These issues could exacerbate the difficult positions these airlines might have vis-à-vis the ME3. Future research can perhaps examine the issue of cost competitiveness as well.

6. Conclusions

Several Middle East carriers now offer multiple daily connections between dozens of cities in Europe and Asia-Pacific, with a significant presence in Australasia, Africa as well as an increasing presence in both North and South America. They posed significant competition to many full-service carriers based in Europe, Asia and Australasia. In general, it is difficult for these competitors to compete with ME3 based on extensive market scope, even though the latest small, long-haul aircraft could help these competitors marginally extend their market scope. Logically, they should focus on carving out different niches in their products. In the Business cabin, guaranteeing horizontally flat beds in Business is now a must for airlines to achieve a significant price premium. In Economy, improving the overall service quality helps command higher prices. Singapore Airlines and other carriers in a similar position vis-à-vis the Middle East carriers have embarked on these strategies to some

extent, but more still ought to be done.

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