Surviving the Squeeze
Winning Strategies for a Changing Airline Industry
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AT A GLANCE

Ongoing turbulence in the airline industry and a changing competitive landscape are forcing all involved companies to rethink their strategies.

**The Changing Competitive Landscape**
Airlines in China and the Middle East are reshaping the Europe-to-Asia route, squeezing the business of traditional legacy and hub carriers. At the same time, low-cost carriers in Asia have seen passenger volume explode.

**The Strong Get Stronger**
These stronger airlines are likely to capture the lion’s share of future industry growth, according to analysis conducted by BCG in a number of different markets.

**Investing to Stay Ahead**
Middle Eastern, Chinese, and low-cost carriers in Asia are capitalizing on their cost and demand advantages by making smart moves—and strengthening their positions.

**How Industry Players Can Fight Back**
To survive and prosper in the face of these changing dynamics, virtually every participant in the industry must rethink its strategy, business model, and tactics.
These are tough times for the airline industry. Buffeted by rising fuel prices, overcapacity, and low-cost competitors, airlines are struggling to stay airborne. Premium air travel has yet to recover from the global financial crisis, with premium passenger volume in 2011 still around 9 percent below prerecession levels. The impact of the sovereign debt crisis in the euro zone is further hurting airline earnings, and the International Air Transport Association has issued a 2012 profit forecast for the industry of only 0.5 percent of revenues, or $3 billion, compared with industry earnings of $7.9 billion in 2011.

Although legacy and hub carriers are feeling the pinch in most of the world, the picture is far brighter for airlines in the Middle East and China. Already among the top performers in terms of growth and profitability, these carriers are reshaping the Europe-to-Asia route, squeezing the business of traditional global carriers. At the same time, low-cost carriers (LCCs) in Asia have seen passenger volume explode, causing the growth and profits of legacy endpoint and (non-Chinese) Asian hub carriers to suffer. (See Exhibit 1.) Cash flow margins and liquidity positions are also deteriorating, and a number of carriers are financially vulnerable.

But all is not doom and gloom for those airlines outside the Middle East and China. There are a number of ways that industry participants—airlines, aircraft manufacturers, airports, and maintenance, repair, and overhaul (MRO) providers—can respond and prosper. Forward-looking companies will rethink their strategies and find ways to capitalize on the opportunities presented by the growth of travel and tourism in emerging markets.

The Changing Competitive Landscape

Recent years have seen the rise of Middle Eastern megacarriers such as Emirates, which is on track to be at least twice the size of any other long-haul carrier in the world by 2015. China’s rapidly emerging airlines are poised to further shake up the industry, as the country becomes a viable and cost-effective midpoint stop for Europe-to-Asia traffic. According to the International Air Transport Association, Chinese airlines earned $22 billion last year, almost three times as much as all airlines across the world (including China) made during the previous year.

Moreover, airlines in the Middle East and China are planning major investments in wide-body aircraft. If current growth projections hold, Emirates will be the clear leader in wide-body fleet capacity by 2015, and China’s largest airline—Air China—will have wide-body capacity about equal to Delta Air Lines, Qatar Airways, and
other global players. As a group, Chinese carriers will account for about 6 percent of global wide-body aircraft capacity by 2015, while Middle Eastern carriers will account for 15 percent.

The aggressive expansion of pan-Asian LCCs is also having an impact on the industry. Asia-Pacific LCC passenger volume doubled from 78 to 157 million from 2006 through 2010. In just over five months in 2012, three new Japan-based LCCs—Peach, JetStar, and AirAsia—began operating, and a fourth, affiliated with China’s Spring Airlines, will launch in 2013.

JetStar has steadily evolved from a domestic short-haul carrier to an international carrier and a multinational franchise since launching its Australian operations in May 2004. The LCC began offering flights between Australia and New Zealand in 2005, and over the next few years, it acquired stakes in affiliates JetStar Asia, JetStar Pacific, JetStar Japan, and JetStar Hong Kong, which is scheduled to begin operations in 2013.

Moreover, Indonesia’s Lion Air capitalized on burgeoning demand in its home country, becoming the world’s seventh-largest LCC in 2011, up from number 20 in 2008.
The Boston Consulting Group

In the same three-year period, Lion more than tripled its passenger load from 7.5 million to 26.9 million and doubled its fleet from 34 planes in service and 162 on order to 75 in service and 347 on order.

The Strong Get Stronger

While most global airlines are hurting financially, Middle Eastern, Chinese, and low-cost carriers are better equipped to ride the storm—and the performance gap between these leaders and the weaker carriers is likely to increase. According to BCG’s analysis, these stronger airlines will probably capture the lion’s share of future industry growth in a number of different markets. In one long-haul market, for example, we project that the combined share of Middle Eastern, Chinese, and low-cost carriers could rise from a third to over half of the market over the next ten years, while the share of legacy home carriers in that market could shrink to as little as 15 percent—simply because the latter stopped investing in their businesses. In an economic downturn, companies that continue to make such investments typically emerge stronger when the economy recovers.

So why are the Middle Eastern, Chinese, and low-cost carriers able to invest and grow profitably under the same harsh economic and market conditions that are hurting the legacy carriers?

There are two key reasons. First is the often-noted cost advantage, which provides Middle Eastern, Chinese, and low-cost carriers with a profitable engine for growth. Their unit costs are typically 10 to 20 percent lower than those of other Asian airlines, and as much as 30 to 40 percent lower than those of international legacy carriers—largely because of lower labor rates and much higher productivity. Moreover, favorable tax policies, such as accelerated depreciation and lower corporate taxes, make more funds available for investments in newer, more fuel-efficient aircraft. This, in turn, lowers fuel costs and maintenance.

The second reason is that demand is evolving in these carriers’ favor. Because of geographic advantages, Chinese and Middle Eastern airlines, in particular, will prosper as long-haul hub carriers. (See Exhibit 2.) Middle Eastern airlines are well positioned to participate in about 60 percent of global interregional flows (both point-to-point and connecting), including the Middle East to North America and Europe, India to North America, and Europe to Africa. Both Chinese and Middle Eastern carriers have an advantage in flows from northeast Asia to the Middle East and Europe, and from Australia and New Zealand to Europe. Chinese airlines have an advantage in flights from northeast Asia to North America, Australia, and New Zealand—placing them in a strong position to achieve about 45 percent of global interregional traffic flows. In contrast, Southeast Asian hub carriers are at a relative disadvantage since they are well positioned for only 30 percent of these flows.

In addition, carriers in emerging markets such as China, India, and Indonesia will be able to capitalize on the growing demand from domestic travelers. (See Exhibit 3.) At the root of China’s airline growth, for instance, is a travel boom fueled by rising incomes that is driving an unprecedented uptick in tourism—both within and beyond the country’s borders. According to a recent BCG study, Chinese travelers
will take 2.5 billion trips and spend about $850 billion on travel each year by 2020, a dramatic increase from the 1.1 billion trips and $230 billion spent in 2010. Of these trips, 100 million will be outbound from China, compared with 36 million in 2010. According to the World Travel and Tourism Council, the Chinese will overtake the Japanese in spending on travel and tourism by 2020, becoming second only to travelers from the United States.

But China isn’t the only growth market. India and Indonesia, too, will see a travel boom as the size of their middle-class and affluent (MAC) populations continues to expand rapidly. BCG’s analysis suggests that the outbound trips taken by Indian travelers will almost triple from 11 million trips in 2010 to 28 million trips in 2020. In the same time period, outbound trips by Indonesian travelers are expected to quadruple from 3.5 million to 14 million.

LCCs and other carriers with lower costs and access to narrow-body aircraft will benefit from point-to-point traffic, which is expected to grow more rapidly than hub-based traffic over the next decade—just as it has in the past ten years—largely because of rising incomes overall and growing demand in smaller cities. In China alone, 70 percent of the MAC population will live in smaller cities by 2020, and 280
Chinese cities will each have more than 250,000 MACs by that year, with income levels similar to those in Shanghai. (See Exhibit 4.) Within the same time frame, 50 cities in Indonesia are each expected to have more than 250,000 MACs, and India will also see significant growth in these higher-income groups. Besides driving point-to-point traffic, rising incomes will fuel a travel and tourism boom, with residents flying both within and outside of their home countries to popular tourist and business destinations.

Investing to Stay Ahead
Middle Eastern, Chinese, and low-cost carriers are capitalizing on their cost and demand advantages by making smart moves—and further strengthening their positions. For one thing, they’re adding new flights to international destinations and increasing departure frequency. (See Exhibit 5.) Over the past three years, for instance, Middle Eastern carriers added 55 new destinations in Europe, Asia, and Africa and increased departure frequency across their networks by 25 percent. Chinese carriers added 21 new destinations—primarily in Europe and Asia—and increased departure frequency by 40 percent. By comparison, legacy hub carriers added only eight destinations in the same time period and upped frequency by just
**EXHIBIT 4 | By 2020, 280 Cities in China Will Each Have More Than 250,000 Middle-Class and Affluent Residents**

- **Approximately 90 cities with more than 250,000 MACs, 2010**
- **Approximately 280 cities with more than 250,000 MACs**

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>23</td>
</tr>
<tr>
<td>Myanmar</td>
<td>40</td>
</tr>
<tr>
<td>Laos</td>
<td>25</td>
</tr>
</tbody>
</table>

**Middle-class and affluent population**
- More than 1 million
- 500,000–1 million
- 250,000–499,999

Source: BCG analysis.
Note: 650 official cities were included and approximately 1,600 were excluded from the analysis.

**EXHIBIT 5 | Middle Eastern, Chinese, and Low-Cost Carriers Are Adding Destinations and Increasing Departure Frequency**

- **International flights from hub**
  - **Number of destinations**
  - **Outbound frequency per week**

<table>
<thead>
<tr>
<th>Carriers¹</th>
<th>2009</th>
<th>2012</th>
<th>2009</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle Eastern</td>
<td>199</td>
<td>55</td>
<td>2,150</td>
<td>546</td>
</tr>
<tr>
<td>Other Asian</td>
<td>151</td>
<td>8</td>
<td>1,753</td>
<td>290</td>
</tr>
<tr>
<td>Chinese</td>
<td>90</td>
<td>21</td>
<td>697</td>
<td>282</td>
</tr>
<tr>
<td>Asian/Pacific LCCs</td>
<td>58</td>
<td>18</td>
<td>781</td>
<td>331</td>
</tr>
</tbody>
</table>

Sources: OAG schedule; July 9, 2012, BCG analysis.
Note: Numbers include departures from the hub to all destinations served by nonstop flights.
¹The data includes three major carriers from each region: Middle East (Emirates, Qatar, Etihad), China (Air China, China Southern, China Eastern), other Asia (Thai Airways, Cathay Pacific, Singapore Air), and Asia-Pacific low-cost carriers (AirAsia Malaysia, JetStar Airways Australia, Cebu Pacific).
17 percent. This changing dynamic will likely shift the value equation for legacy hub carriers, which may no longer be able to charge a premium once they lose their frequency advantage to the competition.

Middle Eastern carriers are also starting to grow stronger in terms of the attractiveness and effectiveness of their hubs by increasing the number of connecting flights from the expanded network of destinations. They are doing this through better scheduling, routing, and network coverage. On a typical day, the top Middle Eastern carriers offer 13 connections for each incoming flight on average, compared with 9 connections for the larger Southeast Asian hub carriers and as few as 2 connections for the smaller ones, according to BCG’s analysis. Chinese airlines already provide as many connections as the top Southeast Asian hub carriers, and that advantage is expected to grow.

In addition, Middle Eastern, Chinese, and low-cost carriers are partnering with other airlines to further feed their networks. For example, Etihad Airways in the Middle East has invested in four carriers since December 2011, and LCC Air Asia recently bid $80 million to buy Indonesia’s Batavia Air. The bid is currently under review by Indonesia’s government to ensure that it complies with foreign ownership regulations.

Finally, Middle Eastern and Chinese carriers are benefiting from investments that their respective governments are making in airport infrastructure. By 2020, the top three hubs in the Middle East will be able to handle 160 million to 220 million passengers per year, and China’s top hubs—Shanghai, Beijing, and Guangzhou—will have capacity for 280 million to 320 million passengers. China plans to build 50 new airports within the next five years to serve the 50-plus cities that together will have more than 1 million middle-class and affluent citizens.

Among these new facilities will be the world’s largest airport. Costing about $15 billion, it will be 28 miles from Beijing’s city center, cover 21 square miles, and have nine runways. According to Albatross Airport News, the new airport will have enough capacity to handle 400 million passengers per year—more than Hartsfield-Jackson Atlanta International Airport, which is now the busiest in the world. Beijing’s current airport handles about 74 million passengers per year and is close to its capacity.

How Industry Players Can Fight Back
To survive and prosper in the face of these changing dynamics, virtually every participant in the industry must rethink its strategy, business model, and tactics. Given how the landscape is evolving, we offer guidelines for each of the key players: legacy endpoint carriers, legacy hub carriers, aircraft manufacturers, airports, and MRO providers.

Legacy Endpoint Carriers. Already squeezed by Chinese and Middle Eastern airlines, legacy endpoint carriers must take rapid action to defend their markets. At the same time, they should seek to capitalize on the growth opportunities in emerging markets, where travel and tourism are booming. Key strategic moves include the following:
• **Join forces to strengthen offerings and minimize costs.** Further consolidation and deeper alliances will likely characterize the industry. (See the sidebar “The Industry Is Consolidating” for more on this topic.) To compete effectively, legacy endpoint carriers should explore partnership options that will extend their network offerings in Asia, Europe, and the Americas. By allowing airlines to pool their operating requirements in heavy engineering and along the entire supply chain, such alliances can also deliver cost synergies. In some cases, partnerships might allow LCCs to combine the best of both the full-service and budget models.

Partnerships can also bring together legacy endpoint carriers and hub carriers, including Middle Eastern airlines. In August 2010, Etihad partnered with Virgin Australia Holdings to offer a joint network of more than 100 destinations. Etihad passengers can now fly to 45 destinations in Australia, New Zealand, the Pacific Islands, Asia, South Africa, and Latin America, and Virgin customers can feed into Etihad’s network of 65 destinations across North America, Europe, Asia, the Middle East, and the Indian subcontinent. In September 2012, Qantas and Emirates announced an extensive partnership that will involve sharing routes and frequent flyer benefits. Qantas will make Dubai its new hub for European flights—switching from Singapore. Combined, the two airlines will operate 98 weekly services between Australia and Dubai, and Qantas will be the only

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**THE INDUSTRY IS CONSOLIDATING**

Faced with a tough economy and ongoing margin pressures, many airlines are joining forces or making acquisitions to reduce costs and strengthen their competitive positions. For instance, British Airways and Iberia merged in 2010 and formed a new holding company, International Airlines Group (IAG). The airlines announced plans to combine their respective cargo operations into a single business division, although each was to retain its existing brands. In June 2012, IAG upped its revenue and cost-saving estimates from the merger by €100 million to €500 million by 2015. IAG also purchased British Midland Airways from the Lufthansa Group for $271 million in December 2011 and went on to launch a new low-cost carrier—Iberia Express—in March 2012.

In July 2012, Chile’s LAN Airlines completed its takeover of TAM, Brazil’s largest airline. With a market cap of $13 billion, the merged companies are now the world’s biggest carrier—overtaking Air China’s revenues of $10.7 billion. LATAM, as the company will be known, will also deliver major synergies of $600 million to $700 million within four years—60 percent from increased revenues and 40 percent from cost savings. The $700 million figure is 5.3 percent of the $13.2 billion combined consolidated income for the two airlines.

The long-term success of these and other industry mergers depends not just on gaining network benefits but also on integrating the back end of operations to gain cost and scale advantages.
carrier other than Emirates to operate from Dubai International Airport’s Terminal 3. The partnership will give Qantas customers one-stop access to more than 70 Emirates destinations in Europe, the Middle East, and Africa. For Emirates, it will open up Qantas’s Australian domestic network of more than 50 destinations and 5,000 flights a week. The partnership is subject to regulatory approval.

- Rethink your business model to protect corporate and premium segments. To guard against losing these profitable customers, legacy endpoint carriers must sharpen their focus on meeting the needs of corporate and premium passengers by using smaller, next-generation aircraft to increase departure frequency while offering cabin, lounge, and loyalty services that appeal to first-class and business travelers.

- Continue to reduce the cost base. All airlines should look for ways to keep costs under control by adopting the cost-saving practices of Chinese, Middle Eastern, and low-cost carriers—such as using overseas crews with lower labor rates and setting up scale-efficient maintenance operations.

- Build your brands. Trusted brands are important to consumers, particularly in emerging markets such as China that associate Western brands with high quality. Because these travel markets are still emerging and evolving, there is little brand loyalty yet—and many opportunities for airlines to rethink and strengthen their brand portfolios. Forward-looking carriers are seeking ways to build a strategic toehold in specific markets by forming joint ventures and other alliances with local airlines or travel companies. In July 2011, AirAsia formed a joint venture with Expedia, an alliance that represents the first partnership between an LCC and an online travel agent. The joint venture aims to strengthen both brands and extend the breadth and depth of their offerings to an expanded audience across Asia. There are, so far, two localized Expedia sites in Singapore and Thailand.

- Meet the needs of Chinese consumers. Airlines that understand and cater to the specific needs and preferences of Chinese travelers can differentiate themselves. Our research shows that Chinese travelers value certain services more than Western travelers do and will pay extra for them. These include greater flexibility in changing flights, baggage delivery to hotels, a higher weight allowance for checked bags, lounge access, and priority security and passport control. Other potentially appealing offers: products and promotions that target group travelers, easier and more convenient trip planning, and offerings that target underserved travelers in smaller cities.

**Legacy Hub Carriers.** As Middle Eastern and Chinese competitors increase point-to-point services and investments, hub carriers are in a race to capture passenger traffic. Here are some strategies that they can use to increase their odds of success:

- Partner with endpoint carriers. To survive, midpoint hub carriers depend on feeder traffic from endpoints. By consolidating traffic at the midpoints of travel routes, airlines can offer passengers more connections and more frequent
endpoint carriers with extensive domestic networks can be good potential partners for hub carriers by providing an ongoing flow of passengers—and access to the business travelers who are so critical to premium airlines.

- **Capitalize on growth in emerging markets.** To reach passengers from emerging markets such as China, India, and Indonesia, international airlines should seek opportunities to partner with local carriers—for instance, by trading brand, product, and commercial expertise for a share of the growing travel market. In early 2012, Singapore’s Tiger Airways made a 33 percent investment in Indonesia’s distressed Mandala Airlines. The restructured airline adopted Tiger’s business model and will offer low-fare travel to international and Indonesian destinations within a five-hour flight radius. Other partnership opportunities may exist at the travel destinations themselves. Explore ways to share in the profits along the entire travel value chain—meals, accommodations, guided tours, local transport to shopping areas, and airport retail outlets.

- **Actively manage connections.** As discussed above, Chinese and Middle Eastern carriers have maximized the effectiveness of their hubs by increasing the number of connections available to passengers. They have also aimed for layovers of three hours or fewer. For legacy hub carriers to incorporate these goals, they will have to conduct a detailed analysis of traffic flows and travel preferences, which, in turn, will lead to better routing, scheduling, and network coverage.

**Aircraft Manufacturers and OEMs.** Given the sizable orders and future aircraft requirements of Middle Eastern and Chinese carriers, aircraft manufacturers and original-equipment manufacturers (OEMs) will have to ensure that they meet the needs and continue to secure the business of those regions over the long term. Indeed, there is a real threat that China will build its own manufacturing capability to take on the Boeing and Airbus stronghold. Even if this does not happen, it is likely that the traditional value pools in aircraft and related equipment will erode because of the strength of these Middle Eastern and Chinese megacarriers. At the same time, traditional carriers will need to respond to the megacarrier scale advantage by consolidating their own purchasing requirements, potentially by leveraging existing or new partnerships to build scale and to negotiate more effective purchase agreements. Manufacturers can respond in a number of ways:

- **Collaborate more closely with airlines on innovative aircraft designs.** Given the fleet expansion plans of Middle Eastern and Chinese carriers, manufacturers would do well to think about how to customize new aircraft to better meet the specific requirements of these industry titans. For instance, what type of aircraft would most efficiently transport the expected high volume of Chinese passengers: 800 million domestic travelers and an additional 100 million who will travel outside of China—many on short-haul trips to neighboring Hong Kong and Macau?

- **Invest strategically in manufacturing networks.** Aircraft manufacturers and OEMs should consider making strategic changes or additions to their manufacturing footprints in order to respond more effectively to the needs of these important customers. For example, they could build a new manufacturing facility in China to serve the Chinese market or in the Persian Gulf to serve the Middle East.
• **Use “smart differentiation” to redo cabin interiors.** Legacy airlines will be looking for ways to reduce the cost of interior refurbishments and fit-outs, while still differentiating their onboard offerings. To gain an edge, they will have to focus on upgrading or customizing only those cabin components that are visible to and valued by the passenger, while standardizing everything else to gain benefits of scale in production and purchasing. OEMs can help airlines achieve this “smart differentiation” by incorporating innovative approaches to interior design. For instance, some seat manufacturers standardize the base components of their seats but customize the features that affect the passenger, such as the seat material, incline positions, and the size and placement of in-flight entertainment and controls. And Emirates standardizes its galley kitchens but offers larger, more luxurious bathrooms in its first and business classes.

**Airports.** Given the huge investments in airport infrastructure that the Middle East and China are making, along with the natural geographic advantages of their airlines, airports elsewhere in Asia will need to carefully define and demonstrate their value to retain their relevance. Key strategic moves include the following:

• **Promote hubs as destinations.** For many passengers, the hub is not only an airport to pass through but a key business destination or a pleasant stopover as part of a broader travel itinerary. Singapore’s Changi airport has committed to a strategy of ongoing upgrades and exceptional service. (See the sidebar “Staying in the Game: Changi Airport.”) Middle Eastern carriers such as Emirates attract travelers to their hubs by leveraging their governments’ well-funded tourism and destination strategies. In Dubai, capital investments of more than $3 trillion between 2010 and 2020 will fund massive growth of infrastructure and hotel accommodations. It is critical that other midpoint Asian hub carriers do the same. This will require significant alignment and collaboration among airlines, airport authorities, and tourism groups—both private and government sponsored.

• **Meet the needs of target airlines.** An airport’s offerings can influence airlines’ decisions about which hubs to partner with. Carriers cater to passengers with different preferences and requirements. Airlines, too, often have differing needs. Understanding these differences and providing the right shops, restaurants, and services can attract and strengthen ties with passengers and the airlines that transport them. For instance, LCCs need ground services that are fast and efficient but not as extensive as what full-service carriers typically require. LCCs also require a terminal design that streamlines passengers to the gates as quickly as possible to ensure fast turnarounds, but they have no need for lounge space. By contrast, carriers that offer premium services want a premium airport experience for their passengers, too. Superior lounge facilities; luxury shopping; and a modern, well-maintained environment are important to these airlines.

• **Build up nonaviation capabilities.** Retail sales, parking, and other nonaviation income account for half of total airport revenues and up to 70 percent of earnings before interest and taxes, according to our analysis of top European airports. Strong growth in airport retail sales is expected over the next five years, particularly in Asia. Airports can capitalize on this trend by optimizing passen-
STAYING IN THE GAME: CHANGI AIRPORT

Singapore’s Changi Airport continually upgrades and modernizes its facilities as part of an ongoing strategy to attract more airlines and travelers to its Southeast Asian hub.

In July 2012, the airport’s 31-year-old Terminal 1 emerged from a four-year, $500 million renovation project that included new carpets and lights, more open spaces, and additional shops and restaurants. Further upgrades are in the works. These include expanding the arrival hall on the first floor of the four-story facility to boost annual handling capacity from 21 million to 24 million passengers, renovating the basement, and improving the road that separates the terminal from the car park.

Consistently at or near the top of industry evaluations and ratings, Changi was ranked second among the world’s international airports for service quality in 2012 by Airports Council International. This is not surprising, given Changi’s innovative customer-service initiatives. In 2011, the airport introduced 90 roving customer-service reps equipped with iPads who can provide useful information such as the location of stores, gates, and lounges, and the addresses and telephone numbers of hotels and embassies. With the ability to provide assistance in more than 20 languages, the service reps roam the airport’s four terminals, looking for ways to help passengers with check-in, transfers to connecting flights, missing baggage, and other special needs. The airport also has roving inspectors who keep an eye on Changi’s facilities. A messaging system allows travelers to contact the inspectors about any concerns or problems—such as dirty washrooms—at various airport locations.

Changi also offers free and ubiquitous Internet connectivity through 550 kiosks across the four terminals, complementary Wi-Fi, and local area network docking points. A smartphone app that passengers can download from iTunes provides information on flight times, departure gates, special events, shopping, and dining.

MRO Providers. With tight cash flows and shrinking liquidity, legacy carriers are looking for savings wherever they can find them—including from their maintenance, repair, and overhaul providers. The most sophisticated carriers are seeking to minimize their total costs of ownership—often by outsourcing these services—without sacrificing aircraft availability or safety. At the same time, the expanding fleets of Chinese and Middle Eastern carriers will likely justify dedicated maintenance services. Here are the key strategic moves for MRO providers:
• **Align operations with growth markets in Asia and the Middle East.** Given the shift in international traffic to emerging markets in Asia and the disproportionate capacity growth of Asian and Middle Eastern carriers, MRO providers must consider setting up heavy-maintenance and engine/component-manufacturing facilities that are closer to this growing customer base, including in growing secondary destinations.

• **Anticipate demand for heavy-maintenance outsourcing.** An increasing number of airlines are likely to outsource heavy maintenance, given the growing use of new technologies (such as carbon framing) that require fewer shop visits. Moreover, most airlines with smaller fleets are unable to justify the costs of keeping their heavy-maintenance services—and perhaps even some line-maintenance services—in-house. To gain an edge, MRO providers must understand an airline’s total cost of ownership, the critical need for safety and availability, and the breakeven points for in-house versus outsourced maintenance—and they must be able to provide innovative, cost-effective solutions.
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