****

9B19E002

Cathay Pacific: Navigating Digital Disruption[[1]](#endnote-1)

Duan Yang wrote this case under the supervision of Professors Yulin Fang and Ning Su solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

This publication may not be transmitted, photocopied, digitized, or otherwise reproduced in any form or by any means without the permission of the copyright holder. Reproduction of this material is not covered under authorization by any reproduction rights organization. To order copies or request permission to reproduce materials, contact Ivey Publishing, Ivey Business School, Western University, London, Ontario, Canada, N6G 0N1; (t) 519.661.3208; (e) cases@ivey.ca; www.iveycases.com. Our goal is to publish materials of the highest quality; submit any errata to publishcases@ivey.ca. i1v2e5y5pubs

Copyright © 2019, Ivey Business School Foundation Version: 2019-06-24

It seemed that 2017 was doomed to be an unusual year for Cathay Pacific Airways Limited (Cathay Pacific), a 72-year old enterprise. In January 2017, Cathay Pacific unveiled “Time to Win,” a new business strategy intended to guide a corporate transformation program in response to the company’s loss of HK$575 million[[2]](#endnote-2) over 2016. The transformation led to the layoff of 600 people in mid-2017, significantly affecting Cathay Pacific’s prospects. In April 2018, the company announced another full-year loss, along with other disconcerting figures on its 2017 annual report. The horizon seemed even more unclear and distant than it had ever been for Cathay Pacific.[[3]](#endnote-3)

The drastic measures taken during the three-year transformation program that commenced in early 2017 made it clear that the company’s management board intended to emphasize the use of digital enablement and insight-driven operations to realign the company’s newly defined business focus and to establish supporting pillars for future development. However, as its 2018 financial figures and competitive performance implied,[[4]](#endnote-4) the gap between Cathay Pacific’s recent performance and the high level of information technology (IT) reliance envisioned in the new business strategy suggested that the company might not be as successful as it had been in the past in using IT capabilities to maintain its place in the fiercely competitive airline industry. This raised questions about how Cathay Pacific’s IT strategy had developed over the most recent decade: What had been the focus of Cathay Pacific’s IT investments, and what factors had led Cathay Pacific to today’s hardships?

Through the Storm (2007–2011)

The Hong Kong–based carrier had made several forays into IT-led business realignment since its foundation in 1946. In fact, Cathay Pacific was known for its successful shift from in-house IT development to outsourcing. Since that shift, it had capitalized on the flexibility and cost advantages of IT outsourcing with different strategies, namely, a partnership-oriented smartsourcing strategy and its successor, the competition-based “Evolve” strategy (see Exhibit 1). These strategies had played a vital role in the formation of Cathay Pacific’s IT portfolio and in its strategic partnerships with several key suppliers, including IBM and Sabre Travel Network (Sabre), which were active members of Cathay Pacific’s IT vendor list after 2006.[[5]](#endnote-5)

The company’s acquisition of Dragonair and cross-shareholding with Air China conveyed a clear message: Cathay Pacific was seeking to take advantage of the huge development potential of the Chinese market to accomplish network expansion and to strengthen Hong Kong’s position as key regional aviation hub. Marked by the establishment of a new daily route to Shanghai in December 2006, Cathay Pacific had claimed its re-entry into the competition of the Chinese market. Joining hands with Dragonair, Cathay Pacific was determined to maintain a strong financial position and seek further growth and expansion.[[6]](#endnote-6)

Although the severe economic downturn caused by the global financial crisis in 2008 resulted in a full-year loss of HK$8.56 billion for Cathay Pacific, the loss did not essentially alter the company’s pursuit of further growth. The company took immediate actions to limit the effects of the loss on its business and trod a prudent path, revising its growth plans.[[7]](#endnote-7) As a result, Cathay Pacific was able to make a profit of HK$4.69 billion in 2009, even when its revenue had decreased by 22.6 per cent due to the recession (see Exhibit 2).[[8]](#endnote-8) With improved business conditions and a strong financial position in 2010, the company re‑embarked on its journey.[[9]](#endnote-9)

Information Management Department (Post-2007)

The information management (IM) department of Cathay Pacific saw significant personnel changes after 2007. After 33 years of service in dealing with the company’s IT needs, Anthony Yeung retired from his position as general manager of IM in October 2008. He noted that the thing he was most proud of in his career was “the way IMT [information management and technology] has been transformed from an inward-looking back-office department to a more service-oriented, customer-focused team.”[[10]](#endnote-10) His successor, Tomasz Smaczny, was new to the airline industry, but he had rich experience in customer-facing retail and finance IT. The subsequent retirement of Edward Nicol from the post of chief information officer in 2010 led to brand new leadership in the IM department with Smaczny stepping up as the new chief information officer.[[11]](#endnote-11)

Extension of Evolve IT Strategy

During this period, Cathay Pacific made IT investments that were consistent with its Evolve IT strategy, a competition-based, business-oriented outsourcing strategy that included the following guiding objectives: (1) acquire and manage rather than build and operate; (2) specify *what* rather than *how*; (3) use fewer, long-term suppliers that consistently demonstrate high flexibility and market competitiveness; (4) acquire proven technology and solutions; and (5) apply well-integrated suites rather than best-of-breed solutions, with minimal customization for both systems and services.[[12]](#endnote-12)

Investing for Growth and Expansion

In order to further support its expansion in the fast-growing industry, Cathay Pacific recognized that it would need to seek more capable alternatives to replace its 30-year-old reservation, inventory control, and departure control systems, CUPID and CUPAC, which had been built in-house. Hence, it set up a new department, Passenger Service Systems (PSS), and tasked it with a project named “Genesis,” which involved finding a new solution for Cathay Pacific’s reservations, distribution, and check-in functions. The 15 members of the project team that formed the core of the new department worked together to select and evaluate a range of products from potential vendors, aiming to initiate system migration in 2008.[[13]](#endnote-13)

Through its smartsourcing and Evolve IT strategies, Cathay Pacific had identified several long-term suppliers from which it could acquire proven, well-integrated software suites, including IBM, the Hewlett Packard Company, and Sabre Corporation.[[14]](#endnote-14) Among these was Amadeus IT Group (Amadeus), an established travel technology provider that had been supplying reservation systems for various leading airlines and e‑commerce technology for Cathay Pacific’s commercial website.[[15]](#endnote-15) Amadeus seemed a reliable partner to work with in the Genesis project selection.

In 2007, Cathay Pacific signed a 10-year contract with Amadeus for its Altéa Suite, which was chosen as a replacement for PSS at Cathay Pacific and Dragonair.[[16]](#endnote-16) Recognized as “the biggest system change in the airlines’ history,”[[17]](#endnote-17) the project was divided into two phases. PSS Phase 1 would replace the reservations and inventory system, CUPID, with Altéa’s reservations and inventory system. Phase 2 would focus on the replacement of the departure control system, CUPAC, with the Altéa departure control system, which consisted of two modules: the Altéa customer management system, which provided integrated management of airport passenger services, and the Altéa flight management system, a new weight and balance management system. Upon completion, the new system would be connected to all of Cathay Pacific’s IT systems, affecting a wide range of business processes. Therefore, Phase 2 also included comprehensive business process re-engineering to take full advantage of the new system and to coordinate the changes.[[18]](#endnote-18)

As an extensive part of the Genesis project, Cathay Pacific signed another deal with Amadeus in 2010 to improve Cathay Pacific’s distribution functionality. The extensive content agreement on travel agents enabled Amadeus agents to access all Cathay Pacific and Dragonair fares, schedules, and availability.[[19]](#endnote-19) On the investment, Clarence Tai, then general manager of sales and distribution for Cathay Pacific, commented:

Travel agencies remain a key sales channel for Cathay Pacific. It is critical that our travel agency partners have access to a broad range of fare products of Cathay Pacific and Dragonair. Amadeus is an important distribution channel for us, enabling true global coverage. We are pleased to announce this new agreement as we enhance our distribution relationship with Amadeus.[[20]](#endnote-20)

These investments consolidated the partnership between Cathay Pacific and Amadeus, laying a solid foundation for longer-term co-operation between the two companies. David Doctor, Amadeus’s then–director of airline and travel agency, noted that Amadeus had an excellent, long-term relationship with Cathay Pacific as both a provider of airline IT solutions and as a distribution partner.[[21]](#endnote-21)

The partnerships established during smartsourcing also had an impact. In March 2011, Cathay Pacific signed two multi-year contracts with IBM—one for application support and maintenance services and the other for application development services. As with the desktop outsourcing back in 2001, both services had become non-strategic commodity IT resources. As a result, the contracts enabled Cathay Pacific to manage over 80 per cent of its IT application portfolio with the aid of IBM’s application support and maintenance services, supported by specialized service consultants and abundant business resources from IBM.[[22]](#endnote-22) Smaczny, chief information officer at the time, had a positive outlook on the investment and the enduring partnership between Cathay Pacific and IBM, as he commented on the announcement of the contracts:

Partnering with IBM is consistent with our strategy to leverage the external market to assist in delivering solutions that support delivery of world-class service to our customers. We look forward to a long-term relationship with IBM and being able to capitalize on IBM’s capabilities across technology and business processes.[[23]](#endnote-23)

Caught in Competition (2012–2015)

In early 2012, uncertainty in the global economy continued to grow, while the high price of jet fuel adversely affected Cathay Pacific’s profitability and pace of development. Cathay Pacific had seen a substantial 93.48 per cent decrease in its net profit in 2011 and 2012, down from HKD$14.05 billion of 2010 (see Exhibit 2). A marked decline in export shipments from Hong Kong and mainland China also added to the difficult situation and the intensity of competition.[[24]](#endnote-24)

In addition, China’s fast-growing aviation industry posed a major threat to Cathay Pacific’s business. China Southern Airlines Company Limited announced the establishment of its new “Canton Route” in mid-2012, establishing a link from London to Sydney and Melbourne via Guangzhou. China Southern Airlines’ ambition was clear: to make Guangzhou, its headquarters, a new world-class aviation hub.[[25]](#endnote-25) The geographical proximity affected not only Cathay Pacific’s market share and customer base, but also Hong Kong’s hub position.

However, the plot did not go as the competitors expected for Cathay Pacific. Backed by a resurgent global demand in both passenger and cargo markets, along with the falling fuel price, Cathay Pacific reported significant continuous growth in its net profits for three consecutive years after 2013.[[26]](#endnote-26) Under these circumstances, Cathay Pacific deemed it paramount to maintain its financial position while continuing to enhance its products and services.[[27]](#endnote-27)

New IT Leadership

In late 2012, Smaczny, having been promoted to director of information management, chose to leave the company to pursue other interests. As a direct consequence, in August, Cathay Pacific had a new leader for IT, Joe Locandro, who had abundant IT experience in different industries.[[28]](#endnote-28) Along with the leadership change, the IM department got a new name, Information Technology, in 2012. Locandro pointed out during an interview that the IT department’s realigned major focuses were (1) ensuring the right mix of IT projects by identifying the projects with the best outcomes for the short, medium, and long terms; (2) delivering operational efficiencies, both in IT and in business (crucial when margins were low); and (3) having the right level of investment and strategy in IT to meet business strategies.[[29]](#endnote-29)

The Downside of Traditional Outsourcing

Both the smartsourcing and Evolve outsourcing strategies at Cathay Pacific fell into the category of traditional outsourcing because both strategies tried to obtain proven solutions to satisfy specific business needs while limiting the number of key suppliers by creating longer-term, strategic partnerships. Undeniably, the practice existed because IT outsourcing was regarded as a cost-saving measure rather than a competitiveness-improving tool, and the prime concern of outsourcing was to satisfy business needs at a possibly lower cost while mitigating risk and management challenges as much as possible.[[30]](#endnote-30) However, the greatly intensified competition seemed to have rendered Cathay Pacific’s reliance on traditional outsourcing strategies insufficient in terms of standing out from those who were acquiring the latest and best technology for competitive edge. Therefore, with new leadership on board, Cathay Pacific began to deviate from its Evolve IT strategy and develop an inclination toward a long-tail IT outsourcing strategy.

Long-tail IT outsourcing was “an innovative IT-outsourcing model that combine[d] a few key partnerships with a dynamically changing and unrestricted number of smaller contracts with other suppliers to deliver specific value propositions beyond the capabilities of key partners.”[[31]](#endnote-31) The use of this dynamic, diversified, and disciplined approach enabled its adopters to pursue technology leadership and experiment with new technology trends. The approach valued long-term partnerships with well-established suppliers built on past agreements, while emphasizing the supplementary significance of smaller entities that were able to offer innovative solutions or new suppliers demonstrating possibilities with the latest technologies.[[32]](#endnote-32)

Investing for Competitive Edge

Against this complicated backdrop, Cathay Pacific had realigned its IT focus to enhance its competitive edge and break away from the competitors. Instead of investing heavily in the pursuit of extensive growth, the company chose to explore emerging technologies with several well-established partners. Meanwhile, to further improve its distinguishing competitiveness, Cathay Pacific was also seeking more advanced and innovative solutions from smaller-scaled, dedicated vendors.[[33]](#endnote-33)

The e-Enabled Aircraft Solution

During this period, Cathay Pacific initiated an innovative solution called “e-enabled aircraft,” which was dedicated to enhancing the efficiency of flight operations and customer services. Russell Davie, who was then general manager of flight operations, described the significance of the e-enabled aircraft solution:

E-enablement is very much the future of aviation for Cathay Pacific. Increased operational efficiency of our flights has a clear and direct impact on our continued ability to offer passengers award-winning service, as well as increased operational efficiencies across the organization.[[34]](#endnote-34)

The e-enabled aircraft solution had the following objectives:

* Improve the speed, accuracy, deployment, and presentation of information between the aircraft and ground infrastructure, enabling improvements to operational efficiency, maintenance effectiveness, and service delivery.
* Enable pilots to determine precise fuel requirements and the potential for increased payload for each flight.
* Reduce the environmental impact of producing, distributing, and disposing of operations manuals and charts, and decrease the weight of carrying them on the aircraft.
* Enable earlier preparation and faster action by ground engineers, with less time spent retrieving and analyzing information from paper technical and cabin logs.[[35]](#endnote-35)

The majority of IT investments made between 2012 and 2015 served the smooth advance of the e-enabled aircraft solution. In February 2012, Cathay Pacific expanded its co-operative relationship with one of its long-term flight operations software and services suppliers, Navtech Inc., through a multi-year agreement on aeronautical charts and navigation data. The charts and data would be used for various flight planning and airline navigation systems across Cathay Pacific, Dragonair, and the joint venture all-cargo carrier Air Hong Kong.

The deal with Navtech accelerated the move toward a paperless environment in Cathay Pacific’s aircraft cockpits, and it marked the beginning of other IT investments for the e-enabled aircraft,[[36]](#endnote-36) including a deal with Aeronautical Radio Inc. (ARINC), one of Cathay Pacific’s long-term strategic partners in airline operation solutions. The contracted fleet-wide upgrade for e-enablement infrastructure and information management was described as the “airline industry’s most significant flight deck technology upgrade in more than 30 years.”[[37]](#endnote-37)

To further develop the e-enabled aircraft solution, in November 2014, Cathay Pacific purchased a knowledge management solution, the Arconics AeroDocs Electronic Flight Bag (EFB) digital library, aiming to fully exploit its accumulated knowledge databases. This investment marked a major deviation from Cathay Pacific’s previous IT outsourcing strategy because Arconics was a privately held Irish firm founded in 2001 (acquired by Viasat Inc. in 2016) that specialized in innovative EFB document management solutions. After implementation, the Arconics AeroDocs EFB digital library would give pilots in-flight and mobile access to the library’s knowledge databases, including the latest versions of manuals and documents.[[38]](#endnote-38)

Experimenting with Emerging Technologies

Cathay Pacific was trying emerging technologies with its established friends in various other areas. Because jet fuel prices remained tremendously high, Cathay Pacific demonstrated its determination to improve the situation through an investment in a business intelligence solution. At the end of 2015, Cathay Pacific turned to its long-term partner, Rolls-Royce PLC, for an efficiency service solution that would reduce fuel consumption. Under a five-year agreement, Rolls-Royce would deploy its fuel management tool, VisiumFUEL, to provide rich data visualization and powerful analytics capabilities for both Cathay Pacific and Dragonair to help improve the airlines’ fuel efficiency and drive down fuel costs at the fleet, route, and individual flight stages.[[39]](#endnote-39)

During this period, Cathay Pacific also deemed it vital to replace its customer feedback and compensation system with cloud-based solutions to provide faster and more accurate responses to customer feedback. While the old system had a limited ability to provide adequate support for ensuring customer satisfaction in the days of fierce competition, David Ryan, head of customer relations at the time, explained that it was important for Cathay Pacific to secure “a more modern and responsive system that would reflect the industry’s best practices.”[[40]](#endnote-40)

Eventually, Cathay Pacific selected Salesforce.com Inc.’s Service Cloud for its flexibility and integrability. Because there had been no previous co-operation between the two companies, Cathay Pacific chose Salesforce on the basis of its best-of-breed customer services solutions, which used the latest technologies, including cloud computing and data analytics. The new Service Cloud provided integrated management of customer feedback from all over the world; moreover, it could be integrated with other business intelligence tools to provide a greater level of visibility for Cathay Pacific’s customer service team throughout the entire customer feedback process.[[41]](#endnote-41)

Dawn of a New Era (2016–)

In 2016, Cathay Pacific celebrated its 70th birthday and reported a full-year loss of HK$575 million, the first loss since the financial crisis of 2008. In 2017, the company reported a full-year loss of HK$1.26 billion—119 per cent higher than the 2016 loss.[[42]](#endnote-42)

Cathay Pacific’s paper-thin profit margin in 2016 suffered from fuel hedging. As the price of Brent crude plummeted below US$100 per barrel in mid-2014, airlines began to benefit from decreased fuel prices.[[43]](#endnote-43) However, Cathay Pacific had massive fuel hedging contracts, so it suffered from the new low fuel price. The fuel-hedging contracts the company had made in 2014 led to a significant loss for four consecutive years, amounting to a total loss of HK$24.22 billion, according to the respective annual reports,[[44]](#endnote-44) which vastly encumbered Cathay Pacific’s profitability.[[45]](#endnote-45)

Challenges kept coming. In December 2016, China signed an open-skies agreement with Australia, which gave Chinese airlines unrestricted passenger capacity in Australia.[[46]](#endnote-46) The agreement further endangered Cathay Pacific’s already weakening passenger demand, while adding to the intensity of the already white-hot regional passenger market. Moreover, as the *de facto* flag carrier of Hong Kong, Cathay Pacific had joined the benchmark Hang Seng Index in July 1986, one month after the company’s debut on the Hong Kong Stock Exchange. The company had managed to maintain its component status for 31 years, but the Hang Seng Indexes Company Limited removed Cathay Pacific from its blue-chip index in November 2017. Cathay Pacific’s market value at that point was HK$48.54 billion, about half of its value at its peak in 2010.[[47]](#endnote-47)

Time to Win

The worsening figures and continuing bad news prompted a company-wide business review to drive revenue growth and cost reductions. In January 2017, Cathay Pacific announcedits Time to Win strategy, the biggest change program launched in 20 years, in response to the extremely difficult situation*.* Chief executive Ivan Chu described the strategy as a necessity for Cathay Pacific, which had to act immediately to catch up with the competitors that might be overtaking it.[[48]](#endnote-48) The three-year program was constructed of four pillars or objectives—customer-centricity, operational excellence, productivity and value focus, and a high-performance culture (see Exhibit 3)—which emphasized a digitally enabled and insights-driven focus on the customer, improving competitiveness in the marketplace, and becoming more efficient in operations. To parallel this strategy rollout, a redesign of the airline’s organizational structure would support the transformation program. This included the largest layoff in the last 20 years of the airline’s history.[[49]](#endnote-49)

Although the expected 30 per cent reduction in staffing expenses did not appear in the company’s 2017 annual report (staffing costs instead went up by 1 per cent), the benefits of the transformation program did begin to surface in the second half of 2017.[[50]](#endnote-50) The 2017 interim report indicated a loss of HK$2.05 billion for the first half of the year, and a profit of HK$792 million for the second half. This reflected to some degree the solid foundation Cathay Pacific had laid in 2017 for the transformation program.[[51]](#endnote-51)

Realigned Position for IT

Affected by the challenging business environment and the transformation program, the IT department also experienced a series of major changes. In June 2016, as part of a realignment, Cathay Pacific laid off 17 of its IT staff, including the director of information technology, Locandro.[[52]](#endnote-52) Following this major change in staff, the IT department was soon managed by the director of corporate development, Paul Loo, who was assisted by three new general managers. The IT department was subsequently one of the biggest victims of the layoffs in June 2017; reports indicated that Cathay Pacific shed at least 77 employees from the department.[[53]](#endnote-53) This major change marked a new role and strategic position for IT in the future development of Cathay Pacific.

The company’s IT investments in this period, on the other hand, presented a pattern similar to the previous phase although they served a very different purpose. In previous phases, it seemed that Cathay Pacific made its IT investments mainly to respond to the rise of various business problems, however, Cathay Pacific had chosen a much more proactive approach for the management of its IT investments. Cathay Pacific was seemingly emphasizing technologies, including cloud computing[[54]](#endnote-54) and data analytics,[[55]](#endnote-55) with both long-term and new suppliers that would support its digital transformation for participating in the intensified competition in the new era (see Exhibit 4).

Investing for a Digital Future

The fact that Cathay Pacific had already outsourced its IT infrastructure and IT applications to multiple vendors made it difficult for its IT team to put all the fragments together to review the actual IT environment. It seemed that Cathay Pacific was relying on too many applications to complete a single service request, while the monitoring tools for the applications added to the complexity of managing and maintaining the applications and led to information overload. For example, for incident management in flight booking, there were about six major steps from flight search to payment, which involved ten different applications and ten corresponding monitoring tools. It could sometimes take two hours for the support team to identify a problem reported by a customer, and by this time, the incident might no longer exist. Such a situation made it difficult for Cathay Pacific’s IT team to be proactive in its operations.[[56]](#endnote-56)

In response to such challenges, Cathay Pacific decided to further utilize innovative IT solutions by setting up a digital department, an in-house agency that every department could turn to when in need of big data involvement. Leslie Lu, the general manager of this department, led his 21-member team in introducing data analytics capabilities and solutions to provide meaningful insights and “truth” across the organization, in departments from Operations to Customer, Commercial, and People.[[57]](#endnote-57)

In January 2017, Cathay Pacific sealed a deal with Elasticsearch BV (Elastic) for Elasticsearch and X-Pack incident management. Because Elastic was an open-source search and analytics software vendor founded in 2012, the deal demonstrated Cathay Pacific’s further transition toward long-tail outsourcing strategy. During the half-year operational trial, the solution demonstrated its capabilities in data search and real-time insight generation. According to Anthony Chung, team leader of service quality management, such capabilities enabled the IT team to become more proactive, efficient, and accurate in isolating problematic areas from those that were healthy. While the capabilities did not solve the fragmentation problem itself, such real-time data analytics helped present a clear picture of IT from a new perspective.[[58]](#endnote-58)

Soon, Cathay Pacific entered into more contracts, with similar intentions regarding the use of data analytics. One contract was for Honeywell International Inc.’s GoDirect Maintenance Services program, which emphasized the operational efficiency improvements that advanced data analytics could generate. Unscheduled aircraft maintenance could be costly and time consuming for airlines, and GoDirect could help Cathay Pacific discover and prepare for such events in advance. Through the capture, visualization, analysis, and sharing of operations and maintenance data, the program could enable Cathay Pacific’s operations and ground crews to discover potential maintenance issues before failures occurred.[[59]](#endnote-59)

Another vital tool Cathay Pacific took advantage of for its digital transformation was cloud computing. Interestingly enough, this was the same tool that had been rejected by Cathay Pacific back in 2013 due to considerations of maturity, security, scalability, and cost. However, the massive, aging, legacy IT systems and infrastructure, along with increasing new demands, eventually led Cathay Pacific to adopt cloud services. In early 2016, after reviewing services from Google Inc., Microsoft Corporation, Amazon.com Inc., and other cloud service providers, Cathay Pacific chose to collaborate with Amazon Web Services (AWS). The plan was to embrace cloud-enabled operations on a hybrid basis to modernize the company’s IT infrastructure, future-proofing for the digital changes ahead.[[60]](#endnote-60) “We relied too much on manual processes for making website improvements. It was slowing down our pace of innovation,” commented Lawrence Fong, general manager of IT solutions, on the necessity of moving to the cloud-based infrastructure.[[61]](#endnote-61) “Customers weren’t happy and our operations staff were equally unhappy. We needed to change, modernize our infrastructure and get into a digital future.”[[62]](#endnote-62)

Cathay Pacific prioritized and migrated applications in a selective and well-planned manner, depending on the cost, efficiency, productivity, and nature of the applications. By the end of 2017, it had migrated approximately 40 per cent of its IT infrastructure workload, including its online check-in system, flight schedule bulletin, flight schedule, and web hosting, onto AWS. As a result, AWS enabled a great improvement in the stability, availability, reliability, and efficiency of Cathay Pacific’s IT infrastructure, resulting in a significant cost reduction of over 50 per cent for both software development and operational and project development.[[63]](#endnote-63)

Interestingly, blockchain technology also found a place in the transformation as Cathay Pacific worked with Accenture to introduce a blockchain application in its reward program, Asia Miles. The characteristics of blockchain—namely, its decentralization, auditability, and sustainability—enabled nearly real-time, highly reliable, and traceable transactions. The application not only allowed customers to earn miles faster, it also made it simpler for Cathay Pacific and its partners to manage the program through transparent transaction history. Asian Miles’ chief executive officer, Stephan Wong, indicated in an interview that more initiatives in marketing were to be expected with the capabilities of blockchain.[[64]](#endnote-64)

Cathay Pacific took another significant step in announcing a strategic alliance with Alibaba Group Holding Limited (Alibaba). Prior to the announcement, Cathay Pacific had already opened an official web store on Fliggy, Alibaba’s online travel agency platform, to increase Cathay Pacific’s exposure and influence in the Chinese market. The alliance marked an enhanced, comprehensive co-operation between the two giants, specifically in three areas: tourism services, cloud computing, and payment solutions.[[65]](#endnote-65)

The digital transformation was also expected to bring major changes to Cathay Pacific’s marketing by bringing innovative IT capabilities. Social media, with its comprehensive effect on various aspects of organizations’ businesses, had become a significant marketing tool. Cathay Pacific, which was in an intensely competitive industry, could use social media as a strategic tool to differentiate itself in terms of its effect on customer-facing operations. More specifically, direct interactions with customers could provide the airline with opportunities to enhance its customer-centric focus while increasing customer satisfaction. Therefore, in June 2016, Cathay Pacific invested in a social data analytics solution from Brandwatch, a British social media solutions provider that had just completed a Series-C funding round in late 2015.

The Brandwatch solution consisted of various components that would provide Cathay Pacific with social data analytic applications in four major areas: business insight sharing, regular performance reporting, marketing campaign management, and crisis monitoring and alerts.[[66]](#endnote-66) Specifically, Brandwatch Channels would help Cathay Pacific track customer comments on different social media channels to enable real-time insight sharing across all relevant business departments, while Brandwatch Analytics would provide multiple analytic capabilities, including performance reports and campaign assessment. Brandwatch could also perform live trend analysis on topics such as popular destinations or travel to enable more creative and targeted marketing. Priscilla Chok, Cathay Pacific’s digital marketing manager, emphasized the necessity of maintaining clear and effective communication with customers through social media and the importance of understanding the performance of online campaigns to increase customer satisfaction and competitiveness.[[67]](#endnote-67) Finally, Brandwatch Alerts would monitor social media channels for potential influential activities that could affect the airline’s reputation or develop into crises.[[68]](#endnote-68) On the crisis monitoring and alerts feature, Chok commented:

Brandwatch helps us measure how many people are currently talking about an issue. This allows us to gauge how big the impact is. We can then be proactive with our updates and any communications with passengers.[[69]](#endnote-69)

A Way Out

The digital enablement transformation and the realignment of the IT department had demonstrated the indispensable role of IT in Cathay Pacific’s current and future development.[[70]](#endnote-70) With the solid foundation laid in 2017, more positive effects resulting from the transformation were expected in 2018 and beyond. As the program made steady progress, it seemed that Cathay Pacific would be able to make its own way out of the mire of competition and financial hardship.[[71]](#endnote-71) However, important questions remained: How far could Cathay Pacific go with the digital transformation? How could IT influence the company’s future business strategy; could it help Cathay Pacific avoid flying into more severe turbulence?

Exhibit 1: Summary Table—Smartsourcing, EVOLVE, and Long-tail Outsourcing strategies

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Smartsourcing** | **Evolve** | **Long-Tail** |
| Emphasis | * fewer but more strategic suppliers * identification of strategic suppliers | * fewer, long-term suppliers with constant high flexibility and competitiveness * widely accepted and reliable suppliers with a relevant client base * proven technology and solutions * well-integrated suite rather than best-of-breed solutions with minimal customization | * combination of key partnerships and dynamically changing, unrestricted number of smaller contracts * use of best-of-breed innovative solutions from new suppliers * proactive technology disruption |
| Driving Force | * transformation from fixed cost to variable cost * fulfillment of burgeoning IT needs * “acquire and manage” rather than “develop and operate” | * support for business strategy development * creation and delivery of business value solutions * reliability, flexibility, and cost-efficiency of the business applications | * disruption from rapid technology changes * acquisition of cutting-edge innovation * technology leadership and competitive edge |
| Applied Business Areas | * infrastructure and airline applications | * airline applications, distribution, cargo, customer relations, etc. | * infrastructure, airline applications, distribution, marketing, incident management, etc. |

Source: Created by the case authors based on F. Warren McFarlan, Fred Young, and Waishun Lo, *Cathay Pacific* (Boston, MA: Harvard Business School Publishing, 2007). Available from Ivey Publishing, product no. 307009; Su Ning, Natalia Levina, and Jeanne W. Ross, “The Long-Tail Strategy for IT Outsourcing,” *MIT Sloan Management Review* 57, no. 2 (2016): 81–89. Available from Ivey Publishing, product no. SMR57206.

Exhibit 2: Cathay Pacific—Consolidated Balance Sheet and Profit and Loss Account, 2006–2017

Consolidated Profit and Loss Summary

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **in HK$ millions** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** |
| Passenger Services | 35,155 | 45,129 | 57,964 | 45,920 | 59,354 | 67,778 | 70,133 | 71,826 | 75,734 | 73,047 | 66,926 | 66,408 |
| Cargo Services | 14,251 | 16,238 | 24,623 | 17,255 | 25,901 | 25,980 | 24,555 | 23,663 | 25,400 | 23,122 | 20,063 | 23,903 |
| Catering and Other Services | 1,382 | 1,478 | 3,976 | 3,803 | 4,269 | 4,648 | 4,688 | 4,995 | 4,857 | 6,173 | 5,762 | 6,973 |
| Total Revenue | 50,788 | 62,845 | 86,563 | 66,978 | 89,524 | 98,406 | 99,376 | 100,484 | 105,991 | 102,342 | 92,751 | 97,284 |
| Operating Expenses | −45,570 | −55,106 | −94,124 | −62,499 | −78,471 | −92,906 | −97,763 | −96,724 | −101,556 | −95,678 | −93,276 | −99,563 |
| Operating Profit/(Loss) | 5,218 | 7,739 | −7,561 | 4,479 | 11,053 | 5,500 | 1,613 | 3,760 | 4,435 | 6,664 | −525 | −2,279 |
| Profit on Disposal of Investments |  |  |  | 1,254 | 2,165 |  |  |  |  |  |  | 586 |
| Gain on Deemed Disposal of an Associate |  |  | −468 |  | 868 |  |  |  |  |  |  | 244 |
| Net Finance Charges | −465 | −787 | −1,012 | −847 | −978 | −744 | −884 | −1,019 | −1,158 | −1,164 | −1,301 | −1,761 |
| Share of Profits on Associates | 301 | 1,057 | −764 | 261 | 2,587 | 1,717 | 754 | 838 | 772 | 1,965 | 2,049 | 2,630 |
| Profit/(Loss) Before Taxation | 5,054 | 8,009 | −9,805 | 5,147 | 15,695 | 6,473 | 1,483 | 3,579 | 4,049 | 7,465 | 223 | −580 |
| Taxation | −782 | −799 | 1,333 | −283 | −1,462 | −803 | −409 | −675 | −599 | −1,157 | −497 | −308 |
| Profit/(Loss) After Taxation | 4,272 | 7,210 | −8,472 | 4,864 | 14,233 | 5,670 | 1,074 | 2,904 | 3,450 | 6,308 | −274 | −888 |
| Profit Attributable to Non-Controlling Interests | −184 | −187 | −224 | −170 | −185 | −169 | −212 | −284 | −300 | −308 | −301 | −371 |
| Profit/(Loss) Attributable to Shareholders | 4,088 | 7,023 | −8696 | 4,694 | 14,048 | 5,501 | 862 | 2,620 | 3,150 | 6,000 | −575 | −1,259 |
| Dividends Paid | −2,992 | −2,245 | −2,438 |  | −1,691 | −3,777 | −1,338 | −551 | −1,022 | −2,046 | −1,259 |  |
| Retained (Loss)/Profit for the Year | 1,096 | 4,778 | −11,134 | 4,694 | 12,357 | 1,724 | −476 | 2,069 | 2,128 | 3,954 | −1,834 | −1,259 |

Exhibit 2 (continued)

Consolidated Balance Sheet Summary

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **in HK$ millions)** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** |
| Property, Plant and Equipment and Intangible Assets | 63,351 | 70,170 | 73821 | 73,345 | 74,116 | 82,099 | 93,703 | 104,737 | 108,789 | 111,158 | 117,390 | 122,403 |
| Long-Term Receivables and Investments | 12,232 | 13,573 | 14,530 | 14,349 | 17,285 | 23,677 | 24,776 | 27,449 | 29,290 | 27,947 | 27,902 | 32,212 |
| Borrowings | −31,943 | −36,368 | −40,280 | −42,642 | −39,629 | −43,335 | −59,546 | −67,052 | −65,096 | −63,105 | −70,169 | −78,394 |
| Liquid Funds | 15,595 | 21,637 | 15,082 | 16,511 | 24,194 | 19,597 | 24,182 | 27,736 | 21,098 | 20,647 | 20,290 | 19,094 |
| Net Borrowings | −16,348 | −14,731 | −25,198 | −26,131 | −15,435 | −23,738 | −35,364 | −39,316 | −43,998 | −42,458 | −49,879 | −59,300 |
| Net Current Liabilities (Excluding Liquid Funds, Bank Overdrafts and Current Portion of Borrowings) | −9,019 | −11,246 | −16,887 | −12,864 | −14,022 | −16,685 | −15,711 | −19,110 | −22,478 | −23,961 | −21,727 | −18,649 |
| Other Long-Term Payables | −170 | −268 | −4,606 | −1,059 | −1,700 | −2,612 | −3,205 | −1,318 | −10,487 | −15,838 | −7,517 | −3,502 |
| Deferred Taxation | −6,508 | −6,771 | −4,831 | −5,255 | −5,815 | −6,797 | −8,061 | −9,429 | −9,263 | −8,781 | −10,643 | −11,892 |
| Net Assets | 45,538 | 50,727 | 36,829 | 42,385 | 54,429 | 55,944 | 56,138 | 63,013 | 51,853 | 48,067 | 55,526 | 61,272 |
| Financed by: |  |  |  |  |  |  |  |  |  |  |  |  |
| Funds Attributable to the Shareholders of Cathay Pacific | 45,386 | 50,549 | 36,709 | 42,238 | 54,274 | 55,809 | 56,021 | 62,888 | 51,722 | 47,927 | 55,365 | 61,101 |
| Non-Controlling Interests | 152 | 178 | 120 | 147 | 155 | 135 | 117 | 125 | 131 | 140 | 161 | 171 |

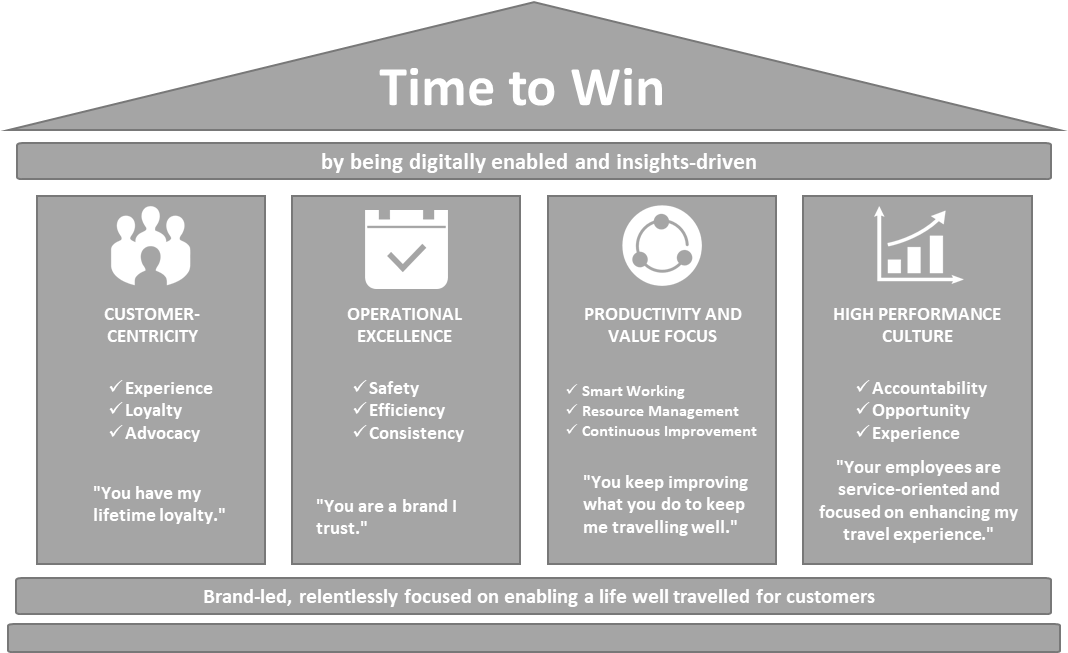
EXHIBIT 2 (CONTINUED)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** |
| **Per Share** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Shareholders' Funds | (HK$) | 11.53 | 12.83 | 9.33 | 10.74 | 13.80 | 14.19 | 14.24 | 15.99 | 13.15 | 12.18 | 14.07 | 15.53 |
| EBITDA | (HK$) | 2.78 | 3.46 | −0.91 | 2.97 | 5.85 | 3.40 | 2.31 | 3.04 | 3.44 | 4.45 | 2.56 | 2.68 |
| Earnings/(Loss) | (HK cents) | 115.90 | 178.30 | −221.00 | 119.30 | 357.10 | 139.80 | 21.90 | 66.60 | 80.10 | 152.50 | −14.60 | −32.00 |
| Dividend | (HK cents) | 84.00 | 84.00 | 3.00 | 10.00 | 111.00 | 52.00 | 8.00 | 22.00 | 36.00 | 53.00 | 5.00 | 5.00 |
| **Ratios** |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Profit/(Loss) Margin | % | 8.00 | 11.20 | −10.00 | 7.00 |  |  | 0.90 | 2.60 | 3.00 | 5.90 | −0.60 | −1.30 |
| Return of Capital Employed | % | 8.90 | 12.60 | −11.80 | 8.70 |  |  | 2.30 | 4.00 | 4.70 | 7.60 | 1.00 | 0.80 |
| Dividend Cover | times | 1.20 | 2.10 | −73.70 | 11.90 |  |  | 2.70 | 3.00 | 2.20 | 2.90 | −2.90 | −6.40 |
| Cash Interest Cover | times | 11.20 | 9.80 | 3.70 | 5.10 |  |  | 20.90 | 23.80 | 20.70 | 28.90 | 9.10 | 4.90 |
| Gross Debt/Equity Ratio | times | 0.70 | 0.72 | 1.10 | 1.01 |  |  | 1.06 | 1.07 | 1.26 | 1.32 | 1.27 | 1.28 |
| Net Debt/Equity Ratio | times | 0.36 | 0.29 | 0.69 | 0.62 |  |  | 0.63 | 0.63 | 0.85 | 0.89 | 0.90 | 0.97 |

Note: EBITDA = earnings before interest, taxes, depreciation, and amortization; HK$ = Hong Kong dollar; HK$1 = US$0.13 as of April 2018.

Source: Compiled by the case authors based on Cathay Pacific Airways Limited, Annual Reports for 2006–2017, accessed April 1, 2018, www.cathaypacific.com/cx/en\_CA/ about-us/investor-relations/interim-annual-reports.html.

EXHIBIT 3: Time to Win



Source: Created by the case authors based on Cathay Pacific Airways, “The Time is Now,” *CXWorld* 249 (February 2017), 2–3, accessed April 1, 2018, <http://downloads.cathaypacific.com/cx/press/cxw/pdf/CXW249.pdf>.

EXHIBIT 4: IT Investment Timeline



Note: The timeline summarizes Cathay Pacific’s major IT investments and outsourcing agreements during the decade. Above the timeline are customer-facing investments; below are inward improvement investments.

Source: Created by the case authors.

ENDNOTES

1. This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of Cathay Pacific Airways Limited or any of its employees. [↑](#endnote-ref-1)
2. HK$ = Hong Kong dollar; HK$1 = US$0.13 as of April 2018; all currency amounts are in HK$ unless otherwise specified. [↑](#endnote-ref-2)
3. Cathay Pacific, “The Time is Now,” *CXWorld* 249 (February 2017), accessed April 1, 2018, http://downloads.cathaypacific.c om/cx/press/cxw/pdf/CXW249.pdf. [↑](#endnote-ref-3)
4. Cathay Pacific, *Annual Report 2017* (2018), 6-15, accessed April 14, 2018, www.cathaypacific.com/content/dam/cx/about- us/investor-relations/interim-annual-reports/en/2017\_annual\_report\_en.pdf. [↑](#endnote-ref-4)
5. F. Warren McFarlan, Fred Young, and Waishun Lo, *Cathay Pacific* (Boston, MA: Harvard Business School Publishing, 2007), 5–6. Available from Ivey Publishing, product no. 307009. [↑](#endnote-ref-5)
6. Cathay Pacific, *Annual Report 2006* (2007), 3–7, accessed April 3, 2018, www.cathaypacific.com/content/dam/cx/about-us investor-relations/interim-annual-reports/en/2006\_annual-report\_en.pdf. [↑](#endnote-ref-6)
7. Cathay Pacific, *Annual Report 2008* (2009), 3–10, accessed April 3, 2018, www.cathaypacific.com/content/dam/cx/about-u s/investor-relations/interim-annual-reports/en/2008\_annual-report\_en.pdf. [↑](#endnote-ref-7)
8. Cathay Pacific, *Annual Report 2009* (2010), 2–4, accessed April 3, 2018, www.cathaypacific.com/content/dam/cx/about-us/ investor-relations/interim-annual-reports/en/2009\_annual-report\_en.pdf. [↑](#endnote-ref-8)
9. Cathay Pacific, *Annual Report 2011* (2012), 3–4, accessed April 3 2018, www.cathaypacific.com/content/dam/cx/about-us/i nvestor-relations/interim-annual-reports/en/2011\_annual-report\_en.pdf. [↑](#endnote-ref-9)
10. Cathay Pacific, “Changing of the IMT Guard,” *CXWorld* 152 (November 2008), 5, accessed April 3, 2018, http://downloads .cathaypacific.com/cx/press/cxw/pdf/CXW152.pdf. [↑](#endnote-ref-10)
11. Cathay Pacific, *Annual Report 2010* (2011), 33, 79, accessed April 3 2018, www.cathaypacific.com/content/dam/cx/about- us/investor-relations/interim-annual-reports/en/2010\_annual-report\_en.pdf. [↑](#endnote-ref-11)
12. McFarlan, Young, and Lo, op. cit. [↑](#endnote-ref-12)
13. Cathay Pacific, “PSS is Ready to Roll,” *CXWorld* 125 (August 2006), 6, accessed April 3, 2018, http://downloads.cathaypa cific.com/cx/press/cxw/pdf/CXW125.pdf. [↑](#endnote-ref-13)
14. McFarlan, Young, and Lo, op. cit. [↑](#endnote-ref-14)
15. Amadeus IT Group SA, “Amadeus and Cathay Pacific Sign New Extensive Content Agreement for Travel Agents,” press release, September 30, 2010, accessed April 3, 2018, https://amadeus.com/en/insights/press-release/amadeus-and-cathay-pacific-sign-new-extensive-content-agreement-for-travel-agents. [↑](#endnote-ref-15)
16. “Cathay Pacific Signs 10-Year Deal with Amadeus,” Eyefortravel, August 12, 2007, accessed April 3, 2018, www.eyefortra vel.com/archive/cathay-pacific-signs-10-year-deal-amadeus. [↑](#endnote-ref-16)
17. Cathay Pacific, “1 Year and Counting!,” *CXWorld* 176 (November 2010), 4, accessed April 3, 2018, http://downloads.catha ypacific.com/cx/press/cxw/pdf/CXW176.pdf. [↑](#endnote-ref-17)
18. Cathay Pacific, “New System, New Changes,” *CXWorld* 209 (September 2013), 14, accessed April 3, 2018, http://downloa ds.cathaypacific.com/cx/press/cxw/pdf/CXW209.pdf. [↑](#endnote-ref-18)
19. Amadeus IT Group SA, op. cit. [↑](#endnote-ref-19)
20. Ibid. [↑](#endnote-ref-20)
21. Ibid. [↑](#endnote-ref-21)
22. “Cathay Pacific Airways and IBM Announce the Signing of Two Multi-Year Agreements,” Sourcingfocus.com, March 22, 2011, accessed April 3, 2018, www.sourcingfocus.com/site/newsitem/cathay\_pacific\_airways\_and\_ibm\_announce\_the\_signi ng\_of\_two\_multi-year\_a. [↑](#endnote-ref-22)
23. Ibid. [↑](#endnote-ref-23)
24. Cathay Pacific, *Annual Report 2012* (2013), 3–4, accessed April 3, 2018, www.cathaypacific.com/content/dam/cx/about-u s/investor-relations/interim-annual-reports/en/2012\_annual-report\_en.pdf. [↑](#endnote-ref-24)
25. “China Southern Launches Canton Route,” Travel Daily Media, June 5, 2012, accessed April 14, 2018, www.traveldailyme dia.com/china-southern-launches-canton-route. [↑](#endnote-ref-25)
26. Cathay Pacific, *Annual Report 2014* (2015), 2–4, accessed April 3, 2018, www.cathaypacific.com/content/dam/cx/about-u s/investor-relations/interim-annual-reports/en/2014-cx-annual-report-en.pdf. [↑](#endnote-ref-26)
27. Cathay Pacific, *Annual Report 2013* (2014), 3–4, accessed April 3, 2018, www.cathaypacific.com/content/dam/cx/about-u s/investor-relations/interim-annual-reports/en/2013\_annual-report\_en.pdf. [↑](#endnote-ref-27)
28. Cathay Pacific, “Senior Management Change at Cathay Pacific,” press release, July 31, 2012 accessed April 14, 2018, https://news.cathaypacific.com/senior-management-change-at-cathay-pacific-174486#. [↑](#endnote-ref-28)
29. Cathay Pacific, “Taking Up the IT Reins,” *CXWorld* 198 (September 2012), 4, accessed April 14, 2018, http://downloads.c athaypacific.com/cx/press/cxw/pdf/CXW198.pdf. [↑](#endnote-ref-29)
30. Su Ning, Natalia, Levina, and Jeanne W. Ross, “The Long-Tail Strategy for IT Outsourcing,” *MIT Sloan Management Review* 57, no. 2 (2016): 81–89. Available from Ivey Publishing, product no. SMR57206. [↑](#endnote-ref-30)
31. Ibid. [↑](#endnote-ref-31)
32. Ibid. [↑](#endnote-ref-32)
33. Cathay Pacific, “Taking Up the IT Reins,” op. cit. [↑](#endnote-ref-33)
34. Networks Asia Staff, “Cathay Pacific Upgrades Flight Deck Technology to Increase Operational Efficiency, Reduce Costs,” Networks Asia, July 26, 2012, accessed April 14, 2018, www.networksasia.net/article/cathay-pacific-upgrades-flight-deck-technology-increase-operational-efficiency-reduce-costs. [↑](#endnote-ref-34)
35. Cathay Pacific, “Operational Evaluation Begins for Cathay Pacific’s Innovative eEnabled Aircraft Solution,” press release, July 2, 2014, accessed April 14, 2018, https://news.cathaypacific.com/operational-evaluation-begins-for-cathay-pacifics-innovative-eenabled-aircraft-solution#. [↑](#endnote-ref-35)
36. Navtech Inc., “Cathay Pacific Airways, Ltd. Signs Multi-Year Contract with Navtech,” press release, Aircraft IT, February 12, 2012, accessed April 14, 2018, www.aircraftit.com/Operations/News/Cathay-Pacific-Airways-Ltd-signs-multi-year-contract-with-Navtech.aspx. [↑](#endnote-ref-36)
37. Rockwell Collins ARINC Airports, “Cathay Pacific Chooses ARINC to Implement Airline Industry’s Most Significant Flight Deck Technology Upgrade in More than 30 Years,” press release, Airport Technology, September 12, 2012, accessed April 14, 2018, www.airport-technology.com/contractors/consult/arinc-airports/pressreleases/presscathay-arinc-airline. [↑](#endnote-ref-37)
38. Arconics, “Cathay Pacific Selects Arconics AeroDocs EFB Digital Library,” press release, Viasat Inc., November 26, 2014, accessed April 14, 2018, www.arconics.com/2014/11/26/cathay-pacific-selects-arconics. [↑](#endnote-ref-38)
39. Rolls-Royce, “Cathay Pacific Signs Up to a New Efficiency Service Solution from Rolls-Royce,” press release, Aircraft IT, December 7, 2015, accessed April 14, 2018, www.aircraftit.com/Operations/News/Cathay-Pacific-signs-up-to-a-new-efficiency-service-solution-from-Rolls-Royce.aspx. [↑](#endnote-ref-39)
40. Melissa Chua, “Cathay Pacific Services Customers in the Cloud,” Asia Cloud Forum, February 17, 2016, accessed April 14, 2018, www.networksasia.net/article/cathay-pacific-services-customers-cloud.1455653413. [↑](#endnote-ref-40)
41. Ibid. [↑](#endnote-ref-41)
42. Cathay Pacific, *Annual Report 2017*, op. cit. [↑](#endnote-ref-42)
43. International Air Transport Association, *Annual Review 2016* (June 1, 2016), 11-14, accessed April 14, 2018, www.iata.or g/about/Documents/iata-annual-review-2016.pdf. [↑](#endnote-ref-43)
44. Cathay Pacific, *Annual Report 2014*, op. cit., 28, accessed April 3, 2018, www.cathaypacific.com/content/dam/cx/about-us /investor-relations/interim-annual-reports/en/2014-cx-annual-report-en.pdf; Cathay Pacific, *Annual Report 2015* (2016), 25, accessed April 3, 2018, www.cathaypacific.com/content/dam/cx/about-us/investor-relations/interim-annual-reports/en/2015-cx-annual-report-en.pdf; Cathay Pacific, *Annual Report 2016* (2017), 31, accessed April 3, 2018, www.cathaypacific.com/content/dam/cx/about-us/investor-relations/interim-annual-reports/en/CX16\_Final\_en.pdf; and Cathay Pacific, *Annual Report 2017*, op. cit., 27. [↑](#endnote-ref-44)
45. Kyunghee Park and Angus Whitley, “Cathay Pacific’s CEO Has Some Broken Parts to Fix,” Bloomberg, March 5, 2018, accessed April 14, 2018, www.bloomberg.com/news/articles/2018-03-05/cathay-pacific-s-hogg-has-parts-to-fix-and-these-charts-show-why. [↑](#endnote-ref-45)
46. “China and Australia Remove Airline Growth Restrictions as China Cautiously Embraces Open Skies,” CAPA Centre for Aviation, December 21, 2016, accessed April 14, 2018, https://centreforaviation.com/analysis/reports/china-and-australia-remove-airline-growth-restrictions-as-china-cautiously-embraces-open-skies-319894. [↑](#endnote-ref-46)
47. Jeanny Yu, “Cathay Pacific Dropped from Hong Kong's Hang Seng After Decades,” Bloomberg, November 10, 2017, accessed April 14, 2018, www.bloomberg.com/news/articles/2017-11-10/country-garden-added-to-hang-seng-index-cathay-pacific-removed. [↑](#endnote-ref-47)
48. Cathay Pacific, “The Time is Now,” op. cit. [↑](#endnote-ref-48)
49. Danny Lee, “Hong Kong’s Cathay Pacific Confirms 600 Staff to Go amid Major Restructure,” *South China Morning Post*, May 22, 2017, accessed April 14, 2018, www.scmp.com/news/hong-kong/economy/article/2095127/hong-kongs-cathay-pacific-sack-600-staff-amid-major. [↑](#endnote-ref-49)
50. Cathay Pacific, *Annual Report 2017*, op. cit., 6–15. [↑](#endnote-ref-50)
51. Cathay Pacific, *Interim Report 2017* (August 2017), 2-5, accessed April 14, 2018, www.cathaypacific.com/content/dam/cx/ about-us/investor-relations/interim-annual-reports/en/2017\_cx\_interim\_report\_en.pdf. [↑](#endnote-ref-51)
52. Sijia Jiang, “Cathay Pacific Eliminates 17 Jobs from its IT Department Amid Continuing Slowdown in Passenger Traffic,” *South China Morning Post*, June 16, 2016, accessed April 27, 2018, www.scmp.com/business/companies/article/1976526/cathay-pacific-eliminates-17-jobs-its-it-department-amid. [↑](#endnote-ref-52)
53. Editors, “Cathay Pacific Realigns IT Organization,” Computer World HK, June 20, 2016, accessed April 27, 2018, www.cw.com.hk/it-leadership/cathay-pacific-realigns-it-organization. [↑](#endnote-ref-53)
54. Edwin Yapp, “Cathay Pacific Embraces Cloud in Digital Transformation Gig,” Digital News Asia, December 20, 2017, accessed April 27, 2018, www.digitalnewsasia.com/business/cathay-pacific-embraces-cloud-digital-transformation-gig. [↑](#endnote-ref-54)
55. Nancy Ho, “Cathay Pacific Improves Incident Management with Elasticsearch,” Computer World HK, January 18, 2017, accessed April 27, 2018, www.cw.com.hk/it-hk/cathay-pacific-improves-incident-management-elasticsearch. [↑](#endnote-ref-55)
56. Ibid. [↑](#endnote-ref-56)
57. Cathay Pacific, “The Truth is Out There,” *The Journey* (October 2017), 16–17, accessed April 27, 2018, http://downloads.c athaypacific.com/cx/press/cxw/Journey/2017/The%20Journey%20Oct%202017.pdf. [↑](#endnote-ref-57)
58. Nancy Ho, op. cit. [↑](#endnote-ref-58)
59. Steve Brecken, “Honeywell, Cathay Pacific Connected Aircraft Test Program Delivers Substantial Savings in Flight Operations Maintenance,” press release, Honeywell International Inc., May 17, 2017, accessed April 27, 2018, https://aeros pace.honeywell.com/en/press-release-listing/2017/may/honeywell-cathay-pacific-connected-aircraft-program-delivers-savings. [↑](#endnote-ref-59)
60. Yapp, op. cit. [↑](#endnote-ref-60)
61. Amazon Web Services, *Cathay Pacific Airways Case Study*, AWS, December 2017, accessed April 27, 2018, https://aws. amazon.com/cn/solutions/case-studies/cathay-pacific-airways/. [↑](#endnote-ref-61)
62. Yapp, op. cit. [↑](#endnote-ref-62)
63. Amazon Web Services, op. cit. [↑](#endnote-ref-63)
64. Dylan Bushell-Embling, “Cathay Pacific Using Blockchain for Rewards Campaign,” Computer World HK, May 14, 2018, accessed May 16, 2018, www.cw.com.hk/it-hk/cathay-pacific-using-blockchain-for-rewards-campaign. [↑](#endnote-ref-64)
65. “Cathay Pacific, Alibaba Group and Ant Financial Collaborate to Explore Enhancements in Travel Services,” *Business Wire*, August 4, 2017, accessed May 16, 2018, www.businesswire.com/news/home/20170804005266/en/Cathay-Pacific-Alibaba-Group-Ant-Financial-Collaborate. [↑](#endnote-ref-65)
66. Natalie Meehan, “Interview: How Cathay Pacific Remains the World’s Best Airline on Social,” Brandwatch, April 11, 2016, accessed May 16, 2018, www.brandwatch.com/blog/interview-cathay-pacific-remain-worlds-best-airline-social/. [↑](#endnote-ref-66)
67. Ibid. [↑](#endnote-ref-67)
68. Hannah Tregear, “Cathay Pacific Case Study: Using Social Data to Inform a Global Business,” Brandwatch, September 1, 2016, accessed May 16, 2018, www.brandwatch.com/blog/cathay-pacific-case-study-using-social-data-inform-global-business. [↑](#endnote-ref-68)
69. Ibid. [↑](#endnote-ref-69)
70. Cathay Pacific, “The Time is Now,” op. cit. [↑](#endnote-ref-70)
71. Cathay Pacific, *Annual Report 2017*, op. cit. [↑](#endnote-ref-71)