KUNG-FU SERVICE DEVELOPMENT AT SINGAPORE AIRLINES

How has Singapore Airlines consistently managed to stay one step ahead of the competition in the airline industry and, along the way, remain consistently profitable? **Loizos Heracleous, Jochen Wirtz** and **Robert Johnston** suggest that the martial art of kung-fu offers one means of understanding the airline's outstanding performance.

The highest state of attainment in the martial art of kung-fu is the ability to seamlessly combine the hard and the soft. Speed and flexibility derive from being soft and fluid while penetrating attacks derive from applying hard energy at the right time to specific, targeted points. This winning combination of soft and hard does not come naturally; it needs to be ceaselessly practised.

In competitive, threatening situations, people – and organisations – unwittingly tend to tense and seize up. In so doing, they reduce their adaptive ability and diminish their chances of responding effectively. The only way to enter the realm of the kung-fu master is to drill this soft/hard orientation into one's sub-conscious through continuous practice, so that it becomes second nature.

This martial arts metaphor sheds light on how Singapore Airlines (SIA) has become the recognised master of innovation in the airline industry and has consistently outperformed the industry for decades. SIA has never incurred a loss on an annual basis and has shown healthy returns since its founding in 1972 (see Tables 1 and 2 for SIA's relative performance during 1992-2004). In contrast, the airline industry as a whole has suffered from a cyclical pattern of bubble, crash, stabilisation and recovery, with nearly half the years in the last two and a half decades marked by heavy losses.

Booking the cooks

SIA's success is built on its ability to be a serial innovator, introducing many firsts in the airline industry, and sustaining this over the decades in the face of intense cost pressures, industry crises, and trends towards commoditisation. SIA is known worldwide as a paragon of in-flight service and continuous innovation, and is continuously rewarded with prestigious industry awards that confirm its status as the airline that others seek to emulate. In addition to regularly introducing discontinuous, substantial innovations (such as the launch of the first on-demand in-flight entertainment system in all classes, the first non-stop flight to the US which only has two classes of travel, business class and "executive economy", or its current uses of biometric technology), SIA seems to have the ability to churn out a large quantity of incremental, cost-effective innovations across all its operating units (such as internet check-in, SMS check-in or the "Book the Cook" service for passengers who like to order specific dishes in advance).

SIA's approach to innovation appears to deviate from the standard, linear, normative models of new service development (NSD) as propagated in many text books. It involves the seamless combination of both hard, structured, rigorous, centralised innovation, with soft, emergent, distributed, but equally significant, innovation.

The hard aspect is enshrined in a centralised product innovation department that tends to undertake major, discontinuous innovations, such as "LeaderShip", the first non-stop service between Singapore and Los Angeles with upgraded business and executive economy classes. SIA will be the first airline to fly the A380 super-jumbo planes and is currently working on designing the new services to be offered on it. The potential of biometrics is also currently being considered by SIA. The company has already identified 113 potential uses of biometrics and is looking at which ones would add value to the customer and to the company, and provide strategic differentiation while simultaneously improving efficiency. Its breakthrough pilot project where passengers use their biometrically-coded cards at a separate gateway to clear immigration and police checks and check in within around one minute has

→ been ongoing since November 2004. This is expected not only to provide higher security and reduce costs, but also to significantly improve the customer experience, reinforcing SIA's image as a serial innovator and a paragon of service excellence.

There is a well-defined innovation framework guiding activities in the airline's product innovation department. This involves a sequential process of having inspirations or making discoveries; capturing them on the e-log, an electronic storage space of innovative ideas; having "war cabinet" meetings to explore feasibility and flesh out the details; preliminary endorsement of the idea by senior vice presidents; the holding of a user conference where SIA frequent flyers are invited to debate the idea and give their inputs; development of a robust business case with detailed cost and revenue projections; approval by senior management; and further refinement and implementation. Yap Kim Wah, SIA's senior vice president responsible for product and service explained: "SIA is a profit-generating organisation. We are not an institute of technology and whatever we do must make business sense and that is the guiding principle. To support

while panning for gold. The product development team surf the internet and read magazines in search of good ideas or existing technologies that can be adapted for airline use, such as biometrics.

SIA's strategic partners are always companies with a robust brand image. Its in-flight Dolby sound for example was initially developed by a company called Lake. While SIA was interested in the technology, it wanted Lake to find a partner with a robust brand before it became involved. Lake invited Dolby to enter the alliance, which paved the way for SIA's support of further development and a two-year exclusivity agreement.

Fluid only

SIA's service research and development involves a soft and flexible process. Although there are a few key fixed points, such as senior vice president endorsement, costing and approval, the other stages are quite fluid. For example, some innovations are developed in great detail, even tested, before seeking senior vice president endorsement; others are simply at the idea stage. There is also flexibility to allow individuals in the product development

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the guiding principle we have to make a profit and customers must want to return."

The Product Development (PD) department in SIA is made up of a small number of people who eat, drink, sleep and breathe innovation. Their sole task is to conceive of innovative ideas and take selected ones through the development cycle to commercial introduction. There are several sources of ideas, including customer feedback, ideas from service staff, or competitor benchmarking. The most interesting ideas, however, are stumbled upon

department to pursue less orthodox ideas and let them simmer and potentially feed at a later point into the formal NSD process, or hand them over to operational units for development.

In SIA there is a breed of softer emergent new service development which can best be described as distributed innovation. Dr Yeoh Teng Kwong, SIA's former senior manager of product innovation, explained: "I would not consider my department as the central product development unit as this would give the impression that we drive all new
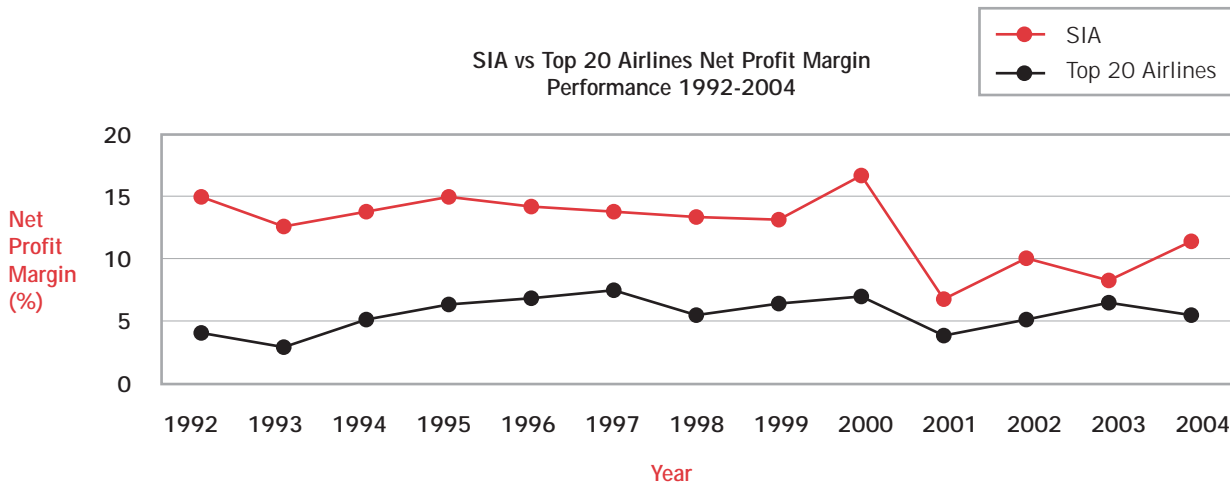
SIA vs Top 20 Airlines Net Profit Margin Performance 1992-2004

Net Profit Margin (%)

Year

Table 1.   SIA vs Top 20 Airlines Net Profit Margin Performance 1992-2004

SIA vs Top 20 Airlines ROA Performance 1992-2004
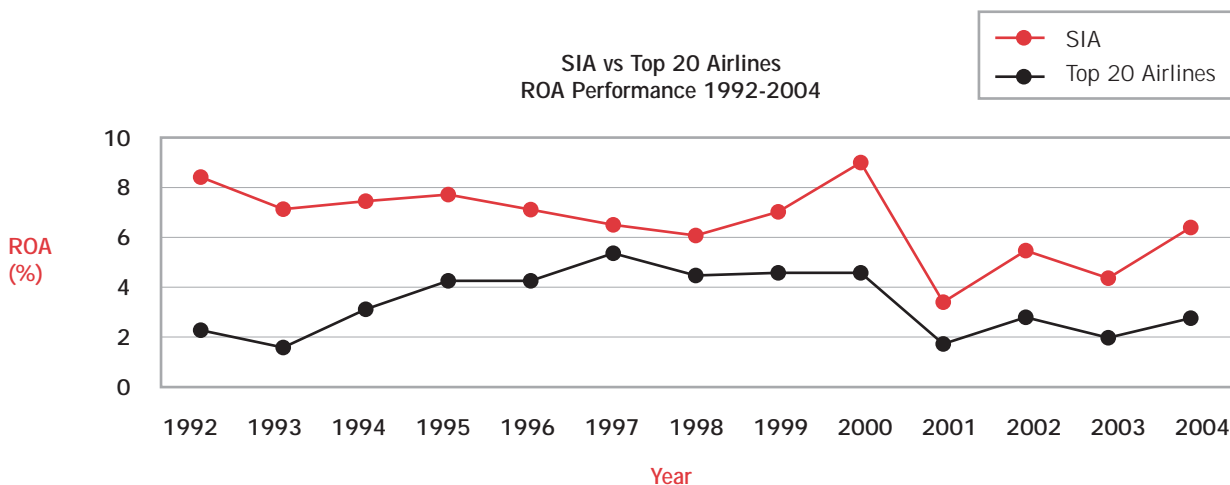
ROA (%)

Year

Table 2.   SIA vs Top 20 Airlines ROA Performance 1992-2004

Note: The performance comparisons compare Singapore Airlines' performance in terms of net profit margin and return on assets against the weighted average for the top 20 airlines by market capitalisation (as at 15 May 2004), for the period 1992-2004. The 20 airlines are Southwest Airlines, Singapore Airlines, Cathay Pacific, Japan Airlines, Lufthansa, British Airways, All Nippon Airways, Quantas, Air France, Ryanair, JetBlue Airways, China Southern Airlines (A shares), China Eastern Airlines (A shares), Thai Airways, American Airlines, Malaysian Airlines, SAS AB, China Airlines, WestJet Airlines, and Alitalia.

developments in SIA. Far from it, the culture of innovation is so pervasive in the company that most functional departments have the innovation objective as part of their mission. SIA strives to excel in a multitude of areas so that our competitors find it a near insurmountable task to try to rival us."

SIA's culture encourages a stream of new ideas from its various functions, such as in-flight services, ground services and loyalty marketing. These ideas are developed and implemented by people in those functions in a decentralised, distributed manner, using department budgets at least for the initial

stages of development. One example is the recently developed internet check-in, building on customer acceptance and high utilisation of telephone and SMS check-in, which was conceptualised, developed and implemented by the ground services department. This fluid process enables and encourages "live", continuously fine-tuned, innovations that are owned by specific departments which continuously monitor and develop them further, based on staff and customer feedback. Continuous enhancements to the SMS check-in process, for example, were made to improve

→ functionality without sacrificing ease of use. Other improvements which have resulted from distributed innovation include the now commonly available ability to choose one's seat online or through SMS, or the unique service where business and first class passengers can order their favourite dish beforehand, and it is delivered to them on their flight.

This distributed innovation capability also guards against the company blindly following technological fads, because it engages the people who are close

SIA, reinforcing its key competency of the operational ability to deliver consistent and reliable service every time, in every customer transaction.

The hard side

This soft distributed innovation process also has a hard edge. While minor adjustments can be made by almost anyone at any time, the more expensive and significant changes are subject to the key fixed points process also adhered to by the PD department; senior vice president endorsement,

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to the actual processes involved and can see hype for what it is. For example, the ground services department made a conscious decision, at the height of the hype about WAP, that it did not want to follow this technology, and that it would instead focus on SMS check-in because it was more user-friendly and the infrastructure was more widely available.

In addition, the influence and direct involvement of operations on the innovation process means that the ability to consistently and seamlessly deliver, a cornerstone of SIA's success, is not compromised by the introduction of innovations that sound good but cannot be delivered reliably. One example was the proposed idea of passengers ordering in-flight drinks through SIA's in-flight entertainment system, Krisflyer. It was decided not to pursue this, since the ability to deliver the drinks to passengers within a reasonable time frame and with the necessary level of customisation would be compromised. This operational ownership of innovations is crucial for

costing and approval. These developments are carried out totally independently of the PD department, but are still overseen by the senior vice president responsible for product and service innovation.

Other harder, structural and process-related aspects of SIA's organisational context support the development of this capability for distributed innovation. For example, the high importance given to customer feedback, means that any inputs by customers to boundary, front-line workers, such as the famous Singapore Girl, are duly recorded and swiftly transferred to the relevant departments for deliberation. Flexible rewards based on company performance give every incentive to employees to think innovatively, even though they are not part of the centralised PD department. SIA's team concept, where the in-flight teams composed of the same individuals remain the same for years, further reinforces the feeling that personal fortunes are tied with company fortunes, and introduce peer

NSD Process	NSD Organisational Activity	
	Centralised PD Department	**Distributed Functional Departments**
Hard highly structured NSD process	Well-defined and structured innovation framework, with a number of fixed points, focusing on major and usually high cost innovations.	Major NSD permitted within their areas of control; but subject to the same key fixed points. Structured assessment of customer feedback and rewards for innovation.
Soft flexible, unstructured, emerging process	Flexible process allowing individuals to pursue less orthodox ideas before being fed into the formal NSD process, or being handed over for development to the operational units.	Primarily an unstructured, emergent process that focuses on continuous improvements. Often, budget is absorbed in operating expenses.

Figure 1. The hard and soft approach

pressure to perform. Job rotation of everyone from junior manager level upwards further enables company-wide rather than myopic, department-based thinking. Cultural values encouraging continuous improvement, change and innovation also support un-learning, the removal of legacy processes that may inhibit further innovations. For example, developing internet check-in meant having to challenge and reconstitute long-standing airport security and check-in procedures, which was duly implemented.

This hard/soft kung-fu approach to innovation is drilled into SIA's sub-conscious through conscious design, ceaseless practice and cultural reinforcement. As a result SIA is capable of deploying kung-fu tactics effortlessly even when the odds are stacked against it. During 2002-2003 when the global airline industry felt the devastating effects of the 9/11 terrorist attacks and then SARS, some airlines tensed up so much their business collapsed. SIA also had to cut costs, but it did so without compromising service levels and innovation, the cornerstones of its success. Costs were cut, for example, by imposing substantial salary cuts on senior management, encouraging employees to take unpaid leave, and temporarily suspending recruitment. At the same time, however, SIA continued its soft, fluid but penetrating attacks by continuously developing its people's innovative skills, investing in brand new planes, upgrading its facilities (such as by introducing the lie-flat "space-bed" seat in business class), and ultimately sustaining its competitive success and exceptional performance. ■

Resources

Costa, P R, Harnet, R S, and Lunquist, J T (2002), "Rethinking the aviation industry", *McKinsey Quarterly, Special edition: Risk and resilience.*

Heracleous, L & Wirtz, J (2005), "Biometrics meets services", *Harvard Business Review*, "Breakthrough ideas for 2005", February: 48.

Heracleous, L, Wirtz, J and Johnston, R (2004), "Cost-effective service excellence: Lessons from Singapore Airlines", *Business Strategy Review*, 15, 1.

Heracleous, L, Wirtz, J & Pangarkar, N (2006), *Flying High in Competitive Industries: Cost effective service excellence at Singapore Airlines*, McGraw-Hill.

Staw, B, Sanderlands, L & Dutton, J (1981), "Threat-rigidity effects in organisational behaviour: A multi-level analysis", *Administrative Science Quarterly*, 21.

Wirtz, J and Johnston, R (2003), "Singapore Airlines: What it takes to sustain service excellence", *Managing Service Quality*, 13, 1.

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Best practice