

Achieving Service Excellence Through Innovation

At Singapore Airlines¹

SIA has shown in the past 37 years that it can deliver sustained cost-effective service excellence and competitive advantage powered significantly by its innovation capabilities. The company seems to have the ability to combine hard and soft aspects of innovation. This unique approach to new service development involves the seamless combination of both structured, rigorous and centralized innovation led by mainly the product innovation department, with emergent, distributed, but equally significant innovation led by different functional departments.

Singapore Airlines is recognized as a master of innovation, in an intensely competitive, commodified industry where it is exceedingly difficult to achieve sustainable differentiation and competitive advantage. This article explores the role of service innovation in SIA's ability to sustain cost-effective service excellence and competitive advantage for over three and a half decades. First,

this article will present SIA senior management's perspective of the key challenges it faces in delivering sustained cost-effective service excellence. Our research has shown that SIA's main approaches to these challenges are mostly related to constant innovation, redesign and new service development. The main body of the article will focus on SIA's approaches to innovation. We will also shed light

on SIA's ability as a serial innovator, introducing many firsts in the airline industry over the years, and sustaining this innovative orientation over decades in the face of intense cost pressures, industry crises, and push towards commoditization. SIA's approach to innovation involves the seamless combination of hard structured, rigorous, and centralized innovation on the one hand, and on the other, soft, emergent, distributed, but equally significant innovation.

The Key Challenges of Delivering Service Excellence

Three key challenges SIA faces stood out in our interviews with senior management. It is important to understand these challenges to be able to appreciate the drive behind SIA's amazing innovation capability. Specifically, in this section, we will discuss the following three key challenges SIA's senior management highlighted repeatedly and from different angles throughout our interviews:

- How to consistently satisfy the sky-high and continuously rising expectations of its demanding customer base.
- How to balance standardization and personalization of its services, and overcome the tension between offering standardized service (i.e., consistently delivering the brand promise) that is at the same time personalized.
- How to approach a large number of services and their support sub-



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processes in totality to attain excellence in all processes and sub-processes.

Dealing with Sky-High and Ever Rising Customer Expectations

Having an international reputation for service excellence makes delivering outstanding service a continuous challenge, because customers tend to adjust their expectations according to the reputation and brand image of the company. Yap Kim Wah, Senior Vice-President, Product and Service, explained: "We have a high reputation for service and that means that when someone flies with us, they come with high expectations. Still, we want them to come away saying 'Wow! That was something out of the ordinary'." Sim Kay Wee, former Senior Vice-President, Cabin Crew, added, "When you fly on a good brand like SIA, expectations are already sky-high. If SIA gives anything that is just OK, it is just not good enough."

Furthermore, SIA understands that customer expectations are also influenced by the service standards of other airlines as well as service firms in other industries. As a full-service premier carrier, customers would expect SIA to provide a service standard that is tangibly better than that of most of its competitors in the aviation industry. However, they would also compare SIA's service standards with leading service firms from other industries. As elaborated by Yap Kim Wah, "We need to give our customers a great experience and good value. It is important to realize that they are not just comparing SIA with other airlines. They are comparing us against many industries, and on many factors. Thus, when they pick up a phone and call up our reservations, for example, they are actually making a mental comparison, maybe subconsciously, to the last best experience they had. It could be with a hotel or with a car rental company. If they have had a very good experience with the hotel or car rental company and if the next call they make is to SIA, they will subconsciously make the comparison and say 'How come you're not as good as

them?' They do not say, 'You have the best telephone service system out of all the other airlines I've called.' Because we are excellent, our customers, albeit subconsciously, will benchmark us against the best in almost everything. The new ball game for SIA is not just to be the best of the best in the airline industry, but to work at being the best service company." Yap Kim Wah added, "This is a fantastic challenge for us. We have to look at everything we do. This means that the food we place on board, and our food and beverage service, has to be the best. So we serve the best champagne, and even when we serve local dishes such as chicken rice, it has to be the best when compared to the local market. If we can't achieve this with a dish, we just have to drop the item."

In order to deliver an extraordinary service that delights its customers despite their high expectations, SIA places a lot of importance on the "wow" effect, that is, occasionally surprising its customers. As elaborated by Yap Kim Wah, "It's the new things that create the 'wow', the things that customers never expected. There is a whole realm of things that customers don't know they want! We try to study the trends. We have our Product Innovation Department that continuously looks at trends, why people behave in a certain manner, and why they do certain things. And then, we do a projection over three to five years. We try to follow both the short- and long-term trends." Besides doing trends analysis, SIA also uses feedback from its staff, information about other airlines, and customer compliment/complaint analysis and major traveler surveys to help them generate new ideas. The new ideas gathered from the various sources enable the airline to constantly identify all possible opportunities to delight its customers through

the introduction of new services.

Yap Kim Wah added, "It's very easy to love what we do, and that's the danger. It's easy to say that the customers will surely want what we do. To be a winner, we have to continually strive to provide the very best service when compared with any industry. That's why it's so challenging. Whatever we do, we are in search of excellence and are never willing to settle for what we have already achieved. It's good to be passionate, but I think you must be able to say 'I'm willing to kill it with a better program.' And that is a huge challenge internally. We have to be able to tell ourselves that, 'I love this new thing that I've developed and we'll make sure that it's well implemented.' However, we also have to kill it with a better product in x number of months. It could be six months, it could be 12 months, it could be 20 months. But you have got to kill it because the lifestyles of our customers are continuously evolving." This means constant innovation and constant development in all the things that we do.

SIA, therefore, clearly sees constant innovation and the wow effect it provides as the key in addressing the sky-high and ever rising expectations of its passenger base. A key support to achieving the wow effect is the delivery of the innovation, as experienced by passengers through interaction with the cabin crew. According to Patrick Seow, Senior Rank Trainer at the SIA Training School, when he trains new recruits, "besides teaching them functional skills, I always try to seek the opportunities to get them immersed in our culture... it's our culture that makes us stand out." Further, according to Lim Suet Kwee, Senior Rank Trainer at SIA Training School, during the initial training of the crew, "actually, over the four months, other than learning about the correct ways to serve and all that, most of the time is being spent on how to communicate with the passengers. The communication is not only with the passengers but among the cabin crew as well. The communicating part, of course, covers eye contact, the correct usage of words

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and the tone of voice as well. Sustaining high customer satisfaction at SIA is supported by the development of such a customer-oriented mindset through continuous training and development of employees, as well as internal policies such as the reward and evaluation system.

Balancing Standardization and Customization of Service

Sim Kay Wee explained, "The challenge in service is that there has to be consistency. When you buy a product, it's very different from buying a service. If you buy a piece of soap for example, it's just a piece of soap, manufactured by the same process day in and day out. A service however, is more human, with the potential for inconsistency. Yet, SIA would not want its passengers to experience different service standard on different trips. It wants to ensure that its passenger will get the same consistent level of excellent service on each trip. To achieve consistency, Choo Poh Leong, Senior Manager Crew Services, explained: "All of our procedures are very finely honed and tested before we introduce any change. Betty Wong, Acting Vice-President Inflight Services added that her department will "carry out research and trials, time and motion studies, make mock ups, see how long things will take, assess customer reaction, and do whatever is necessary to ensure that it is the right procedure."

SIA recognizes that whilst all the components of a service are important, there is an essential difference between hygiene and enhancing factors. Sim Kay Wee explained: "We have a long list of the things that passengers expect when it comes to good service: flight schedules, punctuality, seat comfort, and technical skills such as safety, or just pouring a cup of coffee without spilling it all over the place. But those are just technical and I think a lot of airlines can master them. These are all hygiene factors so you must have them. Mind you, there are some airlines that don't have them and are still in business! The enhancing factors are the softer skills, such as warmth, care and anticipation of

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needs." SIA's strategy is to ensure that hygiene factors, which are expected by most travelers, are consistently delivered, whereas the enhancing factors are personalized and show more variance. Here, SIA aims to give service that is personalized to the needs of each individual, especially in the premium classes.

SIA recognizes that the biggest challenge in delivering consistent yet personalized service is on the people-side. Sim Kay Wee said, "The additional complication is that while striving for consistency, we need people who can be flexible. I know this is a contradiction, but the worst thing about service delivery is when everybody just follows the book. I want them to be flexible and creative. In Singapore, there is a tendency for people to be too regimented in their thinking. If a passenger asks for his vegetarian meal and we did not have it on board, for example, we want the member of staff to go back to the galley, think on the spot and create a solu-

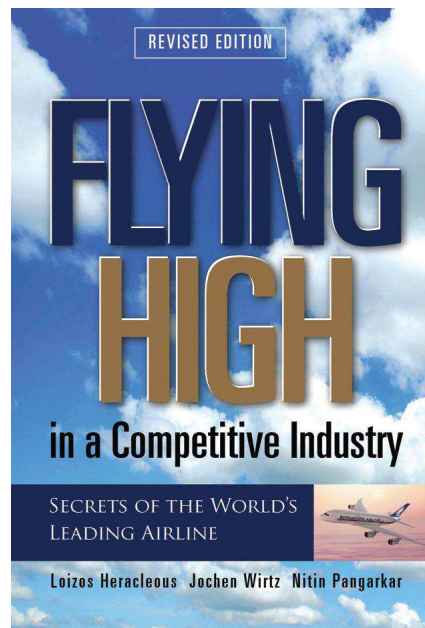
tion, such as putting together a plate from all the fruits and vegetables, rather than annoy the customer by telling him it was not catered for so he can't have it. Sim Kay Wee continued, "Instead of being too regimented in their thinking, SIA wants its staff to have a good relationship with the customer, without just following the rule. The challenge is to encourage and harness that energy to present a different kind of service image, but at the same time, be very positive towards the passenger."

In order to manage this constant struggle between offering standardized service that is at the same time personalized, SIA also places a lot of importance on the testing of all procedures to ensure that they can be consistently delivered, and the participation of employees from all levels in the innovation processes, as it helps to foster creativity and flexibility. This is important, because when the staff master the basic processes extremely well and at high consistency, they then have the mental capacity to watch out for opportunities to personalize, anticipate needs, and to regularly create the "wow" effect that will surprise and delight the customers, instead of merely satisfying them.

Therefore, SIA balances the conflicting goals of consistency with personalization by fine-tuning, testing and improving procedures constantly so that they can be consistently delivered, as well as encouraging employees from all levels to participate in innovation processes so they develop the mindset that supports personalization to customer needs. Staff development and mindset at SIA also promote "situational awareness" and empowerment so that staff can go beyond set procedures to address customer needs.

Focus on Excellence in All Processes and Sub-processes

SIA understands that customers are buying the total travel experience. Hence, service excellence means that all of its service components have to be excellent. This includes everything that the customers would encounter



during the journey, all processes and sub-processes, ranging from reservations and ground service, to in-flight service, food and beverages, to seats and leg rests, and to services related to its frequent flyer program. Yap Kim Wah illustrated, "A flight has many, many sub-components. By being better at every one of these sub-components we give our competitors a hard time. By the time they copy, we would already have moved ahead. This means constant innovation, and constant development in all the things we do. We don't just put the best seat in business class and sit back. We want the best in-flight service, the best food, the best service on the ground, as well as the best seats." Summarizing SIA's perspective on totality, he continued, "It is better to be 1% better in 100 things than 100% better in one thing." To provide a service that is excellent in all aspects and better than its competitors in many areas is a challenge, as many people and much technology are involved. Precisely, this complex-

ity allows SIA to gain a competitive edge based on its processes and focus on totality. The airline needs to constantly improve its processes and sub-processes to ensure its determination to maintain this edge, as well as to keep pace with customers' changing needs and expectations.

SIA's focus on totality also shows in its approach to launching new services. SIA makes sure that its launches are done in complete and integrated packages. Yap Kim Wah explained: "It is a stronger proposition to our customer than to say I have a better cup. We say that the cup comes with better coffee, better delivery and better design."

Therefore, in order to approach a large number of services and support sub-processes in totality to attain excellence in all of them, SIA engages in constant innovation and fine-tuning. An important aspect of this is the mindset developed by staff training and development, job rotation and teamwork, which ultimately support the development of self-reinforcing virtuous circles at the organizational level.

SIA's Approaches to Continuous Improvement and New Service Development

SIA's approaches to overcoming its key challenges in delivering sustained service excellence are in one way or another all linked to constant innovation and improvement. It is the company's amazing innovation capability that has enabled it to sustain its service excellence and cement its service leadership position over decades. Unlike many other service firms that tend to rely heavily on centralized R&D departments to develop new services, SIA's approach to new service development involves the seamless combination of hard, structured, rigorous, centralized innovation, headed mainly by the product innovation department, with soft, emergent, distributed, but equally significant innovation, mainly headed by different functional departments. SIA understands that the importance of regularly introducing discontinuous, substantial in-

novations that "wow" the customer and position it as a service leader in the eyes of its passengers (such as the launch of the first on-demand in-flight entertainment system in all classes, the suites in the A380, or the flat bed in business class, and more recently the widest business class seat in the world (See Exhibit I).

At the same time, SIA also knows that it is necessary to initiate a large quantity of incremental, cost-effective innovations across all its operating units to ensure the airline is constantly improving its service standards as well as productivity. Using distributed innovations effectively, which means that a large quantity of incremental innovations are produced by individual functional departments gives SIA an edge over its competitors and helps it to sustain excellent standards for all aspects of its services. As noted by Timothy Chua, Senior Manager Inflight Services (Projects), "Innovation is not just thinking about new ideas but looking at old ideas and thinking about how to do it better." Hence, sustaining service excellence through constant innovation is not about employing some geniuses and getting them to innovate, it is more about encouraging the staff to look at all processes constantly to search for opportunities to improve. SIA aims to improve just a little bit, but all the time in everything, making it very difficult for competitors to copy. We will discuss in the following sections first SIA's centralized new service design, followed by its distributed innovation capabilities.

Centralized Innovation – SIA's Approach to Designing Major Service Breakthroughs

Enshrined in the product innovation department, centralized innovations are mainly "hard" and highly structured innovations. These are mostly major, discontinuous innovations such as the recently launched non-stop service between Singapore and New York with upgraded business and "executive economy" classes (see Exhibit II), or the design of the A380 cabin. The product innovation depart-

Exhibit I



Singapore Airlines business class seats. These are the widest seats in the world in business class, folding out to become a 6-foot bed. With only four seats per row, all seats have direct access to the aisle.

Source: Courtesy of Singapore Airlines

ment consists of a small group of people, augmented by staff from all departments on one year placements, whose key task is to conceive innovative ideas and take selected ones through the development cycle to commercial introduction.

According to Sim Kim Chui (VP Product Development 2000 to 2007), "Within innovation there is what we call the innovation lab, where resources would be on a one year basis. So this person that comes in can be from anywhere in the company, could be some from cabin crew, some from engineering, they would be asked to come into this idea lab, where they spend only one year, and their job is to come up with ideas. No holds barred so they can come up with ideas on any aspect of the airline business. Their KPI is how many good ideas they can come up with. It's not easy, it's very challenging actually."

The product innovation department follows a well-defined innovation framework guiding activities, which involve new service development processes such as opportunity identification and selection, concept evaluation, design and development, and new service launches. At the very preliminary stage, there must be abundant useful information that provides the company with some valuable insights on where it should start. The information can come from various sources including benchmarking sur-

veys run by IATA, which compares SIA's performance with other airlines, surveys conducted with random sampling of passengers on about 10% of SIA's flights, focus groups, and listening to its front line staff. After the opportunities have been identified, evaluated, and approved by the management committee, design, development and launch would then follow (see Exhibit III).

At a broad level, SIA's innovation is heavily driven by customer needs. According to Yap Kim Wah: "SIA is a profit-generating organization. We are not an institute of technology, and whatever we do must make business sense and that is the guiding principle. To support the guiding principle that we have to make a profit and customers must want to return. Therefore all innovations, in one way or another, must be something that customers need, although sometimes, customers may not know what they need! SIA conducts workshops and focus groups with customers where they are asked to identify what services they would like to see on an aeroplane and prioritize these services. According to Sim Kim Chui, VP, Product Development, "The most important is what is important to the customer. So from that list... what we are interested in would be the key needs; the top 5, the top 10, the ones that everybody wants. Actually they are not that different geographically or culturally or otherwise."

Idea Generation and Concept Evaluation

Besides identifying innovation opportunities through the feedback gathered from customers and frontline staff, the product innovation department would also try to generate innovation ideas from other sources of information, such as through lifestyle trends and competitor analysis. All staff of the department constantly search for new service ideas. They surf the Net, attend conferences, process feedback gathered from customers, and are constantly in contact with designers worldwide.

As mentioned by Yap Kim Wah, "There is a whole realm of things that customers don't know they want! We try to study the trends. We have our Product Innovation Department that continuously looks at trends, why people behave in a certain manner, and why they do certain things." Apart from searching for ideas outside the airline context, SIA also closely monitors competition. According to Yeoh Teng Kwong, Senior Manager, Product Innovation, by looking at what competitors are offering and what they are not offering, SIA has a better knowledge of what might make sense for SIA. A research department has been set up that tracks and compares competitors' and SIA's products and services. This presents SIA with very good opportunities to explore the needs that are not yet satisfied or not fully satisfied by existing service offerings. For instance, whenever a competitor offers a new service, SIA would send its people to try it out and explore competitors' capabilities on whatever services they have. After exploring a new service, SIA would evaluate it and see if it would make sense to introduce that service as well, or to come up with something that is even better than the competitors' offerings. To track competition more closely, SIA also subscribes to an IATA market research tool called "GAP" (Global Airlines Performance Survey). From this survey, SIA identifies airlines with significant improvements or airlines that are particularly strong in certain aspects. Those are the airlines SIA will study in more depth and see what can be learned from them.

Exhibit II



The Executive Economy class cabin provides passengers with affordable comfort on SIA's ultra long haul flights between Singapore and Los Angeles, and Singapore and New York.

Source: Courtesy of Singapore Airlines

Exhibit III
SIA's Three-step Centralized Innovation Process

Step 1	Step 2	Step 3
Idea Generation and Concept Evaluation <ul style="list-style-type: none"> Identifying innovation opportunities through various channels Presentation of new service concepts to Senior Management for endorsement 	Design and Development of New Services <ul style="list-style-type: none"> Managing and improving the interfaces in the designs Employing third party consultants to help with models, and cost and revenue projections Testing and piloting of new services 	Managing New Service Launches <ul style="list-style-type: none"> Communication Plans Promotions are planned to yield maximum results Demonstrations of new services by senior management Dialogs with media

SIA also knows that sustaining service excellence means aiming to be better at everything compared to its competitors; therefore it constantly benchmarks itself against its competitors to try to achieve this. As noted by Yeoh Teng Kwong, "One of the things we can do in terms of innovation is not necessarily always coming up with new ideas. If somebody can do it very well, we can emulate them and do better if we can."

Although sustaining service excellence may mean emulating competitors and doing better than them, SIA also recognizes the fact that it needs to come up with real differentiating ideas in order to cement its service leadership position, as ultimately, it is the brand new ideas that wow customers. Yap Kim Wah explained, "Idea generation within SIA is, to a large extent, governed by the need to differentiate, in other words, staying ahead as we are a premium carrier. Therefore, there will be ideas that we always come up with that are uniquely different from others."

Although it is the product innovation department's main task to churn out more major and substantial innovations, a "soft," flexible and unstructured innovation process also coexists to allow individuals in the product innovation department to pursue less orthodox ideas and let them "simmer" to potentially feed at a later point into the formal new service development process, or "hand them over" to operational units for development.

Over the last few years, to encourage employees to participate actively

in the opportunity identification process, all of SIA's employees have been given a chance to join a program called "Future Works." Future Works is like an annual mini boot camp that consists of some 50 executives from various departments. As Yeoh Teng Kwong elaborates, "The concept is to bring together a group of people from different departments and backgrounds, lock them up for a few days, and do brainstorming." Participants will have a chance to let their imagination run wild. At the end of the workshop, they will be given a chance to present their ideas to the Venture Board, a selected group of SIA's senior vice-presidents. Funds would be provided to develop ideas if the board endorses them. Future Works has recently been superseded by a new program involving year-long placements of staff from various departments of the company into the innovation lab, within the product innovation department, where their main task is to come up with new ideas and to involve others in developing and testing them.

There is also a simple innovation tool, which enables everyone in the product innovation department to participate and contribute, which SIA calls "a central electronic log." Yeoh Teng Kwong explains that whenever a staff member of his department finds an exciting new idea or technology on the Internet, in a newspaper or elsewhere, they are encouraged to capture the idea in the electronic log. So at any one time, the department would have about tens of ideas in this log, many of which are wild and preliminary. Meet-

ings are held every few weeks to discuss the ideas in the log.

SIA has been successful in getting employees from all levels to participate and contribute to the idea and concept generation processes. This is because the company has successfully instilled a culture and developed the processes that encourage its staff to contribute ideas. Yeoh Teng Kwong added, "Innovation is not really trying to get a bunch of geniuses to sit down together and think of ideas. Instead SIA makes innovation possible and easy through systematic innovation."

Design and Development of Innovations: Bringing Innovative Ideas One Step Closer to Customers

After identifying and selecting innovative ideas, and getting the endorsement from the management committee, an innovation has to be carefully developed before it can add real value to SIA and its passengers. Development consists of the creation of everything from the design to the marketing of a new service.

As customers' interest is always SIA's top priority, a lot of time is spent to ensure that any innovation is extremely user-friendly. Various models and combinations are tried, and subjected to detailed testing. According to Timothy Chua, "We focus very much on simplicity and ease of use; constantly reviewing existing steps and deleting steps where necessary to make it as simple as possible... Because ultimately, if we have something that's not easy to use, it doesn't serve the purpose." SIA also brings in third-party consultants to help with the models and projections (as some of the modeling things are a little bit tricky, even for our own people), says Yeoh Teng Kwong. For instance, a consulting firm assisted in the development of A380 cabin concepts using various analytical tools, including conjoint and financial analyses, to help optimize the cabin design including questions such as seat count in the cabin. Third party consultants are also employed to validate and verify the ideas, processes and numbers developed by SIA's staff to obtain a more neutral, potentially

less or differently biased views from outside experts.

Because of the cross-functional nature of airline operations, it is ensured that the right mix of people is on every new service development team. Yeoh Teng Kwong explained that the senior staff in his department tend to be the project drivers. But each team has approximately an equal number of people from other, relevant departments to ensure a cross-functional perspective on a project.

After the product development proposals have been drawn up, SIA's staff will still sit down and spend a lot of time fine-tuning and identifying potential fail points by asking the questions, "What can go wrong and why?" Then they will try to connect all different fail points to get a coherent picture on the underlying problems and work on addressing them. Testing and piloting come after the design and engineering stages. Timothy Chua explained that instead of going into large-scale implementations and investing lots of capital, SIA prefers to go on small trials, often with a small group of priority customers to test a new service.

Finally, when SIA develops new services, it aims to synergize these new services as much as possible with its famous cabin crew, the Singapore Girl. According to Sim Kim Chui, VP Product Development, "I say we leverage on our strength because crew service is our key strength... at the end of the day it's about cabin crew service. So I always emphasized to my team that the hardware that we develop must leverage on the software; only then can we get the maximum out of it." He noted that the decision to provide flexibility to passengers flying in the A380 suites, as to whether they want complete privacy by closing the doors or prefer the flight crew to have access to them, was based on allowing the airline's key strength—cabin crew service—to be constantly available to these passengers if they choose to.

Managing New Service Launches

Somewhere during the process, after all the piloting, testing and trials, the management agrees that the new ser-

vice can be introduced and marketed to its customers. In order to encourage the adoption of the new service and increase its usage, SIA engages in promotional activities. During the initial launches, the company has media events in which for example, Yap Kim Wah would sit down, have sessions with reporters and demonstrate a new service. After the initial launches, SIA also often runs various types of promotions, including lucky draws and double frequent flyer points to encourage customer adoption. Examples include promotions for flying on new routes, using the SMS-based check-in service, using the Internet for frequent flyer service transactions, or conducting online redemptions of frequent flyer rewards. This final phase of new service management is important, to educate the customers about the benefits of the new products and how they are operated and used, to aid fast customer adoption.

Distributed Innovation – SIA's Approach to Continuous Improvements and Major Redesign of Processes Throughout the Organization

Besides the hard and centralized approach, there is also in existence a softer, emergent new service development approach within the SIA, which can perhaps best be described as "distributed innovation," a process that truly differentiates the company's innovation and new service development approaches from many other companies. Unlike the centralized innovation undertaken by the product innovation department that follows a well-defined innovation framework involving a number of key fixed points (for example, initial senior vice-president endorsement, development of a robust business case, and senior management approval), "distributed" innovation is overseen by individual functional departments. It is primarily an unstructured, emergent process that focuses on continuous improvement, and tends to be more fluid and flexible. In addition, the budget for the distributed innovation is often absorbed in the individual department's

operating expenses. As explained by Yeoh Teng Kwong, "I would not consider my department as the central product development unit as this would give the impression that we drive all new 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 decentralized, distributed manner, using department budgets at least for the initial stages of development. One example is the recently redesigned Internet check-in service. Building on the customer acceptance and high utilization of the phone and SMS check-in, it was conceptualized, developed and implemented by the Ground Services Department. Distributed innovation is especially important in sustaining the aspect of service excellence that requires all the components of a service encounter (the totality) to be excellent, as it helps to ensure that all functional departments focus on improving their respective services.

This fluid process also enables and encourages "alive" 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 the ease of use. Other improvements which have resulted from distributed innovation include the now commonly available ability to choose one's seat through Internet or SMS, or the unique Book the Cook service where business and first class passengers can order their favorite dish beforehand, and the specific dish will be delivered to them on their flight.

This distributed innovation capability also guards against the company

blindly following technological fads, because it involves the people who are close to the actual processes and who therefore can see more easily hype for what it is. For example, the Ground Services department made a conscious decision, in 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 considered more user-friendly and the infrastructure was readily available to most of its passengers.

In addition, the influence and direct involvement of operations in 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 and with the necessary level of customization would be compromised. This operational ownership of innovations at the department level is crucial for SIA, as it reinforces its key competency of the operational ability to deliver consistent and reliable service every time, in every customer transaction.

This "soft" distributed innovation process also has a "hard" edge. Although major, discontinuous innovations are usually undertaken by the product innovation department, functional departments also undertake major new service developments that are mainly within their area of control. While minor adjustments can be made almost any time, the more expensive and significant changes are subjected to similar key fixed point checks, which are also adhered to by the product innovation department (such as senior vice-president endorsement, costing and approval). However, these developments are carried out independently of the product innovation department, and are generally overseen by the senior vice-president of the respective division.

Exhibit IV outlines the features of the hard, structured service development process as well as the soft, unstructured service development process at SIA.

The Role of Feedback in Driving Service Innovation

It is important to note that one key driver behind SIA's "distributed" innovation competence is the high importance given to customer feedback. To encourage the customers (both internal and external) to voice out their comments, SIA takes both compliments and complaints seriously. As Sim Kay Wee elaborates, "There is a vice-president with responsibility for compliments and complaints and every letter must be acknowledged, investigated and followed up, even letters of compliment." In addition to analyzing customer complaints, compliments and suggestions, SIA collects around 12,000 questionnaires a month on all its routes and travel classes to reliably understand its strengths and weaknesses system-wide, by geographic region, by station, by route, and by travel class. The analysis can be drilled down to very small units to pinpoint any weaknesses in its service delivery system, and also to understand its strengths better and work on cementing them.

Through its integrated customer feedback system, SIA gathers a lot of feedback from its customers. A large proportion of customer feedback is given to its frontline staff verbally, especially to the cabin crew. As Yap Kim Wah explains, "We even take verbal reports very seriously. In order for someone to sit down and write, he or she has to be either very happy or very angry. But there are always lots of little, less extreme things that people don't bother to write down. If a customer mentions to a member of crew, for example, that a meal is a little too salty, the member of crew will pass on the comment to their manager. The manager will contact our food and beverage manager who will inform the caterer... So if you don't listen to the crew, you've let an opportunity pass, which is crazy!" Therefore, SIA's feedback system is well-gearred to gather and process feedback from its employees, especially from cabin crew, and also from ground staff and back-office employees. In addition, SIA listens very attentively to its overseas staff as the company knows the importance of local and culture-specific knowledge especially for a globally operating firm with customers from all over the world and offices in many countries. SIA's elaborate feedback mechanisms help it not only to listen to customers, but also

Exhibit IV
New Service Development Process at Singapore Airlines

New service development process	New service development organizational activity	
Hard, highly structured new service development process	Well-defined and structured innovation framework with a number of fixed points, focusing on major, usually high cost, innovations	Distributed, functional departments
Soft, flexible, unstructured, emerging process	Flexible process allowing individuals to pursue less orthodox ideas before being fed into the formal new service development process, or being handed over to operational units for development	Major new service development conducted within their areas of control but subject to the same key fixed points. Structured assessment of customer feedback and rewards for innovation Primarily unstructured, emergent process focusing on continuous improvements. Budget often absorbed in operating expenses

to understand them better. As mentioned by Yap Kim Wah, SIA understands that the frontline staff are very important because they are very intimately in contact with the customers. So for every flight that the airline operates, it listens sincerely to the crew and they know that the management takes their feedback very seriously. If the company does not respond to the feedback given by the crew members, they would be disheartened.

At SIA, customer feedback is recorded and transferred to the relevant departments for immediate consideration, and to a central unit that tabulates, analyzes and maps trends, and then reports on an aggregate level back to the departments. As a result, individual departments have plenty of firsthand opportunities to introduce small yet significant improvements continuously. Besides providing useful insights for individual departments and reinforcing SIA's distributed innovation competence, the comments and feedback also help the product innovation department to identify opportunities to wow and surprise its customers.

Careful listening and understanding customers is not easy however. Sim Kay Wee elaborates, "Sometimes, passengers can't tell you what they will need, they cannot anticipate. We have to do this for them. Anticipating needs they didn't realize they had! For example, we noticed the changing tastes of passengers. They were becoming more health conscious about their food, so we made the food lighter and more nutritious. We study data and observe customers in order to understand our customers really well, so that we can anticipate their needs." An example by Yap Kim Wah on the introduction of the flight alert service illustrates the importance of anticipating customer needs. He says, "We developed our mobile phone services largely because we believed that there would be a demand. Some people were sceptical. We were the first to introduce the alert service which sends out a Short Message Service informing the customer of flight arrivals and delays. There was some scepticism when we launched our e-mail service

in the air. Some people said that the aircraft is about the only sanctuary where they can get away from their work and their boss. They didn't want all that connectivity! However, when we studied the feedback, our customers really appreciated it. So, we provided that facility. If you don't want it, you don't have to use it. But I think business people will enjoy the flight more if they have cleared their e-mails! Often, business people feel very stressed in the last hours before they leave the office, so we can say to them, "Relax, you don't have to be so frantic. You can take your time on board to deal with those last minute problems. We study the trends and try to be proactive."

It is worth noting that the e-mail service in the air was discontinued in 2006 because of insufficient demand. The pricing imposed by Boeing, the developer of the technology was relatively steep, between US\$10-27 for different durations within a single flight. What the discontinuation of the service shows is that even with extensive consumer research, robust planning and implementation, there is always a risk that innovations will not work as anticipated. It also shows the value of experimentation and the need for flexibility to remove innovations that don't deliver as expected.

Singapore Airlines – A Master of Innovation

SIA has shown in the past 37 years that it can deliver sustained cost-effective service excellence and competitive advantage powered significantly by its innovation capabilities. The company seems to have the ability to combine hard and soft aspects of innovation. This unique approach to new service development involves the seamless combination of both structured, rigorous and centralized innovation led by mainly the product innovation department, with emergent, distributed, but equally significant innovation led by different functional departments. This process is supported by SIA's integrated customer and frontline staff feedback systems that provide valuable insights for both the product innovation department and other functional departments. The outcome of this process is an airline that is considered a master of innovation, consistently achieving higher returns than its competitors and never showing an annual loss in an industry that has never delivered a return above investors' cost of capital. ■

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Appendix

This article is partly based on interviews with the following SIA executives and staff (in alphabetical order) from 2001 to 2008. Since the interviews were conducted over a number of years, the designations of some interviewees have changed. The list of interviewees below shows the title of the individuals during the interview, and any subsequent changes in designation since then are indicated in parentheses:

- Choo Poh Leong, Senior Manager, Cabin Crew Performance (now Senior Manager, Crew Services)
- Timothy Chua, Project Manager, New Service Development (now Senior Manager, Inflight Services -Projects)
- Lim Suet Kwee, Senior Rank Trainer, SIA Training School
- Lim Suu Kuan, Commercial Training Manager
- Seow, Patrick, Senior Rank Trainer, SIA Training School
- SIM Kay Wee, former Senior Vice- President Cabin Crew
- Sim Kim Chui, VP Contracts (from 2000-2007 VP, Product Development)
- Betty Wong, Senior Manager Cabin Crew Service Development (now Acting Vice President, Inflight Services)
- Yap Kim Wah, Senior Vice President, Product and Service.
- Yeoh Teng Kwong, Senior Manager, Product Innovation (currently with another company)