



# Customer focused service development in practice

## A case study at Scandinavian Airlines System (SAS)

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**Abstract** *The airline industry will be going through dramatic changes in the years to come. This is due foremost to altered customer demands and expectations but also to deregulation of the airline business. Many airline companies have lost track of the true needs of their passengers and are trapped in outdated views of what airline services are all about. The paper illustrates how Scandinavian Airlines System (SAS) has carried out thorough investigations into the concerns of the customers throughout the entire travel experience. Based on the results, SAS has developed new services and redesigned old services. One of the key issues in the paper is the way SAS has chosen to develop the new services, namely to allow the passengers to define the process as opposed to defining it from the company perspective.*

### Introduction

The goal of service development is to attract and keep customers who are satisfied, loyal and speak well of the company, but perhaps most importantly, to keep profitable customers. To really understand customers' needs and wishes, it is appropriate and often necessary to involve them in the process of developing new services. Attractive and customer-friendly services emerge from a dialogue with competent and demanding customers. However, most customers are only familiar with current products and technologies, why asking customers what they want will not necessarily result in new innovative products. Thus, another important source of information is observation. By observing customers in real situations we get a more objective impression of how they behave and a better understanding of the situations we force them into. The relevance of this can be found in the following quote:

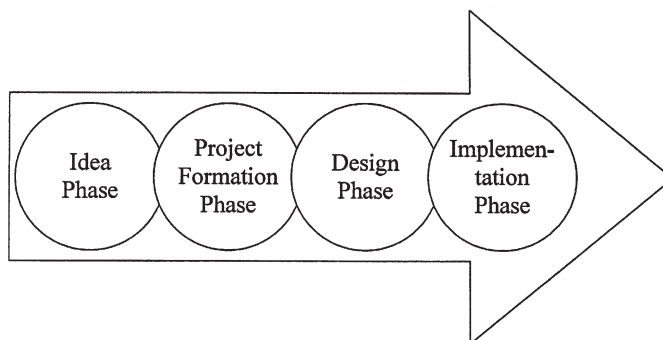
There are three kinds of companies; those that simply ask customers what they want and end up as perpetual followers; those that succeed – for a time – in pushing customers in directions they do not want to go; and those that lead customers where they want to go before customers know it themselves (Hamel and Prahalad, 1991, p. 85).

However, there must be systematic work involved in first collecting and then using customers' input either to improve an existing product or to develop something new.

One example of how SAS has used observations as the primary source of information is how people react at the gate lounge. Here business class passengers and economy class passengers are separated, making it easier to provide better service to premium passengers but also to facilitate the boarding of the air-plane for economy class passengers. This idea originates from observation, from studying how passengers “stampede” the plane regardless of seat rows called.

Joint efforts by, for example, Wilhelmsson and Edvardsson (1994), Edvardsson and Mattsson (1992) and Norling *et al.* (1992) have resulted in an attempt to set up a model for service development, which consists of three concepts and a process in four phases. The three concepts necessary to describe a service are: the service concept; the service system; and the service process. The service concept represents a description of what the service provider offers to the customer and is thus closely related to the need that the service is expected to meet. The service system, on the other hand, represents the resources and organizational structure required to produce the actual service. Finally, the service process is a description of how the service is, or will be, performed. The three concepts of service concept, service system and service process are put into a larger context by connecting them to the phases of a suggested service development process (Wilhelmsson and Edvardsson, 1994). Based on empirical evidence Wilhelmsson and Edvardsson (1994) have divided the service development process into four somewhat overlapping phases as seen in Figure 1.

The four phases are the idea phase, the project formation phase, the design phase and finally the implementation phase. During the idea phase the service idea is identified and evaluated against the current company business objectives. The idea phase ends with a decision, often based on preliminary market research and customer analysis, as to whether or not it is worthwhile and of interest to the company to pursue the idea further. Once the decision has been made to proceed, the next phase in the process is begun. The objective of the project formulation phase is to create a team of people with knowledge and competence suitable for the specific service to be developed. When such a team



Source: Wilhelmsson and Edvardsson (1994)

**Figure 1.**  
The service  
development process in  
different phases

has been formed the project enters the design phase. It is during this phase that the three concepts discussed above are combined to eventually form the basis for the actual service. The service development process is concluded with the implementation phase, during which the service is launched both internally, for example in the form of education and training of employees, and externally with a market entrance.

The purpose of this paper is to illustrate how SAS has tried to build its development activities on what is believed to be genuine understanding of the customers' true needs based on what customers want to do when they travel. The paper will illustrate how SAS has used thousands of hours of video recordings to closely examine passenger activities throughout the entire travel experience. By such means, key customer needs and concerns were identified and turned into a foundation for design principles that will shape company development strategies and innovations. We base the description on the earlier mentioned service model.

### **Industry situation**

The airline business is a mass market with mostly standardized services. All customers used to be, and still mostly are, treated the same. Furthermore, there is little differentiation between airlines. Consequently, the customers have limited options and are caught in the "happy slave" problem (Elster and Roemer, 1991). A word that better than most others describes air travel of today is "fragmentation". Many customers feel they are forced into a system characterized by contradictions, redundant or insufficient information, misguided authority and confusion. In this system, they are expected to carry out or participate in a series of activities, each of which individually might seem logical but together may lead to an impression of chaos. The system is also dominated by conditions unknown to the passengers, creating a sense of randomness that overwhelms even the most experienced of travellers.

For a long time the airline industry has found itself struggling not just in terms of profitability, but also in customer satisfaction and loyalty. The industry has been dominated by subsidized national monopolies and suffering from over-capacity. Despite what is often portrayed in commercial advertising, airline travelling has become utilitarian, uninspired and outright customer unfriendly. Passengers have been forced to accept this general deterioration and have quietly watched as the airline industry has drifted from its purpose of serving customers. The airline business must aim at fulfilling the individual customer needs or even reaching beyond these. By this simple measure, SAS tries to do more than the customers actually expect. The present challenge for SAS is to come up with a larger number of product variations and to supply the customers with services that have only few limits. In this way, SAS tries to provide services that will allow customers to design their own travel experience. This in turn will put a lot of pressure on the SAS organization and its way of working. In other service industries it has become popular to let

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customers take care of routine tasks while carrying out the service themselves. The bank industry is a good example; bank customers can withdraw money from their accounts at any time, they can also move money between accounts or pay their bills without the help of bank staff. This trend will, as shown later, also be applicable to the airline industry.

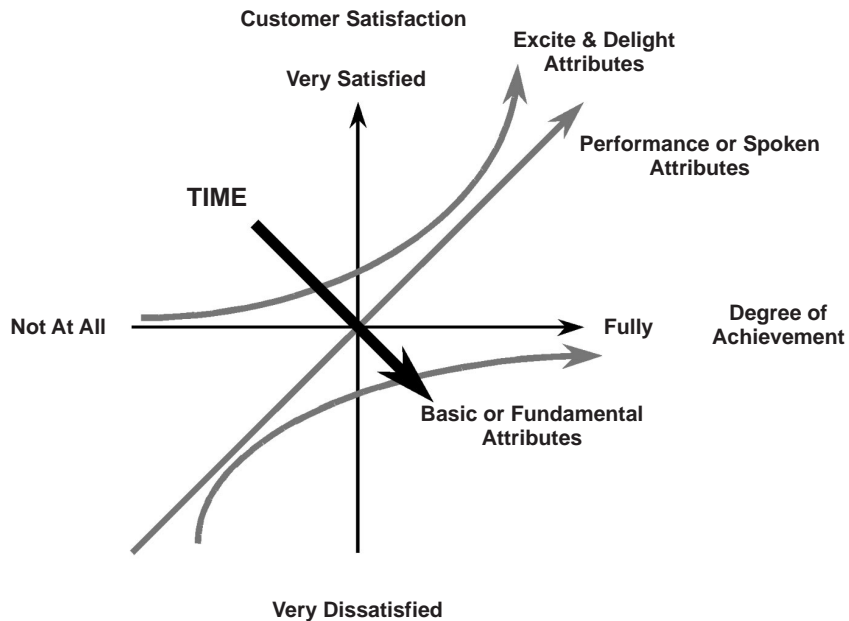
Realizing the possible gains for the company that succeeds in reformulating the fundamental concept of air travel, SAS made a strategic decision to become a forerunner in the development of the airline industry. An important step in turning this strategy into reality was an effort to develop a thorough understanding of the true, spoken and unspoken, needs and expectations of the customers. Further, it was necessary to understand how the customers interact with SAS while travelling. Therefore SAS asked itself the questions “What do the customers do when they travel?” and “What do the customers want to do when they travel?”.

All this serves as background information illustrating the challenge that SAS is facing to be a competitive airline in the future or – as their goal is – to become a forerunner in the development of the airline industry. This marks the start of the idea phase as shown in Figure 1.

### **Understanding passengers**

One of the most dangerous assumptions that can be made by a company is that customers are well aware of their future needs, and that market research in the form of just asking the customers can be used to extract this information from them. Customers can only be expected to know about what is presently on the market. However, they are excellent in helping a company evaluate a new concept. One example of this is the gate café introduced in 1996 by SAS, in which customers can select their own food and drink before boarding. The customers did not request a gate café, but now that it has been introduced it is extremely well received.

A well accepted model that explains what information can be expected to be obtained from the customers is the Kano model of quality (Kano *et al.*, 1984). The Kano model states that there are three levels of needs: basic, performance and excitement as seen from Figure 2. The basic needs are the things that the customers expect from the product, for example that it is safe and trouble-free. Because the basic needs are expected, customers are less likely to tell you about them, but their absence is very dissatisfying since they are expected. The basic needs are also low on the satisfaction scale because they are expected. The performance needs are the customer requirements that are expressed and that companies compete with, for example number of flights to different destinations and arm and leg room. If such needs are fulfilled, customers are content. The exciting requirements are items that the producers develop themselves, i.e. there is rarely any direct help to receive from the customers. These items can be satisfiers but not dissatisfiers since they are not expected. If they are present they can be part of what is now called customer

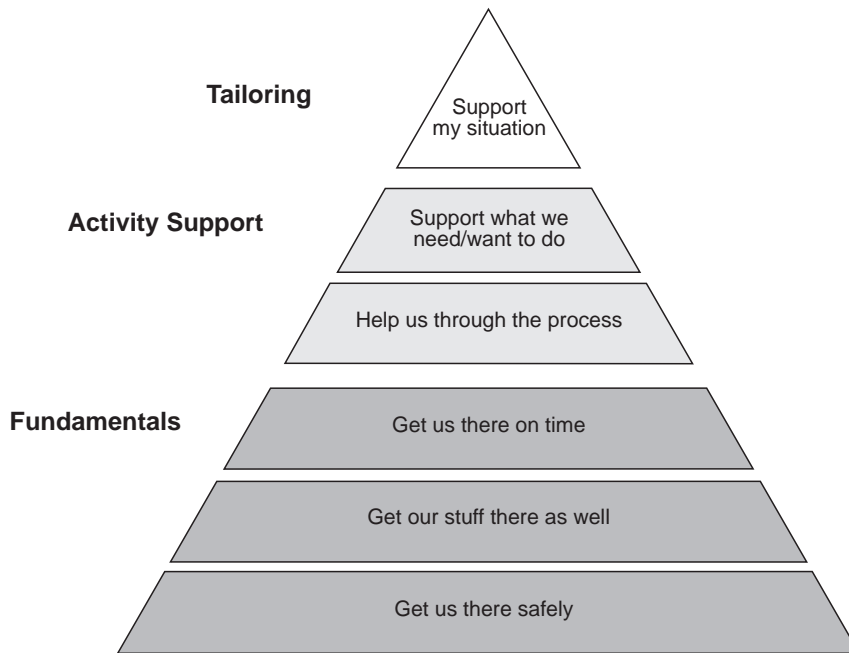


**Figure 2.**  
The Kano model of  
quality

Source: Kano *et al.* (1984)

delight. There is also a time factor in the Kano model. Customers get used to having certain characteristics/attributes on the product and over time take them for granted.

SAS has developed a model of its own as shown in Figure 3. This model has great similarities with the Kano model. The fundamental or the basic needs that SAS has to deal with are safety, getting the luggage to the right place, and punctuality. These requirements are basic and SAS must meet them first before climbing the pyramid. These activities have, however, been in focus over a long period of time. In order to become more competitive SAS must now focus on the activity support, i.e. supporting the customers to get through the process and help them to do what they want and need to do and, in order to delight the customers, tailor the travelling process for each individual. This cannot be achieved by just meeting customer requirements. One must probe and seek to understand why something is important, why customers do this or that, why something is a problem. A company must understand how big a problem something is and how it may affect their customers. An environment must be visualized to discover the value that a company can provide. It is the discovery of value that must happen, and anything to help you realize value that can differentiate you from the competition (in a very positive way) is good. It is not sufficient to look at the conventional dimensions of competition in your industry. These dimensions are most often well understood by all players.



Source: Powers (1997)

**Figure 3.**  
SAS has developed a  
model to understand  
how to fulfil its  
customers' basic needs

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Instead, seek to understand the problems and needs of the customers who use your products and services and create a competitive advantage. Success in customer focused service development requires a deep understanding of:

- (1) *Customer needs*, requirement, expectations and preferences.
- (2) *Customer service systems*, that is the technical infrastructure, the customers' knowledge and ability to use services.
- (3) *Customer values* and cognitive structure.
- (4) The *customers' behaviour* when using services; *customers' usability processes*. Focus both on what the customer does and what he wants to do!
- (5) *Customers' quality perceptions*, such as easy to do business with, reliability and customers' dissatisfaction and how customers' complaints are managed.

SAS studied the customers in the environments that comprise the entire travel process, or, as it will be called, the travel experience. The travel experience was divided into five phases: check-in, lounge, gate, in-flight and baggage claim, each phase roughly representing a physical location or a function that the

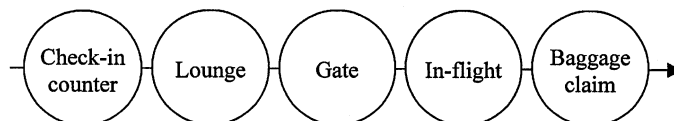
passenger has to pass through. Together they include all parts of the interaction between SAS and the customers (see Figure 4).

Studies of the customers were carried out partly by using on-site observation, but foremost by using video cameras documenting the customers' travel process. Video cameras were set up in different locations throughout the travel process. In all, SAS amassed thousands of hours of video and photographic data of the customers on the ground and in-flight. The video data were then studied in detail to identify recurring passenger needs and concerns. Close to 3,500 hours of video data were studied in sequences as short as five seconds in addition to 3,600 still images taken in different situations. This conscientious analysis of data forms the basis for establishing an understanding of the passengers, drawing from actual behaviour and how customers perceive different activities. Furthermore, five weeks of in-depth interviews were carried out with different unions, in-flight staff, and ground staff.

This marked the end of the idea phase. Next, the project formation phase (see Figure 1) was entered and the project team finalized. It consisted of representatives from the top management, SAS product development organization, and a cross-functional team with both frontline and corporate participants from technical services, marketing, flight and ground personnel. It also contained external design and advertising resources and external marketing resources. This can be characterized as being a multi-team, i.e. more demanding than the cross-functionality, because experts – not just personnel – from different areas are included. In the formulation phase the different workshops to help analyse the material were planned. The people mostly involved in these workshops were executives and front line staff. Another round of interviews was also planned.

### Passenger activities

The design phase (Figure 1) started by analysing the different passenger activities. For each of the five phases of the travel experience, both voluntary customer activities and those prescribed by the travel system were closely examined using the collected video data. By the study, SAS wanted to form an understanding of the true needs and expectations of the customers. A walk through the halls of an airport quickly reveals that passengers do not engage in any one, focused activity. Whether in line to board, searching for a gate or waiting for a colleague, the sheer number of flight oriented events and the complexity of everyday life suggests an endless list of activities. To study the entire travel experience in detail and then try to develop new products and services based on the individual



**Figure 4.**  
The travel experience as  
a service process

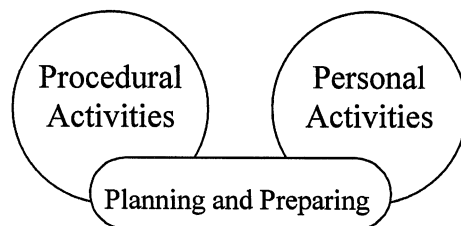
findings would be impossible due to the multitude of different activities. In addition, a focus on detailed findings would most certainly divert attention from the primary objectives of the passengers. It would be impossible to see the wood for the trees.

However, less obvious to the eye, but apparent through analysis of video data were the larger patterns underlying the myriad activities. Based on findings from the video data it was possible to find structures that signified and influenced customer activities and behaviour and provided vital information about the passengers. Therefore, SAS tried to systematize the different tasks and focus on clusters of similar customer behaviour. In this way it was possible to identify a number of distinct categories which SAS chose to divide into three parts: procedural, personal, and planning and preparational activities (see Figure 5).

Procedural activities consist of the mandatory and highly prescribed activities that passengers must perform during the phases of the travel experience. The activities that SAS demands of its customers in order to supply its services are also included here. In spite of the essential nature of these activities, they are often the least understood by the passengers since airlines neglect to provide sufficient information on how to execute them properly. Although numerous options in performing procedural activities are available, customers seldom take advantage of them since they are unaware of their existence.

The procedural activities were further divided into two subcategories, exchanging value and navigating. Exchanging value represents the system of giving and receiving that takes place as the passengers progress through the travel experience. For example, in exchange for a boarding pass the passenger will be allowed to pass through a guarded doorway to the plane. Often enough, this shuffling of papers is not fully understood by the customers and therefore found unnecessary and bureaucratic. In addition, the customers only have a vague idea of the real value of their tickets and therefore run the risk of losing out on attractive privileges. "Navigating" represents the activities needed to progress through the many environments and procedures. The video data showed that many customers had great difficulty in figuring out where to go and, perhaps even more important, what to do during different phases of the travel experience.

While procedural activities are induced by system requirements, personal activities are instead necessary because everyday chores must be attended to,



**Figure 5.**  
Three categories of  
passenger activities

even while travelling. Since travelling often takes much time, these activities must find their way in among the dictated ones. Since personal activities are seldom directly travel related, they are often under-supported or even hindered by the airlines. Therefore, personal activities are the most problematic ones for customers to complete.

SAS identified a number of different subcategories of personal activities, resting, working, entertaining, socializing and personal care. Resting can range from passengers shutting their eyes for a few seconds to actually sleeping. Long journeys make it necessary to rest, but airport environments are seldom designed to allow passengers to enjoy comfortable and safe recuperation. During long hours of travelling, most passengers try to work in order to make better use of their time. However, the travel environment is seldom conducive either to efficient work or to necessary privacy.

Entertaining represents the activities undertaken by the passengers to pass time while travelling. This involves reading, shopping, playing games, watching TV and so on. Entertaining children, colleagues and business contacts is an important part of these activities. The dominating activity for passing waiting time is socializing with fellow passengers. Entertaining and socializing possibilities together greatly influence the customers' general impression of the travel experience. The airlines, however, often do a poor job of supporting these activities. Finally, personal care represents perhaps the most vital of all personal activities. For instance, to be able to freshen up after a long flight before meeting with important business contacts, to enjoy a good meal, or being able to rest are all examples of activities that make the journey more enjoyable. Today, airlines do their best to support personal care, but they seldom succeed in supporting the special needs of the individual passenger.

Complying with dictated procedures and at the same time attending to personal issues makes travelling complex and sometimes difficult to manage. Therefore passengers spend considerable time planning and preparing what to do before the journey and how to handle possible unforeseen occurrences throughout the travel experience. An abundance of travel information and helpful tips from the airlines support some aspects of planning and preparation. Once the journey is under way, however, the passengers can expect much less support. Delays and changes in flights and connections are almost frighteningly common occurrences which often put passengers in unanticipated situations where they are forced to rely on their own problem-solving abilities.

Planning and preparing activities were divided into three subcategories, micro/macro planning, preparing belongings, and linking. Passengers plan their journeys ahead of time as well as while they are under way. When irregularities occur, passengers must often start over and replan important parts of their journey, most often without proper resources and support from the airlines. Preparing belongings includes packing and perhaps repacking whatever it is that passengers bring along when they travel. These activities

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greatly affect the passengers' abilities to comply with procedures and take care of personal activities. Passengers try their best to anticipate what will be needed and easily accessible in different situations and what can safely be checked in. The most important belongings must be easy to reach, yet hard to steal. Linking includes all the planning and preparing activities aimed at making the travel experience more comfortable.

Since most of the personal activities are not facilitated by the airlines, passengers try to adapt whatever environment and situation they come across to support their needs. Such environments are often designed to support the airlines' opinions about what passengers should do while travelling, which often differs substantially from what customers actually want to do. This reflects a stereotype view of customers rather than genuine understanding of customer needs. For instance, the stereotype picture of business people is that they want to work during the journey. However, if observed, most of them try to relax and enjoy the ride. Another example is the passengers' tendency to "nest" or "settle in". By spreading out their belongings passengers create boundaries against the outside world, shielding off a personal space for themselves in which to rest or work. The question is how does the airline support behaviours such as giving the passengers enough room to feel more private or making resting more comfortable?

### **Focusing on essentials**

By identifying the numerous activities that occur throughout the travel experience and mapping the underlying patterns and structures that guide these activities, SAS began to understand the needs and expectations of its customers. Thus, the company was able to define a set of detailed guidelines of new service concepts within each activity cluster. These guidelines can also serve as checklists when evaluating how new service concepts contribute to customer satisfaction. Finally, they are useful when SAS validates the new service concepts against overall development strategies.

Based solely on the extensive results from the study, it would, however, be very difficult to choose which development guidelines to prioritize and which new service concepts to pursue. Therefore, SAS needed some rules of thumb or design principles, which on a strategic level comprise and illustrate what it is that SAS wants to achieve with its development activities. The video data proved to be a priceless source of valuable information, since they allowed identification of which areas were suffering the most from lack of customer focus. SAS identified three such design principles: give passengers control; make the process transparent; and empower the staff, as illustrated in Figure 6.

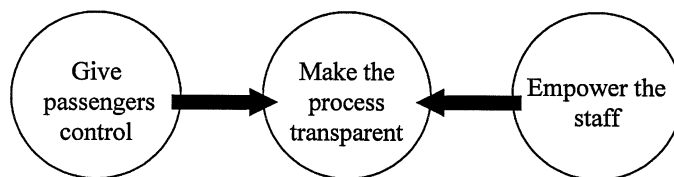
Although all of the activity categories identified in the study are considered equally important to the customers, the study confirmed that services provided today are highly influenced by SAS's needs and the rules and regulations dictated by the system. Under these conditions, the customers try to carry out their personal activities but are more often than not hampered in their attempts.

This forces passengers to resort to unconventional solutions in order to achieve their own personal objectives. Since the system is mainly focused on procedures and does not allow passengers to interact according to their own personal abilities, people are treated as luggage that is inspected, tagged and sent on its way through the travel experience. It is vital that SAS succeeds in engaging the customers in the travel experience by letting them decide for themselves what level of support they need. SAS must provide the passengers with information that will empower them and allow them to serve themselves through their journey and give them freedom to take an active part in creating the travel experience. In this way SAS can give the customers control over their own experience.

The rules and regulations that dictate the travel experience often give an unnecessarily complex impression to the customers. In addition, there is a lack of clear and consistent help to understand how the process works. SAS cannot by itself eliminate all the complexity of a dictated system but is certainly able to help remove the mysticism that traditionally surrounds it. SAS can develop its own processes so that they become as simple and understandable as possible. If the procedural activities are made simpler to understand, learn, and complete at the same time as more support for personal activities is provided, SAS can create a balance between procedural and personal activities. An important issue will be for SAS to help passengers understand the process. SAS personnel are today stopped from doing their best in giving the customers as pleasant a travel experience as possible. Information systems and other tools are not designed to give the staff the opportunity to interact with the passengers in an effective manner. The staff need better tools, more information and better training so that they can help the customers instead of having to defend a bureaucratic system. This would also allow the staff to personalize the services to the individual customer needs without compromising efficiency. SAS must supply its staff with the right tools to create the best opportunities for serving customers.

Based on the findings from the study, the development guidelines, and the design principles, SAS chose to prioritize three main areas of innovation: in-flight services, ground services and information services (see Figure 7).

Ground services and in-flight services more or less correspond to the different phases of the travel experience, whereas information services serve as the fabric that connects the different phases and binds them together. The aim of focusing on these three main areas is to achieve as profound an impact as possible on the customers' overall impressions of the travel experience. In



**Figure 6.**  
Prioritized design  
principles

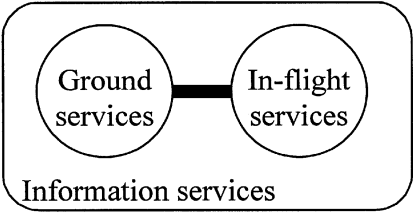
addition, keeping these three areas in mind will allow the creation of innovation portfolios, i.e. series of interlinked innovations, that will not only be very powerful, easy to understand and implement, but also very difficult for competitors to imitate.

**Implementation**

Drawing on findings from the study and the guidelines and principles developed from them, SAS has now moved beyond concepts to develop what it believes to be truly customer focused products and services within the prioritized areas of innovation. One example of these innovations will be given here. The example is taken from the information services area and illustrates SAS’s work on the “SAS kiosk”. At present, customers are dependent on the airlines and their staff to find necessary information and to complete even the simplest of services. Customers who are used to making important decisions and taking care of their own business end up in situations where they are virtually unable to influence what happens around them. The fact that many customers are very experienced travellers and fully capable of handling many of the procedural activities themselves is not utilized. Besides frustrating these passengers, SAS personnel waste time, which could be of much greater use in other parts of the travel experience than on activities, which the passengers might as well tend to themselves.

The SAS kiosk service concept is an interactive information system that assists customers to personally take care of ticketing, seating and other similar procedural activities. In addition, the SAS kiosk supports a selection of personal activities, such as keeping in touch with the outside world, for example via e-mail or telephone. The SAS kiosk makes it possible for customers to choose what level of service they want and to interact with the staff to suit their individual preferences better. This allows assigning personnel to those phases of the travel experience where personal service is more valued.

Access to SAS kiosk will be available via the Internet, from the in-flight entertainment system, in lounges, at ticket offices and at selected hotels. Access is also available by regular telephone. Sensitive information requires the use of a EuroBonus card with the attached personal PIN-code. To the largest extent possible the EuroBonus card will replace ordinary tickets, and necessary information will instead be available from the SAS kiosk or on screens and printouts. Besides supporting the procedural activities and planning and preparing activities, the SAS kiosk will allow passengers to



**Figure 7.**  
Prioritized areas of  
innovation

deal with a large spectrum of personal activities. The system could, for example, be used to make personal messages available to the passengers wherever they are throughout the entire travel experience. It also allows the passengers to search for information about the destination or any other travel related data. The EuroBonus cards will be the key to the entire system, and in combination with a credit card, the customers will be able to virtually tailor their journey according to individual preferences. In addition, SAS kiosk makes it possible for the company to build a database containing detailed information on travel habits and preferences of the individual passenger. As the database grows, the kiosk will become a powerful tool in the hands of the SAS employees and significantly increase their ability to provide personalized services. The SAS kiosk is a good example of an innovation, which fully aligns with prioritized guidelines and design principles and furthermore supports all three categories of activities. The kiosk will be followed by other innovations in the near future.

### **Service process**

The paper has thus far covered several aspects in the model for service development with the exception of the service process. This is a description of how the service is or will be performed. One tool to describe a process is service blueprinting. The technique was developed as a tool for improving the quality of service design activities (Shostack, 1977, 1981, 1984, 1985, 1987), and is reminiscent of techniques used for flowcharting in systems and software development. The underlying idea of blueprinting is that services are made up of processes, which in turn are made up of activities. By producing a detailed graphic description, a blueprint, of these activities in a chronological order as well as a list of personnel and equipment required for the process, a complete and systematic overview of the entire service process can be established.

A process description is normally created in three steps:

- (1) collection of the “voice of the customer”;
- (2) translation of this into the company language;
- (3) presentation of a description of how the company must work in order to fulfil customer requirements.

SAS also adopted this way of working, but what was fundamentally new was the approach to focus on customer needs rather than on company regulations. By observing customers’ processes, and trying to figure out what people wanted to do during their travelling, SAS let the customers design the process instead of squeezing them into to some company designed process.

### **Summary**

Overall, SAS has identified 40 problems that customers encounter which justify drastic product development. The company has also acquired unique information leading to some 50 minor improvements. These innovations need

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to be properly staged and implemented. They also require development of communication pieces such as documents and videos.

One of the primary outcomes of this study was a deeper understanding of passengers' needs and concerns throughout the service process, which would lead to the implementation of new and innovative services. Perhaps most important of all was to find a new approach in developing services, clearly focused on the customers' perception of the service process. This new approach will aid SAS in developing not only separate innovative services, but a series of innovations complementing each other to form a holistic travel experience, based on the individual needs of the customers in the different episodes during the travel process. This is in line with what Edvardsson (1997) found to be crucial for success when developing new services or redesigning existing service offerings.

SAS also identified a number of other benefits from observational research using video cameras. First of all, video recording represented a new technique not used very much previously for service development. Therefore, aspects not covered by more traditional customer survey techniques were now included for the first time. In addition, the video recordings allowed study of customer behaviour at an extraordinary level of detail, over and over again, without running the risk of losing any vital information along the way. The video recordings included sequences where the passengers solved their own problems, and this information could prove vital and very useful when developers sit down to design new services, especially if the person being recorded could be involved in the interpretation of the sequence. Further, the video database in itself constitutes an enormous source of ideas for new and improved products and services. It will be possible to return time and time again for inspiration in the future. Finally, SAS has recognized the video database to be an important part of an ongoing learning process within the company. As such, it must be continuously updated through active contacts with customers and through renewed use of video recordings. In this way, SAS can make sure of keeping the understanding of the passengers' needs and expectations up-to-date.

### References

- Edvardsson, B. (1997), "Quality in new service development: key concepts and a frame of reference", *International Journal of Production Economics*, Vol. 52, pp. 31-46.
- Edvardsson, B. and Mattsson, J. (1992), "Service design: a TQM instrument for service providers?", *The Service Productivity & Quality Challenge Conference*, The Wharton School, University of Pennsylvania.
- Elster, J. and Roemer, J.E. (1991), "Introduction", in Elster, J. and Roemer, J.E. (Eds), *Interpersonal Comparisons of Well being*, Cambridge University Press, Cambridge, pp. 1-16.
- Hamel, G. and Prahalad, C.K. (1991), "Corporate imagination and expeditionary marketing", *Harvard Business Review*, July-August, pp. 81-92.
- Kano, N., Seraku, N., Takahashi, F. and Tsuji, S. (1984), "Attractive quality and must-be quality", *Hinshitsu*, Vol. 14 No. 2, pp. 147-56 (in Japanese).

- Norling, P., Edvardsson, B. and Gummesson, E. (1992), *Tjänsteutveckling och tjänstekonstruktion* (in Swedish), Research Report 92:5, Service Research Center, University of Karlstad, Sweden.
- Powers, J.V. (1997), "Scandinavian Airline Systems (SAS) measures customers' feedback through actions, words", *American Productivity & Quality Center*, June/July, pp. 1-8.
- Shostack, G.L. (1977), "Breaking free from product marketing", *Journal of Marketing*, April, pp. 73-80.
- Shostack, G.L. (1981), "How to design a service", in Donnelly, J. and George, W. (Eds), *Marketing of Services*, American Marketing Association, Chicago, IL, pp. 221-9.
- Shostack, G.L. (1984), "Designing services that deliver", *Harvard Business Review*, January-February, pp. 133-9.
- Shostack, G.L. (1985), "Planning the service encounter", in Czepiel, J., Solomon, M. and Surprenant, C. (Eds), *The Service Encounter*, Lexington Books, Lexington, pp. 1-23.
- Shostack, G.L. (1987), "Service positioning through structural change", *Journal of Marketing*, January, pp. 34-43.
- Wilhelmsson, M. and Edvardsson, B. (1994), *Service Development* (in Swedish), Research Report, Service Research Center, University of Karlstad, Sweden.