

PROCESS DESIGN AND IMPROVEMENT
C10PD2
LECTURER: AMOS HANIFF

Edinburgh Zoo

Improving the Admission Process

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Edinburgh Zoo Process Improvement

Introduction

To inspire and excite our visitors with the wonder of living animals, and so to promote the conservation of threatened species and habitats.' – Edinburgh Zoo, mission statement

Opened in 1913, Edinburgh Zoo is Scotland's second largest tourist attraction, with 600,000 paying visitors each year (Edinburgh Zoo). The zoo is closely situated to Edinburgh city centre and covers 82 acres. It is home to over 1,000 rare and endangered animals and offers a range of activities to suit all visitors' needs.

The zoo is a European leader as a centre of conservation, education and research and uses its partnerships with other zoos across the globe to ensure the survival of threatened animal species, and to raise awareness and understanding of "the fragility of life on this planet, and our responsibility to help care for it" through their education programme.

The Scope

The entrance of a tourist attraction would serve to collect payment from the visitors and initiate their journey through the attraction by giving them relevant and useful information. The primary objective of this project was to establish the optimal performance of the admission process to the zoo. The operation was observed and feedback gathered from visitors and staff. The process was then mapped and potential improvement areas were identified through a detailed analysis of each activity. The process map was redesigned and the activities were optimized to meet the new performance objectives.

Relationship in the supply chain

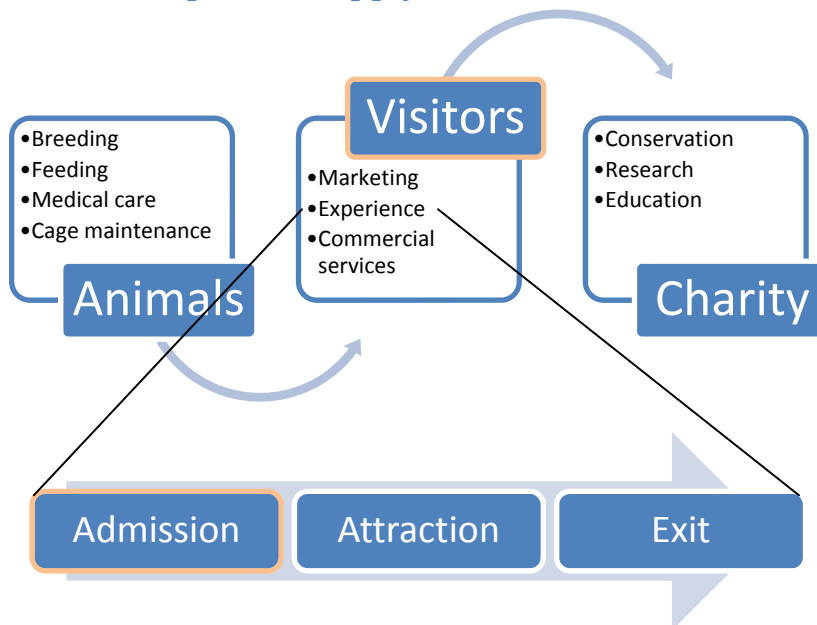


Figure 1

The admission process is located at the initiation of the visitor experience. This is where the visitors generally pay for entry and it is the main income source for the zoo (RZSS, 2008). The money generated through the visitor experience, which is not spent on the operation and maintenance of their two collections, funds the charitable activities of the Royal Zoological Society of Scotland, such as conservation and research. As it is in the interest of the society to maximise these funds, it is a strategic objective to increase the number of visitors and use the full capacity of their facilities.

Performance objectives

The research identified that high quality increases the likelihood of the visitor returning. Slack et al (2007) suggest that quality is the most visible performance objective that customers can judge. However, in this particular process, the customer perception of quality is directly linked to other performance objectives. Currently the process cannot cope with a high number of visitors. During days with increased volume, queues are likely to form outside the zoo and can be as long as 150 m. This obstructs the flow of the foot traffic, and has a negative effect on customer satisfaction.

The more time a visitor spends in a queue, the more negative impact this activity can have on their overall satisfaction. In order to reduce the queues, we need to improve the speed with which customers can be processed. We have identified that the bottleneck of this process is the payment activity. By optimising the payment process, we can increase the speed of the overall process, thus improve the overall quality of the visitor experience.

It is important to emphasise that although the quality and speed objectives are prioritised, any improvement should only have a positive impact on the flexibility, dependability and cost of the operation.

In order to improve the design of the processes we have to identify the type of users of our technology. There is a great diversity in the type of visitors to the Zoo; the majority of the visitors are families, but foreign tourists, students, elderly and others are also among the user group. In designing the new process, the capabilities and disabilities of all the users need to be considered.

Process outline

Description

The current process is based on a queuing system where the customers line up in front of a reception desk. There is a customer advisor to greet the customers as they arrive and advise them on their further action. The cashiers at the reception sell the tickets and give information about the zoo and upcoming events. If the customers have bought tickets online, they can bypass the queue by going to the group reception point on the right hand side and get scanned using a barcode.

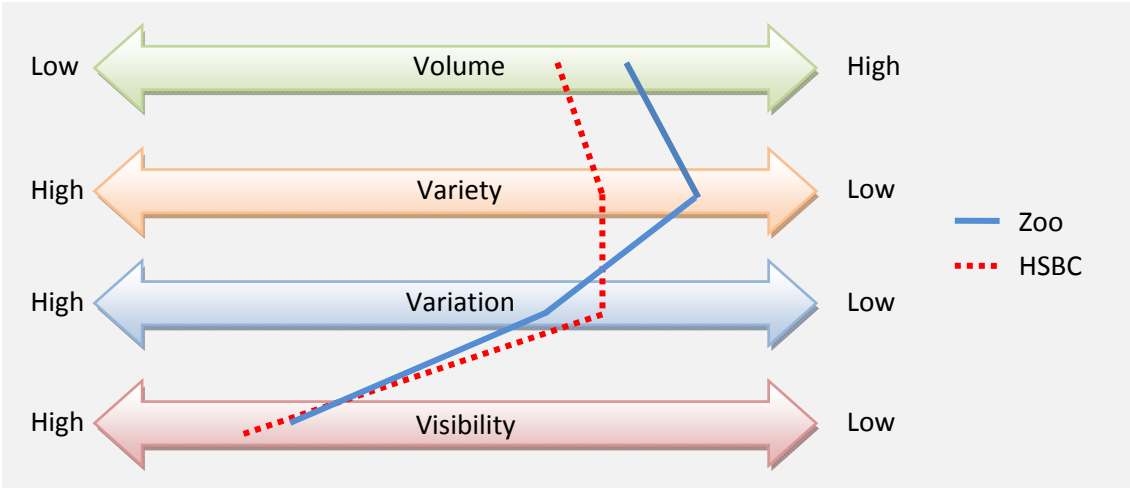


Figure 2

As seen in figure 2, this operation is a high volume, low variety, medium variation and high visibility operation. Defining these characteristics can aid in identifying similar processes in other industries to benchmark against, for example banks or airports. It also shows the dimensions that generally carries the highest cost penalties, thus identifies where costs can be reduced through improvements. An estimation of the customer service process of HSBC shows similar characteristics, and it has proved to be a valuable source for potential improvements.

Layout

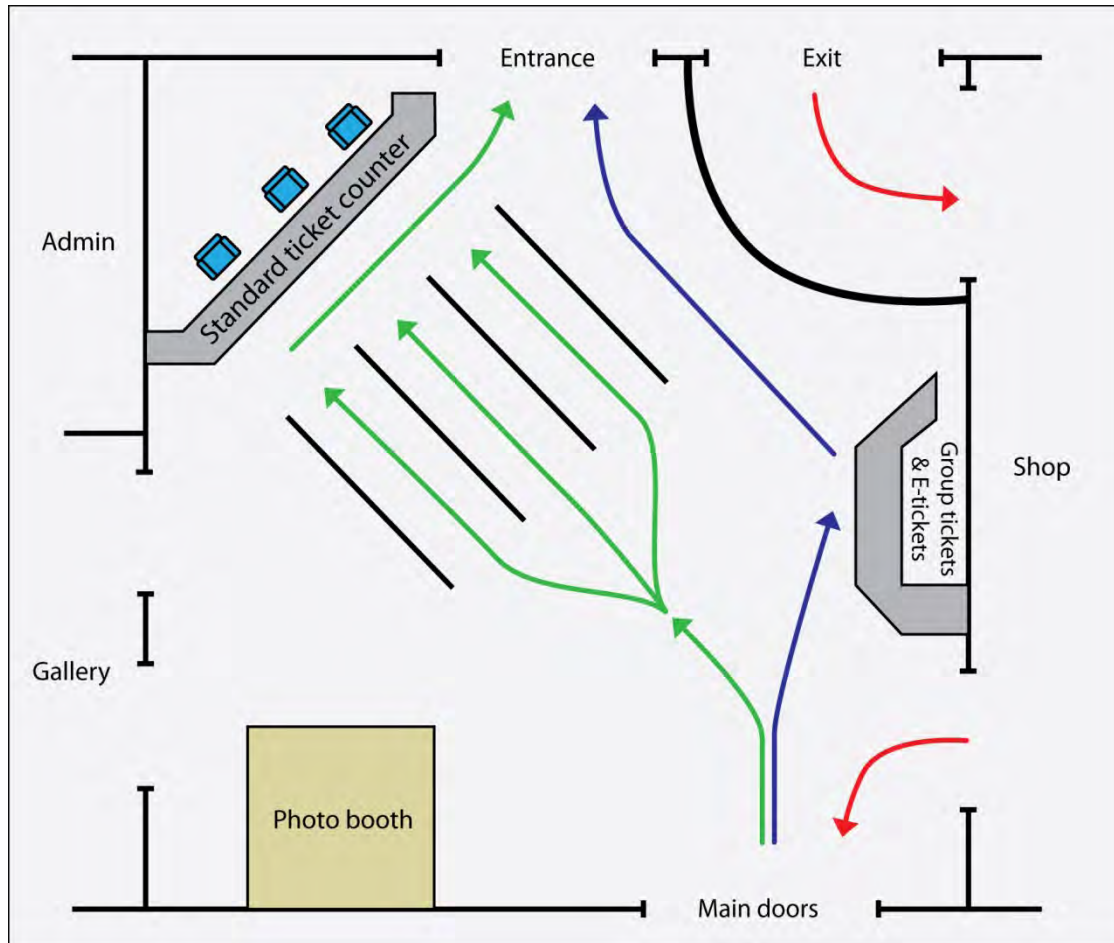


Figure 3

The current layout is focused around the four soft barriers at the centre of the room, forming the three queues leading up to the standard ticket counter. This static counter is staffed according to expected demand. Additional staff is employed to organise the queues when they become longer than the barriers. Another static counter is situated to the right of the entrance, and handles large groups and people with e-tickets.



Figure 4



Figure 5

Process map

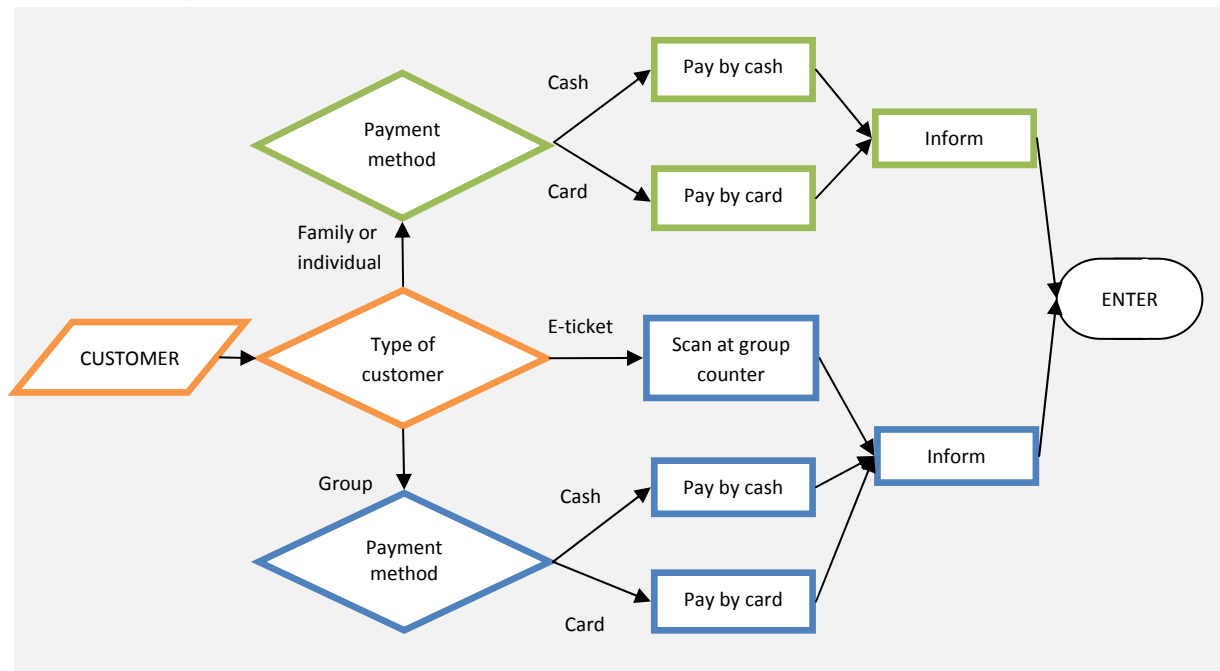


Figure 6

The current process map separates customers into three different groups, according to size and possession of an e-ticket. The payment and information activities are then performed by the cashiers at the standard or the group counter.

Process improvement

Benchmarking

The HSBC bank Princes Street branch was chosen as an example to benchmark against in improving the design of the entrance area in the Edinburgh Zoo. The purpose of the design is to increase visitor interaction quality with the members of staff, improve the flow of customers and create an open space environment. The design of the branch allows offering an excellent level of customer service even during the high volume demand and peak hours. Each customer is greeted by a member of staff according to the brand standard at the reception. There is no desk or any other obstacle between the customer and the member of staff creating a more informal and individual atmosphere. This is the point where customer can receive an answer to any of his/ her query immediately. The number of members of staff available at the reception meet the fluctuations in customer demand having at least one member of staff available at all times and up to 5 members of staff (observed during lunch time on Friday) available during peak hours.

The reception area is equipped with self service machines for private and business money deposits, ATMs for cash withdrawal as well as access points for online or phone banking. The self service machines have user friendly display with simple functions and clear design. Help is always available for the customers, who can ask for assistance any time. If the nature of the query is more complicated or private and cannot be resolved by the member of staff at the reception, the customer

is given a ticket number with an estimated waiting time and is sent to the waiting area which is located on a different floor and has slower paced environment.

The elements that can be adapted from the HSBC example are the efficient design of a high customer turnover space and positive use of technology within that environment adding value to the customers overall experience. In addition the members of staff have more time available to provide an individually tailored service to meet and exceed their expectations.

New layout

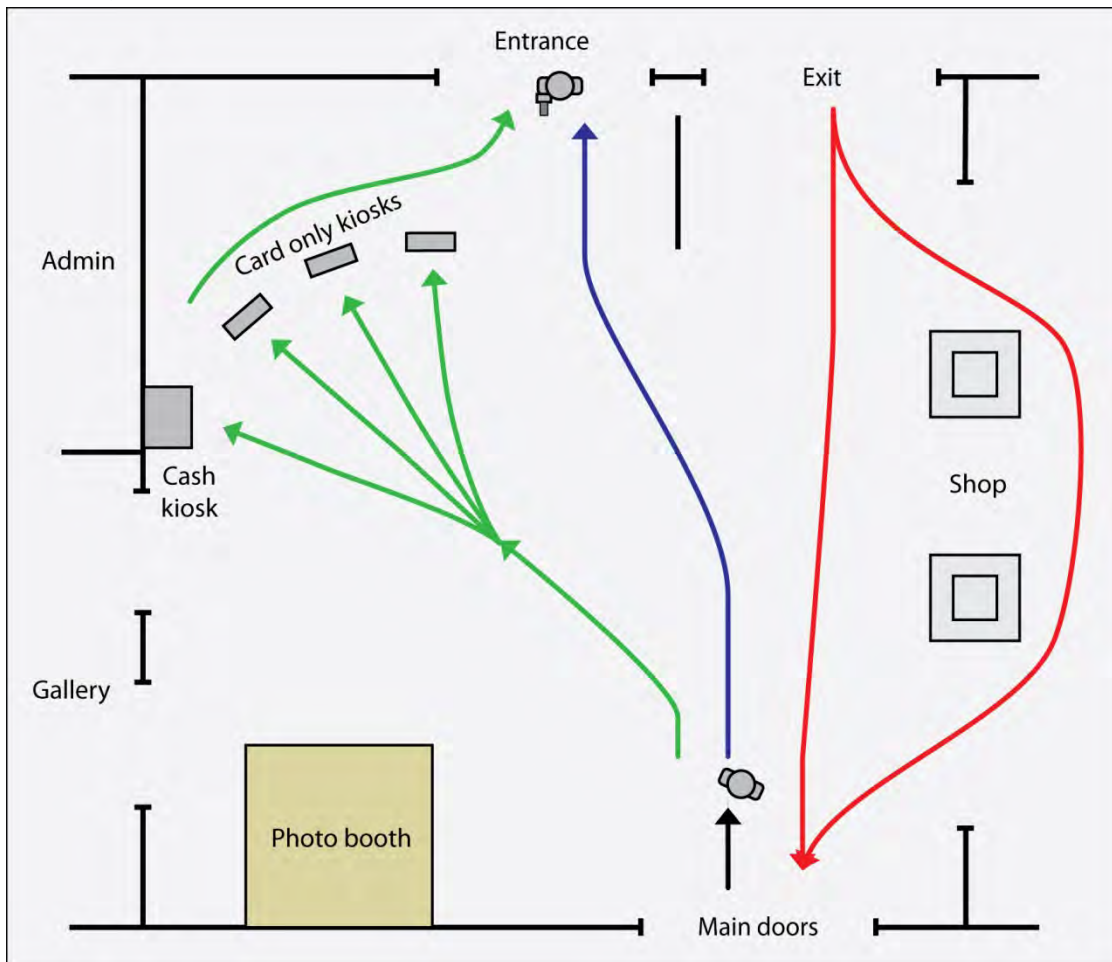


Figure 7

As seen in figure 7, the new layout has freed up space and made the entrance/exit area more open. Removal of the group ticket counter has enabled the shop walls to be removed, resulting in better exposure to visitors, better flow and expanded shop floor. Another benefit of this is that the visitors are no longer forced into the shop at the end of their experience, an obvious attempt at generating sales, which for families with children can result in a traumatic ending of the day, dramatically decreasing customer satisfaction. Several customers have complained about this, as in the example from the guest book shown in figure 8. Automatic doors prevent customers from entering through the exit.

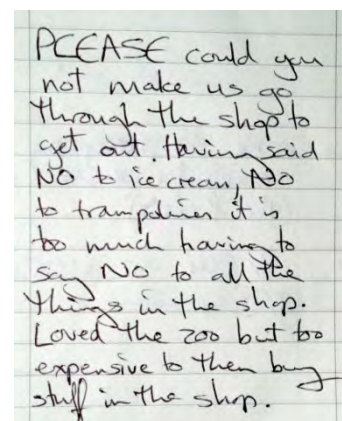


Figure 8

New process map

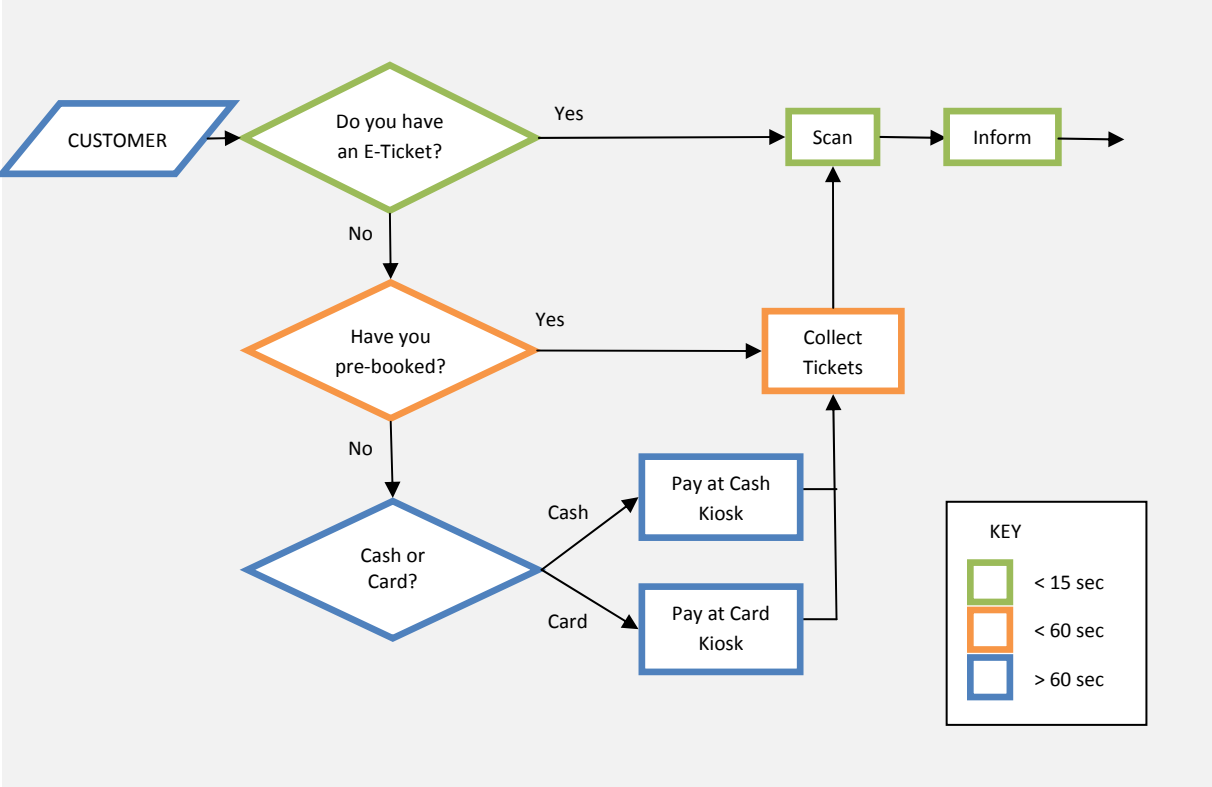


Figure 9

Customer interaction

The first step in the process is meeting journey advisor that greets the visitors depending on the volume of the demand and directs them towards the ticket kiosks for ticket collection or purchase. The journey advisor is a fully trained member of staff that also offers advice as well as guidance on using the automated ticket kiosks; however their main task is to interact with the visitors to seek out what is the purpose of their trip to the zoo. Suggestions can be made about the facilities available including the Hilltop Safari as well as restaurants. If the visitors have their tickets printed they are directed towards the member of staff at the entrance - this should be a flawless and smooth process, these visitors would not spend any time in the entrance area creating more space for the visitors that need to wait.

The concept of the new process is to improve the visitor flow through the entrance area whilst adding more value to the customer experience. The new design allows more time to be spent offering advice to the visitors rather than processing the payments and execute admin duties. So we allocate more staff time to customer service/ customer satisfaction improvement and forward the admin duties to electronic ticket kiosks. When the customer flow is very low, only one member of staff is strictly required in the entrance area, however, two members should be present for the element of security.

E-tickets

Customers are encouraged to purchase and print their tickets online before they arrive, shifting the transaction activity away from the admission process of the zoo. Another important benefit of customers paying online is that the cost of the transaction is lower than by using credit or debit card

in the zoo (Choudhary & Tyagi, 2008) and that the amount of cash being handled by the staff is reduced resulting in better control and security. In the current process, these benefits aren't properly conveyed to the customer and the process has been designed around the card/cash payment inside the entrance hall, with online payment being a hidden alternative rather than the preferred method of payment. The improved process is giving customers an incentive to purchase their tickets online as they can more clearly see the benefits of this.

The Electronic Ticket Kiosks

"Customer- processing technology is being used to give an acceptable level of service while significantly reducing costs to the operation."

(Slack et al., 2007, pp.234)

Introducing new technology in the customer entrance process is essential as technology has an increasingly important role in the delivery of the service. We have introduced "active interaction technology - customer processing technology with which a customer interacts directly" (Slack et al., 2007:235) Our aim was to improve the quality of visitor interaction with the members of staff thus the members of staff will act as intermediaries for the customers throughout the ticket purchasing/ collection process. The design of the interface is clear thus no customer training is needed as the service that the electronic ticket kiosk provides is very simple, it is frequently used as it is similar to any vending machine/ ticket machine and has low variety of focus. These are the three key elements devised by Walley and Amin (1994) that directly affect the level of customer training necessary.

Walley and Amin (1994) argue that a benefit of automation can create more reliable service as the operator-induced errors are absent. The machines provide more consistent level of service. On the other hand the authors state – a perception exists that automated services offer a lower standard of service quality as the nature of this service is more impersonal. Hackett (1990) has argued that there is relatively insignificant cost reduction through automation, however, considering the technological development and the increased availability of technology this argument can be dismissed. Thus we have recognized that a combined method of automated service in addition to a human-to-human service would be the best practice for this particular process.

We have identified that at least three ticket kiosks are necessary to meet the demand, and have suggested an investment in four such devices to decrease the risk of failure. Emergency battery power and GSM-technology would ensure functionality in the event of a power failure. Pre-booked/online ticket collection is possible in all ticket kiosks.

The Interface

When designing the interface, the technical abilities of the many different users of the zoo must be taken into account. Graphical user interfaces with touch-screens are most suited to imitate a physical keypad and have the benefit of being dynamic, as opposed to a static keyboard. However, to



Figure 10

avoid confusion, the interface should be limited to the minimum of pages required to perform the payment or collection. The user can select the language of preference at the beginning of the process. The cost of supporting multiple languages is almost negligible and makes it easier to use for foreign visitors, adding flexibility. Another added feature of the ticket kiosks is an automation of discount rates. As the customer selects the number of people who the ticket is valid for, the discount is displayed in a separate box, and is automatically deducted from the total price. This way, a customer needs no knowledge of the discount in order to benefit from the reduced rates, and individuals, families or groups can use the same interface to acquire tickets. Displaying the discount increases the visitors’ awareness of the benefits of sharing the experience with friends and family.

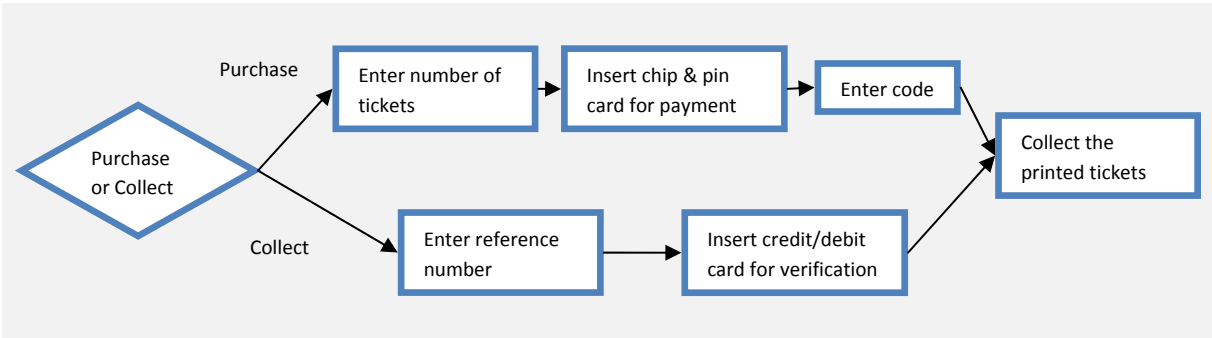


Figure 11

Payment

Only one of the three electronic kiosks needs to have cash as a payment option, as the sum being paid to the zoo is relatively high, the use of debit cards is growing by 10% annually (UK Payments Administration Limited, 2009) and is thought to overtake the use of cash in the UK this year (Jenkins, 2010). Investing in high speed broadband card terminals as a part of the machines is essential to ensure the speed and perceived quality of the payment process. This investment can be justified by the reduced risk of theft and reduced costs as a result of less cash handling.

Scan and Enter

A member of staff validates the tickets with a portable laser scanner and offers further advice to the visitors. The quality of the advice depends on the demand volume, however the member of staff should always highlights the main event of the day. If required, more staff can be equipped with scanners and stand at either side of the door to ensure a swift flow. By scanning the ticket a database of visitors is created that offers comprehensive information about the number of visitors, the demand fluctuations each hour and loyalty to the attraction. The main purpose of this database is to produce comprehensive reports indicating the number of staff needed at a specific time during a business day. This allows a better staff allocation in the zoo meeting the demand needs when necessary.

Conclusion

Performance Objectives

Speed

With the separation of the purchasing activity from the information activity, we have ensured that the flow of customers will be increased when demand is high. Automation has sped up the payment activity and allows for more customers to be processed at no extra cost, apart from the initial investment in technology.

Quality

The members of staff have been moved from behind a counter and closer to the customer, enabling better interaction and communication. Their focus is now on providing information and enhancing the customer experience rather than taking payment, resulting in a better quality perception.

Dependability

Four electronic kiosks with backup battery and GSM-technology ensure functionality in the event of failure. Only one member of staff with a scanner is strictly needed to run the process, thus resulting in less impact of absenteeism. Centralised database information can help forecasting demand and ensure proper staff levels.

Flexibility

Multiple language support and a dynamic interface on the ticket kiosks enhance the variety in the purchasing activity. More mobile members of staff and an open environment can more easily be adapted to changes or special occasions.

Cost

The running costs of the admission process have been reduced, as less staff is needed to operate the process, however, to ensure the quality of the process, it is recommended to employ more than the minimum amount of staff required.

There are probably many processes in need of improvement in the zoo, and RZSS should aim to continuously review their priorities and investments. Seeing how this improved process have had positive impacts on all the performance objectives, the increased overall quality would result in higher customer satisfaction, which again would contribute to increased visitor numbers, thus more funds for charitable activities.

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Appendix

We declare that the work has been composed by ourselves and any use of other authors' work has been acknowledged and referenced appropriately.

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