# COMPUTER AS AN ANALYSIS TOOL
# OPIM 201

M-SPORT

PRESENTED BY
ANG YUN YUN CHRISTINA
S8436424Z
JAN STYPULKOWSKI
G3507760Q
KOH MING ZHEN
S8340123J
MURNIYATI BINTI NORDIN
S8317073E

## 1) PROBLEM STATEMENT AND STUDY JUSTIFICATION

M-sport (http://www.m-sport.pl/), a small guesthouse in Poland, Warmia is a leisure investment by the owner. The guesthouse lacks a formalised account and management system. The main problem is that there are no computerised records of the customers and financial situations. Given that the owner has plans for expansion, it is important to clarify the current system, even if it might be a leisure investment. As a small hotel, it is important for M-sport to have easily accessible records of the guests. Most importantly, M-sport needs to keep track of present bookings to substantiate the need for more staff and the expansion plans.

At the owner's request, the project's focus has been slightly shifted to look at how a small guesthouse can keep track of its accounts and establish a simple computerised booking system.

## 2) PERFORMANCE MEASURES AND EVALUATION

Upon exploration of the management system at M-sports, we find that there was a lack of formalized account. The current system is a simple paper booking form, which may not project a very professional image to the customers, especially if M-sports intend to expand.

Booking of rooms and **rental of equipment** requires the staff to flip through pages of the book in order to find out the availability of the room or equipment. Checking in requires the staff to double check the room reservation book before the customer is allowed to check in. This may increase the check in time inconvenience the customers on their holiday. **Operational costs** were not recorded by the management at M-sports. Instead invoices were filed and had to be constantly looked up when financial decisions had to be made.

As such we proposed a comprehensive system that allows the management to do away with the pen and paper problem. The system will enable the staff to handle reservations, guest arrivals more effectively and assist them in making financial decisions.

## 3) DATA COLLECTION AND ANALYSIS

Information on room rates, equipment rates and meal rates were obtained from the M-sport website. Other information such as number of rooms, number of equipments, staff information and operational and maintenance costs of the guesthouse were obtained from the owner through email exchanges. The data collected were used as **inputs** for the revenue calculator model.

Since there had not been a formalized system at M-sports over the years, it was not possible for us to obtain real customers' data. Instead we made up a **rough database** to build on and to facilitate the testing of the models.

## 4) DECISIONS AND ANALYSIS

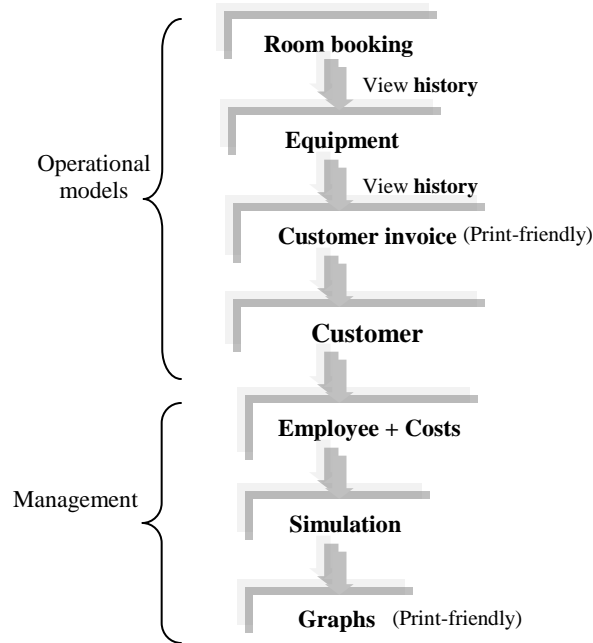In our proposal, we suggested making the following analyses for M-sport.

1) The spending patterns of the guests and how they vary seasonally
2) The income statement from the sports equipment loan
3) The occupancy of rooms and equipments and the schedule for hotel employees
4) Financial Analysis on income statement and projection for expansion plans

However, on further exchange of information with its owner, we discovered that, due to the lack of formal records, it is rather unrealistic to do historical analyses. To solve this problem, we build **operational models**, which can help the owner do his own analyses when there is sufficient historical data. As he depends on a small core pool of permanent staff and other help he engages when needed, the computerized operational system will indicate the current situation to adjust his labor needs.

For his financial concerns, we set up a system, which enables him to **forecast** for the coming month, based on the bookings and the changes he wants to make to the input figures. Graphs will be linked to the output data to enable him to help him visualize the parts of his operations to which the revenue and the cost can be attributed.

## 5) MODEL SKETCHES AND MODEL LIMITATIONS

Below is a flow chart which shows the general sequence of the flow of our various models:

Operational models:
- **Room booking**
  - View **history**
- **Equipment**
  - View **history**
- **Customer invoice** (Print-friendly)
- **Customer**

Management:
- **Employee + Costs**
- **Simulation**
- **Graphs** (Print-friendly)

ROOM BOOKING MODEL

The room booking model allows you to

(i)     book rooms in advance

(ii)    show you who booked it and

(iii)   display the occupancy of each room at your chosen date.

**Assumptions of the model**

Check- in and check-out times are assumed to be between 1 to 6 pm daily. When a room is checked out of in a particular day, it is deemed to be empty that night. This means that it will be shown as unoccupied on the table.

**Tools used**

This model makes use of the **IF**, **ISNA** and **VLookup** function to display the guests' names (stored in the reservation worksheet) in the table. Macros are also recorded to run the system to simplify the procedures for the manager.

When a guest walks into the hotel or calls to make a booking, the manager on duty that day will first enter the suggested date in the input cell to check the **availability** of the rooms. To book a room, the desired date and the time are entered together with the guest's name. When the **booking button** is clicked, a macro runs to cut and paste the selected cells into the respective rooms so that the database can be updated and sorted automatically, for the vlookup function to run. The difference in the time of booking helps sort the check-in/ out time when Vlookup is used. Unoccupied rooms will be validated to appear in purple.

To assist the manager to keep track of the guests who are currently staying in the hotel, a current status of the room can be updated through the **check in button**. This table is also linked to the customer invoice, enabling the manager to look up any guest's details from the list.

**Limitations of the model**

The model has enough room to accommodate only 6800 bookings, which implies that manual clearing of the database still has to be administered regularly. Also the checking of room occupancy depends on the manager on duty; the model is unable to show if there is overlapping of booking slots.

CUSTOMER INVOICE AND DATABASE MODEL

The customer invoice model allows you to calculate

  (i)      accommodation costs,

  (ii)     meal costs,

  (iii)    equipment rental costs and

  (iv)     total cost of stay.

The information from the customer invoice is then automatically transferred to the customer database model. Additional customer information can be added before updating the customer database.

**Assumptions of the model**

No assumptions were made for this model.

**Tools used**

**Validation** was used for the invoice. The name entered in the invoice has to match the names recorded in the room booking. Index was used so that the room number, date checked in and date checked out can be automatically shown on the customer invoice. The equipment rental hours are also automatically shown in the invoice in which the calculations of all the hours spent on the various sports enjoyed by the guests are made in the 'all stuff' sheet involving the use of if, count-if and sum functions. The number of meals is the only input required here. The total amount spent by the guest is then automatically calculated with reference to the reference tables.

The owner can easily change the rates at the guesthouse by changing the amount in the reference tables.  The customer invoice will instantly register the new rates. Information from the customer invoice is automatically updated to the customer profile. When the **"Update database**" button is clicked, a **macro** is activated which cuts and pastes the value and number format into the customer database.

**Limitations of the model**

The model can only prepare one customer invoice at a time and update the database one customer at a time.

EQUIPMENT BOOKING MODEL

The equipment booking model allows you to

    (i)      book equipment in advance,

    (ii)     shows you who booked a particular equipment and

    (iii)    display the booking of the equipment for the next five days.

**Assumptions of the model**

Equipment rental is assumed to be between 7am to 11pm daily. Each rental slot is one hour and each slot begins at the start of each hour. The rental of equipment is assumed to

be made on the day of activity itself and booking can be made only up to five days in advance. Each day after the last rental slot at 11pm, the user has to update the sheet in order for the equipment rental history to register the correct date of who rented which equipment on that particular day.

**Tools used**

This simple model does not make use of any complicated function to work. However, **macro** is recorded to update each day's booking with the correct date and to show 'today' as the default for the first part of the renting sheet.

When a stay-in guest approaches the staff for equipment rental or booking, the staff on duty will first check the **availability** of the equipment. To rent or book equipment, the staff just has to enter the guest's name into the respective timing slots desired by the guest. There is no limit to the number of slots each guest can take for each equipment per day. At the end of the day (after the last rental slot at 11pm), the staff can **transfer** the day's rental details to another location (all stuff page) and shift the next day's data to today's section by clicking on the "**End of day update**" button. Hence, every morning when the staff on duty operates the model, equipment rental shown on the database reflects the correct booking made for that day.

**Limitations of the model**

The model has enough room to accommodate only 3120 days of equipment booking, meaning that the database history has to be cleared regularly, or to shift the equipment history they have at hand to another location. Similar to the room booking model, this model also depends on the staff on duty because the model does not prompt you when there is overlapping of data.

EMPLOYEE AND COST SPREADSHEET

The employee and cost spreadsheet allows you to keep track of

    i)      the employee costs

    ii)     and the maintenance and operational costs.

Figures on the spreadsheet can be amended easily, according to the seasonality of the business or the increased booking in the guest house. Operational cost can also be adjusted if the owner senses that some savings or additions need to be made. In turn, the input data is linked to the operational revenues calculator model.

OPERATIONAL REVENUES CALCULATOR MODEL

The operational revenues calculator allows you to perform calculations in

  (i)      changes in rates of the guesthouse facilities,
  (ii)     changes in ratio of meals per person,
  (iii)    changes in equipment and lessons spending per person and
  (iv)     changes in maintenance and operational costs and find out the costs, revenues and financial outcome of the simulations.

This model is based strictly on **the immediate past figures** (past month and year). The reason for limiting the time period is that this model is a very simplified one, meant to act as a calculator for the owner. It does not take into account the limitless conditions that could be changing in Poland's business environment. Hence the model simply allows the owner to calculate the outcome of scenarios he wants to test.

**6) SCENARIOS AND SENSITIVITY ANALYSIS**

**Room Booking: When a customer makes a booking but fails to check in on the day**

When a booking is made, the system is programmed to show who is occupying which room. Hence if a booking had been made, regardless whether the room is actually vacant, the room appears to be occupied on the table. This can mislead the manager to think that there is a full house when there are still vacancies. To solve this problem, another table is drawn up to keep track of the check-in guests. When a guest who has booked in advance comes to M-sport, he will just be checked in. If it is a walk-in guest, then both the booking and the check- in will have to be done.

## 7) RESULTS AND IMPLICATIONS

**Simulation outcome**

If the output of the simulation is negative, the owner can take a look at the graphs plotted according to the figures calculated by the model. By looking at the segments of the **pie charts,** he can decide what costs he wants to reduce (based on the sizes of the pie). When there are profits are coming in, he can also check for the segments from which the revenue is coming from and analyze how he can use this knowledge in other areas of M-sport.

## 8) LESSONS LEARNT

From this project, we realized that seemingly complex administrative problem can be solved with simple excel functions. Contrary to the typical thought that Excel is a computerized function and therefore is rather rigid, we found out that it actually requires a lot of creativity. For instance, we had initially used some models we had learnt without much adaptation, only to realize that it was completely different from the solution we required. We had to think hard of permutations of steps to make it work. By the time we had completed some parts of the models, we had also realized how the existing parts were lacking in capacity. Some of these we improved, some unsolved ones became limitations.

Although the project had taught us the functionality of the technical skills we were taught, we gained more from the soft skills we became equipped wit after the project. Time management, brainstorming skills and small group dynamics were some of the interesting learning points we took home. In particular, the problem solving procedure was valuable due to the rigorous thinking process involved. At the end of the day, we achieved more with the project than we had thought of before embarking on it and honestly, we have indeed moved out our comfort zone.

## 9) CONCLUSION

The **operational aspect** of the models, which includes the easy-to-use customer database, reservation database, room booking system and equipment booking system, will enable M-sports staff to run the guesthouse in a more organized manner as all the booking

information is stored in the same file.  Apart from providing more convenience to the staff, it also allows historical data to be stored for further analysis.

The **managerial calculator** can assist the owner to adjust his expansion plans with valuable input data from the recent guest booking information. The aim is to provide convenience as well as useful visuals to aid in his managerial decisions.

## 10) MEETING LOGS

| Date | Time | Venue | Attendance |
|---|---|---|---|
| 29 September 2004 | 7pm – 9pm | Food Haven | Christina, Jan, Ming Zhen, Murni |
| 7 October 2004 | 1pm – 4pm | Biz L1 GSR 9 | Christina, Ming Zhen, Murni |
| 13 October 2004 | 2pm – 3.15pm | Raffles L4 GSR 14 | Christina, Ming Zhen, Murni |
| 20 October 2004 | 7pm – 9pm | Ficus Bistro | Christina, Jan, Ming Zhen, Murni |
| 30 October 2004 | 1pm – 4pm | Acct L6 GSR 7 | Christina, Jan, Ming Zhen, Murni |
| 02 November 2004 | 6.30pm – 3am | Biz L2 CR4 | Christina, Jan, Ming Zhen |
| 9 November 2004 | 5pm – 10pm | Business Lobby | Christina, Ming Zhen, Murni |

## 11) CONTACT DETAILS

Kierwiny 48, 11-106 Kiwity

+48 601 79 09 79 (English, German, Polish)

info@m-sport.pl

| | | |
|---|---|---|
| Ang Yun Yun Christina | 91517181 | christina.ang.2003@business.smu.edu.sg |
| Jan Stypulkowski | 94861435 | stypulkowski@o2.pl |
| Koh Ming Zhen | 97599625 | mingzhen.koh.2002@business.smu.edu.sg |
| Murniyati Binti Nordin | 90477172 | murniyati.2002@business.smu.edu.sg |