



Case description

About the Case: Duif and Duinpan

The island of Terschelling is very popular among tourists. More than 1 million tourists visit the island and most of them stay multiple nights. There are a few hotels and boardinghouses among which Duif and Duinpan – both the property of the Cupido family. They have managed both hotels successfully for over 30 years now –probably because of the location and the informal atmosphere. The fact that tourists keep coming back is living proof of the pleasant service.

Though business seems to go well, the Cupido family wishes to reorganize their business. Not only the wallpaper and decorations on the walls need to be 'updated' but the whole business needs a more thorough modernization. Automation is a part of that. The family members do not have any experience in automation and the administration in neither of the two hotels has been automated.

Currently, the PC at Duinpan is only used to print simple letters using Microsoft's Office. Tasks to be automated are managing reservations, checking in and out, invoicing, correspondence, and ordering. Automation should yield room occupancy figures of both hotels as well. Currently all this is done by phone and fax and on paper, planning boards and a card-index box.

Hotel Duif is managed by Cupido Sr and Hotel Duinpan by Cupido Jr. Mr. Cupido Sr has no computing skills, Junior has gained quite some computer experience at the University of Hotel Management and he is technically gifted.

The Cupido family asks you to automate the administration of their hotels. It is your task to formulate a concrete plan. They wish to receive an offer with a possible solution - explain which processes can be automated and which means are necessary: time, funds, manpower, training, et cetera. Make a solid plan, which could be realized.

Firstly the family wishes to have an information system to manage the reservations, checking in and out and invoicing for both accommodations. Secondly they wish to automate the registration of the use of facilities like the restaurant, bike rental etc . Thirdly they would like the system to be able to produce management overviews.

Hotels and operational management

Both accommodations are located on the island of Terschelling: Duif on the western part of the island and Duinpan on the eastern part. Duif is mostly used for the elderly and families without children. For these two groups they have the appropriate facilities.

More Cupido family members are active in the organization: husbands, wives and cousins. In all the hotels employ 12 regular staff (reception, bar, kitchen chambermaids). They are employed by the Cupido family and work at both hotels. During high season both hotels use standby workers. Occupancy at Duif is 70%, at Duinpan 75%.

The Duif Hotel

This hotel has 30 rooms, on the ground, first and second floor. There are 20 double rooms and 10 single rooms. All rooms have en-suite facilities: a bath, shower, toilet, television and minibar. The hotel is wheelchair accessible and suitable for the elderly.

Double room rates are €90 a night (single or double occupancy) and single room rates are €70 a night. The Duif Hotel does not have any special offers, except for short weekend breaks – which means that the guests arrive on Friday and leave on Monday morning. Short weekend breaks rates are €500 for a double room (double occupancy) and €300 for a single room. Prices are based on full board.

Which facilities that have to be paid for and appear on the invoice does the Duif Hotel offer?

- Restaurant
- Bar
- Bowling alley (€20 per hour)
- Sauna (€10 per visit)
- Bike rental (€5 a day per bike)

The Duinpan Hotel

This hotel is bigger than the Duif Hotel: there are 40 rooms on the ground, first and second floor

There are three different types of rooms:

Double room (15): €100 per night

Triple room (10): €130 per night

Family room (four-bedded room) (15): €170 per night

Children under the age of three are free. Travel costs are supplied at €10 a night. Like the Duin Hotel the Duinpan Hotel has no special offers except for short weekend breaks, which means that the guests arrive on Friday and leave on Monday morning. Prices are based on full board.

Double room: €500 per night (double occupancy)

Triple room : €700 (triple occupancy)

Family room : €900 per night (full occupancy)

Which facilities that have to be paid for and appear on the invoice does the Duinpan Hotel offer?

- Restaurant
- Bar
- Bowling alley (€20 per hour)
- Sauna (€7 per visit)
- Bike rental (€5 a day per bike)
- Tennis courts (€20 per hour)

Procedures

The following procedures need to be automated:

1. Reservations (see the reservation form enclosed)
 - a. A guest either calls the reception desk or sends a fax
 - b. The reception checks the availability of rooms on the planning board and updates the board (see explanation further on)
 - c. Data concerning the reservation is written down on a reservation form (see examples)
 - d. The reception sends a copy of the form to the guest and files the original.

2. Checking in and out (see reservation form enclosed)
 - a. The guest arrives at the hotel
 - b. The receptionist looks for an available room in the card-index box, hands over the room keys to the guest and writes down the room numbers on the reservation form.
 - c. The rooms concerned are set to 'occupied' in the card-index box
 - d. When the guest checks out, the status of the room in the card-index box is changed into available. This is also done at the reception (more information later on).

3. Registering additional costs of the use of facilities like restaurant, bar, mini bar, bowling alley, sauna, bike rental, tennis court etc.
 - a. If a guest, for example, had dinner in the restaurant, the bill (with date and prices) is given to the reception. The guest receives a copy of the bill too, of course.
 - b. If a guest uses the minibar, it will be registered by the maid in the morning , She passes this information on to the reception. It is also her task to restock the minibar.

4. Calculating the invoice
 - a. When a guest checks out, he/she receives the fully specified invoice.
 - b. If he/she has used any of the facilities, they will be stated on the invoice.

5. Cancelling a reservation
 - a. There is no specific cancellation procedure: the reservation form is simply thrown away.
 - b. If needed, a little note is placed 'somewhere' for someone to change it on the planning board.

Furthermore the Cupido family would like to get more management information in a simple way:

- Guest data (for mailings)
- Overview of the average room occupancy
- Overview of the use of facilities
- Etc.

Question

How does the reception know whether rooms are available in a certain period? Currently they work with a planning board for reservations and a card-index box for the rooms – it

seems to work well. However, the planning board is pretty complicated and not everyone knows how to read and use the board. Moreover, the two hotels cannot see each other's reservations.

The reservation form is filed.

Reservation procedures for Duif and Duinpan

Below you can read transcript of a conversation of an information analyst (Samira) with an employee of the Duif Hotel (André). This has been added because during the IP-project there is no time to arrange a “real” meeting.

Conversation, dated May 12 2004

Samira asks André to explain exactly how André makes the reservations and assigns the rooms.

“Well,” says André, “I have a card-index box and a planning board: the planning board for the reservations is used to check the availability of rooms – the card-index box is used for checking in and out.

If a guest wishes to make a reservation, I fill in a reservation form. I fill in name, address, place and phone number of the guest; the date of reservation and arrival; the expected date of departure – and also the type and number of rooms the guest prefers.

The planning board shows the reservations and availability for each type of room in that time period. Then I update the reservation numbers on the planning board. When all the rooms are occupied due to reservations, I must disappoint the guest. I always ask whether they would accept another type of room, or a room at the other hotel. If they are also interested in the other hotel I tell them to call the hotel themselves. This is all as regards the reservations.”

“And here you can see the card-index box for all rooms. If a room is available, a little pivot is displayed on the card of that room. When someone checks in, I remove the little pivot from the room card and I fill in the relevant guest data. I also search for the reservation form and I fill in the room numbers: I write down the dates of arrival and departure on the card from the card-index box. When the guest checks out, I place the little pivot back on. That’s all.”

Room Card Duif		
Room 8, double room		
Name	Arrival	Departure
R. Wachters	3-4-2004	6-4-2004
N. Osikawa	8-4-2004	9-4-2004
M. Wielders	11-5-2004	13-5-2004

Figure 1a

Room Card Duif		
Room 3, single room		
Name	Arrival	Departure
A. Oskam	3-4-2004	7-4-2004
R. Borel	17-4-2004	22-4-2004
A. Brinkgreve	1-5-2004	3-5-2004
M. Sjowall	5-5-2004	7-5-2004

Figure 1b

“As you can see, today is May 12 and there are guests in Room 8. Room 3 has no entries and has the little pivot at the top right hand corner – this means that the room is available. There are reservation forms that go with this example from Ms Wielders who is here with her children. She and her daughter both have a single room. Her son and his wife are in a double room (no. 8). All reservations are placed in the name of Ms Wielders, because she placed the reservations.

The second example concerns the planning board (see figure 2). You can see the number of room reserved for on a certain date. Do you understand that on May 7 2004 there were just one single room and ten double rooms available?

Planning board Duif					
2004	10 x single room	20 x double room		10 x single room	20 x double room
May 1	7	13	June 1	9	19
May 2	8	14	June 2	8	19
May 3	8	15	June 3	8	15
May 4	7	15	June 4	7	15
May 5	7	15	June 5	7	15
May 6	7	15	June 6	7	15
May 7	9	10	June 7	9	10
...	9	10	June 8	9	10
...	9	19	...	9	19
...	...	19	19
etc					

Figure 2

“Yes, I see,” says Samira, “Am I right that the reservations are always for one type of room (single or double) and not for a specific room (number)? Because you seem to determine the room number only when the guest checks in. Why is that? And if someone calls and asks ‘I want room 8,’ what do you do?”

André: “I never determine the room number when placing a reservation. This doesn’t work because then I will have to change things again. Suppose someone wants a room for two nights and I only have room 3 for the first night and room 4 for the second night. Nobody would agree to that. That is why I only assign rooms when people arrive. This always works out well. If I know that someone prefers a particular room I try to accommodate that wish but this is not always possible.

I will explain this more clearly with the following example: Suppose, I have a hotel with 2 rooms and I immediately determine the exact room when I place a reservation. Suppose that on May 30 Ms Bot wants to stay the nights of June 3rd and 4th. Figure 3a shows which reservations there already are for the first 6 days in June. You can see there is a reservation for Mr Jansen for room 1 for 1st and 2nd June and for Mr Hagen a reservation for 2nd and 3rd June. For Ms Bot there is no room available for 3rd and 4th June. However if we move Mr Jonk to room 2 and Mr Hagen to room 1, Ms Bot can be accommodated in room 1. So if we just assign the rooms when someone checks in we never have to make these changes.”

kamer	dag					
	1/6	2/6	3/6	4/6	5/6	6/6
1	Jansen		Bot	Jonk		
2		Hagen		Bot	Wester	

Figure 3a

kamer	dag					
	1/6	2/6	3/6	4/6	5/6	6/6
1	Jansen		Bot	Wester		
2		Hagen		Jonk		

Figure 3b

Samira: “But how do you decide whether you can accept a reservation?”

“Right,” André says, “I forgot about that and that is sometimes the biggest problem of all.

Personally I don’t experience the use of the planning board as hard – I don’t think it isn’t really that complicated, but you need to stay focused when you use it. You must check the planning board with every new reservation, to see if the type of room is available at that time. And of course, when a reservation has been made, the planning board needs to be updated.

Last summer we hired a temporary worker, but the planning went all wrong. I told him to check the planning board whenever a guest wants to place a reservation. But one day someone called and made a reservation for the next weekend and the boy forgot to check the planning board, he only searched in the card-index box (which showed only the available rooms at that moment). On the planning board he could have seen that the weekend was entirely booked, but he didn’t.

When the guest arrived at our hotel, the reception had to deal with an angry guest. Fortunately it was possible to send the guest over to our other hotel and everything was solved. Of course we decided not to let the boy make any more reservations.”

“I now understand the part of reservations, but what happens if a guest checks in without a reservation – he just wants a room for the night?” Samira asks.

“That works the same way as a normal reservation. We check the planning board to see whether there are rooms available and we check which room is free for the night.”

“And what happens when people cancel a reservation?”

“That’s very simple: I just throw away the reservation and I alter the numbers on the planning board for the time period concerned.”

“I see, I think I know enough for now. Could you bring me a cup of coffee, while I check my notes?”

Samira summarizes

- The system must be able to decide whether a request for reservation can be granted and must assign rooms when checking in;
- To decide the possibility of a reservation in a certain time period, the system must check the number of available rooms of the appropriate room type for each day in that time period;
- To assign rooms when checking in, the system must know which rooms of the appropriate room type are available at that time;
- When checking out, the rooms must be set to available again;
- When placing a reservation, only the availability of the room type needs to be checked;
- When a reservation has been placed, the planning board needs to be updated;
- The room numbers are assigned when the guest checks in;
- The room overview – currently the card-index box – only displays the current situation.



Reservation form

Westlanderdijk 21 A
1339 AK West Terschelling
Tel. 05176 7645123
fax: 05178 7645124

Reservation number :
Dealt with by:
Reservation date:

Personal details

Name:

Initials:

Address:

Post code:

Town:

Country:

Telephone:

E-mail address:

Reservation

Date of arrival:

Date of departure:

Accommodation: full board / special offer:

Name special offer:

Number of rooms: x single rooms
..... x double rooms

Rooms assigned (fill in upon check-in)



Invoice

Westlanderdijk 21 A
1339 AK West Terschelling
tel. 05176 7645123
fax: 05178 7645124

Invoice number:
Invoice date:
Invoice made by:

Name:
Initials:
Address:
Post code:
Town:
Country:
Telephone number:
E-mail address:

Accommodation: full board / special offer:
Name special offer:

Number of nights: x single room at 70 Euros
..... x double room at 90 Euros

Extra charges

Restaurant / bar:
Bowling alley / pins alley:
Sauna/swimming pool/gym:
Bicycles:

Sub total:
VAT:
Amount due:

Payment method:



Reservation form

Oostlanderdijk 12
1336 AK Oosterend
Tel. 05176 7645129
fax: 05178 7645128

Reservation number :
Dealt with by:
Reservation date:

Personal details

Name:
Initials:
Address:
Post code:
Town:
Country:
Telephone:
E-mail address:

Reservation

Date of arrival:
Date of departure:

Accommodation: full board / special offer:
Name special offer:

Number of rooms: x double room
..... x triple room
..... x family room

Rooms assigned (fill in upon check-in)

Invoice



Oostlanderdijk 12
1336 AK Oosterend
tel. 05176 7645129
fax: 05178 7645128

Invoice number:
Invoice date:
Invoice made by:

Name:
Initials:
Address:
Post code:
Town:
Country:
Telephone:
E-mail address:

Accommodation full board / special offer:

Name special offer:

Number of nights: x double room at 100 Euros
..... x triple room at 130 Euros
..... x family room at 170 Euros

Extra charges
Restaurant / bar:
Bowling alley:
Sauna / swimming pool / gym:
Bicycles:

Sub total:
VAT:
Amount due:

Payment method:



Reservation form

Westlanderdijk 21 A
1339 AK West Terschelling
Tel. 05176 7645123
fax: 05178 7645124

Reservation number : 3456.....
Dealt with by: *Annie Cupido*.....
Reservation date: 13 - 05 - 2004

Personal details

Name: *Paulusma*.....
Initials: *P*.....
Address: *Lageweg 89*.....
Post code: *1098 PA*.....
Town: *Amsterdam*.....
Country: *Nederland*.....
Telephone: *020 - 1244538*.....
E-mail address: *p.paulusma@hotmail.com*.....

Reservation

Date of arrival: 27 - 11 - 2004

Date of departure: 30 - 11 - 2004

Accommodation: full board / special offer:

Name special offer:

Number of rooms: x single room
1..... x double room

Rooms assigned: (fill in upon check-in) 1.5



Invoice

Westlanderdijk 21 A
1339 AK West Terschelling
tel. 05176 7645123
fax: 05178 7645124

Invoice number: 3478.....
Invoice date: 30 - 11 - 2004.....
Invoice made by: Peter.....

Name: Paulusma.....
Initials: P.....
Address: Lageweg 89.....
Post code: 1089 PA.....
Town: Amsterdam.....
Country: Nederland.....
Telephone: 020 - 1244538.....
E-mail address: p.paulusma@hotmail.com.....

Accommodation: full board / special offer:

Name special offer:

Number of nights: x single room at 70 Euros
3 x 1..... x double room at 90 Euros

Extra charges

Restaurant / bar: 67,50.....
Bowling alley / pins alley:
Sauna / swimming pool / gym:
Bicycles:

Sub total: 270 + 67,50 = 337,50.....

VAT: 64,12.....

Amount due: 401,62.....

Payment method: *cash*



Reservation form

Oostlanderdijk 12
1336 AK Oosterend
Tel. 05176 7645129
fax: 05178 7645128

Reservation number : 3457.....
Dealt with by: *Peter Cupido*.....
Reservation date: 04 - 07 - 2004.....

Personal details

Name: *Janssen*.....
Initials: *Kees*.....
Address: *Ruigedreef 14*.....
Post code: 3811 AV.....
Town: *Leusden*.....
Country: *Nederland*.....
Telephone: 033 - 4657487.....
E-mail address: *K.Janssen@yahoo.com*.....

Reservering

Date of arrival: 24 - 12 - 2004.....
Date of departure: 03 - 01 - 2005.....

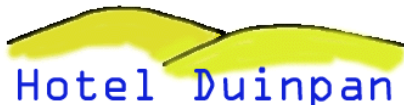
Accommodation: full board / special offer:

Name special offer:

Number of rooms: x 2 double room
..... x 3 triple room
1..... x 4 family room

Rooms assigned: (fill in upon check-in) 2.10

Invoice



Oostlanderdijk 12
1336 AK Oosterend
tel. 05176 7645129
fax: 05178 7645128

Invoice number: 3579.....
Invoice date: 03 - 01 - 2005.....
Invoice made by: Annie.....

Name: Janssen.....
Initials: K.....
Address: Ruigedreef 14.....
Post code: 3811 AV.....
Town: Leusden.....
Country: Nederland.....
Telephone: 033 - 4657487.....
E-mail address: k.janssen@yahoo.com.....

Accommodation: full board special offer:

Name special offer:

Number of nights: x double room at 100 Euro
..... x triple room at 130 Euro
10 x 1 x family room at 170 Euro

Extra charges

Restaurant / bar:
Bowling alley:
Sauna / swimming pool / gym: 10.....
bicycles:

Sub total: 1700 + 10 = 1710.....

VAT: 324,90.....

Amount due: 2034,90.....

Payment method: *credit card (visa)*