THE PAYLIFT CONCEPT

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ABSTRACT

The PayLift concept is based on the fundamental idea that we don't sell elevators but rather charge only for the actual transportation performed. This means users pay according to the user-pays-principle, i.e. only for individual transportation similar to all other means of transportation such as train, airplane or taxi. At present, the investment costs of an elevator facility are off set over the rent and the operating and maintenance costs off set up to 80% over the monthly incidental expenses. The basis for allocation is the floor space of the office or apartment. There is no present provision for allocating costs based on individual use such as for electricity, water or heating. The PayLift concept also provides for individual travel desires – such as single travel, door opening times, type of music, information, etc.- that can be selected by the passengers themselves using an information terminal.

1. INTRODUCTION

This idea was developed because of the continuing drop in prices in all areas of the elevator sector and the future change in customer behavior. The basic concept puts individual passengers in the foreground and takes their individual needs and demands on comfort into consideration. A prototype was developed following extensive market research. The first field testing facilities will be installed in Germany this year.

According to our present studies about 40% of the tenants of an apartment building (up to 8 floors) use the stairs. The reasons for this are the long waiting times, slow elevator speed, unclean cars, agoraphobia in the car, and of course a certain sense of sportiness. For this reason we were forced to rethink our concept of the elevator as a means of transportation.

We knew we had to make elevators much more attractive and carefully consider the individual needs of the passengers.
In particular, the following points had to be considered:

- timely readiness of the elevator
- it must be obvious when the elevator is ready
- the shaft doors must satisfy individual needs
- in the future passengers must be able to select the following options themselves:
- A) door opening times
- B) type of music in the car
- C) car design (realized with lighting)
- D) scent in the car
- E) possible single travel
- F) information or advertisement specially designed for passengers

2. OVERVIEW

Figure 1 shows that the PayLift concept includes the building from the main entrance to the apartment. For this reason the system also functions as an entrance check system with all possible features to take individual and building-specific characteristics into consideration.

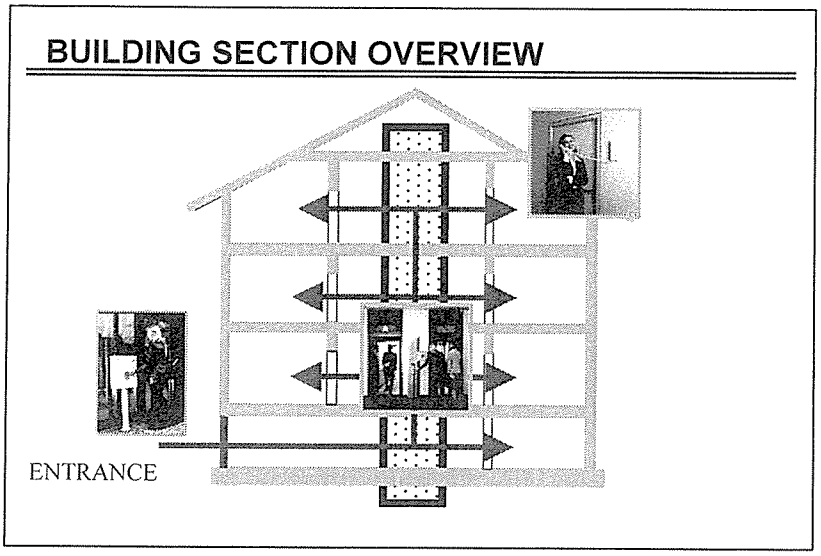


Figure 1

3. ENTRANCE

Tenants possess some physical means or instrument such as a key chain, card, or wrist watch to open the main entrance door. In the future this instrument will be replaced by fingerprinting, voice commands, or biometric data. The instrument used has a number code which is assigned to each user in a data bank. No personal data is stored on the instrument itself.

When the entrance door is opened the elevator control unit receives the order to send the elevator to the main stop. This was implemented to minimize time spent waiting for the elevator. When the car reaches the main stop, an acoustic signal is sounded and the letter "H" for "HERE" appears in the display of the landing control station.

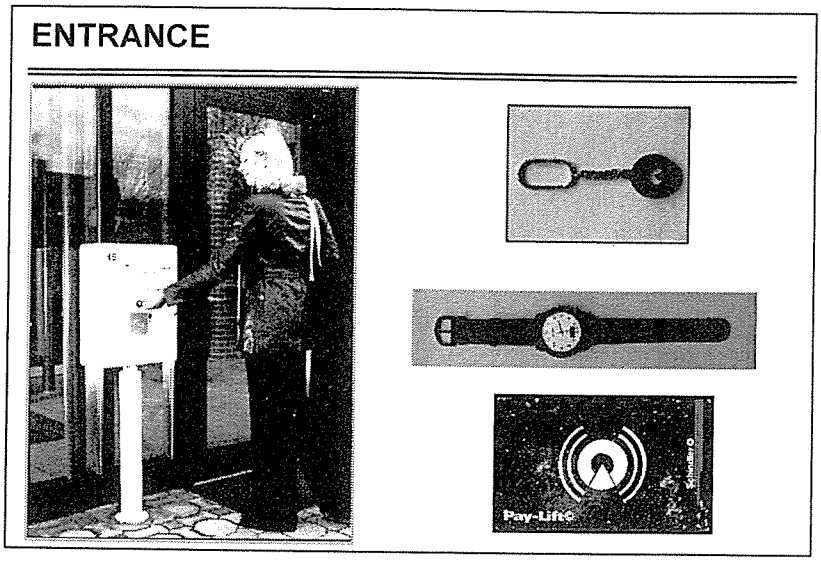


Figure 2

4. MAIN STOP

When passengers arrive at the InfoTerminal they identify themselves with the proper means and are allocated the corresponding car. The destination floor has already been stored for convenience but passengers can of course choose any other floor if it is selected within a certain time-window. All landing terminals used with the PayLift concept are based on the destination call control M 10. Only the ALARM, DOOR OPEN, and DOOR CLOSE buttons and the location indicator are found in the car.

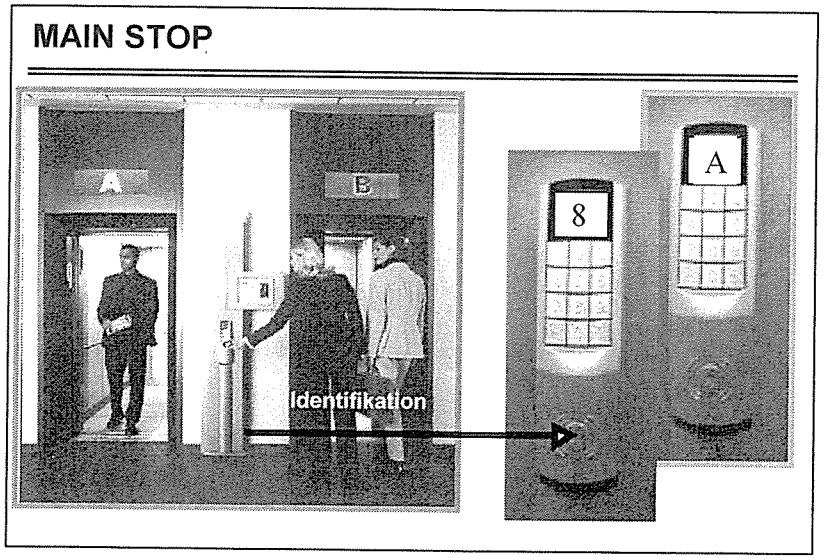


Figure 3

5. INFORMATION TERMINAL

All necessary hardware and software is incorporated in the InfoTerminal although a decentralized arrangement is also technically possible. Since each passenger is a customer with the PayLift concept – not only the building administrator – an interactive touchscreen was provided with which passengers can access and view information or pass on messages to the service center. Thus passengers can check which tariff (cost per trip) is in effect, how much they must pay for each trip, and the current balance of their account.

Naturally one can also assign the trip costs to a cost center or perform statistical evaluations to quantify the frequency of various rental units.
If no passenger uses the touchscreen then advertisements appear on the screen that can be used as an additional source of income. All information can be updated online from the center. The operating status of the elevator facility can be simultaneously viewed in the service center.

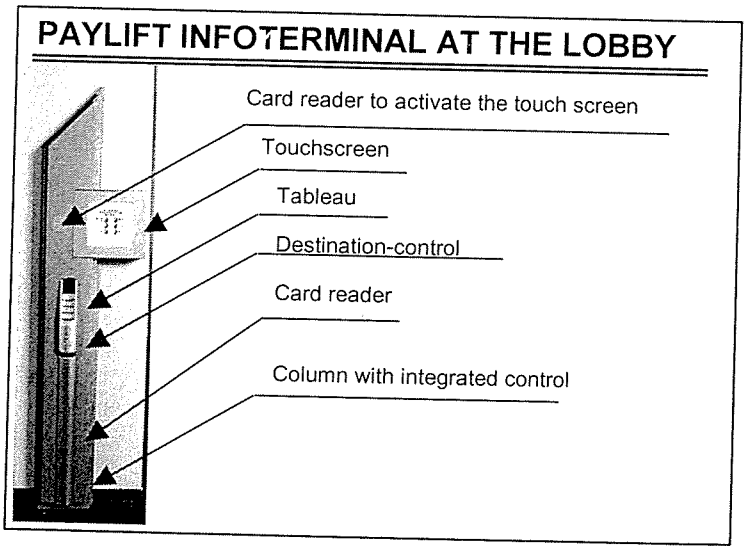


Figure 4

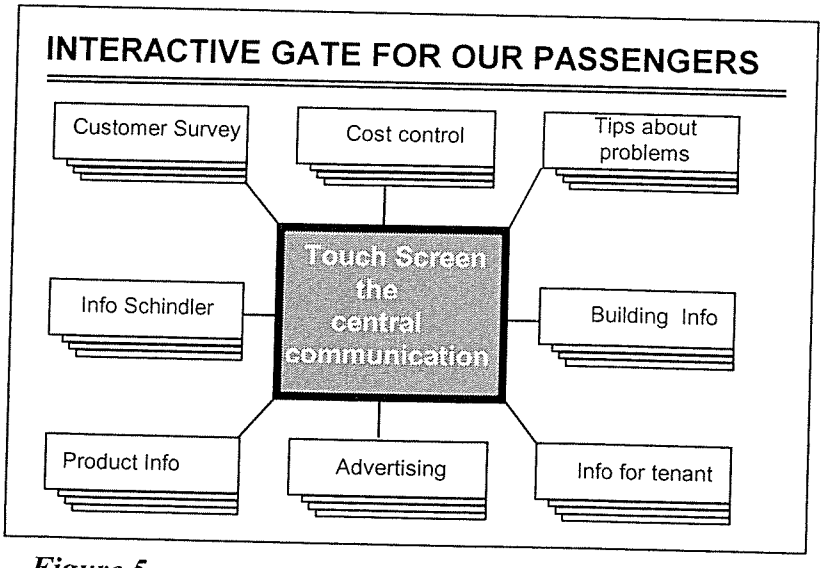


Figure 5

Figure 6

6. FUNCTION OF THE INTERCOM IN THE APARTEMENT

Since no outsider may enter the building or use the elevator without the proper instrument, the apartment intercom was connected to the control unit of the PayLift system. In addition to normal voice contact, the elevator can be sent to the main stop from the apartment itself and visitors can then select the desired destination floor by pressing the corresponding button. Only this button is released for selection for a certain time period. No other floor can be selected. Should visitors wish to leave the apartment, then the same button is pressed without lifting the receiver and the elevator is sent to that floor. Visitors can only select the "0" (main stop) on the control station (all other floors are switched off). They are then assigned a car and are transported.

The same function can be used when a tenant leaves the apartment (Waiting time for the elevator is reduced. The elevator is automatically sent to the floor). Or the tenant can use the proper instrument for the facility. In this case any other floor of the building can be selected within a certain time interval.

All trips are recorded in a data bank. This provides an accurate picture of all traffic movement in a building.

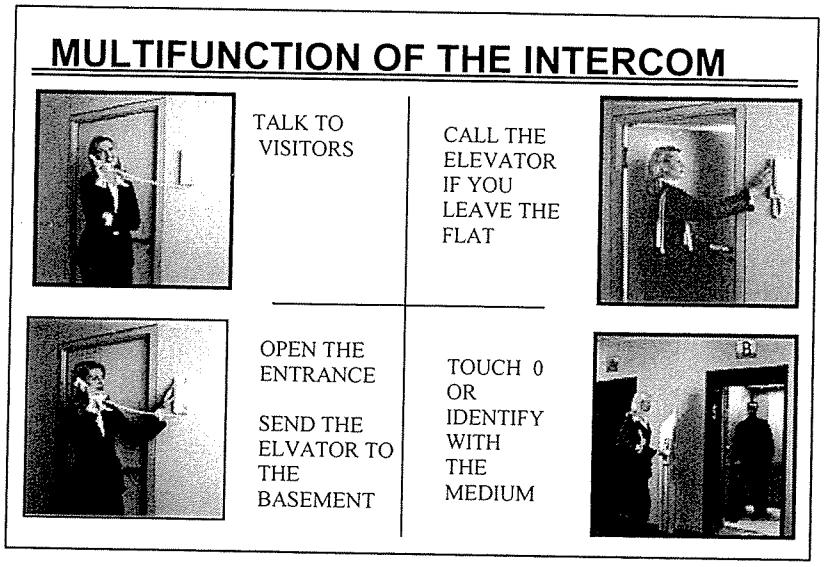


Figure 7

7. COLLECTION

A decisive issue is the question of how payment is to be made for the transportation performed. In comparison to present accounting practices – i.e. for the performance of maintenance – many more bills would have to be prepared and sent. The amounts are substantially smaller and the circle of customers very large. But think about the telephone in your apartment – the telephone companies have the same problem today. From our point of view this issue should not ultimately prohibit future development or implementation.

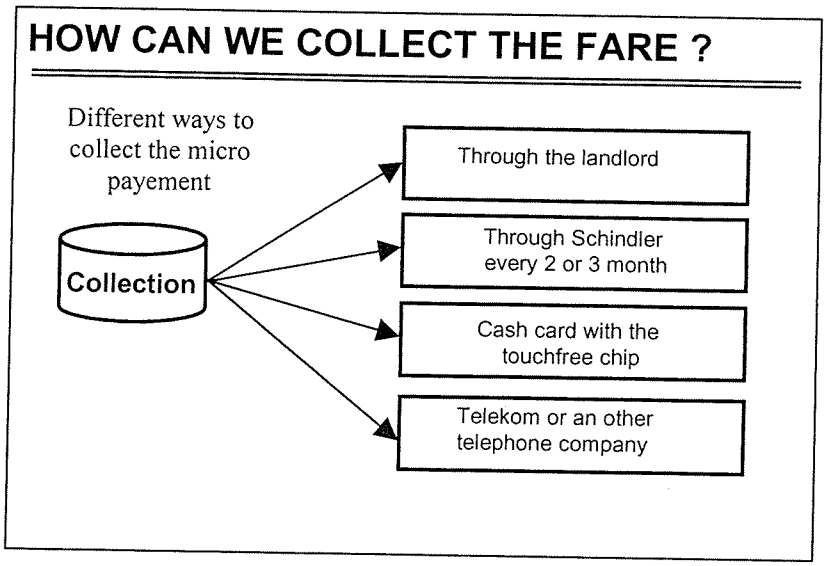


Figure 8

There are four different options available:

- The building administrator assumes responsibility for collection and sends bills to the tenants.
- Schindler sends a bill every three to four months. The data is stored until accounting is performed.

- Payment is made using a future cash card. Cards are debited electronically when passengers hold their cards up to the control station, i.e. the trip is paid immediately.
- The data record is sent to a telephone company, for example, that already sends bills on a monthly basis. The costs for the elevator would then listed on the reverse side.

How much does a passenger pay for a trip?

Since PayLift is a totally new concept, the exact trip cost – which must not exceed an amount acceptable to the passenger – will be accurately determined during field testing of the facility.

The knowledge obtained from market research in connection with advertising revenue has caused us to be optimistic.

We currently have elevator facilities in our portfolio that could be operated more economically using the PayLift concept.
The number of trips is, of course, a main indicator of the economic viability of this system.

8. THE PERSONALISED SHAFT DOOR

Since more and more individual customer demands are to be expected in the area of shaft-door design, a projector was developed that allows 40 different designs to be projected onto the shaft door. The pictures are first modified using a computer to obtain a perfect picture after enlarging 80 times. The single-frame projection times of the images can be set using a remote control. The projected images could provide information, a design, or an advertisement.

With the PayLift concept it is possible to show each passenger the series of images they desire because tenants are identified as soon as they enter the building. Passengers leaving the elevator are not blinded by the images because the projector is switched off the moment the door is opened.

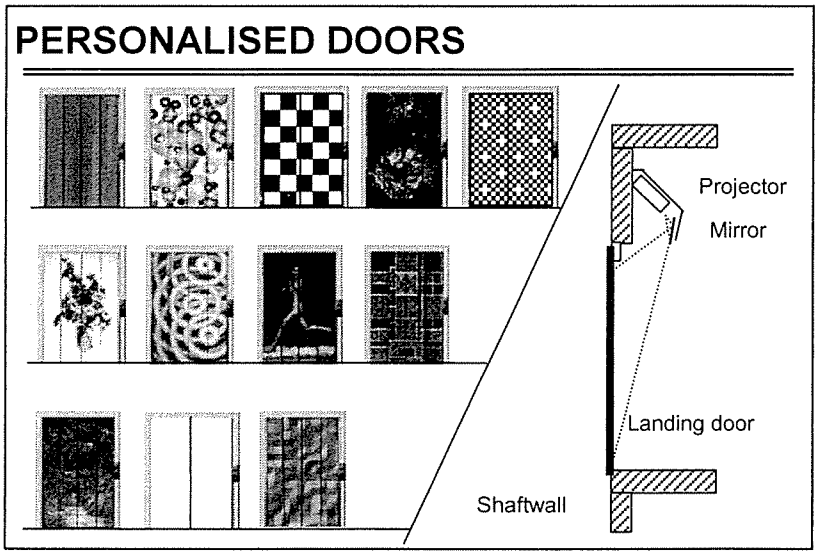


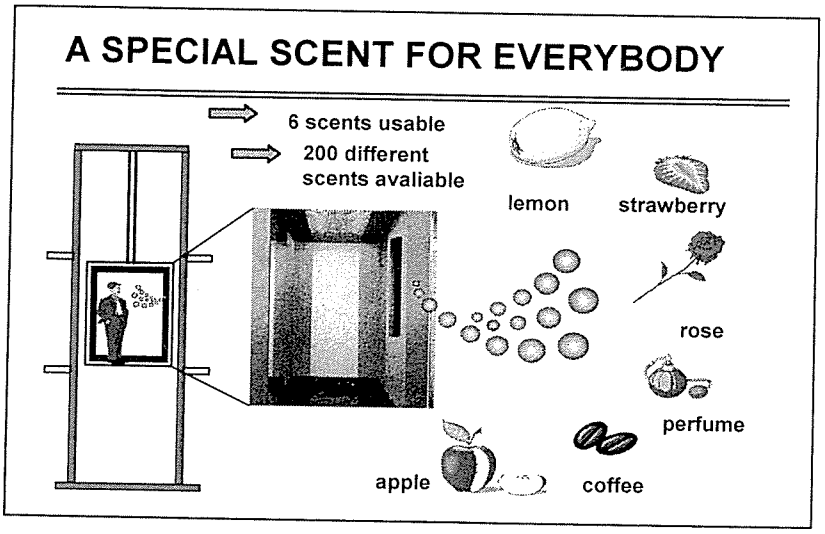
Figure 9

9. AN INDIVIDUAL SCENT FOR EACH PASSENGER

The desire for fresh air or a pleasant smell in the elevator car is probably something all passengers have in common worldwide. However, since every individual has his or her own unique sensitivity it is very difficult to meet these needs with conventional means.

A system was therefore developed that allows each passenger to select his or her own individual scent. At present six different scents are available for selection but the future goal is a selection of 200 scents.
New to this system is the fact that the scent disappears in seconds and doesn't contaminate the car. The scent jets can be mounted so that various scents can be released at different spots in the car and not interfere with each other. A passenger entering the elevator car the first time would not detect any previous scents.

In the next few years we'll see scent used with different products – and in connection with advertising – as a third dimension of communication.



10. CONCLUSIONS

The PayLift concept will become that much more attractive as prices continue to drop rapidly in the elevator sector. Similar concepts can be found in the energy sector where customers are only charged for the amount of energy used and not for the heating unit itself.

The PayLift approach means the elevator sector will have to find a new focus in the area of product development because all malfunctions are chargeable to us. Looking into the future, we will only deliver the hoisting facility in order to make money from vertical transportation. All other processes within the organization will be affected and result in an additional savings potential.
The PayLift concept is an operator model and has nothing to do with leasing. The safety in the building is increased. The risk to the building owner is minimal since the owner only has to conclude a long-term contract. Reimbursement and conversion to the old principle are possible in the event such a contract is prematurely terminated. We will have obtained new insights following the testing phase and will see just how attractive we can make the use of an elevator in the future.

11. BIOGRAPHIES

Mr. Lennart Svensson and Mr. Lutz Richter are currently working as Innovationsmanager of Schindler Germany.

Mr. Lutz Richter joined the company in 1990 and has been working on software engineering for Research and Developement of Schindler Switzerland.

Mr. Lennart Svensson joined the Company in 1983 and has been working as Sales Engineer, Sales Manager and Marketing Manager for Schindler Germany.