MODELS OF AN EXEMPLARY PROCESS IN THE HOTEL INDUSTRY, NAMELY: "CLEANING OF THE GUEST ROOM"

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Abstract

The purpose of the paper is to present exemplary models of an actual process in hotel industry, namely: "cleaning of the hotel room". Existing approaches and models of business processes are further developed and applied to hotel industry. Models of operations as well as types and requirements of materials, information, human resources and cash flows are presented. The methodology of study includes identification of: main operations of the process and the most important materials, information, people, time and cash flows included and their requirements. In addition, a comparison with the sub-processes "serving guest during arrival" and "serving guest during departure" is done. The results confirm that much greater variation is observed in the processes of serving guests during arrival and departure than cleaning of the guest rooms. Quantities and requirements needed for materials, people, information, cash and time vary in wider ranges for the operations of former than of later processes.

Key words: hotel establishments, models, processes, operations, flows

МОДЕЛИ ПОСЛОВАЊА У ХОТЕЛИЈЕРСКОЈ ИНДУСТРИЈИ НА ПРИМЕРУ „ЧИШЋЕЊА ХОТЕЛСКЕ СОБЕ"

Извод

Циљ рада је да представи моделе пословања у хотелијерској индустрији, и то на примеру „чишћења хотелске собе". Постојећи приступи и модели пословања даље су развијени и примењени у хотелијерској индустрији. Приказани су модели пословања, као и врсте и потребштине у смислу материјала, информација, људских ресурса и новчаних средстава. Методологија студије обухвата идентификацију главних операција самог процеса „чишћења хотелске собе" и најважнијих материјала, као и релевантних информација, особља, утрошеног времена и новчаних средстава. Поред тога, врши се упоређивање са моделима пословања „услуживање госта приликом доласка у хотел" и „услуживање госта приликом одласка из хотела". Резултати потврђују да се у моделима услуживања гостију приликом доласка и одласка могу уочити много веће варијације него када је реч о моделу „чишћења хотелске собе". Количина и потребштине у смислу материјала, особља, информација, новчаних средстава и утрошеног времена варирају у ширим опсегу за моделе услуживања гостију приликом доласка и одласка него за модел „чишћење хотелске собе".

Кључне речи: хотели, модели, процеси, операције, токови

INTRODUCTION

The focus of the paper are some models of an exemplary process of hotel business. The models are tools that could be used successfully in managing activities of companies operating in all sectors of economy, including hospitality. Based on the models developed an in-depth analysis of aspects covered by them could be performed.

The results of the analysis can be useful in making informed decisions about application of various management techniques and approaches in order to achieve substantial and significant improvements in hotel business.

The aim of the paper is to present exemplary models of an actual process in the hotel industry, namely the process of: "cleaning of the hotel room".

LITERATURE REVIEW

Scientific literature presents various techniques of modeling of company processes. The most common are: process technology, algorithm and object-oriented approach.

The term process technology involves "the studying of corresponding existing or imaginary process and its graphical representation before proceeding with relevant changes and improvements" (Hadjiev 2007). Thus, the sequence of operations of a process is presented.

The most common methods of process technology are block diagrams and flow diagrams (charts). In block diagrams "a process is divided into simpler processes, sub-processes, stages or activities. Where process flow is interrupted due to technical necessity or decision-making, control or choice of work option - relevant branches are drawn and the diagram is complicated. Complexity increases when the output of a group of sub-processes influences an earlier stage of the process flow. In this case, there appear reverse links for the respective sub-process, which influence the process of transformation of the related sub-process" (Hadjiev 2007).

Flow diagrams are another method of technology "by which process flows are visualized through graphical conditional indications (symbols)". Symbols are used for: flow, sub-process, input, operation, branch/compound, decision, control (inspection), connection, boundary, output, consultation, etc. (Hadjiev 2007).

The basic approach of flow diagrams can be elaborated further to show actual performance of work in more details. Flows among organizational departments can be presented by dividing the flow chart into several vertical columns. Each step can be coupled with reduction in costs, in time of the process and processing time (Drew 1995).

Similar to these methods is process algorithm. Algorithm is regarded as an order of execution of elementary operations in a specific sequence applied to solving problems of a certain type. It includes elementary operations and

corresponding regulations for performance. That represents the skeleton of the algorithm, but does not exhaust its content as the order of execution of the operations must also be pointed out. Logical conditions that connect one elementary operation with another must be set as well. The next operation is determined depending on the fulfillment of the condition. The structure of algorithm also includes "criteria", "conditional" and "unconditional" "operators". Criteria determine whether condition is satisfied or not and conditional operators - the order of subsequent operations. When among elementary operations logical conditions are not available they are interconnected through unconditional operators, which determine the order of execution of operations (Ribov 2003).

Another technique for modeling processes is object-oriented approach: "Object orientation is a special approach to the constructions of models of complex systems, in which a complex system, consisting of a large number of occurrences, is regarded as a set of objects. The relations between these occurrences are seen as associations between objects; their properties are attributes of the objects. In addition, the occurrences can have static as well as dynamic characteristics. An occurrence that affects another when a certain event takes place is described as communication between the objects." (Jacobson, Ericsson 1995). Cases are modeled by the approach objects and their use.

• "An object is the role that someone can play in terms of business." (Oyhman, Popov 1997). It is "an identifiable, encapsulated entity that provides one or more services that can be requested." It is "an occurrence that is meaningful to our company and that we wish to describe in its environment." "We define an 'object' as an occurrence that can contain information and offer behavior" (Jacobson, Ericsson 1995)

• "A use case is a sequence of transactions in a system that are conducted to obtain measurable consumer value for an object of a business system" (Oyhman, Popov 1997). It is "a sequence of transactions in a system whose task is to yield a result of measurable value to an individual actor of the system." (Jacobson, Ericsson 1995).

This technique is used in developing computer programs that serve company management in modeling business processes in order to be designed, re-designed, etc.

An interaction diagram can be developed by applying the approach. Interaction diagrams show how individual objects in a model interact in order to perform a specific process or a flow of events, i.e. how a process is implemented through communication between objects or what interactions during the course of events in the process occur (Oyhman, Popov 1997). "If you wish to express in more detail how the various objects in the model collaborate to execute a certain flow of events, you can draw an interaction diagram. This diagram shows how a case is realized by communicating objects." "An interaction diagram shows, in detail, the interactions that take place between the objects during a case flow of events." "In an interaction diagram, an object is

represented by a vertical column." "At the left edge of the interaction diagram, we usually describe the behavior sequences that the objects will carry out; these are called 'operation paths'. On the columns, operation paths are represented by rectangles. The descriptions of the operation paths provide the basis for the identification and description of the objects operations later on." (Jacobson, Ericsson 1995). Starting from the beginning of every row and up to the column of the object an interaction between the operation and the object is pointed out by an arrow (directed from or towards the object). Thus, every operation is associated with a relevant object. Vertical lines that are drawn on the column of the object show occurrence of operation interactions with every object.

METHODOLOGY OF STUDY

The process of cleaning of the guest room, together with the processes of serving the guest during arrival and departure ensure the provision of the basic hotel service - conditions for night shelter. The activities that could be included in the composition of these processes are described in details in a number of scientific literature sources (Rutherford, O'Fallon 2011; Stamov, Alexieva 2005; Tonchev, Todoriev 2000; Ribov, Stankova et al. 2007; Hadjinikolov 2003; Bardi 2011; Barrows, Powers, Reynolds 2012; Confederation of Tourism and Hospitality 2010; Holloway 2002; Lawson 1995; Lundberg 1994; Walker 2001; Durovich 2009; Todorov 2009; Todorov 2017, etc.). These sources are used for the identification of operations composing the process described in the paper, namely: "cleaning of the guest room".

The most important materials, information, people, time and money and requirements for them are drawn by the authors. We consider that their identification would shed some light on their nature and the way they are used and transformed during the performance of individual operations of the process. They complement and expand models of processes developed through the methods process technology, process algorithm and object-oriented approach. Process technology and algorithm show individual operations and possible sequences of performance. However, they do not present materials, information, people and money involved in process performance but present only average time of performing each operation. Object-oriented approach and interaction diagrams besides operations present some materials, information, people and money as objects that are not systemized in the way they are classified into four groups here. No data is available for the time needed to implement the operations.

PRESENTATION OF MODELS OF AN EXAMPLARY PROCESS

Models of the process named "cleaning of the guest room" present an exemplary sequence of operations composing the process. The sequence of operations is presented in Figure 1. For process "cleaning of the guest room"

operations are classified according to the sequence of execution of workflow as preparatory, actual and final.

Preparatory operations - The maid:

1. should have a nice appearance and wearing a uniform.

2. makes sure that her cart is loaded with cleaning devices, agents, clean linens, towels, materials and consumables for charging guest rooms.

3. accepts keys and has information about room status (occupied, free and cleaned, free but not cleaned), when guests are expected to arrive or leave, what their requirements are, etc.

Actual operations - The maid:

4. makes sure that there is not "do not disturb" sign on room door.

5. knocks on the door.

6. enters the room.

7. apologizes to guests and asks them whether she could clean the room.

8. leaves the door open or indicates that room is being cleaned.

9. makes sure that door mechanisms, locks, windows, blinds, equipment, installations are working, furniture, decoration and mattresses are in good condition, sheets, menus, magazines and advertising materials are clean, there are enough guest supplies, etc.

10. pulls curtains and blinds.

11. turns off air conditioning.

12. opens windows and the balcony door.

13. cleans the balcony.

14. discards waste from the balcony.

15. arranges tables and chairs on the balcony.

16. arranges the room: folds guest clothes and puts them in wardrobes; arranges books and newspapers and places them in cabinets or desks, etc.

17. discards waste and replaces used glasses with clean ones.

18. takes used towels from the bathroom.

19. changes bed linen in the room and exports it in the laundry cart.

20. cleans windows, window frames, lamps and switches in the bathroom.

21. cleans cupboards and shelves in the bathroom.

22. polishes mirrors in the bathroom.

23. cleans soap holders, cup holders and hangers in the bathroom.

24. cleans the sink.

25. cleans the tub.

26. dries chrome parts with a cloth to remove water drops.

27. pays special attention to corners and other places where dust and water are gathered.

28. cleans the toilet.

29. cleans and dries the floor.

30. places clean towels.

31. charges bathroom with guest supplies (soap, shampoo, shower hat, etc.).

32. wipes bathroom door.

33. closes bathroom window.

34. switches the bathroom lamp off.

35. has a final look to the bathroom.

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36. cleans the room - bedroom and hallway: wipes dust from cupboards, wardrobes, shelves and drawers - inside and outside.

37. wipes the dust off door frames, window frames, edges, paintings, bed tables, lamps, TV set, telephone, etc.

38. cleans furniture items and appliances with cleaning agents depending on the materials they are made of.

39. polishes mirrors.

40. cleans windows and glass doors.

41. makes beds.

42. cleans and dries the refrigerator.

43. fills ice pots with water.

44. cleans the floor.

45. stocks the room with the necessary supplies, products in the mini bar, promotional materials, etc.

46. closes windows.

47. switches the air conditioning on.

48. has a final look on the room: whether paintings, furniture, lamps and guest consumables are arranged, whether there are no interwoven wires, etc.

49. drops and arranges curtains.

50. switches the lights off.

51. leaves the room.

52. locks the door.

Final operations - The maid:

53. reports to her superior which rooms are cleaned, which are not and why.

54. notifies receptionists about room status.

55. notifies maintenance department about established damages to furniture, equipment and installations.

Figure 1. Operations Composing Sample Process "Cleaning of the Guest Room"

Figure 2. presents some important physical resources involved in process operations. These are movable or immovable objects – hotel property. These resources include: the building, furniture, equipment, supplies and consumables. Some requirements for the types of physical resources are also described.

Various materials that should comply with various requirements are used in different processes. The process "Cleaning of the guest room" requires a larger number/ amount of materials - supplies for guests, cleaning agents, equipment, etc. - than other processes - serving the guest during arrival and departure. The size, location, furniture and equipment may also differ. While reception should be located next to the main entrance, and be visible and spacious, the hotel rooms should be isolated from the noise outside and from other hotel premises.

Type	Composition	Requirements
Premises	Guest rooms	Clean, tidy, furnished, equipped. Consists of bedroom, hallway, bathroom
	Maid premises	Clean, tidy, furnished, equipped. Consists of premises for clean and used bed linen and towels, supplies and consumables for guest rooms, devices and cleaning agents and maid rest rooms
Furnishing	Of the premises: doors with locks and keys, windows, window frames, blinds, curtains, flooring, carpets, wall coating, beds, bedside tables, shelves, rack, wardrobes, desks, tables, chairs, cupboards, bed linen and towels, waste bin, soap holders, cup holders, mirrors, paintings, staff uniforms, etc.	Neat, tidy, in good condition; of guest rooms - attractive, secure, consistent, durable, easy to maintain, etc.
Equipment	Cleaning carts Cleaning devices - brushes, buckets, mops, vacuum cleaners, floor polishers, etc.	Functional, easy to use, powerful, reliable, resilient, durable
	Appliances in rooms: lamps, air conditioning, TV set, phone, fridge, sink, tub, shower, etc.	Easy to use, reliable, resilient, durable
Supplies and consumables	Cleaning agents (solutions, pastes, powders, etc.)	Efficient, effective, operational
	For guest rooms: Hotel cosmetics - soaps, shampoos, etc. Food and beverages, pens, notebooks, phone directory, menus, "do not disturb" signs, promotional materials, glasses, dishes, bed linen, towels, etc.	Hotel cosmetics - appealing, attractive, efficient, useful for guests, suitable for hotels Other supplies and consumables - clean, in good conditions Informational materials - updated

Figure 2. Materials for Sample Process "Cleaning of the Guest Room"

Figure 3. shows the people involved in the operations. These are employees of the hotel. Some requirements for the employees are described as well. While the operations of the sub-processes of serving the guest during arrival and departure cannot be carried out without the presence of the client, in carrying

out the operations of cleaning of the guest room the presence of the client is not necessary. There are different requirement for staff for both types of processes. While personnel who welcomes, accommodates and see the guests off should be able to communicate in an appropriate manner, the personnel who cleans guest rooms should rather possess technical skills.

Employees involved in cleaning of the guest room	Requirements of the employees
Maid	Wearing uniforms and signs, suitable appearance and attitude towards guests, acquainted with hotel procedures of Cleaning of the Guest Rooms, her duties and workplace, requirements and features of cleaning devices, operation and results from using detergents, etc.

Figure 3. People involved in the Process of "Cleaning of the Guest Room"

Figure 4. shows substantial information that is used or exchanged during the performance of business operations. Information can be received by or transmitted to guests, other hotel staff members or serve employees in carrying out the operations.

During the processes of serving the guest during arrival and departure a larger amount and variety of information is exchanged compared to the process of cleaning of the guest room. Moreover, the former processes use information that varies more widely and depends on specific interaction between the hotel staff and the hotel guests.

Internal flows - about:	External flows - whether guests:
-features of rooms, furniture, equipment, accessories -cleaning procedures and sequences of operations -cleaning equipment -cleaning agents and effects on different surfaces, working with cleaning agents -room statuses, number of guests, time of arrival and departure -guest requests for additional supplies and hotel cosmetics -malfunctions, damages, failures	-do not want to be disturbed -wish rooms to be cleaned -wish maids to continue cleaning -want repeated cleaning

Figure 4. Information about Sample Hotel Process "Cleaning of the Guest Room"

Figure 5. is dedicated to the time needed to carry out the operations. Of course, every hotel establishment can measure, assign and determine the average time needed for every operation. It will depend on the competence of the staff, the available equipment and informational systems, work schedules,

etc. The delays, which may arise, including these that do not depend on the hotel staff should also be taken into an account. Opportunities for speeding up time needed to complete the operations should be explored as well.

The average time needed for the process of cleaning of the guest room could be calculated and assigned and it will vary in much smaller extent compared to the processes of serving the guest during arrival and departure as the later largely depend on the guest behavior and guest interactions with the staff (e.g. during arrival the guest may or may not request additional services, therefore the employee may have to explain their features, prices, discounts, packages and duration, when are they offered, by whom, etc., which also determine the duration of operations).

Indicators that should be calculated for each operation of the process
The time needed to complete the operation
Maximum deviation from that time
Possibilities of significant delays
Opportunities to improve time to perform the operation
How soon the operation could begin

Figure 5. Time of Sample Hotel Process

The funds that are required for the performance of the operations (costs) are shown in Figure 6. For the performance of each operation costs are incurred for physical resources, materials, construction and maintenance of facilities, salaries and social insurance contribution of staff, informational systems, databases, etc.

Costs for:
Training and equipment of the personnel, for salaries and social security
Construction, maintenance, cleaning, security, furnishing and equipment of the building and premises - maid offices and guest rooms
Purchase and maintenance of maid carts and cleaning equipment
Countertops, cabinets, cupboards, racks, shelves
Staff uniforms
Paper, cleaning agents, hotel cosmetics, promotional materials
Lighting, water, fuel, energy, electricity, heating, etc.

Figure 6. Funds for Sample Hotel Process "Cleaning of the Guest Room"

In both types of processes - first, serving the guest during arrival and departure and second, cleaning of the hotel room - there are costs for materials, facilities, salaries and social insurance, information and informational systems. From the former processes the hotel, however, receives revenues compared to the later process from which revenues are not generated. In this regard, revenues from overnight stays should be compared with costs for both serving the guests during arrival and departure and cleaning of the guest rooms, due to the revenues the hotel generates from its core service - accommodation.

CONCLUSION

Generally, a considerable variation is observed in operations of the processes serving the guests during arrival and departure than cleaning of the guest rooms. The needed quantities and requirements of materials, people, information, money and time vary in wider ranges for operations of former than of later processes. The reason is presence of customers at the former whose behavior cannot be fully predicted. The models described here are substantially simplified. Actually, they can include other operations as well. Operations can be performed in a different sequence or some of them sometimes should not be performed depending on the situation. Processes can include other materials, people, information, time and funds and additional requirements for them can be set. Managers of every hotel establishment should choose the most important ones. Other variants of process performance could be developed, which should be suitable for different situations.

We consider that the benefits of these models lie in the fact that they could be used to find the most appropriate materials, people, information, time and funds, as well as to draw the most significant features and requirements for these items that can be used in the development of computer programs and other systems of operation management. Different variants of process performance and various ways for process optimization could also be predicted and designed in order to improve the hotel operations.

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