

Dashboard Design For Viewing Online Travel Agent Who Works With Kresna Hotel Wonosobo

Dhewa Gunawan Putra^{a)}, Dedi Trisnawarman^{b)}, and Zyad Rusdi^{c)}

Author Affiliations

Department of Information Systems, Tarumanagara University, Jakarta, Indonesia

Author Emails

^{a)}dhewa.825180072@stu.untar.ac.id

^{b)} [Corresponding author: dedit@fti.untar.ac.id](mailto:dedit@fti.untar.ac.id)

^{c)}zyadr@fti.untar.ac.id

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Abstract. Kresna Hotel Wonosobo is an old hotel located in Wonosobo city. Founded in 1917 under the name Grand Hotel Dieng and run by a Dutchman named JW Muthert. In modern times like today, many hotels have collaborated with Online Travel Agents (OTA). This is because OTA can help hotels on the marketing side in a wider scope. Kresna Hotel Wonosobo has collaborated with OTA since 2016. But so far, there has never been an application that can assist the hotel in evaluating, monitoring and assessing OTA activities. So the creation of a dashboard to evaluate, monitor, and assess OTA activities at Kresna Hotel Wonosobo is needed. The dashboard is made using the System Development Life Cycle (SLDC) waterfall model and the data processing process uses the nine step design method. This dashboard is focused on three OTAs, namely Traveloka, AGODA, and Tiket.com. The dashboard has succeeded in displaying all the data needed on the target Key Performance Indicators provided by the hotel. By creating a dashboard and adding a web admin, it is hoped that Kresna Hotel Wonosobo can continue to use it for OTA monitoring in the future.

INTRODUCTION

Kresna Hotel Wonosobo is a historic hotel that has been established since 1917. Kresna Hotel Wonosobo is a company engaged in accommodation that provides lodging services for visitors (Fitrianis and Apriliani, 2019). Because this hotel is located in a small city, it has evolved into the era of globalization and digital literacy, one of which is collaborating with Online Travel Agents (OTA) which is the main key to expand hotel marketing and increase the potential for visitors from a wider scope. shopping for travel products through online travel agent has become very popular (Setiawan & Widanta, 2021).

As already mentioned, that in this era of globalization, the hallmark is the progress of science and technology. So that the creation of openness in various fields, especially in the field of Information Technology is the main key to economic progress (Widani, et al., 2019). If we look at the times, it can be said that many modern hotels have collaborated with OTA to expand their marketing and increase the number of visitors. This collaboration with OTA is also carried out by old hotels, one of which is Kresna Hotel Wonosobo. Especially when facing the covid pandemic.

OTA is very influential during the covid pandemic where it is known that this pandemic is very detrimental to the hotel business. The number of visitors is decreasing but spending continues. Each OTA has its own way, such as online marketing to do recovery, and that is one of the reasons why OTA plays an important role in the continuity of the hospitality business.

Online marketing is the development of internet-based technology in the hospitality business, one example of which is making the branding process by utilizing digital facilities an attractive option and has a very significant level of profit. Examples of the branding process are marketing through social media, marketing through OTA, and marketing through applications (Fatoni, et al., 2021).

Online travel services, and particularly OTAs, have attracted scholars' attention in the recent past, and various relevant studies have been conducted across the globe. Scholars contend that the online mode has become quite a popular way of booking hotel rooms (Talwar, et al, 2020).

The decision for the hotel involves whether to rely on direct booking via its official website or cooperating with an OTA, and if the latter is suggested, what business model to be adopted for the cooperation with the OTA (Ye, et al., 2019). the mediating role of perceived value on the relationship between service quality and satisfaction, as well as the moderating role of hotel star ratings on all direct and indirect relationships (Wong, & Sharif, 2020). Therefore, this dashboard is expected to be able to display the processed data in the form of visual graphs to help Kresna Hotel Wonosobo in monitoring and viewing activities as well as comparing the effectiveness of the OTAs studied.

IMPLEMENTATION METHODOLOGY

Research Method

The system development method used is the System Development Life Cycle (SDLC) with the waterfall process model, which was first recognized by Winston Royce published in 1970 and put forward by Pressman in 2001. The waterfall model is a classical model that is systematic, sequentially in building software. The name of this model is actually "Linear Sequential Model". This model is often referred to as the "classic life cycle" or the waterfall method (Widiyanto, 2018).

So the creation of this dashboard is done starting with analyzing first and looking for information about Kresna Hotel Wonosobo. Then choose an Online Travel Agent (OTA) who actively cooperates with the hotel and conducts research or experiments using applications from each OTA that is examined to add supporting data for each OTA. Other supporting theories are collected via the internet. After that, make contact or communicate with the IT Kresna Hotel Wonosobo, especially those who can access the hotel database and who play an important role in the OTA cooperation contract with the hotel. All this is done via zoom and whatsapp applications. When the discussion has been carried out and the hotel agrees, the hotel provides Key Performance Indicators (KPI) as a target that must be owned by the dashboard. KPIs can be seen in (Table 1). Due to the pandemic and the remote location of the hotel, the use of this teamviewer can replace face-to-face. In addition, using this application you can directly control the Kresna Hotel Wonosobo database.

Method of Collecting Data

Literature study is done by studying various literatures related to Online Travel Agent (OTA) which aims to collect some information about records, and supporting theories. Make observations, by observing the process of booking hotel rooms on each OTA that is examined, viewing the hotel database, and accessing the website of cooperation between the hotel and the OTA under study.

Extract Transform Load Process Method

In making the dashboard, it is necessary to reduce the attribute data as needed, then the Extract Transform Load (ETL) process is carried out to perform processing and select the required data. The method used for this ETL process is the nine step design method which was first recognized by Kimball and Ross in 2010. There are 9 steps in building a data warehouse, known as the nine step design methodology (Lokaadinugroho, et al., 2021).

PROGRAM DESIGN

Programs Created

There are two programs created, namely a dashboard to display data in accordance with the Key Performance Indicators provided by Kresna Hotel Wonosobo. And the second one is Web Admin with the aim of managing data in the future. For this web admin, input forms, edit forms, delete forms and other additional search forms are made.

Process Design

In process design, use cases are the basis and most common form of a design. Use case display can be seen in (Figure 1. Use Case).

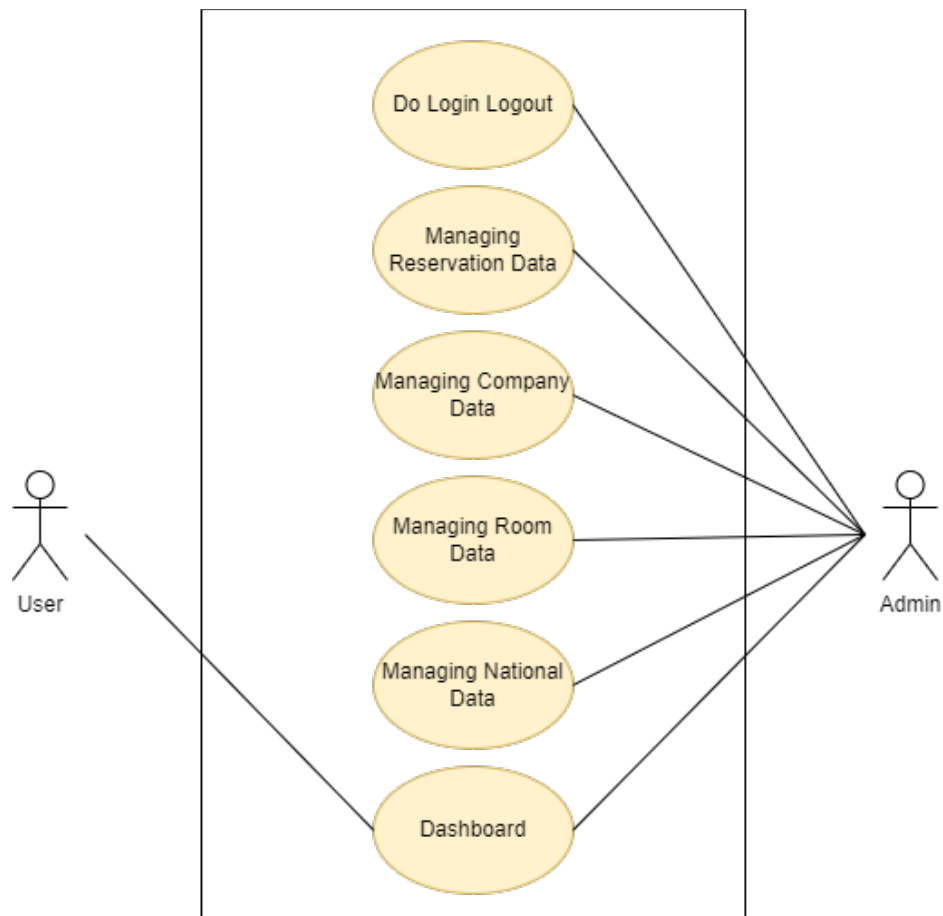


FIGURE 1. Use Case

Explanation :

- Admin can login to enter the Web Admin view with the specified account.
- Admin can log out or logout from the web view.
- Admin can make changes to data such as adding, deleting, or changing data in the Reservation, DimCompany, DimRoom, and DimNational tables.
- Admin can change, add, or remove visuals from the dashboard.
- Users can see the dashboard display.

Each data attribute has a relationship or relationship key in the form of a primary and a foreign key. The relationship between each table can be seen in (Figure 2. Database Diagram).



FIGURE 2. Database Diagram

Explanation :

- This Star Schema shows there are four tables.
- Reservation is a fact table that has many data records but data information is completed by all dimensions.
- Room dimension which stores hotel room data used by visitors from Online Travel Agents.
- Company dimension which stores the name of the Online Travel Agent, the type of Online Travel Agent, and the area of origin of the Online Travel Agent.
- National dimension which stores the nationality data of the visitor.
- Date dimension which stores time data.
- The relation is that every 1 data table Reservation will only have 1 data in each dimension table. Meanwhile, every 1 data in the dimension table can be owned by many data in the Reservation table. All can be seen from the relationship symbols in the Reservation table, there is a branched circle shape, which means that the dimension table data can be owned by many Reservation data.
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Key Performance Indicator

In making the program, this research has the basic goals and targets as needed by Kresna Hotel Wonosobo. There are several points that are expected to be displayed on the dashboard. Examples of Key Performance Indicators (KPI) can be seen in (Table 1. Key Performance Indicator)

TABLE 1. Key Performance Indicator

Column Header Goes Here	Column Header Goes Here	Column Header Goes Here
Number of rooms used through online travel agent AGODA	Number	Add 10% of used room in the month same year previously
Total revenue generated by online travel agency AGODA to Kresna Hotel Wonosobo	Number	10% income greater than same month in the year of previously
Number of rooms used through online travel agent TRAVELOKA	Number	Add 10% of used room in the month same year previously
Total revenue generated by online travel agency TRAVELOKA to Kresna Hotel Wonosobo	Number	10% income greater than same month in the year of previously
Number of rooms used through online travel agent TIKET.COM	Number	Add 10% of used room in the month same year previously
Total revenue generated by online travel agency TIKET.COM to Kresna Hotel Wonosobo	Number	10% income greater than same month in the year of previously
Percentage contribution to total income every year	Percentage	Percentage 33% for each Online Travel Agent of total whole
Percentage contribution to total room used or reservation every year	Percentage	Percentage 33% for each Online Travel Agent of total whole

IMPLEMENTATION AND OPERATION

Dashboard View

Dashboards are formed using power BI and data sources start through several processes, starting from Excel data which is imported to the database and ETL processes with Visual Studio 2019 to power BI. The dashboard display can be seen in (Figure 3. Dashboard View).

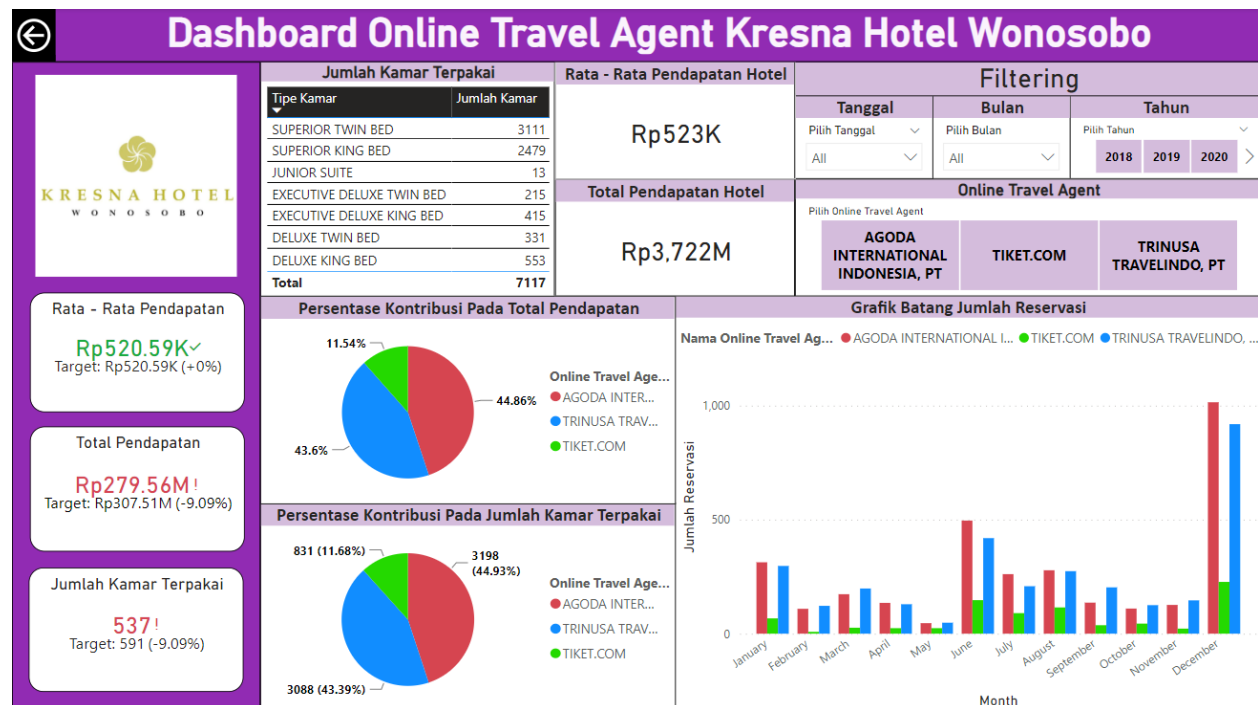


FIGURE 3. Dashboard View

Explanation :

- On the dashboard, a filtering feature is provided to provide time limits and the scope of the Online Travel Agent.
- The dashboard displays the target number of visitors, the target amount of revenue, the target number of rooms used, the pie graph of the percentage contribution of total revenue, the pie graph of the percentage contribution of the number of visitors or reservations, the cluster graph of the number of room sales, the average hotel revenue, the total hotel revenue and tables number of rooms used based on room type.

Web View

Web view is created to enter data into a database to be displayed on a dashboard view. One example is the Reservation data input page which can be seen in (Figure 4. Web View).

The screenshot shows a web application interface for adding reservation data. On the left is a purple sidebar with a 'WEB ADMIN' header and a menu containing 'Halaman Utama', 'MENGELOLA TABEL', 'Reservation', 'Room', 'Company', and 'National'. The main content area has a purple header 'Tambah Data Reservation'. Below this is a form with the following fields: 'ID Travel Agent' (dropdown menu with '--Pilih ID Travel Agent--'), 'ID Kamar' (dropdown menu with '--Pilih ID Kamar--'), 'ID Nasional' (dropdown menu with '--Pilih ID Nasional--'), 'Pembayaran' (text input with placeholder 'Contoh : [1500000]'), 'Nama Pengunjung' (text input with placeholder 'Contoh : [NAMA , Mrs] / [NAMA , Mr]'), and 'Tanggal Reservasi' (date input with placeholder 'dd/mm/yyyy' and a calendar icon). At the bottom of the form are two buttons: 'Simpan' (blue) and 'Reset' (grey). The top of the page shows the time '1:10:06 PM' and the user 'ADMIN' with a profile picture.

FIGURE 4. Web View

CONCLUSIONS AND SUGGESTIONS

Conclusion

In this study, produced a work to compare Online Travel Agents (OTA). There are two forms of application, namely the Dashboard view and the Web Admin.

- This OTA comparison dashboard application program can run as expected by the user. This dashboard has helped Kresna Hotel Wonosobo in monitoring and conducting KPI-based assessments of OTAs that have collaborated. This is because Kresna Hotel Wonosobo has never monitored OTA.
- The web admin application program can provide convenience in entering data compared to having to import data from Excel and the data must be tidied up first. This web admin is one of the reasons that this OTA comparison dashboard can be used for a long time.

Suggestion

Collaborating with an Online Travel Agent (OTA) can have many positive and beneficial impacts. In addition to expanding the reach of marketing, OTA is also more in demand by the public. With discounted rates, hotels may

experience a lack of revenue, but it is possible that OTAs can provide large revenues from Travel Agents. In the future, Kresna Hotel Wonosobo can evaluate and monitor OTA data displayed on the dashboard and input data into the dashboard daily via the web admin

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