Business Reporting Tools

Professor: Matthijs Meire

SQL Individual Assignment

Sakila Business Case

Fernando Delgado

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In the following Business Case, I will present an overview of Sakila's situation with a data-driven approach. The case will present analysis on the fields of Finance, Customers, Internal Business Processes, and Employees. It is important to mention, that all the tables in the case are extracted with SQLite from the company's database. The SQL file with the calculation of each table is annexed to this document.

Financial Analysis

First, it is necessary to show a financial overview of the company. Saklia has 2 main stores operating. The following table shows the monthly revenue and number of rentals by store:

Month	Year	Rentals Store1	Revenue Store1	Rentals Store2	Revenue Store2	Total Rentals	Total Revenue
05	2005	617	2621.8	539	2201.6	1156	4823.4
06	2005	1163	4774.4	1148	4855.5	2311	9629.9
07	2005	3344	13998.6	3365	14370.3	6709	28368.9
08	2005	2835	11853.6	2851	12216.5	5686	24070.1
02	2006	95	234.1	87	280.1	182	514.2

Additionally, the following table gives us a yearly overview of the rentals and revenue by store:

Year	Rentals Store1	Revenue Store1	Rentals Store2	Revenue Store2	Total Rentals	Total Revenue
2005	7959	33248.4	7903	33644	15862	66892.4
2006	95	234.1	87	280.1	182	514.2

By looking at these two tables alone, it is hard to truly compare the performance of each store, given that we don't really know their size, years of operation, or how efficiently they are operating in terms of revenue over rentals. Nevertheless, the following table will show a comparison of each store's performance with a Monthly Average Price Per Rental:

Month	Year	Store 1	Store 2	Total AvgPricePerRental
05	2005	4.2	4.1	4.2
06	2005	4.1	4.2	4.2
07	2005	4.2	4.3	4.2
08	2005	4.2	4.3	4.2
02	2006	2.5	3.2	2.8

In terms of finance, it is important to set Key Performance Indicators (KPIs) to measure the performance of the company. In this case, by setting a KPI like *Average Price Per Rental* for every store, we can easily assign monthly goals for each store and compare their performance regardless of their size. Not to mention that, in case that the company opens more stores in the future, we can analyze their growth and performance regardless of their years of operation.

Customer Analysis

Sakila currently has 599 customers, out of which 584 are currently active and 15 inactive. Those who are inactive have not made any rentals, but they are registered in the system's database:

Active Customers	Inactive Customers	Total Customers
584	15	599

Given that the database of customer is too large to show here, we will show data for the average customer:

Frequency	Recency	Monetary Value
26.8	15.7	4.2

The frequency shows that, in average, a customer has made 26.8 rentals over time. The recency shows that, in average, it has been over 15.7 years since customers made a rental. The monetary value shows that each customer has spent, on average, $ 4.2. Thanks to this data, we can assume that the company has not been operating for the last 15 years.

In terms of tenure, the average customer has 15 years with the company. However, we've detected that the database registered the same date of registration for all the customers, which is probably an error from the database.

Furthermore, analyzing customers location we can observe the following market share:

Region	Number of Customers	Customer %	Sales By Region	Market Share %
Asia	257	42.9	28953.4	42.9
Europe	123	20.5	13782.5	20.4
South America	76	12.7	8447.1	12.5
North America	74	12.4	8378	12.4
Africa	62	10.4	7112.3	10.5
Oceania	7	1.2	743.3	1.1

Notice that the sales by region are directly proportional to the number of customers per region, meaning that regardless of the region, customers are fairly making the same number of rentals. Additionally, this table also displays the opportunity of reaching the lowest regions such as Africa or Oceania with a marketing campaign to advertise Sakila's service, as well as, looking at the possibility of exploiting Asia's market by opening more stores and/or offering more services that would be attractive for them.

Internal Business Processes

Moving forward, I analyzed the top 10 films by number of rentals:

film id	Nbr Of Rentals	category
103	34	Travel
738	33	Foreign
767	32	Music
730	32	New
489	32	Animation
382	32	Games
331	32	Games
1000	31	Comedy
973	31	Documentary
891	31	Classics

Additionally, I ranked all the film categories by their average rental rate. First, given that the average rental rate was bigger than 3.1 then the film category is ranked as "*good*". Then, given that the average rental rate is larger than 2.8 then the film category is ranked as "*average*". Finally, given that the average rental rate is 2.8 or lower, the film category is ranked as "*bad*". It must be mentioned that I used this method to rank categories because it makes categories easy to compare regardless of how many movies each category has. If we had ranked the categories by number of

rentals it could bias the result since the number of films for each category could be completely different and thus, the average would be affected.

Category	Average Rental Rate	Rank
Games	3.3	Good
Travel	3.2	Good
Sci-Fi	3.2	Good
Comedy	3.2	Good
Sports	3.1	Good
New	3.1	Good
Foreign	3.1	Average
Horror	3	Average
Drama	3	Average
Music	3	Average
Children	2.9	Average
Animation	2.8	Average
Family	2.8	Bad
Classics	2.7	Bad
Documentary	2.7	Bad
Action	2.6	Bad

From the previous 2 tables we can observe that not only do categories like Games, Travel and Comedy achieve a "Good" ranking, but also have films amongst the top 10 films by number of rentals.

What's more, in terms of actor ranking, we used the same ratios of rental rate as in categories to segregate them into "good", "average" and "bad". As it is impossible to display the list of 128 actors in this file, we will show the total number of actors per rank:

Rank	Nbr of Actors
Average	57
Bad	38
Good	33

Last but not least, through the dataset I discovered that there are in total 42 movies that did not have any rentals through the years of operation. This is due to the fact that such movies do not have any stock in the inventory as shown in the following table:

Missing Movies	Total Inventory	Avg Replacement Cost	Restock Cost
42	0	18.3	3066.3

The table shows that the average replacement cost per movie is $18.3. Thus, if we would like to restock each movie 4 times, the total cost of restock would be $3,066.3, which is probably unfeasible given that the investment required would be too large compared to the previously presented revenue per store. However, if we select out of these 42 movies, only the ones that are part of a "good" ranked category, then we would only need to invest the following:

category	Missing Movies	Total Inventory	Avg Replacement Cost	Restock Cost
Comedy	2	0	22	175.9
Games	3	0	19.7	235.9
New	3	0	21.3	255.9
Sci-Fi	2	0	15.5	123.9
Sports	1	0	28	112
Travel	4	0	15	239.8

The total investment required would be $ 1,143.4:

Missing Movies	Total Inventory	Avg Replacement Cost	Restock Cost
15	0	19.1	1143.4

This not only reduces the investment required to restock the movies, but also gives certain security since the categories are ranked as "*good*".

Employees

By matching the address from the employees table into the customers table, we can conclude that none of the employees are actual customers of the company. I believe that it would be a good initiative to offer employees discounts and special offers for them to use the service themselves. This would not only keep the employees happier but also have a good staff retention rate:

customer	store id	first name	last name	email	address id	active	create dat	last updat

For the rest of the analysis, as of now there is only one employee per store. This leads to the financial analysis by store shown at the beginning of the document being the same for the employees. However, if the company is ever to hire more employees by store, it would be wise to analyze their performance with KPIs as well.

Conclusion

In summary, the main areas of opportunity and strengths detected from this analysis are the following:

- Financial Analysis:
    - Inclusion of Key performance Indicators for a better understanding of the performance by store. This could lead to an expansion strategy.
- Customer Analysis:
    - The company has not been operating for the last 15 years, it would probably take some extra re-investment to re-stock the inventory with new content.
    - There's probably an error within the registration system that gives the same registration date to all the customers.
    - There is a great marketing opportunity on the weakest regions, such as Africa and Oceania. As well as an opportunity to exploit hot regions like Asia.
- Internal Business Processes:
    - There are 42 missing films that could be re-stocked, but it would represent a big investment. However, if stock only those films that are part of a "good" film category, the investment would be substantially lower, and it would give us a sense of security of rental rate.
- Employees
    - Offering employees discounts or special deals to be customers of the service as well would benefit the company from a good staff retention rate.