Forecasting Case Study: Highline Financial Services, Ltd.

Name

Institutional Affiliation

Professor

Date

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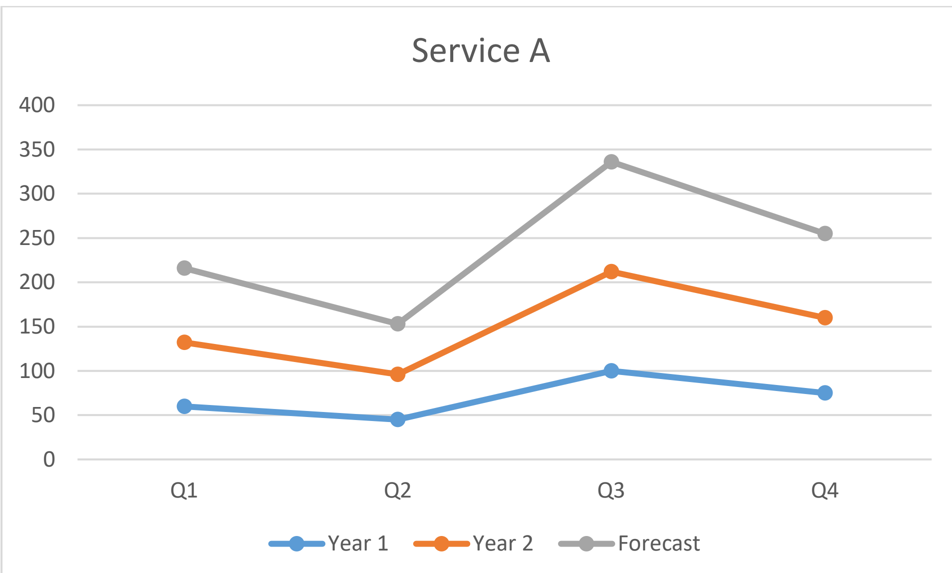
Demand forecasts for the next four quarters for all three products.

Service A

The choice of the method for calculating demand for Service A is using naïve approach because it has a stable trend.



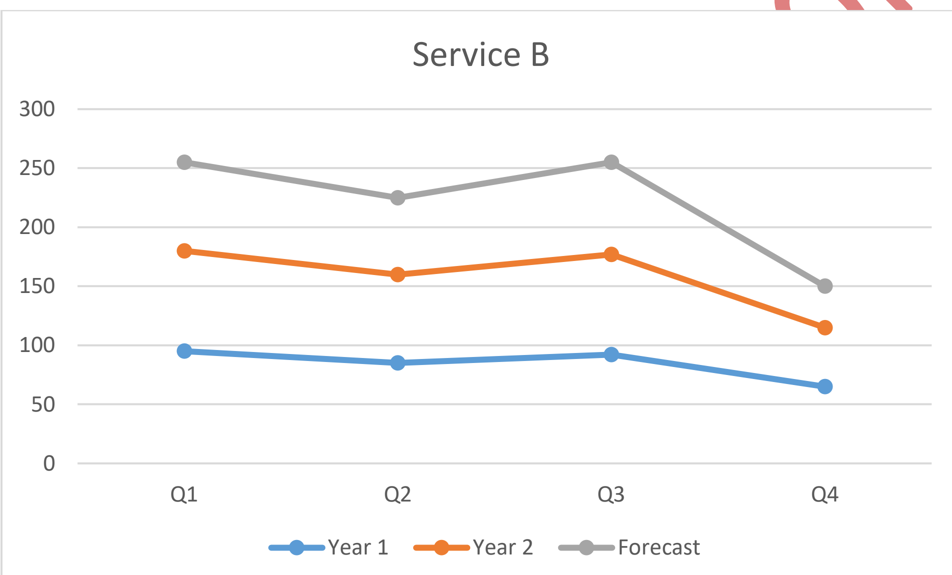
Service A

Demand	**Year 1**	**Year 2**	**Change from previous value**	**Forecast Year 3**
Q1	60	72	12	84
Q2	45	51	6	57
Q3	100	112	12	124
Q4	75	85	10	95

The demand forecasts for Year 3 are as follows: 84 in the first quarter; 57 in the second quarter; 124 in the third quarter; and 95 in the fourth quarter. The demand will be highest in the third quarter of year three followed by the fourth quarter, then the first quarter, with the second quarter experiencing the lowest demand. Nevertheless, the demand will grow in each quarter as compared to the results of the respective quarter in Year 2.

Service B

The choice of the method for calculating demand for Service A is using naïve approach because it has a stable trend.



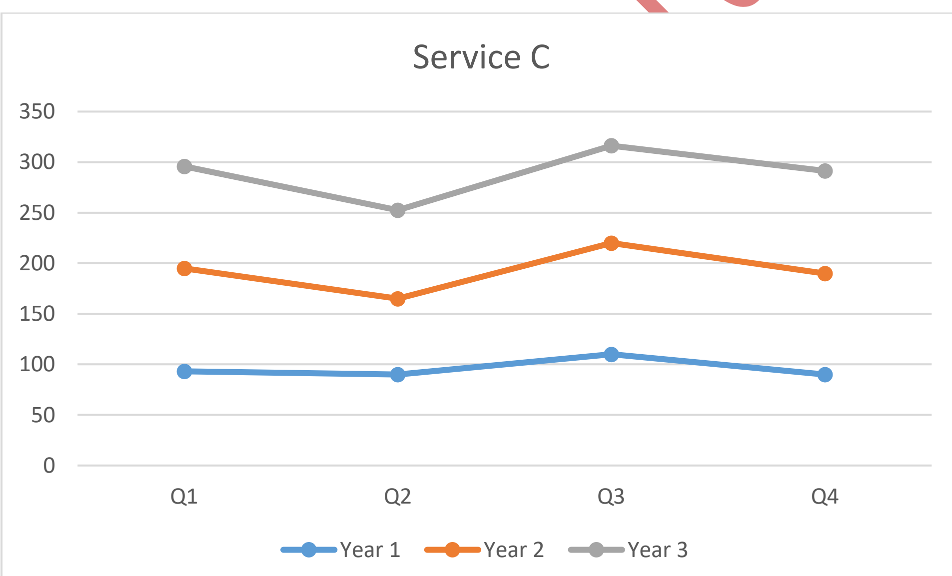
Demand	Year 1	Year 2	Change from previous value	Forecast
Q1	95	85	-10	75
Q2	85	75	-10	65

Q3	92	85	-7	78
Q4	65	50	-15	35

Although the changes in values between year 1 and year 2 are negative, the demand forecast was made using the naïve approach because there was stability in the changes in respective quarters. The calculations found the demand forecast for year 3 to be as follows: 78 for quarter three which is the largest, followed by 75 for quarter one, 65 for quarter two and 35 for quarter four being the lowest.

Service C

The choice of method is using seasonal relatives to calculate demand forecast.



The first step is computing seasonal relatives using Simple Average (SA) Method, while the second step is using trend and seasonal data to make a forecast.

Step I

Computing Seasonal Relatives Using the Simple Averaging Method

Demand	**Year 1**	**Year 2**	**Quarter Total**	**Average Quarter**	**Quarter Relative**
Q1	93	102	195	97.5	1.012987013
Q2	90	75	165	82.5	0.857142857
Q3	110	110	220	110	1.142857143
Q4	90	100	190	95	0.987012987
	Av of QR	**96.25**			

Step II

Using Trend and Seasonal Data to make a Forecast

Period Year 2	**Quarter**	**Demand Y2**	**Quarter Relative**	**Deseasonalized Demand (Forecast)**
Q1	1	102	1.012987013	100.6923077
Q2	2	75	0.857142857	87.5
Q3	3	110	1.142857143	96.25
Q4	4	100	0.987012987	101.3157895

The forecast for year 3 is 100.69 in the first quarter, 87.5 in the second quarter, 96.25 in the third quarter, and 101.32 in the second quarter.

Description of forecasting methods chosen and their suitability.

For both Service A and B, my choice of forecasting method was a naive forecast method. This naïve approach involves forecasting with simple calculations where there are evident patterns in the time series (Dhakal, 2017). This method is suitable for these particular cases because these variations are seasonal and have a predictable trend, despite Service B having negative variations. In this method, with a stable data series, the last data point is used as the forecast for the next period. For such data with a trend, the forecast is equal to the last value of each series, which is then added or subtracted to the difference between the last two values of the series. This naïve approach has some significant advantages that include a cheap method of forecasting because it does not require complex calculations, and it is easy and quick to prepare. This forecasting method also offers a significantly high level of accuracy where the internal and external factors remain constant.

For service C, my choice of forecasting method is computing seasonal relatives. Since there is no availability of Quarter relative, I used the simple averaging method to find the quarter relative, which was then used to deseasonalize demand using seasonal relatives. This method is suitable because it helps us understand the nonseasonal components of data that do not develop specific trends that can be used to make forecasts. This method uses the last data point to divide the corresponding previous data point to compute deseasonalized data. This approach is best suited for this data type because it accounts for the nonlinear trend, and therefore it can be used to track the data closely (Chen, Wu & Shen, 2019). This approach especially using the simple average method, is important because of its simplicity, and it is useful when there are large variations in the data sets. Additionally, this approach is useful because it has higher accuracy levels, and hence reducing the margin of error.

Reasons for Similar and Different Choices of Forecasting Method for Each Product

For Service A and B, I chose the same forecasting method for both products, the naïve approach. There was a need to use the same method since both products had similar data trends and a linear relationship, which is suitable for this approach (Dhakal, 2017). Additionally, there was a need to choose the same forecasting method for comparison purposes in the developing trends because they have similar trends, therefore minimizing the margin of error.

The choice of forecasting method for Service A and B is different from that of choice C. Their differences in variation trends informed the choice. For service A, the variations in the trend are positive, and there is a particular trend in each quarter, while the same can be said for Service B despite the variation being negative. Therefore, in both of these cases, there is an identifiable trend in variations. However, when it comes to Service C, the variations between the different quarters in the two years do not correspond, and no clear trends are emerging. The changes in demand form a nonlinear trend that does not have any relationships with the variables. Therefore, there was a need to calculate the model coefficients for service C to get the forecasts for a time series. This method is suitable because it minimizes the errors and helps determine the local components of trend, level, and seasonality in nonlinear programming.

Benefits of Using a Formalized Approach to Forecasting

Using a formalized approach to forecasting these products is necessary because it promotes better decision-making on resources. A formalized approach uses mathematical and scientific calculation methods to find the forecasts and therefore increases the accuracy of forecasting and reduces the margin of error, promoting better decision-making for the firm (Aljandali & Tatahi, 2018). Using formal approaches is important because it helps determine the margin of profitability and other sets of financial data that may require high levels of accuracy and hence better planning. Using a formalized approach is also necessary since it establishes clear forecasting plans and ensures the correct choice of forecasting methods used depending on the available data and the desired results. Additionally, unlike informal forecasting may be subject to bias because of bureaucracy, and lack of clear decision making structures, formalized approach to forecasting only relies on scientific data to make informed decisions.

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