

Transportation national group (columbia business school) essay sample

[Economics](#)



**ASSIGN
BUSTER**

Preparation questions for Transportation National Group

1. What challenges does TNG face in managing its leases on trailers?
2. What is your assessment of TNG's current lease performance measures and controls, especially its use of ROI measures?
3. How might TNG implement revenue management? What ideas or approaches seem most viable in a business like this?
4. Based on the data for the Yakima branch, what is the potential revenue opportunity at this location from optimally controlling the availability of leases of various durations? That is, suppose TNG knew the demand; then what lease decision should TNG make? The spread sheet with the data from Exhibit 5 has been posted. (Note there is a small, inconsequential discrepancy between the spreadsheet and the exhibit in the case - just use the data in the spreadsheet.)
5. If TNG wanted to implement revenue management, what recommendations would you make going forward and how would you prioritize your recommendations?

CHALLENGES

Demand can vary geographically and seasonally. The highly seasonal nature of demand at many locations makes it difficult for the company to manage the leasing. The lease rates of the market also vary over time due to the differential season. Owing to the competition of local markets and differential demand, the company may, therefore, have little control over the local spot

rates. Consequently, the profit may not be as high as the company may want since the price is mostly controlled by the local market. In addition, the company has to compete not only with the Excel, but also the local businesses.

It is important that the company consider the ability to accept the potential contracts in the future. Accepting or declining a current contract will definitely have an impact on the future ability. Regarding the geographical demand, one-way leases are also difficult to manage, because they involved one branch losing a piece of equipment and another branch gaining it. Whether this net change is desirable or not depend on the local market conditions at each location. Thus, coordination among the regional management and reallocation of equipment is important since there could be long-term imbalances in equipment that arose due to major one-way seasonal flows.

CURRENT PERFORMANCE MEASURES AND CONTROLS

ROI is widely used to assess how companies collect revenue from investment in terms of the effectiveness of a department, project or each commodity. TNG has a large capital cost of investment and high ROI is needed. However, there are some faults how to use the ROI.

First, there is no reason why they select 10% as a critical point. The purpose of using ROI is to know the company can collect more than the cost of investment or not and for planning of future investment. This number should be changed by the total number of years that trucks are going to use and

new truck investment plan decided by the demand. Therefore, the critical point that the front person uses should be varied in each year.

Second, ROI should be used for annually basis instead of a single contract in this highly competitive market. Providing lower price may result in increasing prospective customers, increasing the utilization of trucks and finally rising the total ROI, analogous to globally optimum. In the competitive market, flexible bottom line of price is necessary to keep prospective important customers. To relax the constraint, ROI should be “ the ratio of Revenue for the year to Investment”. They can update the ROI everyday but they should use the yearly data. Furthermore, there are many ways to calculate and in this case, it is better to use the gross profit instead of the revenue. It allows them to assess the ability to collect money more accurately although the operating cost is relatively small compared with the capital investment.

Third, utilization rate of trucks should also be emphasized and in some cases they should prioritize the utilization rather than the ROI. If they only want contracts that have ROI of more than 10% or certain percentage, TNG may not have a good use of its capacity (investment) and even though the yield may be high, revenue may not be maximized. Also high utilization may result in having more prospective customers in the future. It depends on the revenue management and utilization and ROI should be considered simultaneously.

TNG does not concentrate on the gross profit for the year (Exhibit 4) because it has already invested on the existing trailers. It could consider an opportunity of having a larger number of fleet trailers. Therefore, the focus is

to maximize profit since it might waste the capital investment if the trailers are just to park, especially since the operating costs of serving the fleet are relatively small compared to the capital cost of equipment.

REVENUE MANAGEMENT

Revenue management is an integration of capacity and pricing. Given that TNG has a fixed number of trailers (capacity) that have very high capital costs, it should try to implement revenue management into its operational design so as to maximize revenue and minimize revenue loss (or opportunity costs) since operating costs to service the fleet are relatively small. It can do this by providing better service for certain customers and thus charge a higher price (price differentiation) and also control the number of trailers leased at lower prices (balancing the tradeoff between current and future revenue).

Price Differentiation

TNG is actually already practicing some kind of price differentiation in that it is charging different prices for different contracts, depending on the duration, the location, the time of the year and whether the lease is one-way or a round-trip. For example, it is charging higher prices during the peak periods and also for contracts that are shorter in duration. In addition, given that one-way service give rise to logistics problems, TNG charges a higher price for the one-way service. However, more can be done in maximizing its revenue.

Another way would be for TNG to segment its customers into a few categories. For examples, customers whose strategies are geared towards service, customers who are price-sensitive, customers who are able to commit a certain capacity ahead of time and customers who need the trailers at very short notice (due to insufficient equipments or out-of-service equipments).

For customers who are geared towards service, time-sensitive or require trailers at very short notice, their willingness to pay is usually higher, especially if the vendor is able to meet their stringent requirements (or exceed it). Therefore, it is possible for TNG to charge them a higher price by provide them with a higher level-of-service through more frequent service, higher probability of service, priority assignment of trailers, on-time guarantee, additional value-added services (bundling), etc. By marketing its competitive advantage of a large network and superior service, it would be able to differentiate itself from the rest of the competitions in the eyes of these service-oriented customers.

Different Contracts / Pricing

In addition, by charging at lower prices during the non-peak season (possibility less than 10% of the ROI), it would be able to attract customers who may not use the service otherwise and this would help to smooth out the demand. The same would apply if TNG were to provide discount to companies that are able to commit to a certain volume of leasing per year (especially specifying the volume for non-peak period). The following are a few types of pricing strategy TNG could use.

- Dynamic pricing with spot market shippers
- Dynamic pricing with contracted shippers
- Long term fixed-time contracts
- LT fixed rate - Bulk discount (if commit to a certain volume of leasing per year)

System Approach - Opportunity Costs and Additional Revenue

Since trailer leasing is a highly capital intensive business, it is important that TNG tries to squeeze every possible dollar from its customers (and thus its trailers). This is because every second that a trailer is sitting at the storage yard, there is an opportunity cost as the trailer could have been earning revenue (be it a large amount or not). There are also opportunity costs from lost of future contracts (which could be better source of revenue) when TNG make a decision to lease out its trailers. Therefore, there is a need to trade-off between the risk of having idle trailers and the risk of loss of future potential revenue. For example, the decision to accept a one-way lease or not should be based on the revenue from the one-way service and the possible loss (or increase) in potential revenue from the next lease by the one-way service.

Restricts Acceptance of Low Revenue Contracts

To help in making the decision, TNG should make use of demand forecasting and restricts the acceptance of low revenue contracts (such as contracts that are 16 weeks long or contracts that result in a great potential loss in future

revenue). That is, it needs to forecast future booking by higher-paying customers and to have the discipline to forgo a “bird-in-hand”. This approach will mean that TNG can still be as competitive as its competitors (in terms of pricing) and yet, managed its inventory of trailers by deciding how many trailers to allocate to each of the different lease duration category (with the help of demand forecasting and optimization) so that it will be able to maximize its revenue.

Lease Decision

Note that this is a network flow problem with integral right hand side, and therefore the integral constraint could be relaxed. Based on the 1997 lease data, the revenue could be improved to \$4, 920, 000 (cf. Table 1).

Intuitively, the 16-weeks lease gives the highest revenue per lease and therefore has the highest percentage of acceptance. Because of the relatively high return per day and rather stable demand the acceptance percentage of 4-weeks lease is also high. Although the 1-week lease has the highest price per day, its acceptance percentage is much lower, which is mainly caused by the fact that the seasonality is most obvious for the 1-week lease. In addition, the 8-week lease has the lowest acceptance rate.

Another important observation is that the rejection of 16-weeks lease occurs 4 weeks before the peak season, while 8-weeks leases are usually during the first 4 weeks of the peak season, and the short period leases might be rejected at any time during the peak season. This could be explained by the length of the peak season (about 10 weeks) verse the lease period. For

example, by rejecting an 8-weeks lease at the beginning of the peak season, TNG reserves trailers for the more profitable short term leases during the peak season. Acceptance of long term leases at the end of the peak season on the other hand improves the utilization of trailers during the off season.

Table 1: Potential Revenue with optimized lease decision

Actual Performance Potential Performance

1-WK4-WK8-WK16-WK1-WK4-WK8-WK16-WK

Total Demd. 13199187467621319918746762

Total Accpt. 8777767037251188894623744

% Accpt. 66. 5%84. 5%94. 2%95. 1%90. 1%97. 4%83. 5%97. 6%

Total Rev.\$4, 763, 000\$4, 920, 000

In practice, the same model could be applied using the forecasting demand to maximize the expected total revenue. We could improve the accuracy of forecasting by considering the seasonality as well as the long term contracts. Moreover, this model can be re-optimized whenever more accurate demand data are available.