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Optimizing Your Fleet Replacement Policy

Producers incorporate more than operating costs in upsizing decisions.

By Ryan Brown

THE $35 BILLION ready-mix concrete industry consumes about 75% of the cement shipped in the U.S. And the NRMCA estimates the industry is making do with about 55,000 concrete mixer trucks — a number that has stayed fairly constant for five years. After adopting a wait-and-see attitude following the recession of 2008, many ready-mix producers are now pulling the trigger to upsize their fleets.

But as any concrete producer knows, operating and maintaining a fleet of trucks is not only a necessity, but also a big capital expenditure. It may seem better to continue to feed the hungry beast of truck costs while the day-to-day lead time service rages on with customers. But at what point does avoiding a fleet upgrade begin to erode the bottom line and damage your hard-earned relationship with your customers?

Some independent operators have already recognized the opportunity costs in the marketplace and thus carved out a lasting advantage by emphasizing reliability. "We manage to a pretty high standard," says the owner of one independent ready-mix concrete provider in Houston. "Some competitors overbook badly and do not always show up for a job. We are

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a responsible supplier known for being on time, standing behind our product, and not taking on more work than we can handle. My reputation is the main thing I can lean on and the reason people choose to do business with us."

While there is no single generally accepted way of determining when to replace/upsize, there are processes in place to help. To make the best balanced decision in the real world, it's best to consider both quantitative and qualitative factors. To be sure, direct costs have to be considered when deciding when to replace an asset. However, indirect impacts like opportunity costs and driver retention also complicate things.

The quantitative effort

Life cycle costing (LCC) seeks to find the optimum "economic life" of a particular asset considering acquisition, maintenance, operational, and disposal costs over the time it is held.

The chief aim of any life cycle cost analysis is to minimize the total cost of ownership. The economic life of a truck can vary from operation to another depending on interest rates, depreciation, maintenance, and overhead. However, the cost of ownership is generally defined by:

1. cost of maintenance per year,
2. cost of operating per year, and
3. the cost of capital over the useful life.
4. The result of these cost calculations is the formation of a curve that shows the total cost of ownership. The lowest point in this curve is the best time to be in possession of an asset.

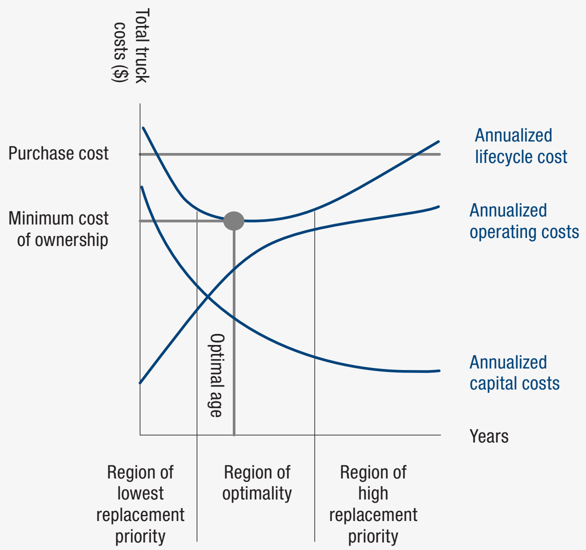

Figure 1: Under the Life Cycle Cost model, acquisition costs decrease over the vehicle life since the cost is spread over more years. At the same time, operational expenses rise over the years. There is a region of optimality, a point in time where the total cost of ownership is minimized, and that defines the optimal life cycle from a quantitative standpoint.

The qualitative dimensions

It would be easiest if all our decisions could be finalized from numerical analysis alone. But in reality, data analysis is generally just the starting point. Used in conjunction from the LCC analysis, indirect impacts like opportunity costs of lost sales, shots to corporate image, safety risks, and driver retention also have influence. The key is to make the components of the decision making as unbiased and measurable as possible. A decision matrix that's packed with "weighted" objective criteria can go a very long way in achieving clarity on the right breakpoints for your particular organization. Components of this table might be based on questions like:

- How close is your cost per mile compared to other similar fleets within your delivery radius? How much extra margin do they have to play with?
- What estimated impacts on driver retention will upgraded trucks give you? How important is this for the next few years?
- What market segments are underserved from lack of capacity? Are there opportunities for external hauling and other contractual services?
- How exposed is your operation to a catastrophic failure from wear and tear?
- What impact has your unexpected downtime had on your customer's operation? How serious is the risk they will jump to another local player in the market that can service them better?

The desired answers to these questions form the skeletal framework for your answer. The ranges on the LCC model provide your alternatives. These can be funneled into a decision analysis matrix in which weights and scores are assigned to each component of the overall decision.

Decision Criteria	Criteria Imprtance Scale (1–10)	Choice 1: Replace at 9 years	Choice 1 Score	Choice 2: Replace at 12 years	Choice 2 Score
Keep operational costs at budgeted level	9	8	72 (9×8)	4	36 (9×4)
Provide uninterrupteed delivery	10	10	100	7	70
Improve driver retention by 15%	6	9	54	3	18
Improve brand perception	2	2	4	0	0
Total weighted score			230		124

Figure 2: This example decision analysis incorporates the trade-in points identified from the LCC model and the other business situation requirements from qualitative discussions. In this case, replacing trucks older than nine years is the superior option.

Life cycle costing seeks to find the optimum economic life of a particular asset, considering acquisition, maintenance, operational, and disposal costs over the time it is held. Decision analysis plays a dual part in both bringing different viewpoints together and delivering the best, balanced answer. The economic life of a machine depends on interest rates, depreciation, maintenance, and overhead. The economic life of your business depends on being right. **TCP**

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