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# The Payback Puzzle

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It is a truth universally acknowledged, as Jane Austen might have said, that capital expenditure on existing equipment can only be considered if the savings achieved will return the investment within three years, and preferably in less than two. It is helpful to have such a clear-cut rule of thumb, but I find it totally incomprehensible and deeply frustrating. Two main problems exist with the payback mentality.

On the one hand, three years is a ridiculously short time span when compared with the rates of return that can be achieved by putting the money elsewhere. Take the worst-case scenario: assume that the business has an overdraft, and the effective rate of interest that would be earned by leaving the money in the bank is the charge on the overdraft facility. The money would give an earning capacity of, say, 12.5%.

In contrast, a three-year payback is the same thing as a 33.3% interest rate. At the end of three years, you have the value of your investment, albeit sunk into installed hardware. You also have a revenue stream on an ongoing basis, either in the form of reduced spending on utility bills or in increased production output.

If your CFO thought he could get such a high rate of return on his cash deposits, he would move heaven and earth to secure the deal. Even worse, if the business is cash positive and money is sitting in the bank, then the interest paid is probably not better than 2%. That's like a 50-year payback period.

On the other hand we, the engineers, are probably to blame for this extreme caution in the financiers. We persist in basing our payback calculations on the performance of equipment in its "as-new" condition, ignoring the effects of dirt, dust, wear and tear, and all the other degradations that inevitably are

associated with the operation of any mechanical plant. Is it any wonder that the finance guys are perpetually disappointed when our grand schemes inevitably underperform?

The answer to this puzzle is also in two parts. First, we need to be realistic in our performance assess-

ments, allowing for any decline in performance (while, of course, designing the system to ensure that any drop-off in efficiency can be counteracted through good maintenance).

On the flip side, the financiers must then apply the same yardstick as they use for deposits and loans to ensure maximum performance for the business.

In this way a 10-year payback would be seen as a good proposition, and a three-year payback would be fantastic, not dismissed as marginal.

Second, the usual reason given for rejecting any investment that takes more than 36 months to show a profit is "business uncertainty." It is said that it doesn't make sense to sink money into slow-burning projects when we may not be here in five years' time. However, the imperative to ensure efficient operation of refrigeration systems throughout their life is greater than ever. It seems likely that a company that cannot plan for five years ahead is writing its own epitaph. ■



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