



FOCUS ON PROFIT TO REAP BENEFIT OF SPEED TO MARKET

by PRESTON G. SMITH

Many companies have gained great benefits from accelerated product development, but others have tried and failed. The key to reaping the benefits – and avoiding the pitfalls – is to understand exactly how it will affect the operations of your specific company.

There is no better way to become focused on the real benefits – or otherwise – of accelerated development than to place it on a profit foundation. If faster development earns us more profit than alternative uses of our resources and energy, we do it. Otherwise, we don't.

Most product development projects have four objectives: schedule time, development expense, unit manufacturing cost, and product performance or features. To make knowledgeable decisions on the relative value of time to market in this four-way consideration, it must be related to profit. The factor for converting delay into profit is called the cost of delay (see panel).

Once we know the cost of delay for a project, we should base all proposals to compress time on this factor. Laboratory technicians and CEOs alike can employ this cost of delay factor. This ensures that time-to-market decisions are made consistently across the organisation. Moreover, because decisions can be made at developer level, they can be made faster and with confidence that the decision is the same one that a senior executive would have made. Thus, knowing the cost of delay speeds up decisions and empowers the project team to proceed without waiting for approval or wasting effort in being overruled from above.

Time Undervalued

In short, time compression should be subject to the same cost-to-benefit process that would be used routinely for a new machine tool in the shop. If we do not apply this type of analysis, the normal course of events is usually a quite subjective approach to evaluating time. The problem here is that, because time has less tangible impact than other factors in the trade-off decision, we tend to undervalue time,

usually greatly, so we are reluctant to pay too much for it. Also, because it is subjective, it is a slow decision making process as various people's opinions are tossed in and out.

However, we need not always pay dearly for time. Often when we run the numbers, we find that time can be bought remarkably cheaply. Sometimes, time can be gained while other trade-off objectives also become more beneficial. For example, a true cross-functional development team often leads to advantages in all objectives at once.

The difficulty here is that there is still a price to be paid in organisational change, so some managers choose not to pursue opportunities that the financial analysis shows would be beneficial. It simply seems too difficult to make the organisational change needed to reap the financial benefit.

Wide variations

The cost of delay varies by factors of 10 to more than a thousand, even for companies in the same industry – even for different projects within the same company. It

follows that there are no universal values, such as “x months of delay equals y proportion of a product's lifetime profit”.

Even generalisations, such as time to market being more important in high-tech industries than in more

mature ones, are risky. A high-tech company may be competing on a basis other than cycle time, whereas a mature company may be able to gain advantage by being faster to deliver the goods than its direct competitors.

For instance, a company producing electrical machinery found it was missing out on opportunities it discovered at an annual trade show, as it was too slow to introduce a new product in response at the next show a year later. So it aimed specifically at this target. Once it had its cycle down to under a year, it saw little point in further reduction and thus shifted its next improvement efforts to cost and quality.

A similar faulty generalisation is to over-rate the importance of speed to innovation leaders. Ironically, pioneers often have the luxury of time, simply because

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they may have little competition until they announce their product. In contrast, the clock is clearly running for the followers.

In conclusion, there is no substitute for running the numbers for your projects. The cost of delay is likely to vary by a factor of at least 10 for various projects that you have under development today. In real projects, we have calculated costs of delay ranging from \$2,000 per day to \$1,000,000 per day (in pre-tax profit). We even caught one team leader understating his cost of delay by half, because he was afraid senior management would not believe the true value!

A supplementary benefit from running the numbers for your projects is that, as you do it, you will start to see patterns that may not have been clear before. For instance, one client found that cycle time is more valuable for new additions to its product line than it is for model replacements. With this kind of information you will know where to put your time-to-market emphasis, rather than pursuing a cut-cycle-time-in-half policy across the board.

Strategy and tactics

Once you have a quantitative appreciation for the cost of delay for a range of your products, use this information both strategically and tactically. The tactical application has already been explained: use the cost of delay, as well as the trade-off rules among the other three project objectives (project expense, manufacturing cost and product performance), to make daily project decisions related to "buying" time on a project.

Strategically, use the cost of delay for setting directions in a time-to-market program. Calculate the cost of delay for a representative assortment of your projects. Then calculate an aggregate value for the whole organisation by weighting the cost of delay over your projects, for example, weighting them by revenue or expected profit contribution.

This aggregate cost of delay is useful for deciding whether to undertake time compression at all, whether to invest in design automation technologies to help your engineers work faster, or whether to co-locate development teams to speed up their activities. If, in doing these calculations, you discover segments of your business that have quite different costs of delay than others, you will be able to focus your strategy better. For example, you might approve an advanced CAD system for one business segment but not for another.

Some clients have made profound changes in their product development systems based on insight from their aggregate cost of delay.

One client, for example, found that the signature authority of their development team leaders was equivalent to only four hours of project delay. Because management wanted teams to be looking for savings of months instead of hours, top management totally revised the project budget approval process, basically giving the team full authority for its budget after initial project approval.

CALCULATING THE COST OF DELAY

The cost of delay is a value that tells you how much profit you will lose if the product is delayed by a day, a month or whatever period you prefer to use.

The calculation is straightforward. First, create a profit-and-loss statement for the life of the product, including its development period and its sales life. This normally can be done on one sheet of paper using spreadsheet software. Keep the model simple, because this will facilitate buy-in, and it is all that can be justified by the accuracy of the data used.

This is your baseline model, which assumes that the project goes on time, on budget and so on. Now think about what would happen if the product were six months late. How many orders would you lose? How many of these might be regained later? How much market share might you lose permanently because a competitor gained a stronger foothold? Would you miss a premium pricing opportunity or have to lower your price?

Express this late-to-market scenario as a variation of the baseline spreadsheet, and calculate its profit figure. Now subtract this from the corresponding profit of the baseline spreadsheet to calculate the profit lost due to lateness. Divide this number down to obtain the cost of delay in the terms you desire.

The cost of delay is expressed as pre-tax profit (not revenue) because this is the kind of money we can use to "buy" time-saving opportunities. You can use similar calculations for other factors governing your decisions, such as the profit impact of omitting a product feature or having a higher unit manufacturing cost.

To sustain a speed-to-market program, you must know, in terms of the dynamics of your competitive arena, just how cycle time will translate to your bottom line. Once you know the cost of delay, make sure it is used throughout the organisation to make development decisions. This puts time to market on a quantitative basis and empowers the development team to make quick, accurate decisions that will stick. ■

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