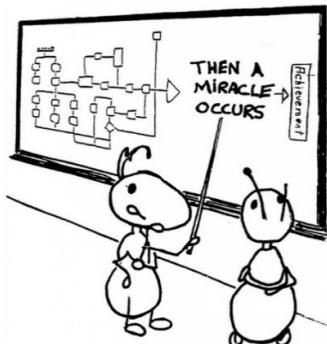


## Contingencies are not a soft option!



**"Good work, but I think  
we might need a little bit  
more detail right here..."**

In *The Real Estimating Challenge Isn't Calculating the Cost*<sup>1</sup>, we suggested that calculating a project cost estimate is the easy bit. Having a realistic estimate accepted by either a client or your management—or both—and then delivering your project on budget is far more difficult. In this article, we look at the challenge of delivering 'on budget'.

Knowing what a project is really likely to cost is important from every perspective: personal, professional, and organizational. But developing a realistic and achievable cost estimate has two components: first you develop the baseline estimate, then you need to develop a realistic contingency. Most people do step one, very few people even think of step two.

The baseline estimate should be realistic and there are many valid approaches to creating this<sup>2</sup>. This article focuses on what comes next.

If you simply stop at the net cost estimate based on expected resource usage and known cost rates your project will inevitably overrun its budget! There are no allowances for risk which will inevitably arise during the course of the work – no project is ever 'risk free'.

Risks are *uncertainties that matter*, and from a cost perspective this includes variability in estimating processes, variability in performance, the uncertain events that may, or may not occur.

### Managing variability

The actual cost outcome of every element in your estimate will vary from the estimate by some amount, the work will be done quicker or slower than planned, people will change and cost more or less per hour, etc. The only certainty is that the actual cost outcome will vary from the estimate. The key question is by how much? Probably the best guide is looking at past performances and using past experience to size this part of the contingency appropriately<sup>3</sup>.

### Managing uncertain events

This type of uncertainty is the realm of the risk register and its list of identifiable uncertainties, overlaid by other risk events that were not foreseen. These are the *known unknowns* and *unknown unknowns* of risk management<sup>4</sup>.

<sup>1</sup> See: [https://mosaicprojects.com.au/Mag\\_Articles/AA005\\_The\\_real\\_estimating\\_challenge.pdf](https://mosaicprojects.com.au/Mag_Articles/AA005_The_real_estimating_challenge.pdf)

<sup>2</sup> For more on **cost estimating** see: <https://mosaicprojects.com.au/PMKI-PBK-025.php#Process1>

<sup>3</sup> One approach is using a **reference class** to assess the level of reserves needed:  
<https://mosaicprojects.wordpress.com/2017/05/23/the-reference-case-for-management-reserves/>

<sup>4</sup> For more on **risk management** see: <https://mosaicprojects.com.au/PMKI-SCH-045.php>



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This type of risk can be mitigated or reduced by good practice, but neither of these *unknowns* can be eliminated entirely, residual risks always remain. The important question is how do you compensate for the remaining risks in your business case or cost estimate?

One approach is to pad the estimate and hide the costs within the overall price. The problem with this approach was identified by Eliyahu Goldratt in *Critical chain project management* (CCPM - 1997). He stated that when the contingencies are hidden, they tend to get absorbed by the work and are generally larger than needed. This is not a good way of working. For example, in developing software every test may fail, but only some will actually fail and identify bugs that need fixing. Padding every test with some allowance for failures hides the money and it is likely to get used anyway to cover all sorts of other events.

The better approach is to price each test on the assumption the test will pass, and then create a contingency for ‘bug fixes’ based on past experience. This allows the cost of rectification to be seen, monitored and controlled independent of the costs associated with testing. If the number of ‘bugs’ is too high, driving up costs, this becomes obvious and allows management action to improve the development process to be considered, addressing the root cause of the issue<sup>5</sup>.

### Managing contingencies

Calculating the amount of money needed to adequately cover the risk exposure of the project is complex, and needs expertise. But once this has been done, the values calculated should be divided into two distinct parts:

1. The project contingency, held within the project budget to compensate for variability and other known unknowns that will occur to a greater or lesser extent. The project manager should be responsible for looking after the expenditure of this money but is expected to report to senior management on each use.
2. The management reserve, held outside of the project budget for use by senior management to offset the effects of unknown unknowns.

Neither of these amounts are ‘slush funds’. They are calculated and held for explicit events that may occur and the use of the funds is constrained, controlled and reported on throughout the life of the project.

### Summary

Developing a sensible level of contingency and reserve is a complex process, and beyond the scope of this article. The message is simple though, if you do not do this you will overrun budget!

The bigger challenge, is to convince management to accept the need for a properly evaluated contingency in every project. Achieving this requires the solutions outlined in *The Real Estimating Challenge Isn’t Calculating the Cost*<sup>6</sup>,



<sup>5</sup> For more on *root cause analysis* see: <https://mosaicprojects.com.au/PMKI-PBK-030.php#Process2>

<sup>6</sup> See: [https://mosaicprojects.com.au/Mag\\_Articles/AA005\\_The\\_real\\_estimating\\_challenge.pdf](https://mosaicprojects.com.au/Mag_Articles/AA005_The_real_estimating_challenge.pdf)



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linked to a concerted program of support from both the organization's PMO and its portfolio management team.

The challenge is not insurmountable! Large parts of the USA government under the auspices of the Government Accountability Office (GAO) are mandating this approach, and the UK treasury has its '*Green Book*'. Your challenge is to get similar attitudes to properly managing the consequences of risk within your senior management.

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