The importance of numerical analysis in the T4 exam, by the case writer

In the T4 assessment matrix, numerical analysis of the issues in the unseen material is awarded marks in the criterion of application. There are a total of 15 marks in application, which includes marks for your SWOT analysis and the application of other technical knowledge to the case material. So why are the calculations so important?

The preparation of accurate supporting calculations is very important. You are sitting the final CIMA test of professional competence which assesses many skills, including your ability to prepare accurate financial analysis for the issues in the case. How can you prepare a report to the board of the organisation, advising them on alternative courses of action and concluding with your recommendations, without preparing and explaining the financial implications of these actions?

Just like the real world
The T4 exam tries to put you in the position in which you find yourself in the real business world. At work, operational and senior managers will look to you, as their management accountant, to not only prepare accurate financial analysis but to explain the results to them.

You will need to develop the ability to both prepare accurate figures and understand what they mean, together with the ability to explain the financial impact of taking alternative courses of action. If your line manager asked you to prepare some calculations, s/he would be disappointed if your calculations contained errors. At worst, a decision could be made using the wrong financial analysis and this could have an adverse affect on the company you work for.

It’s the same in T4. There are always a variety of problems and new proposals in the unseen material on exam day and it’s your role to write a cohesive, well structured report that contains sound financial analysis. Incorrect calculations could result in you recommending the wrong course of action to the board or even rejecting a financially viable proposal.

Over the last few years, the T4 exam has contained a wide range of different types of calculations, including:

- NPV analysis and comparison of alternative NPVs
- costing of products from different manufacturers including fixed set-up costs
- Inventory valuations and inventory write-offs
- calculation of carbon emission reductions
- costing of the impact of a proposal on the profitability for a specific year
- cash flow forecasting
- costing exercise for TV programme making.

As you can see from this diverse list of calculations, the T4 case writer is testing your skills to see whether you understand the data presented to you in the unseen material and to see whether you are able to determine what type of calculations you need to prepare. As explained above, you must not only to attempt the calculations but prepare them accurately so that your financial analysis is correct.

Practise past papers
You have already passed all of the other CIMA exams and the calculations in T4 are often less complex than in some previous CIMA exam, such as in the F3 financial
strategy exam. When you prepared and revised for previous CIMA exams, you would probably have worked through at least two or three past papers.

T4 is a case study scenario with a lot more data to understand in the pre-seen material. However, you can access all the past T4 exam papers as well as the case writer’s suggested answers.

I recommend you improve your financial analysis skills by working through the calculations from at least two past T4 exams. You could read just the unseen material and attempt the calculations contained in that exam and then compare them to the suggested answers; you do not necessarily need to read all of the pre-seen material.

You will make errors initially but as you practice, you will see yourself improve. You can use past papers or mocks provided by tuition providers, but there is no real substitute for attempting past T4 calculations.

**Preparation of a NPV**

One of the most common techniques used to assess the financial viability of a new proposal is the preparation of a NPV (net present value). This technique appraises the overall impact of a proposal using the forecast future cash flows (and not profit) for the proposal and then discounts them at a suitable risk-adjusted discount rate. Therefore you are calculating the net effect future value of cash in flows and out flows at today’s money value, taking account of the business risk of the proposal.

NPV calculations have been examined in many past T4 exams and therefore you should practice your ability to prepare NPV calculations based on some of the past T4 papers, including the March 2012 exam. In this exam a choice of alternative actions was proposed and the candidates were expected to produce a NPV for the new proposal (using higher sales growth for the ‘own brand’ proposal) and to compare it with the alternative of carrying on selling products to this customer under the company’s usual brand name.

Around half the candidates prepared accurate (or almost accurate) calculations; the remainder prepared disastrous calculations which often impacted on them later when they rejected the proposal because their flawed calculations had suggested it was not financially viable. This was incorrect as the proposal was financially acceptable.

**Typical errors to avoid**

This is a classic example where incorrect calculations can affect your judgement in analysing and making recommendations on an issue when you are under pressure in the exam room.

Here is a list of some of the common errors made in the preparation of net present value calculations, together with advice as to what you should do.

- incorrect timing of cash flows – the investment cost is usually in year zero and cash in flows are usually from year one onwards
- using the wrong number of years – if the unseen material asks you to assess the proposal over five years, then this would mean that you should include cash inflows for years one to five inclusive (and therefore not year six onwards)
- using the wrong discount rates or the wrong timing of discount rates. The discount rate should start in year one: eg a discount rate of 10% would result in a discount factor of 0.909 in year one (not in year zero)
• calculating errors – look at NPV number you calculate and see if it looks reasonably accurate
• careless errors such as adding the year number into the cash flows (ie adding in 2015 for example!) or adding the number of units into the financial figures.

In respect of the March 2012 exam, the common errors for the ‘manufacturing problems’ calculations were:

• failure to recognise the capacity constraints of two of the manufacturers
• ignoring the fixed set-up costs being charged by two of the manufacturers
• calculating the set-up costs as a per unit cost and then changing the number of units to be manufactured by, say, manufacturer B to only 20,000 units and ignoring that the set-up costs had been calculated on a larger number of units
• leaving the calculations incomplete.

To demonstrate your competence in this final test of professional competence, you must provide accurate calculations (numerical and financial) in your T4 exam report. It is critical that you produce accurate calculations, as they will be used within your discussion of the issues and form part of the basis of your recommendations.

Remember, calculations are not just about gaining marks in application, as incorrect calculations will affect the credibility of your entire report.

Good luck in May.