Bullet Proofing Your Model

Let's talk now about protecting your model. You've got a financial model that you're really
happy with and you don't want anybody to mess that up. There are a couple of different
methods that you can use to protect that model in Excel and make sure that no one's going
to change anything that you don't want changed.

There are three methods of model protection in Excel. You can protect the file itself, so they
can't open it up without a password. Secondly you can protect the structure of the model so
they can't delete or unhide particular sheets or part of that model and lastly you can lock
cells and protect the sheet itself.

There's a lot more detail on this in chapter 7 of your book but I'm going to take you through
each of those in detail and show you how to do this in Excel.

Open up a copy of the file that I've given you called Model Protection. Firstly we're going to
look at protecting the file itself. If I go into here and go File and save as, I can save over the
top of it and if I then go into tools, general options it gives you an option to put in a
password to open or a password to modify. I quite like doing password to modify because it
means that you can open the file but it only lets you into a read only copy of it so if you
make changes you need to save another of copy of it and you can't mess up the master
model. So that's not a bad option. Make sure you take a note of the password and try not to
forget it. Of course a password is not quite as secure as Microsoft would like you to think it
is. It's actually pretty easy to bust into a password. I mean I'm sure you guys have done this
before, you just go into google and type in password cracker, it's actually pretty easy to get
in and bust open a file. If it's a matter of life and death, I wouldn't trust a password. The
purpose of putting password protection onto a model is supposed to be to stop people from

being nosy. It's not supposed to be absolutely bullet proof. If it's market sensitive information, salaries or something like that then put it in a secure location.

The second method is protecting the structure of the workbook. Let's say you've got some salary information in here and you've got my salary and then I've got my staff, a couple of staff in there. Put those in there like that, total that in there. That's my budget, that's what I need to put into my budget but nobody needs to be concerned with the breakup of all of that, all they need to worry about is the total amount here. This is my total budget. I'm going to go into here and call this my budget. They don't need to see my details so what I'm going to do is link through to here like that. Then I will hide that tab, right hand click on that tab and hide. Now, you can see where it came from but you can't get into it unless of course you just right hand click and unhide. We don't want them to be able to do that, so this is where I'm going to go into review, protect the workbook and then protect the structure. The password here is optional. I quite like leaving it blank because it just serves as a deterrent and you don't have to worry about forgetting the password. Now you can see when I right hand click, the unhide option has suddenly disappeared. Bear in mind though that there are lots of ways people can still get in. If they can see that they can still see the cell reference here, it's quite easy for people to go like that and then just go like that, so they can just get into your data in another way. Just be careful of that, it doesn't necessarily mean that they can't get into your data. I'll just go back now and unprotect the workbook.

Going back to our three different methods of model protection. We've talked about protecting the file, we've talked about protecting the structure and now we're going to have a look at locking cells and protecting the sheet.

Let's come back to the file here and we've got a forecast here. We're doing a compound varying growth rate calculation, so I'm going to do an increase growth rate here. Say $5015 multiplied by, going to use the old 1 plus 5%, what I'm saying there is I want to multiply the whole thing by 105% so to get to that, I'm going to say 1 plus the 5%. Okay and that is a varying growth rate and it is compounding so I don't need to worry about any dollar signs in here. I can then go in and copy that across. I'm happy with that.

I'm a bit worried though that people might come in and start making changes. You can see that people are allowed to make changes to the starting point and to my growth rate. You can tell that, I mean you guys are modellers you should be only make changes when you see something formatted as an input variable. That means that you're allowed to make a change but I'm not entirely sure that everybody knows that. I'm just really concerned that they're going to go in and mess up my formulas. What I'm doing to do is go in and protect the sheet and stop them making any changes. If I go to my review tab, hit protect sheet, again you can put in a password if you'd like to, and I'm not. Now, this file is protected, I can't change that but it also means I can't change my growth rate, I can't change anything. What I need to do now is go into the properties of the cell and make a change so that it's unlocked. Once I've unlocked the individual cells, then when I put on the password protection it will then allow me make changes to those unlocked cells.

In order to do that, I need to take off my protection. Unprotect sheet, highlight the cells that you want unlocked, the ones that are formatted as an input variable. I also want this one formatted as an input variable so I'm going to hold down my Ctrl key. If you ever want to highlight ranges and highlight lots of them but they're not next to each other, non-consecutive ranges, you need to hold down the Ctrl key. Highlight that, hold down the Ctrl key and hit that one there. What I can do is right hand click, format cells and then go into protection, unlock and okay. Now when I go in and protect the sheet, I can't make changes to this but I can make changes to that one. That's a really powerful tool in financial modelling. You need to be sure that your sheet has been unprotected first of all, go into the cells that you want to be unlocked, right hand click, unlock the cells, turn on your protection for the sheet and only the cells that you've unlocked will be able to be changed.

Model protection is a really powerful tool. We've talked about how to protect the file, we've talked about how to protect the structure and also talked about how to lock certain cells so that you can't make changes in those particular cells. These are tools that we use a lot of in financial modelling so make sure you have a play around, that you are comfortable with each of those and have a look at applying those to your models.