Transcript for Session 019

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Transcript:

Hi. Welcome to http://chandoo.org podcast session 19. Today I have an interesting interview lined up for you. I am really glad to feature **Danielle Stein Fairhurst**. She's a good friend and a fellow blogger, author and a trainer on Excel and Financial Modelling. She runs her small business from Sydney, Australia. I had the pleasure of meeting her when I was in Australia way back in 2012. It was the start of a very good friendship from that point onwards. Danielle and I have been collaborating on various projects and we have been learning from each other all this while. I thought she is a really good person to share some of the tips, techniques and ideas when it comes to business analysis and modelling with us. Today, I am really happy to feature her in our podcast where she will be talking about **'6 Tips for Best Practices in Business Modelling**'. It's a very long title but at the end of the day when you are starting your career as a modeller in the financial modelling industry or any other industry where you have to develop models, it is critical that you understand the process of modelling and follow the best practices. So, Danielle's podcast is a great way to understand some of the most common sense and easy to implement techniques when it comes of modelling. It gives you a head-start. Once you know these techniques, you can always add some extra things and become a very good modeller very soon.

Let's dig into the show and talk to Danielle.

Chandoo: Hi Danielle, how are you.

Danielle: Hi, I'm good. How are you?

Chandoo: I'm doing well. I'm really glad to catch up with you after a while.

Danielle: Yeah.

Chandoo: Has it been almost two years?

Danielle: Yeah. I think it has been two years since you were in Australia.

Chandoo: It's good. I had so much fun the last time I was there. As soon as I came back to India, the only thing I was thinking was, "When am I going back to Australia? When am I taking my family there?" I wanted them to have the same beautiful experience that I had.

Danielle: Yeah. It was a shame you couldn't bring your family last time. But, I really hope you'll be able to bring them next time.

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Chandoo: That's right. I am hoping it'll be sometime in early to mid-2015 when I can come back to Australia. Maybe I can do a couple of classes, but most importantly, bring my kids and wife so that they can also see all the beautiful places there and meet all the nice people.

Danielle: Yeah. You're certainly popular down under, so I am sure there will be many people really keen to meet you again.

Chandoo: Let's hope so. For those of our readers who are not familiar with your work, maybe you could briefly tell us what you do and what you're currently working on.

Danielle: Yeah sure. I run a consultancy in Sydney, Australia called **Plum Solutions**. I specialize in the use of Excel for the purpose of financial modelling, data analysis, budgeting and forecasting - basically anything to do with Excel. Excel is pretty much my world! It's all I've ever done as part of my career. I've kind of built my business around the use of Excel and making it practical for people and business users to use Excel. I found a bit of a gap in that kind of area. I go into organizations and help them with solutions and I spend the rest of my time running workshops and training courses around the countryside. I do some courses in the Middle East, Asia and all of Australia. I really enjoy that.

Chandoo: That's good. How would you qualify your business? Is it mostly consulting or mostly training?

Danielle: It's about half and half, I'd say.

Chandoo: That's good to know. I think the last time I spoke to you; you were doing more training than consulting, if I'm not wrong.

Danielle: Yeah probably. It sort of varies.

Chandoo: Do you also write articles on your website.

Danielle: Yeah. So, we've got http://plumsolutions.com.au and we write blog articles and have a newsletter and that entire kind of social media thing. I've got a book published which is part of the Wiley finance series. It's called 'Using Excel for Business Analysis'. It's kind of based around financial modelling which is kind of a lot of what I do. I didn't want to call it Financial Modelling as it kind of restricts its area. It's really the use of Excel for business. 'Using Excel for Business Analysis' came out just around the time when you were in Australia in 2012.

Chandoo: Yeah. I saw the book even before you did!

Danielle: That's right! For some reason it got delivered to you first and you got to see it when it first came out.

Chandoo: I think it was given to Kurt, one of your staff members and then he gave it to me because I was meeting you the week after.

Danielle: Yeah. And then you brought it as a surprise for me. That's right. I was so excited.

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Chandoo: I still have a copy of that book with me. It's a delight to read. I think I wrote a review of the book as soon as I got back to India because I felt that the book [as you rightly said] is not really leaning heavily into financial modelling - which is an interesting topic in itself but it requires a certain type of industry background, educational qualification or at least some sort of that kind of knowledge. Whereas the business analysis part of it is something that everybody is expected to know and do, especially if you are becoming an entry level Analyst or a Manager in a company. You are expected to do a lot of business analysis. Your book is the right guide for people who are starting out in that kind of career and want an overall guide on all aspects of business analysis, how to go about building models and how to use Excel better. I really like the book and from my website review, I can see that quite a few people enjoyed it.

Danielle: Yeah, thank you. It was written using Excel 2010 which is not the latest version anymore. We've now got Excel 2013. It's not a massive change but it sort of gave me the opportunity to do a new edition. Wiley has asked me to put together a new edition. It gave me a chance to go through it and I've added a few new things in there that sort of relate to Excel 2013 and taken out a lot of the things that related to 2003 or things that people don't really use so much anymore. I'm kind of half way through dong that. It's basically a lot of screenshots. There are about 300 images that are part of the book! That's because it's very practical. It's very hard to write about Excel without showing what you're talking about. When I close my eyes, all I can see is screenshots of Excel 2013! That's what I'm doing at the moment.

Chandoo: When is the second edition due for release? Do you know that yet?

Danielle: Yeah, it's the 9th of March 2015.

Chandoo: Excellent. Hopefully, I'll get to see the first copy of the second edition as well!

Danielle: Yes, you might well do!

Chandoo: Coming back to the topic of screenshots, I remember that because when I met you back in 2012, I was also seriously considering writing a book. I was talking to a lot of Excel authors and when I met you in Australia that was my chance to know from you face-to-face what the experience was like.

Danielle: Did I put you off?

Chandoo: No, not really. I mean I had an impression that writing a book takes a lot of patience and a lot of different kind of work. Not that I'm not working, it's just that working online or on a blog post is a different piece altogether. You don't have to take 300 screenshots. You do have to take some, but that's just for that topic. Whereas, when you are writing a book, you need to maintain that same tone of conversation throughout the book. That requires a different kind of practice.

Danielle: Yeah, I know what you mean.

Chandoo: I spoke with you first and then eventually I spoke with many people. But, finally in 2013, I wrote a book. So, I can understand your pain when you say 300 screenshots! Although my book had far less than that, but it's still a lot of hassle to take all the screenshots, make sure that they are all conveying a similar kind of thing related to the topic you are writing and organize them, put them into

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the book template etc.

Danielle: When you're writing a blog post, you can do those kinds of dynamic screenshots. I love those - the ones that move. When you look at them on screen, you can see them doing the action. Obviously you can't do that on a page. I've actually provided all of the back-up models as part of the package when people come for my training courses. They get all of the models that I've used to create all of the screenshots and then also make them publically available online because it's really hard to really get a feel for the model without really seeing it in a soft version.

Chandoo: That's another big challenge. And, as a beginner author, I was not really sure. On the blogs you always know when you are not explaining something properly because you immediately get feedback. Somebody comments back saying, "Hey Chandoo, can you elaborate this topic?" And, you immediately know that the explanation you provided didn't work out. You can either expand it immediately or you can take that feedback and use it for the next article.

Danielle: You can edit it as well.

Chandoo: Yeah, you can edit it. In the book, it is more or less set in stone.

Danielle: You don't get a second chance.

Chandoo: That is another tricky thing. You never know whether you have explained enough or not. You could do a couple of editorial reviews and send it to a couple of friends or people who would like to do a beta test of it, but there is only so much of testing that you can do before you launch it.

Danielle: Yeah, that's true.

Chandoo: That's quite an interesting thing to know and I'm certainly looking forward to your second edition of the book. I will again recommend it whenever it is out. I am super excited about our topic for the day which is modelling best practices. As you rightly said, this is not about financial modelling but this is about a bunch of common sense tips or guidelines that any Analyst or Manager should follow if they want to set up a best -practice in their organization and also follow it so that everyone uses Excel in a consistent way. This is an area where there is a lot of interest. People are always trying to learn what the best practice is so that they can observe those rules and adopt them to their requirement and so on and so forth. Why don't you take us through the list of things?

Danielle: Yeah. I think a lot of people that use Excel are self-taught. Most people would describe themselves as self-taught. When you've kind of figured stuff out for yourself, you don't really know necessarily if what you are doing is right. It might make sense to you but you're not sure if that's what you're supposed to be doing. Also, people who are self-taught might know something that's really advanced but they might not know something that's quite basic. So, a lot of this kind of best-practice stuff is really common sense. It's really what makes sense to people. A lot of it is about reducing the possibility for having errors in your model. I'll call it a model rather than a spreadsheet. I like the word model better, don't you?

Chandoo: Yeah, I like it. For me, when I first started working, we had this colleague in my office who

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wasn't really working in my team but she used to sit right next to me. She was also a Project Analyst like me. I used to see her constantly building these models. People used to call her up from all the different locations in the company and ask her for guidance or ask her to build a model. These models were pricing models or product life-cycle models and things like that. They always sounded very fancy. So, I was really apprehensive about this 'model' word when I started my career. But, eventually, once I kind of settled down and understood what it really meant, it became something that is approachable. Model is a fancy word, but in the end, it is an Excel spreadsheet designed to solve a business problem or provide a solution for something. It is a different word. I don't tend to use it often because I feared it at that point.

Danielle: Do you think it sounds scary?

Chandoo: Yeah, early on in my career! But, as you said, model is probably the right word to use when we talk about business problems.

Danielle: Yeah. I mean it does sound a little bit more professional if you say to your boss, "Let me just refer to my model that I've created for you!" It sounds so much better than if you just say that you'll look it up on a spreadsheet! A model sounds so much better. So, we'll call it a model. But, I do try to de-mystify the whole financial modelling process because I think a lot of people don't realise - or, if they are working in Finance and they're using Excel and putting together models where they've got inputs and outputs and you change the inputs and the outputs change [that's really a model really], you might not necessarily call it that. Many times at the end of the training course, they say that they're really already doing all of that, i.e. they are financial modellers already but they didn't necessarily describe themselves like that. It's not rocket science; it's really just using formulas for the purpose of finance whether it's just to calculate some pricing or to look at some profitability. It can be something really simple. I think the best sorts of models are really simple. They don't need to be overly complicated.

Chandoo: That's right.

Danielle: I've got about half a dozen points which have been expanded on in Chapter 3 of my book, but I'll go through each of those points and how they relate to basically people just using Excel. I kind of go through these things in any course even if it is just a basic training course because it's something that everybody needs to know whether you're putting together a dashboard or whether it's for the purpose of data analysis. All of this stuff is really important. The first one is the importance of using consistent formulas. I think I might give some of these examples to you and you can out them in the show notes. Will that work?

Chandoo: Yeah sure. I would really appreciate that. I think a big challenge with podcasts is the same as with books. You never know whether you are explaining enough or not. Please send them to me. I will be happy to include them in the show notes.

Danielle: Yeah sure. I've got a really simple example where you've got the interest rate across the top and amounts of borrowing down the side. It's just 9 formulas of really simple calculations. But instead of going and multiplying one cell by the other cell, and then going over to the next cell, and so on, you should just using mixed referencing. Using the $ signs and the F4 shortcut is a really important and basic point of best practices on so many different levels. For people to understand how to use those $ signs,

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and how to use absolute, relative and mixed cell referencing is really critical. I've seen really advanced modellers that don't necessarily understand that. They might put an absolute reference in one cell and then copy it across and change the reference. It's something so basic that they teach it in an Excel 101 course. Yet, people don't apply it to their models. It's amazing!

Chandoo: I think the concept of referencing is really one of the foundations if you want to master Excel. This is something that I teach very early on in my courses.

Danielle: You do as well, don't you? Yeah.

Chandoo: This is something that not many people understand. They know the concept that there are a couple of referencing styles and what they are used for. However, the real purpose of them is not for referencing different styles. It is really to minimize your work. I tell my students all the time that when it comes to Excel, we should be as lazy as possible. We don't want to do the work; we want Excel to do the work for us. If I'm writing 9 formulas, I should be thinking if there is a way for me to write one formula and let Excel take care of the other 8. That way you minimize the chance of errors and you can use your time for something else.

Danielle: If you create 9 individual formulas, chances are that you're going to make some mistakes down the line and it's going to take you more time. It's not really going to change the calculations; you'll still get the right results as long as you've not made a mistake somewhere. But, it's just going to be so much quicker especially if you've got 1000 rows and 12 months across, it's going to take you forever. Also, when you're getting a model audited by a professional auditor who'll look at how many unique formulas there are in your model - if you're doing a finance model and if the bank is lending you money based on the outcome of the financial model, then they're going to want that model professionally audited - if you use best practice when you're putting together that model, you're going to reduce the time it takes to audit it and it's going to reduce the cost of the audit as well. Having as few unique formulas as possible in your model as you're building it is good practice.

Chandoo: I totally agree with you. As audit happens with companies, you might build a model but then you will eventually move on to some other role or some other company or you might get promoted into higher management. This happens all the time. So, somebody else inherits the model that you have built and if you are using inconsistent formulas, then it just means that whoever inherits your model is going to spend a lot of time trying to figure out what all of these things are doing. Using consistent formulas is always good so that other people can understand what you've done and adopt that work for something else.

Danielle: The second point is to make sure that we link as much as possible instead of hard coding. For example, if you've got an inflation amount or something like that, you would never hard code in 3% or whatever you decide is your input for inflation. You wouldn't sort of multiply it by 103%. Instead, you would put a separate cell in and put in that as an input cell and have 3% in that cell. Then you'd say:
amount*(1+the variable cell
and use a named range or a reference so that if that 3% changed to 3.5%, you just need to change that one single cell and it'll flow right throughout the model.

Chandoo: Again, a very good tip. This is also something that we might often think [since we are lazy],

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"Why bother with another cell, we know this is not going to change?" But the reality is that even a number like inflation even in a stable economy always changes. You want to model it because you want to see what happens in some futuristic scenarios where the inflation could be 10% or 1%. So, it's always a good idea to link rather than hard code.

Danielle: Even if you know it's not going to change, for example we have GST of 10% and it's been 10% for a decade or more and it's not likely to change, but we should still just put that as a separate cell. It's just good practice to do that, to just always have everything linked and to not type hard-coded numbers into formulas because they're hard to see, they're hard to audit and they are more difficult to change. So that's an important point of best practice.

Chandoo: That's great. What's the next one?

Danielle: Yeah sure. The third one is to just enter the value once and then refer to that same cell. It's really the same kind of thing. Rather than having to enter it into multiple parts of the model - I know it sounds really silly but quite often when you're auditing a model - you find that they've entered one assumption somewhere and then they've entered it again somewhere else and when you come to refer to it again, you create another input or you hard code it into the formula. So it's really important to have a single value that'll flow right throughout the model. This is also important for scenario analysis. When you build the model in a really well-structured way, it means that when you go to do scenarios or sensitivity analysis in at the end it does just make things so much easier.

Chandoo: Very interesting. In fact back when I was working, I used to work on a lot of projects involving data warehousing and Business Intelligence solutions. We used to call this concept as the single source of truth. In plain English, that really means that there is only one version of the original data and everything else is derived from it. If you want to audit or if you want to make sure that the report or the calculation is correct, you would go back to the single source of truth. This also sets the ground rule for playing in this world. That naturally means that you don't have to replicate the whole thing everywhere. Instead you keep that single source in mind and try to refer back to it as much as possible. It's a good thing to keep in mind because, again, it is easy to forget as you rightly say. It is surprising how many people don't implement this in their workbooks or models.

Danielle: I think it's the same with any kind of software. Having a single source of the truth is really important.

Chandoo: It is.

Danielle: Another thing that people do in modelling quite often is this data chaining concept where they sort of link to a link that links to a link and that links to another link. So, you've got this data chain of links going throughout your model and if a part of that chain breaks, then everything subsequent to that can mess up. So, it's always a good idea to always link to the source rather than linking to another cell that then links to the source. So, always go back to the original source data rather than linking throughout the model. It's just a better structured way of building it.

Chandoo: I totally agree. [I'm not making this up] In fact, just yesterday, I was trying to make some quick calculation in Excel for some sort of very simple model. To use your words, it's not a spreadsheet, it's a

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model! I was building something and I created a daisy chain. I had a value in a cell and I wanted the same value in a bunch of other cells. I was too lazy to type it and copy it as an absolute address, so I made a quick relative reference and dragged it. So, it kind of created a chain. I'm guilty of this! You can see how easy it is to fall into this trap of bad habits. For personal consumption, you can do anything. You can hard code, you can write inconsistent formulas and it's all fine. But, anytime that you put together something for somebody other than yourself, it is always important to keep this in mind and make sure that these bad habits are reduced as much as possible.

Danielle: Yes, a lot of times you get away with it. You probably got away with that daisy chain yesterday. Did it cause you any problems?

Chandoo: No, it was just a file that I created. I didn't even save it because I was just trying to understand what would happen in certain calculation scenarios. That's the kind of thing - it is so easy to make these kinds of mistakes that we don't even realise them.

Danielle: Isn't it something like that 96-97% of models actually have errors in them? I know you want to save the topic of errors for another day but that's really why we do a lot of these best-practice things. It's to reduce the possibility for errors in a model. It's really terrifying to think that there are just so many mistakes in a model. Most of the time they're really minor and really don't make any difference at all to a calculation. But, sometimes they do and it's quite a frightening concept.

Chandoo: Exactly. It is also sometimes frightening when you see the news items where somebody says that because of a cell error, a company ended up paying a million dollars more and things like that. You always wonder [especially from a point where you and I are operating - we are training people on how to use Excel], we tend to think how this could even happen. But the reality is that if models are built without paying attention to some of the best practices then you can see how easy it is to get into a situation where you can overpay a million dollars.

Danielle: It's quite a career damaging move to be responsible for a mistake in a financial model. That's what we are trying to avoid. That kind of brings me to my next point which is about bad habits and there are couple of those. They are quite common. The first of those is that if you have finished editing the formula - if you press F2 and go into a formula and make a change to the formula - I've seen that a lot of people just click somewhere else with the mouse when they've finished with the formula. Do you know what I mean? That's fine most of the time. You click somewhere else and the formula will just enter what you wanted it to enter. But there are a couple of reasons why that's a really bad habit to get into. It's partly because sometimes it'll pick up the value of the cell that you've clicked to. That does happen every now and then. Hopefully, if that does happen, it will give you a message and say, "Hey, is this what you really intended to enter?" The thing that really bothers me about this is that people are not always looking at what they've done. I've even seen people who've finished editing a formula and they've scrolled down and clicked somewhere else. They haven't looked at this kind of a methodology of entering a formula and doing what you think is right. You hit enter and then you look at the value to check if it looks right and sensible. Is it what you intended to put in there? It is really important that you look at value that the formula has returned before you move on to the next thing.

Chandoo: I understand what you're saying. I've seen quite a few people do this as well. A good practice would always be to press enter or maybe use an arrow key.

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Danielle: Yes, just something to deliberately enter it before you move on and then check it before you move on. And the other bad habit that I see done quite a bit is that when you are highlighting a range, for example:
=SUM(B2:B20).
But you worry that people might enter in data underneath that, i.e. they might enter something into cells B21, B22 and B23 and that's not being picked up in the SUM() formula. Or, you're doing a pivot table or something like that and you're worried that people might enter data underneath and it's not going to be included. So, instead of using the range B1:B20 in the formula, they'll actually just click on the B at the top of the column and highlight the entire column, so that if somebody adds data underneath it'll be included in the formula. Again, you get away with it. I've done it every now and then, but I always end up regretting it because it can, at times, really flow down the model because you've got something like a million cells and so you're making the work a lot harder than it needs to. Although, I understand that there's been some changes in later versions about how it calculates and I thought that I'd ask you. Are you aware of that?

Chandoo: Again, I'm not really sure. As far as I am concerned, referring to an entire column is something that I do not recommend. I haven't really tested the performance in Excel 2013 or Office 365, but even if there is an improvement - let's say that Microsoft has added some sort of IF logic in the calculation - it still means some penalty when it comes to formula calculation. If the values are not there, there should be some mechanism to check that the cell is empty before we run the formula. One way or another, you end up spending a little more to calculate that. [As you rightly said] It is better to just highlight the range that appears or if you have a scenario where people are going to add more data, you might as well set it up as a table because they are built exactly for this purpose.

Danielle: Exactly. Sometimes we don't always want to use tables in some kinds of financial models because they do behave slightly differently. Tables are great for dashboards or when you're dealing with lots and lots of data or when you're using pivot tables or PowerPivot. But, sometimes in financial models, I find that they're not always the best sort of design. So, sometimes we just want to have an ordinary range in a financial model.

Chandoo: I understand. The way tables are designed, they are good for inputs, and people go and type the data without worrying if the formula will capture everything or not. They are also good for scenarios where you have data changing all the time which is especially relevant for reporting because in reporting you don't want to build the same report every month. So, you build this once and whenever the data changes, whether it is growing or shrinking, the report is still relevant. In such cases, tables are excellent. I highly recommend them especially if somebody is building dashboard. Use tables as much as possible. But, in some other places, [as you rightly said] tables are probably not the best candidates because they have a rigid structure and they have lots of limitations on what kind of column headings you can have.

Danielle: Yeah, you can't have formulas in column headings. One thing that's so bizarre about them is that when you copy and paste, it's different than when you drag the formulas. In some cases you just have to copy and paste rather than just dragging it across. It took me quite a while to figure that one out!

Chandoo: Sometimes it can be very tricky to de-bug that kind of thing because you think that you've

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written the correct formula and then you start dragging and you see unexpected results. Sometimes the results might look sensible because of the table structure. Only after a bit of introspection and exploring, you realise that the references have changed. So, it requires a little bit of practice and you have to always remember that. When you have table references, it is better to copy and paste rather than drag.

Danielle: Yeah. If you're building a model and you don't want to put a table in it and you're concerned about people entering data that won't get included, a couple of options are to create a dynamic named range - I know you've written a blog article on this, Chandoo, where you've created a named range and used a combination of a column and an offset in the named range which is a fairly long ended way of doing it. What's probably easier is to just create a whole pile of blank cells underneath and format them differently so that the user knows that you shouldn't enter data below. Most people realise that when you're entering data to not just start typing underneath and that you should insert a row within the range rather than underneath. But they may not and so it's a good idea to format it to make it obvious that you're allowed to add data to this. You could go down for a couple of thousand rows. A couple of thousand rows are a lot better than a million rows.

Chandoo: I was a coder before I became an Analyst and eventually moved into Excel-based training. But, as a coder, you are always encouraged to build solutions that will last forever. It's a lofty, ambitious goal that anything that you're building should be there forever.

Danielle: Yeah, it's the same with modelling.

Chandoo: What happens is that we end up creating theses dynamic named ranges and solutions that will last forever. But, the reality is often very different. If you're building a model for forecasting some sort of sales for the next several years, a technically correct version would be to build it for an infinite number of years. But the reality is that you don't need to build such a solution. If you know that there is only going to be a sensible window of ten years into the future, you could always build the table with ten rows and write the references for all the ten cells and be done with it. There is no point figuring out how many years of data is entered and all that. Just set it up for 10, 20, 100 or 2000 rows and then write your formulas for that. You don't have to build this solution for everything. You could just list that down as an assumption in the model. You could say that this model is set to work up to only 2000 values. That is good enough. In most scenarios, you wouldn't run out of that. And even if they run out of it, people can always contact you and all it would take for you would be to change the formulas. That'll probably only happen once every five years. Most models don't live that long.

Danielle: It's amazing that I get calls from clients even five years later. You think, "Wow, they're still using that model!"

Chandoo: Yeah. I mean sometimes people do use them. But, in most scenarios, models age because some of the calculations and assumptions that they are built on, are no longer relevant in the changing business.

Danielle: Yeah.

Chandoo: Moving on, do you have more tips to share with us.

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Danielle: The next one is about the assumptions. It's more of a financial modelling one as it is about documentation of assumptions. But, I think it is important in any kind of structure that you're building. It's garbage in, garbage out. You can have a beautifully formatted model and make it look fantastic. But, if the assumptions going into it are rubbish, the outcome will be no good either. Making sure that the data going into it is accurate and making it clear is important. It is quite scary when people say, "We're going to go ahead [and it's a multi-million dollar project!] because the financial model says we're going to make millions of dollars." And you go, "That's based on what? It depends on what inputs you put in there." It's important to make it very clear what those inputs are from a modelling perspective.

Chandoo: It's funny that you mentioned that because back when I was doing my MBA we had these courses where we had to write business plans. And there used to be business plan contests where you had to prepare a perfect business plan for a fictional business. And, if your plan produced a lot of MPV, you would probably win a prize. So, we would all come up with these very fancy, lofty models of fictional businesses that churn out a lot of cash and have practically no expenses. When I started my business, the first thing that I remember is how silly my thinking was back then because the reality is so different. You could always build an Excel model that shows that this business has millions of dollars of valuation, but building your business is different.

Danielle: It's different when it's your own money.

Chandoo: Yeah, it's different. And it's a lot more difficult to even conceive such a business and build it from the ground up. You can build anything in Excel!

Danielle: Yes, exactly! If you've studied finance from textbooks, they say if it's positive MPV you should go ahead with it. If it's negative MPV, you shouldn't do it. But you realise that in the real world, there is just so much more to it. It depends on the inputs, assumptions and scenarios. There's so much more to it than a 'go, no go' sort of situation.

Chandoo: A lot of this is actually qualitative. So, there is only so much of Excel that you can learn. You have to develop a fine sense of intuition and a good understanding of the industry in which you are operating before you could even list down some assumptions about it. Anybody can build a model by saying that assumption number one is that the interest rate is 1% and assumption number two is that inflation is 3%. But the reality is so different. You have to understand what kind of interest rate would apply for your kind of industry or scenario. Only then can you build a good model.

Danielle: Yeah. The results or the outcomes are really only as good as the inputs that go into it. It's important to list those and make it really clear. If you're going to use this model, you need to understand what went into it. As a modeller, it's your job to make those things really clear. My last point is really about the formatting and the labelling; it's the fun bit. We tend to spend so much time on the accuracy of the numbers - "as long as the numbers are right, that's the most important thing". I sometimes find Analysts and modellers drop the ball when it comes to the look of it and the output in terms of making things look attractive. This is serious business, it's got to be quite disparaging and have pretty colors and look nice. I am sure you've heard the research that if you really put colors in your model and pay attention to some formatting, people actually trust your numbers more. Did you know that? Have you heard that one?

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Chandoo: Nah, I haven't come across that one. But, I think that it sounds plausible. I always see that. When someone takes a little more time to format it nicely, it naturally builds a lot of trust and professionalism into it.

Danielle: Yeah exactly. It just makes it look professional and it's something that I often think about. It's so easy with styles. It's the fun part - doing some visuals, putting in some charts and making it look nice. From a best-practice point of view, it is really important to format your inputs differently. Excel makes it quite easy with styles. I find the input style (on the Home tab) a bit bright with the beige background. It's an old fashioned thing from the old dust days where they put all the input variables in blue font, which is something that modellers used to do a lot of. If there's nothing in there, then you can't see the color and you don't know where to enter the data. So, most modellers tend to use that input format. I tend to make that beige background just a little bit paler and just put a bit of formatting around it. I mean whatever, there's no sort of set rules that say that you have to use a particular color. Some companies have standards to adhere to, i.e. inputs need to be in this color, documentation in this color, links in that color, error checks are in this color etc. You can create your own standards, but just make sure that it's really clear to the user as to what an input is and what an output is, where to enter the data, labelling etc. - just make it really clear what you're supposed to do with the model. This is good practice. If it's dollars, format it as dollars. If it is pounds or yen, format it like that. Probably one of the most common mistakes in financial modelling is mixing up units, different measures or currencies. Just making what we're talking about really clear (is it per ton or per kilogram), with the help of clear formatting and labelling, can help to reduce errors in your models.

Chandoo: I totally agree. Formatting is an area that not many people pay attention to. But, hopefully, people who are tuning into my podcast or people who are listening to you are better off and already know this. This is an important area. I always think from an end-user perspective. If I am building something for myself, it's okay. I don't really care what font or color is used. No one else outside my office room is going to look at it. But, if I am building something for others, I always try to keep their needs in mind. If it is a model, then obviously whoever is going to look at it is either going to input the data or look at the output. Unless it is an auditor who would probably look at the formulas, everything else is really structured for optimal input or better looking output. We need to work towards that or set up clear styles and colors so that inputs are easy to enter; and provide some help or tips when they are entering the data so that they don't make a mistake. For example, add a comment to a cell that specifies that it is currency in dollars or these units are in tons or something like that. That makes it easy to know what to type in there.

Danielle: I like the little data validation comments, i.e. when you click on a cell, the comment pops up.

Chandoo: That's a very powerful and simple way to show a message as soon as the user is ready to type data.

Danielle: Hmmm. If you put in an instructions tab, you can't guarantee that people are going to read that.

Chandoo: Yeah definitely. We see this all the time. It's always better to show help or instructions at the time of entry or based on the context. That way you can always ensure that people are at least going to take a look at it when it is time to enter data.

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Danielle: They'll see it at the time when they actually need it. I think this kind of design and color and other things are probably things that typically Analysts are not naturally good at. I don't know about you, but it's something that I really had to work at. I just had that kind of analytical brain!

Chandoo: I agree with you. In fact, I was also like that at least up to a certain point in my analytical life. But, it is surprisingly easy just like the common sense principles for best-practice modelling. Design can also be very easy to understand. You're not really designing an Apple iPhone or something like that. That requires a separate type of skill. But, to build a good model, you can again follow a bunch of thumb rules so that it is easy to construct it and put it together in a consistent way. Maybe I will share those tips in another podcast. Those principles are just common sense. There are a bunch of rules that many designers intuitively follow and we can also follow them just by observing what they are and being aware of them.

Danielle: Yeah. I don't think there is anything particularly new to modellers. Most people have probably been doing this kind of stuff instinctively because it's really just common sense. They are best practices to reduce errors, save time and to make the model better structured. That's pretty much it. Those are my points of best practice. I'll include a summary of those in the show notes, if you like.

Chandoo: Sure, that'll be great. I will also include a transcript of this podcast, so that people who are not able to listen or people who would like to have a PDF to refer back to these, can access it. I think if somebody is building models or if somebody is starting their career building models [and not workbooks]; I certainly feel that they should get your book as a starting kit. It will enable them to quickly navigate through all the important aspects of Excel and understand how to use them in a better way when it comes to modelling. Do you agree?

Danielle: Yeah, sure.

Chandoo: This is something that I recommend. Are there any other resources that you think will help people who are aspiring modellers?

Danielle: There is some fantastic stuff available online. We run online courses as well like you do. I don't know if I have told you this before, but I set up a LinkedIn financial modelling group in Excel. I think I must be one of the first people to set one up because it went viral. I think we've got something like 27,000 members. It's a massive group of LinkedIn forums. I moderate the group. People post all sorts of interesting discussions, comments, problems or issues. It's a great forum to go on just to be continually improving your skills not just related to Excel but also in terms of modelling design and anything to do with financial modelling really. I am always directing people to your blog because I think it is one of the best in terms of the content that is available. There is just so much available online in terms of modelling and Excel resources.

Chandoo: I'll make sure that I link to the LinkedIn group. I remember this because once in a while I see emails from LinkedIn that say that there are some interesting conversations happening in this group and to check it out. I used to visit LinkedIn a lot when I was working. But, after I started the business, I kind of moved away from LinkedIn because I always had an impression that it's a place where you build an interesting profile so that you look attractive to other employers. It has other purposes of course. But,

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since I was no longer looking for employment, I moved out of it. But, I agree that it is an excellent way to reach out to fellow users of your community and talk about various things. We also have a couple of articles on our blog that talk about modelling and best practices and how to manage risk in models. Maybe I will link to those as well so that people who want to learn these things have a place to go to. And, I will definitely link to your website and book. Those are two fantastic resources for people who are starting out. Thank you so much Danielle. It has been a pleasure talking with you.

Danielle: Thank you so much for having me.

Chandoo: It is really good to catch up with you and I am really hopeful that our listeners will really enjoy the podcast and if they have something to share, they will get back to us in the show notes or the resources page. So, thank you.

Danielle: Thank you. Talk to you soon. Bye.

Chandoo: Bye.

I hope you enjoyed this podcast with Danielle. It's really been fun talking to her and catching up about our experiences in Australia as well as learning about those beautiful, simple and powerful techniques when it comes to best practice modelling. Make sure to visit http://chandoo.org/session19/ where you can access all the show notes, resources and links mentioned in this podcast. The link is http://chandoo.org/session19/. Please also visit the Plum Solutions website which is Danielle's company. You can learn techniques about financial modelling and Excel or maybe even sign up for one of her upcoming classes anywhere in Australia or sometimes outside Australia as well.

That's all for now. I hope you have fun and let's meet again in the next episode. Bye.

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