TIPS FROM THE

# 12 DAYS OF FUNCTIONALITY

DOCUMENTATION • ACCURACY • DESIGN • AUDIT • STORY • STRUCTURE
TESTING • CHECK SUM • USER INTERFACE • PARAMETERS
PROJECT MANAGEMENT • REVIEW

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building better systems since 1985

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# INTRODUCTION

I'm Jürgen Schmechel, your business strategist and I'm known for creating clever Excel spreadsheets for my clients.

Where I grew up in Germany there is a big tradition about the last 24 days before Christmas to have a so-called **"Advent Calendar"**. Where every day you find a little treat behind a door so that the kids are having a kind of preempting of pre-story for Christmas.

As a child, this was just delightful because there were some sweets, some chocolates and I remember so vividly that for one year we even had a candle where each day there was a little let's say one centimeter of the candle to burn down and of course my brother and I, two boys loving flames and fire we were just transfixed.

And remember in Germany, around Christmas time, It's dark in the morning. So, it actually makes sense to have a candle around breakfast. So then I've learned about the concept of the 12 days of Christmas which contrary to the German one where it's kind of a prelude to the Climax of Christmas.

The 12 days of Christmas is continuous presents after the climax, after the 25th for 12 days and It's a totally different concept. So this year, I want to bring to you the 12 days of functionality and kind of mixing these two concepts. Now for the next 24 days every second day, I will publish one of my tips on how functionality can really make or break your systems.

So watch out for that 12 Days of Functionality!

# 1 DOCUMENTATION

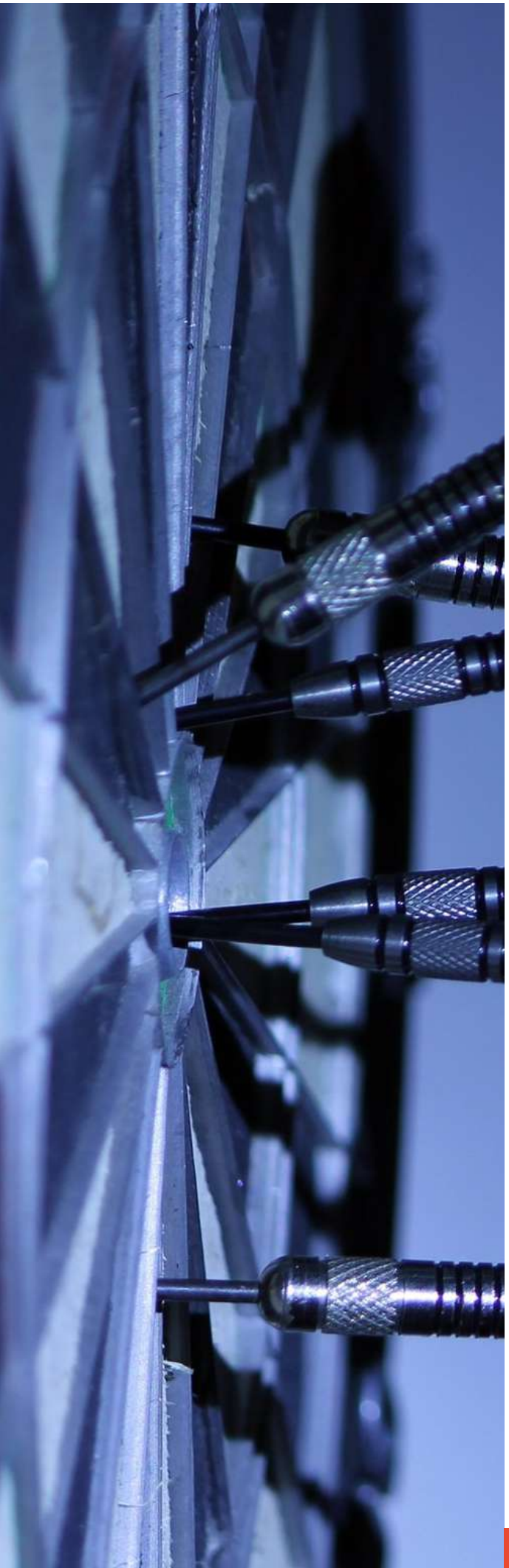
I'm actually starting with one of the hottest topics around functionality because oftentimes when I look at spreadsheets or workflow at my clients, there is no documentation. There is nothing on how to manage their spreadsheet. How to manage their workflow and to make it even worst oftentimes it's just one key person knowing what to do with this spreadsheet.

So if that spreadsheet is crucial to your business success without documentation you are lost the moment that key person won't be there.

So my first tip for the 12 days of functionality is ***make sure to document your spreadsheet***.

You might ask how much?

***The more the merrier.***



# ACCURACY 2

When your spreadsheets or when your models are not accurate, how can you trust your numbers? how can you trust results?

So you want to **make sure that the accuracy of your models is of the highest priority when creating your spreadsheets.**

**How to maintain accuracy?**

- Testing
- Check Sums

a lot of diligence to put into your model so that you are sure all the calculations are accurate.

# 3 DESIGN

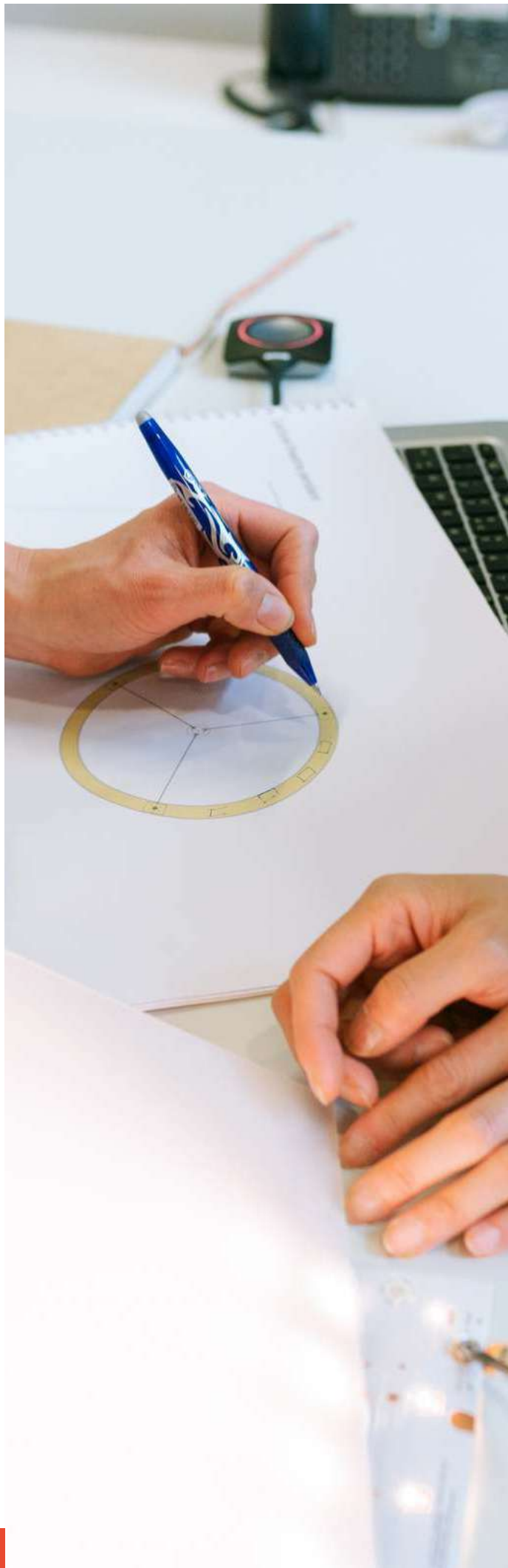
## Design of your Models

When I come to a client and look at their spreadsheet oftentimes it is not well-designed, to put it mildly. And you forget that it actually makes more fun to work with the beautifully designed spreadsheet than it looks like a dog's breakfast.

So **make sure that your spreadsheet is designed** that you are using **the same typeface,** that you are using **Bold and *Italics* in measures,** and that you make sure that **the color coding of your spreadsheet is consistent.**

Of course, we mentioned on the first day of the 12 days of functionality about *Documentation*.

So make sure that one sheet within your spreadsheet, within your workbook, **holds the assumptions**, **holds an explanation, holds the documentation** about your spreadsheet, and make sure to **design it to make it pleasing to the eye.**



# AUDIT

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**When was the last time that you actually crash-tested your Excel models?**

When I grew up my brother and I we build models out of Lego and be building cars and we try to break the car of the other person with the head-on collision. Last man standing so to say. So we were crash-testing our Lego models.

When was the last time you crash-tested your Excel spreadsheet? and I call this *Audit*. **You need to make sure that you audit your spreadsheets.**

How do you audit your own spreadsheets? Pretty much you can't.

Ask a colleague, ask someone externally to look through your spreadsheet and make sure that you spreadsheet actually works the way you wanted it to do.

**Audit your spreadsheets.**

# 5 STORY

**What do I mean by *Story*?**

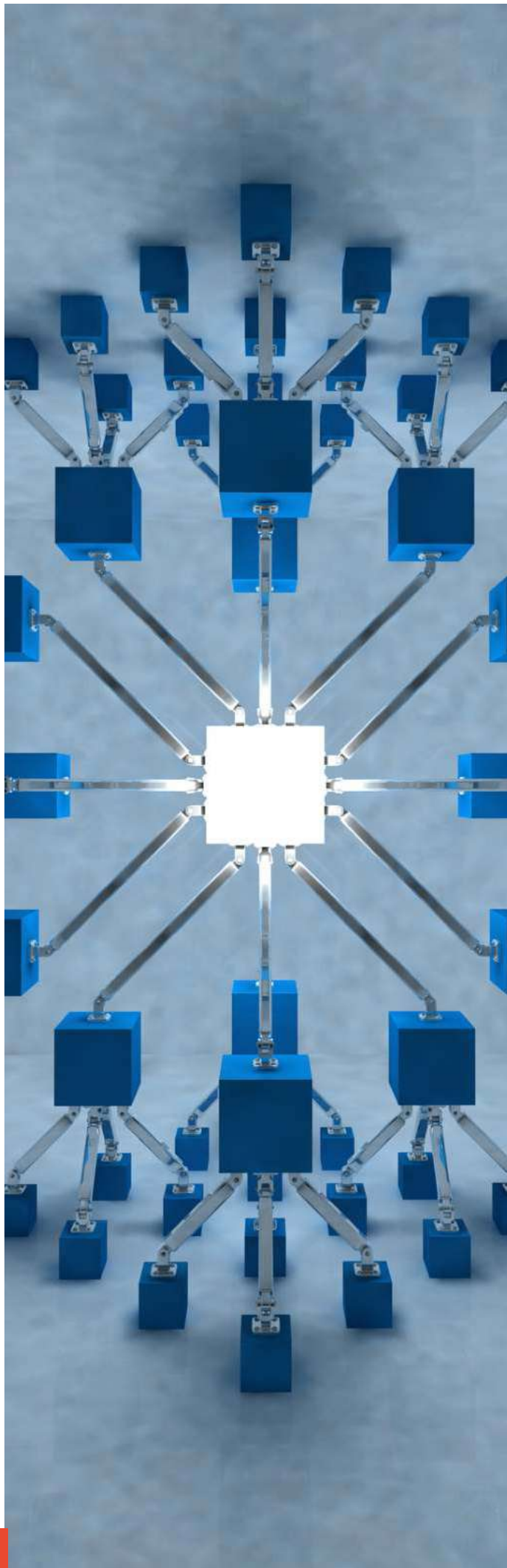
Each and every workbook, each and every Excel model tells a story.

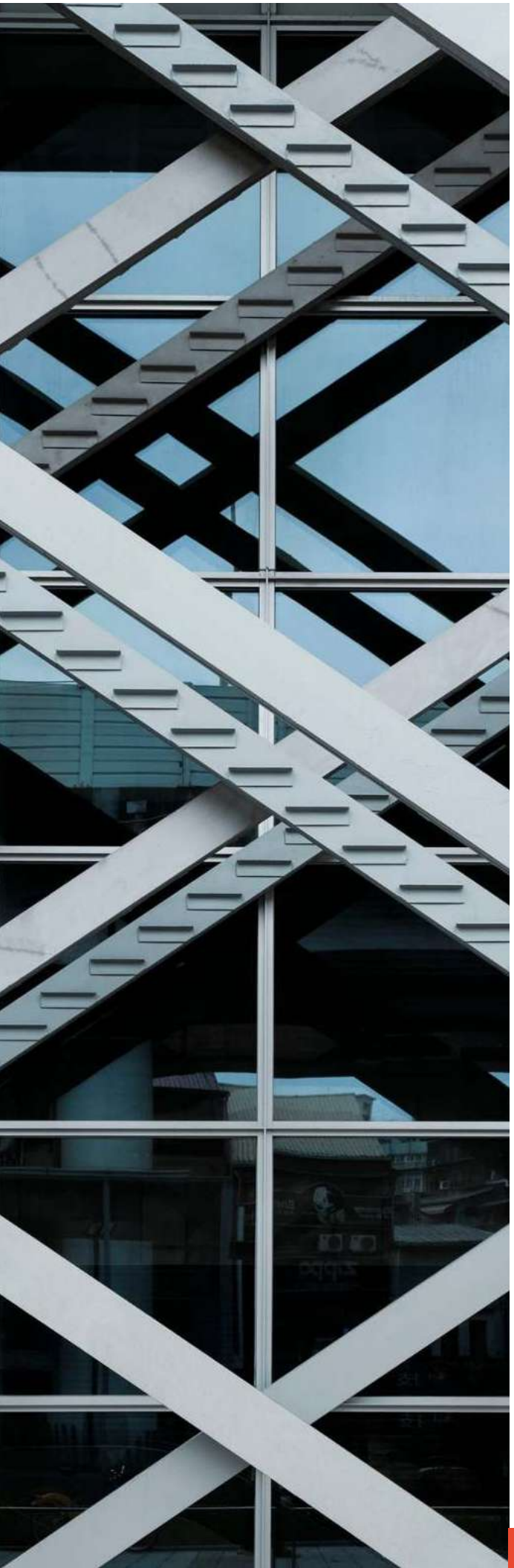
Really? Yes, it does. It has a certain purpose. you want to convey to the reader a certain result, a certain outcome, and maybe it is a clothe template you are using.

So the story of the clothe template is to create beautiful clothes for you clients in the less amount of time possible. To make it easy quick and accessible.

So that's the story of a clothe template. For financial model, for profited loss obviously the story is taught completely different but you want to make sure that the story you want to tell with your spreadsheet is conveyed.

So when you start an Excel spreadsheet, or you start an Excel model **make sure to think about "*What do you actually want to tell with this model?*"**





# STRUCTURE 6

**Structuring of your workbook**
- a certain input corner and a certain output corner or to put it in a different way, ***Input and Calculations*** to make sure these are separate.

We spoke about design, story of your spreadsheet, accuracy, and all these combines in the idea of keeping the input cells different to the calculation so that it's really clear for the user that here is the input and here is the output.

You also make sure that within your calculations you are not using any hard coded values because all the input is over here.

**Make sure to separate input from calculations and make it really clear.**

We talked about documentation on our 1st tip and this fits into the same area that you want to make sure that your spreadsheets are readable for someone who hasn't created it.

# 7 TESTING

This is so interesting because it's so neglected by many people creating Excel spreadsheets. They are not testing their calculations or if they do, it is half-heartedly and my tip is **test with extreme values.**

What do I mean by this? We talked about input and output last time and if there is an input cell which usually holds a percentage let's say 5% put in 60% to really blow the numbers out or if there is a number with  5 dollars make it 5 million to see whether your calculations are holding through.

**Testing means you also need to do a calculation on the back of an envelope.** If you change this number to 5 million, what do you expect the output to be?

That's real testing. How often do you need to test? as much as possible. Each time you introduce a new calculation make sure to test it and make sure that the cross sums are matching.

# CHECKSUMS 8

So if let's say you have a really simple model, profit and loss, 12 months, and the departments or product range on the left side. So you have the total after the 12 months on the right side of your spreadsheet and you have a total of each month underneath each column in your spreadsheet.

So across, there is one total and one of the checksums, and one of the easier checksums would be to see whether the total of the month is equal to the total of all product ranges. It must be, it's Excel, is it.

Well, it should be but should do not mean it is. So talking about the functionality **you want to make sure these totals are matching and there you create a checksum.** As many as possible again so that you at a glance can see whether all your calculations are useful, correct, and accurate.

So what I actually do when I introduce checksums in my spreadsheets, I make it a traffic light. Red means it doesn't match and green means it matches.

Then I create one sheet within my workbook which has all the checksums from all different spreadsheets so that at one glance I can see, are all traffic lights on green? or is there on red? then I need to investigate why does this not add up.

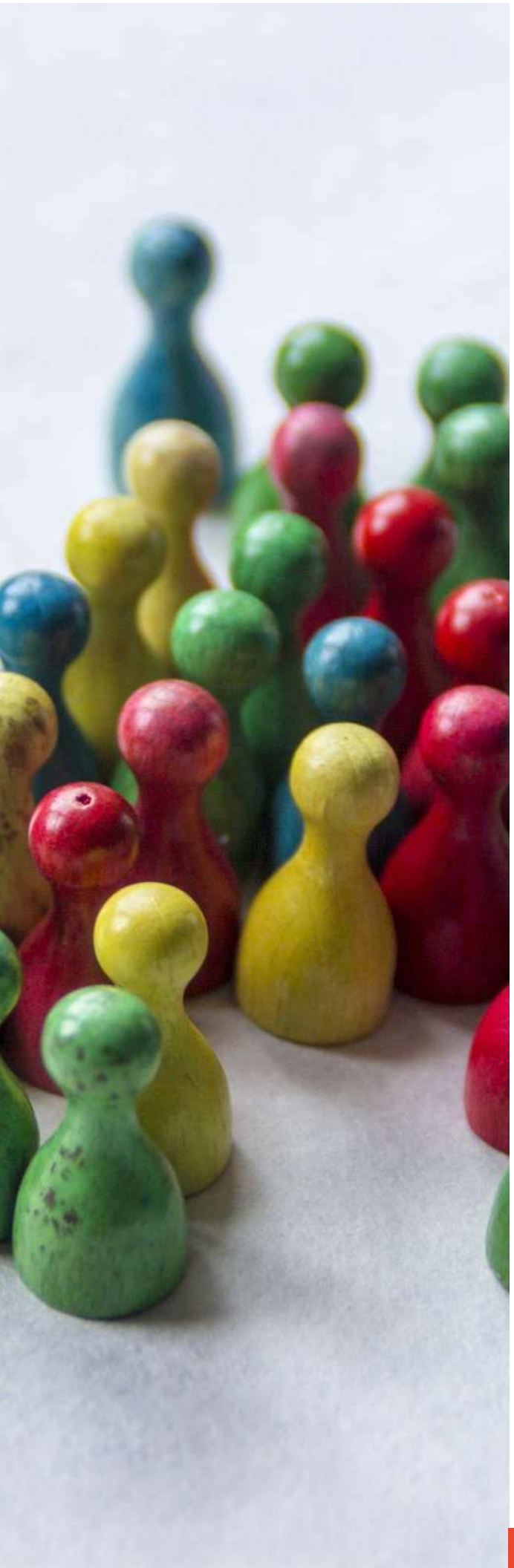
Very important for the Functionality of your workbook, **Checksums.**

# 9 USER INTERFACES

What I love about Excel is that is has a programming language in the background. A potent programming language where I can create user interfaces for my clients so that the input and the output can be more structured.

**More structure for your input means less user errors because I can catch any typing error in these user interfaces straight away where the normal Excel can not do this.**

So that's what I love about Excel, you can really create a workflow for the user where they have their own menu, the top they have user interfaces, and they have the certainty that their input is more controlled than in a normal Excel spreadsheet.



# PARAMETERS 10

We spoke about Input vs. Output or Input vs. Calculations but there is a 3rd element within an Excel workbook which I called ***parameters or settings.*** These are variables which might change along the way but not very likely.

For instance **GST (*Goods and Services Tax)***, I would never put GST as a fixed value in your calculations plus 10% because that might change but it's not an input cell it is a setting or a parameter.

Another one would be the folder you want to save your PDF solutions to which is also not an input cell but it needs to be accessible for you to change if that folder might change locations. That's the parameter section within your workbook.

It all comes back to *documentation*, *proper design*, and a separation of these different elements (*parameters, input, and calculations)* to make your spreadsheet as functional as possible.

# 11 PROJECT MANAGEMENT

When you wanted to have functionality within your systems, workflow, or Excel spreadsheets, you need to **make sure that the project you are starting is managed properly.**

I see so many spreadsheets or projects stopping halfway through and there are even stats around this. ***70% of all projects never get to fruition.***

I don't want to bore you with more stats it is just shocking to see how people react to a new project and how likely this actually sees the light of the day.

**So the proper project management makes it essential to make your spreadsheet functional and successful.**

# REVIEW

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**How does review fit into functionality?**

Well, actually, it does because once you finish your project and once the spreadsheet sees the light of the day, you just put it there and let it be that won't be very successful in the long run because **you want to review whether your spreadsheet is still accurate, whether the calculations are correct, whether you need to audit the spreadsheet or whether this whole story you created with your spreadsheet is still to the point.**

So review is a very important step within the functionality of your workbooks and often time neglected, and I don't see that people are actually living their models. They just use it.

***Make sure to review your Excel models from time to time to make sure that they are still accurate and functional.***

# ABOUT THE AUTHOR

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When the functionality of your systems is crucial, it is imperative to work with a business strategist that has a mind for numbers and detail.

Jürgen Schmechel has over 36 years of experience in business strategy, workflow, analytics, and software development working with organisations in Europe and Australia.

Clients rave about his ability to solve complex problems breaking them down into simple modules. He is known for creating clever Excel solutions that transform the way people work – using their existing software tools.

Jürgen holds a Masters Degree Mathematics and Economics and uses his German precision to improve the productivity of his clients by 10% or more. He creates solutions that work and produces the insights needed for effective decision making.

Among Jürgen's clients are companies like Stryker, AMP, SBS, BMW, Mobil Oil, Rodenstock, Employsure and Fisher & Paykal.

Clients describe him as a game changer.