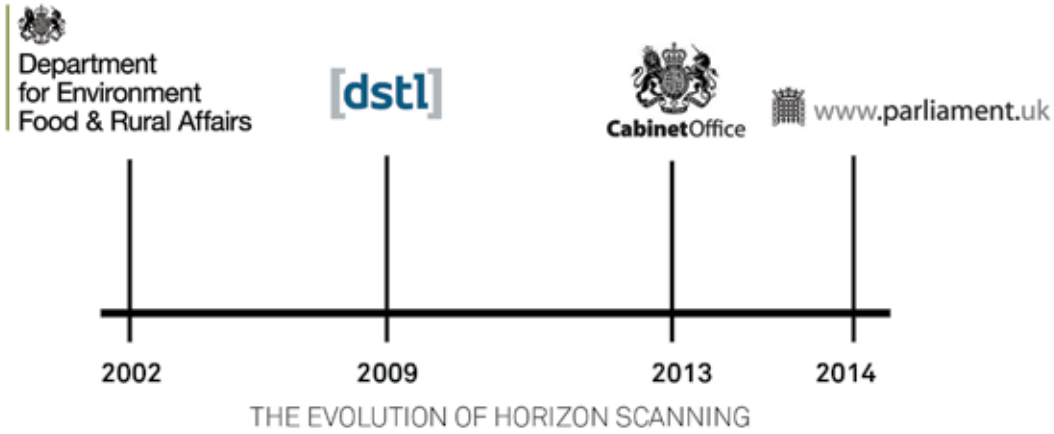
THE SIMPLEXITY GUIDE TO HORIZON SCANNING

SIMPLEXITY GUIDES

SIMPLEXITY ANALYSIS - MAY 2015

What is Horizon Scanning?

'Horizon scanning' is generally how the UK Government refers to the process of futures analysis. It's a pretty broad area and specifics of how to do it are covered in the Simplexity guide on 'Improving Futurology'. The term 'Horizon scanning' itself has been in use since around 2001, the following info-graphic gives an overview of its evolution.



THE EVOLUTION OF HORIZON SCANNING

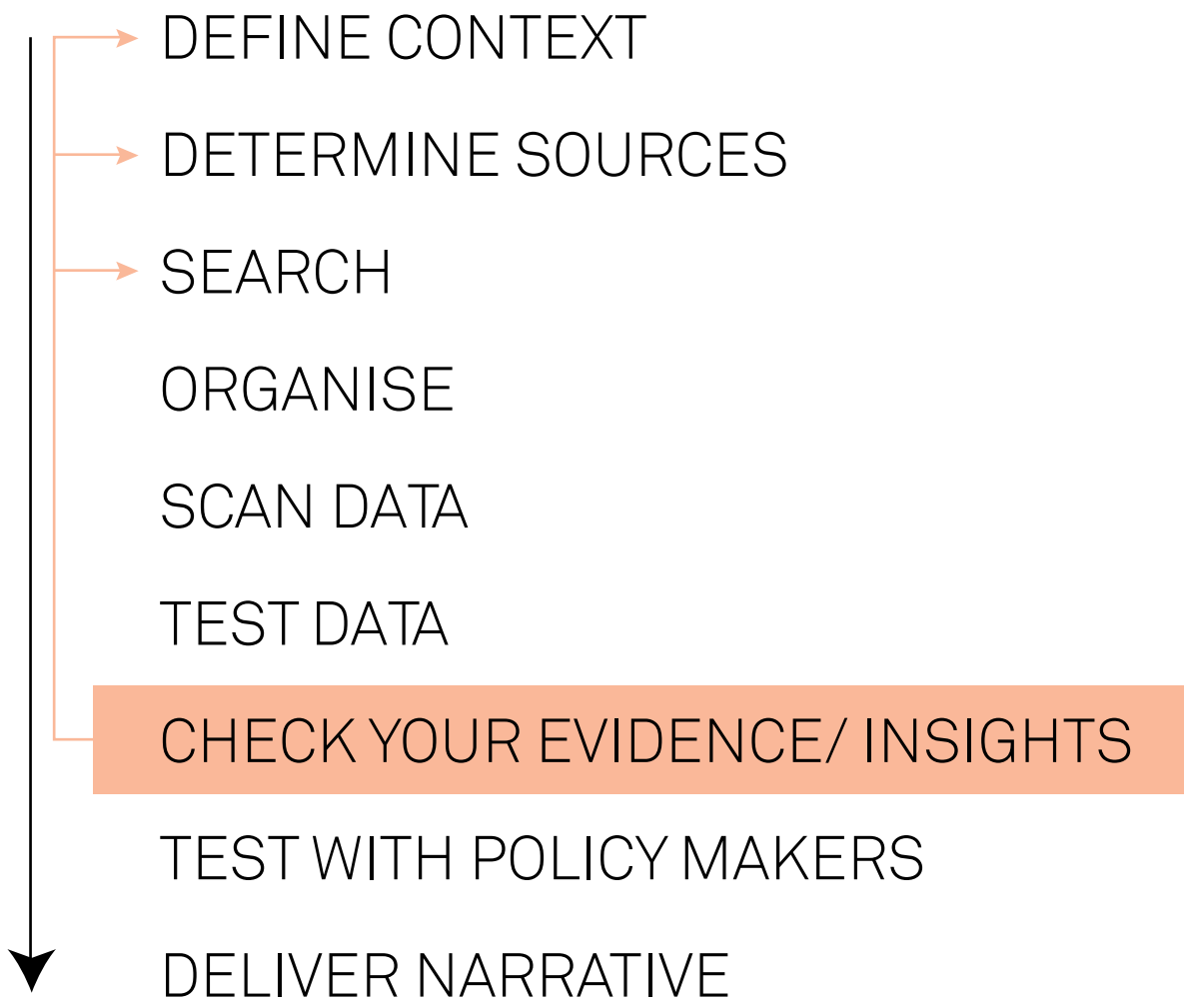
For our purposes, summarizing the evolution of the term and to seek a better understanding of how to apply it strategically, we've defined it as follows:
Horizon scanning = 'A process for analyzing the future that determines and tests hypotheses on long-term* trends, risks and opportunities of potential strategic** significance.'

*Long term = anything more than 5 years away.
**Strategic = Board/Cabinet Level

So now we have a workable definition for what it is (which can and will probably change in the future but will serve as a working definition for now) we can start to understand its value. But how do we then undertake it? Well, at Simplexity Analysis, we use the following process - one, we believe makes the process less subjective and more data driven.

Data driven horizon scanning

The following process allows you to conduct a data derived horizon scan. This enables you to better understand a range of ideas and trends and how they can have strategic impact in the future. It also means that associated activity like facilitated events with experts can be done at the most effective time in a futures project.

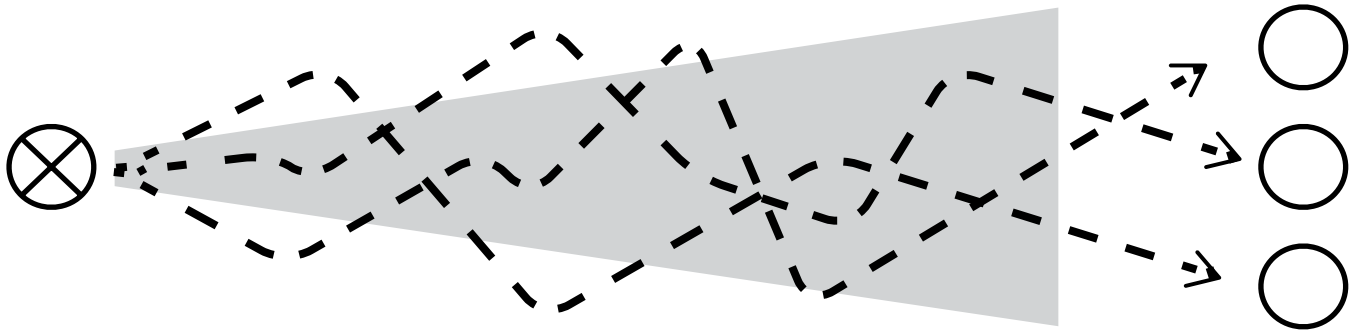


Defining a context

The first thing to do is scope the area you're looking at. This can be tricky – for example, some futures outputs are global in their remit and consider trends going out over a long period of time. However, generally, the insights these assessments are looking for have some kind of focus, or client, in mind.

For example, a product like Global Strategic Trends out to 2045, has to provide Defence and security implications for the trends it describes. Or, for another example, consider the CEO of a cola company. He or she generally just cares about how they can sell more of his product in the future, so what they care about is actually quite focused. It pays dividends for your assessment if you can get an agreed focus for the analysis as soon as possible and this is an area that unbiased facilitation can be useful to help clients properly understand what it is they are thinking about when they talk about the future.

This is called defining a context and despite its simplicity, it can be surprisingly hard to do as more and more people can be stakeholders/interested parties get involved. So, if at all possible, it is good to define as simple an 'exam question'/starting hypothesis as soon possible.



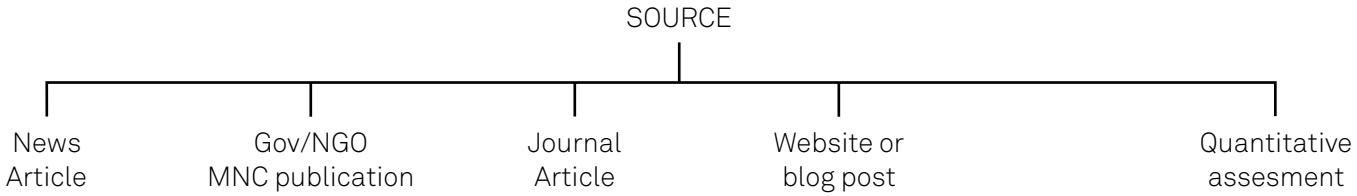
Know your sources

The next stage is to gather your research. The more research you can gather the better informed your assessment will be but, at the same time, probably more costly and complex. So, there is balance to the level of research you can do (and afford) and the pragmatic requirement of delivering strategic insights on time and with some degree of accuracy.

With these thoughts in mind, it pays to think about how and where you are going to structure your research – what sources do you value, do you only have the time to 'google' the future of driverless cars – if so, how valuable is this data?

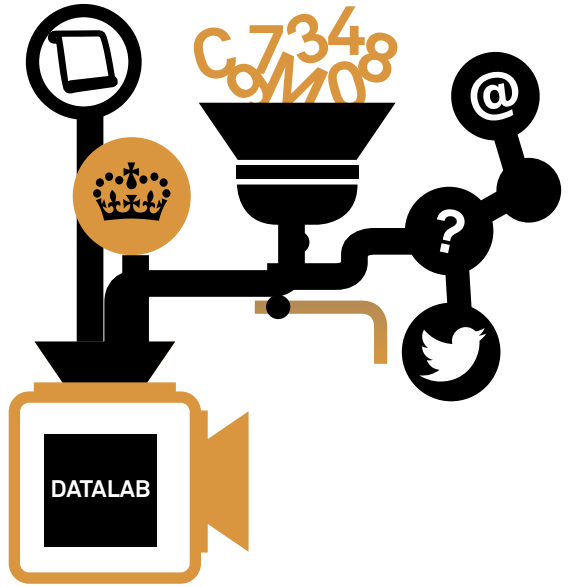
One that works when planning your research is to understand the sources available to you; ones you can pay for and ones you don't have to. Then its worth thinking about the costs of each – is pay per access data from trusted journals worth getting, or is better to use open source documents despite their potentially lower confidence in the data, also, what 'grey' literature is there out there, many think tanks, government departments and multinational organisations produce and publish valuable assessments and analysis all in the public domain.

The following table is a rough overview of the types of sources available:



Search

This closely relates to understanding your sources. Once you've located the areas you wish to search in, its then worth thinking carefully about the search terms you use. This is where you can go back to the context you have defined in stage 1. Having done this enables you to come up with a range of key words that relate to your topic.



For example, you are interested in understanding the future of driverless cars and the potential impacts this could have on the UK logistics industry. Knowing this, you define the following terms for searching your sources:

- Driverless cars OR 'Robot cars' OR Unmanned cars
- Logistics
- (Industry OR Business OR Economy) AND UK
- Future OR Foresight OR trends OR change OR Drivers

These search terms can be used to refine and gather data relevant to your particular problem as required.

Organise!

With your sources identified and search terms defined it is then worth thinking about how you are going to organise the data you gather.

For futures analysis, a good technique to think about using is something that splits the data you're about to bring back into a series of catergories. It's probably worth putting your returns into some kind of new structure, as opposed to just organising things by source as this can cause more work later.

In horizon scanning, an established system of organisation for this is known as 'STEMPLE'. This is a classification system borrowed from the security sector that basically splits trends/ patterns into 7 categories:

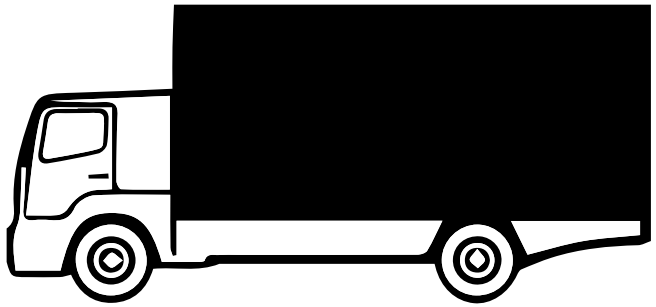
S OCIAL
T ECHNOLOGICAL
E CONOMIC
M ILITARY
P OLITICAL
L EGAL
E NVIRONMENTAL

What's important here, is that it doesn't have to be this exact classification system, it is what you think best represents the problem you are dealing with, and even more important, you are consistent in your classification categories, so when you work through the various sources of data at your disposal, you can bring back the relevant returns and file them accordingly.

The real advantage of starting with such a detailed 'structure' for you classification system, is it enables you to track your data as you are going.

Another important thing to think about here is how much data can you handle? If your searches go too far you may bring back more returns than you can effectively process, additionally, how are you going to process it? Are you going to do it in a traditional academic way of reading everything and then producing a final product that looks like an essay with the relevant evidence footnoted, if so, you might want to keep your data set manageable, say at around 10-100 references, dependent on how long you have to produce the final output. However, if you want to use a larger dataset there are further techniques you can use.
So for future of Europe, you could develop the following searches

Future AND Europe AND Transport – then file your data in the support system data structure.



This is important, as it enables you to track your data as you are going. Another important thing to think about here is how much data can you handle? If your searches go too far you may bring back more returns than you can effectively process, additionally, how are you going to process it? Are you going to do it in a traditional academic way of reading everything and then producing a final product that looks like an essay with the relevant evidence footnoted, if so, you might want to keep your data set manageable, say at around 10-100 references, dependent on how long you have to produce the final output. However, if you want to use a larger dataset there are further techniques you can use.

Scan your data (Analysis)

Once you have gathered your data and assuming you are not producing a written essay based on simply reading the data you have collected, you can then use certain techniques to better understand the data you have gathered. It is especially useful to think about these if you have collected a lot of data.

Whatever approach you chose, you will need to get insights from your data. These particular insights relate to the context you defined in stage 1. Going back to this, you'll want to think about:

- How you have defined for the problem
- Your timeline (when in the future are you thinking about)
- Who do the strategic implications relate to - i.e. are they impacting on a business, a government department or a plan?

Key word frequency analysis

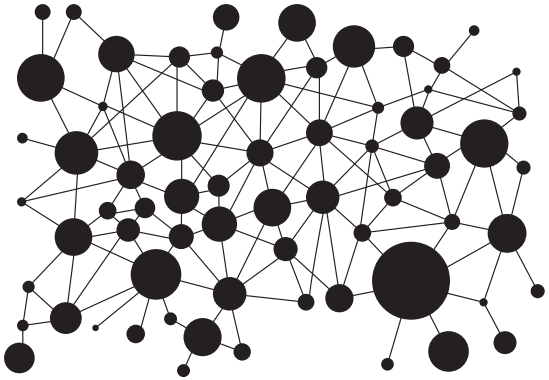
If the documents you have collected are in the right format they, themselves can be searched and the relevant sections of text highlighted for further analysis. This can be in whatever format you are most comfortable, you may wish to simply cut and paste (with the appropriate source attribution) relevant sections of text into the document that will form the early draft of your analysis, or, if you have access to pdf/software readers you can convert your source data into strings and then add them to a spreadsheet, or database.

The advantage of doing this is that you give yourself a targeted, smaller dataset that you can then use as the basis of your assessment, additionally you also have a lot of attributable, accessible data that you can reference in your data. The overall frequency scores of the data are also interesting – perhaps the highest frequency returns return a trend that most people are speculating on, perhaps the lowest reported frequency represents something that is very implausible, or possible a new signal, which in 5 years time we'll all be talking about?

If you do choose to go this way, it is a little technical and you might want to think about the size of your research set – the smaller your source material the less well it will work.

Data visualisation

The great thing about collecting your data in some kind of spreadsheet/organised system, is that you can then feed it through free to use systems like Gephi or Tableau. Granted, at present, this can be a little tricky, but it is worth the effort, because it allows you to use another analysis technique known as 'concept testing'



Concept testing

http://en.wikipedia.org/wiki/Concept_testing is a process that combines quantative and qualitative analysis to fully understand how 'market ready' an idea or concept is. It was used extensively at the Development Concept and Doctrine Centre between 2008-2013. It was used to understand strategic insights in the last defence review and essentially works by producing visual mind maps of documents (at that time, policy level documents). Back then it was down with teams of analysts reading the source material and producing the overall bubble maps – the value of doing so, was it enable complex pieces of analysis to be broken down into one (often complex) diagram that showed the emergent themes, connections and possible contradications within a document, but also across a range of document. This technique was developed from something called 'Systems analysis' and now, this can be automated.

Testing

Once you have gathered your data and used the appropriate form of anlaysis to enable you to form your insights and ideas, you now need to test them. The best way to do this is to use workshops and specially designed facilitated events using two types of groups: Trend Experts and Policy/Strategy Makers. It is worth being aware of these two different groups and - defining particular types of activility around them. For example, its worth asking trend experts to critique your trends (perhaps less so for policy makers) and vice versa, its worth asking policy makers for the strategic implications of particular types of trend. The characteristics of these two groups are explored in Micro Project X and potential techniques to test your insights are described in micro project y, but sumamrised as follows:

1. Workshops with trend experts using a range of exercises:
    - Scenarios
    - Backcasting
    - Gaming
    - Structured Brain storming

2. Structured questions with trend experts
    - Surveys
    - DELPHI interviews

3. Creative techniques to visualise potential futures
    - Speculative exercises
    - Gaming
    - Wild card generation
    - Artistic commissions

The purpose of these techniques are both to test the emerging theories you have on potential trends but also to increase the range of breadth of potential ideas about the future.

Check your data

This stage represents an important point for you to check your findings. If necessary, you can feedback to any stage in the process and revise as required. For example, you may find you made signficant assumptions when forming you context at stage 1, which calls for significant changes in what you first thought. Or, you may find that, the expert testing at stage 6 triggers a massive influx of new knowledge and research that you then need to update your searches and analysis accordingly.

This is a good time to apply some red-teaming, if you have the resources - i.e. an independent team who 'murderboard' your findings. See the Simplexity Analysis guide to red-teaming Assuming you are not going back to widen your analysis, then after gathering and testing your findings, you then need to move forward to find strategic insights and producing a final narrative to highlight and describe your research. To do this, it is probably worth taking your insights and doing another phase of testing - this time with policy makers and senior leaders.

Test your judgments with policy makers

Once you are content with the data your have gathered, the trends and theories you've highlighted and the early thoughts for strategic insights, you then need to test these with strategy makers.

The good news is - the tool kits are exactly the same as in stage 6, but the ground rules are different. You need to have different questions and ways of engaging and your asking for different things.

This is all about interpretation - what could this particular trend mean for the future? As Banki Moon Said in 2007 'Policy makers benefit from as wide a range of options as possible to test their interpretations against.'

At this point you might want to be careful at refining your initial findings here - what a policy maker wants to see can often be different to what the data is saying. As an Analyst it is your job to present the evidence for the policy maker to interpret, not to provide the evidence a policy maker wants to see!

Deliver your narrative

Then finally, this is when you deliver your findings. This will probably be in some kind of narrative - either a big, coffee-table publication like Global Strategic Trends or perhaps, depending on your audience, a simple power point presentation.
Whichever means, you will need consolidate and make clear what you think are the top issues of relevance and what you would recommend policy makers need to prepare for.
This is where editing, writing and the increasingly important art of 'Data storytelling' are key, especially if you are going to tie your analysis and judgments back to evidence. To better understand these, see the Simplexity Analysis guide on 'Who needs a data storyteller?'

The end?

However you define it, Horizon scanning is essentially, a process that enables us to think and prepare for the future. It does so by trying to understand the range of possible outcomes we could face and, on balance, recommending those which we are more likely to face or that could have the most impact on our lives, livelihoods and interests.
There are many ways you can think about the future, the processes we advocate at Simplexity Anlaysis is to focus on using data first to form our beliefs and then test these with experts. Doing futures analysis in this way helps the discipline evolve away from predictions gathered from facilitated exercises, to analysis that gathers data and tests findings with experts at the appropriate point in the process.