




# Mergeflow Tour Guide



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# About this guide

## Who this guide is for

This is not a manual. This guide assumes that you have seen and used Mergeflow before, and that you are familiar with basic syntax.

*“I know where to find the buttons and all that. But sometimes I am not sure how to best address my questions using Mergeflow.”*

Do you agree? Then this guide is for you!

## How to use this guide

You can use this guide like you would use a hiking guide. In other words, this guide is not necessarily meant to be read from start to finish. If you are new to Mergeflow, we do recommend that you start with the blue / easy tours, and then move your way up the other difficulty ratings. But other than that, just take the tour, or the tours, that best match your interests.

## Tour difficulty ratings

We use the same type of difficulty rating scheme here that you would find in a hiking guide:



### Easy

Anybody who has seen Mergeflow before and perhaps received an initial introduction should be able to complete easy tours.



### Medium

Medium-level tours usually require a bit more inferencing and out-of-the-box thinking about your topic than easy tours.



### Difficult

Difficult tours require high levels of abstraction. They are for the Edmund Hillarys and Reinhold Messners among innovation intelligence professionals.

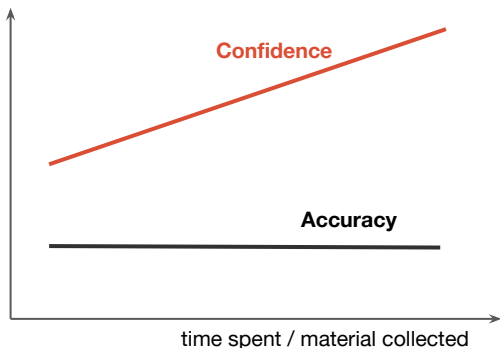
# Common tour traps and pitfalls

***“Let’s plan our search in advance, in as much detail as possible.”***

Very tempting but not recommended. Usually this just cements pre-existing concepts and angles toward a problem. Additionally, by definition, when you do innovation intelligence, you enter uncharted territory. And under such circumstances it is better to proceed iteratively, and modify as you go along.

***“The more and the longer I search, the better my results will be.”***

But consider what usually happens instead, as shown by research from the intelligence community<sup>1</sup>:



<sup>(1)</sup> Chart from: Heuer, RJ (1999). *Psychology of intelligence analysis*.

***“But this is the term that people use for this.”***

Are you sure? It could be that you are using a term that is common within your organization, but not outside it.

***“I don’t want to experiment because something bad may happen.”***

Don’t be afraid! If you try some seemingly outlandish search query in Mergeflow, the worst that can happen is that you get either no or not very relevant results.

***“Oh! It’s 7pm already!”***

It is easy to lose track of time when searching. You go from one thing to the next, and this other thing over there looks interesting too... It usually is a good idea to set a time limit for your search (yes, use an alarm clock). Each tour has a typical duration listed. You could use this as an indication. Or you could set a limit of e.g. 25 minutes, as you would do in the Pomodoro Technique ([https://en.wikipedia.org/wiki/Pomodoro\\_Technique](https://en.wikipedia.org/wiki/Pomodoro_Technique)).

A scenic view of the Austrian Alps at sunset. In the foreground, there is a wooden table and a red and blue umbrella with the text 'KAFFEE' and 'HORNIK' on it. The background shows a range of mountains under a warm, orange sky. The text 'Easy Tours' is overlaid in the center.

# Easy Tours

# The 360° Tour

## HIGHLIGHTS

Explore various angles of a topic, from a 30,000ft level.

## TYPICAL DURATION

20 - 40 minutes. Can be shortened by skipping steps. Steps do not build upon each other.

## HAZARDS

Very often, e.g. R&D on the one and e.g. financial news on the other hand use different language to describe similar things (e.g. “C-RNN” vs. “deep learning”). OR-combine several terms in order to avoid lopsided results.

### (1) Start

Search for your topic, go to 360° view.

### (2) Bets on the Future

If you think of venture capital investments as bets on the future, it makes sense to start here:

- What do the most recently funded companies do, and what do the companies with the biggest funding rounds do? Are they different?
- Who are the investors? Any surprises there? Or are your competitors among the investors? If so, zoom in on those and see which companies are associated with them.

Of course, use your judgment.

### (3) Markets

Zoom in on ‘Markets’. Go to the table. Perhaps sort by descending market size. Then look at the market segments, in particular those that do not contain your search query. Can you see applications of your topic? Or ingredients (e.g. required materials)? Use market segments to inspire additional searches.

### (4) Patents

In patents, look at the patent classes. Any interesting applications there? Then look at the patenting companies in the tag cloud. Now, use this to generate a graph, and add ‘Person’. This shows you the inventors. The inventors may be interesting people to get in touch with.

### (5) Technology Licensing

Scan this, and check if anything tickles your fancy. If so, do a background check in R&D papers.

### (6) Science Publications

If you are not an expert in a topic, use patent classes to zoom in on interesting applications and subtopics. If you are an expert, you may consider exploring a people graph. This shows you coauthor networks.

### (7) Technology Blogs

Think of technology blogs as a bridge between “smart non-expert” and “subject matter expert”. The smart non-expert can read and understand tech blogs, but then also ask the subject matter expert about the R&D papers that are often (but not always) referenced in the blogs.

### (8) Industry News

You can probably keep this short. In the companies tag cloud, do you see any surprises? If so, zoom in on those.

# The *Markets* Tour

## HIGHLIGHTS

Use markets information to discover applications for your topic.

## TYPICAL DURATION

10 - 15 minutes. Can be shortened by skipping steps. Steps do not build upon each other.

## HAZARDS

Using overly specific or “scientific” query terms.

### (1) Start

Search for your topic, go straight to Markets view.

### (2) Explore the chart

What are the biggest market segments? What are the fastest growing ones? Do you agree with these numbers? Zoom in on the underlying documents in order to verify your assumptions.

### (3) Explore the market segments

Do you see applications of your topic? Or component technologies? Also, look for terms that you may not be familiar with yet. These terms may be interesting “anchors” that help you connect your topic to applications.

### (4) Companies network

Now click on “show companies network”. Is it all one big blob, or do you see network subcomponents? If there are subcomponents, this usually indicates that different companies are active in different, or disjoint, market segments. Zoom in on particularly interesting individual companies or edges in the graph.

# The Companies Tour

## HIGHLIGHTS

For your topic of interest, find various types of companies (venture funded, SMEs, big players, R&D funded). This tour does several zoom-ins, all starting from the 360° view.

## TYPICAL DURATION

20 - 40 minutes. Can be shortened by skipping steps. Steps do not build upon each other.

## HAZARDS

Queries that are too specific or too technical. In this case, you will not find companies that use more general language.

### (1) Start

Search for your topic, go to 360° view.

### (2) Venture-funded companies

From the 360° view, first zoom in on 'Venture Capital'. There, explore various facets:

- What do the most recently funded companies do, and what do the companies with the biggest funding rounds do? Are they different?
- Who are the investors? Any surprises there? Or are your competitors among the investors? If so, zoom in on those and see which companies are associated with them.

### (3) Markets

Now, from the 360° view, zoom in on 'Markets'. Click 'Show companies network' to see a connection graph with companies. If applicable, zoom in on any surprising connections between companies.

If you do not like the network view, select 'document list' in the left-side VIEW menu. Then, for the tag cloud, select 'Company'. Now, explore and collect.

### (4) Patent-holding companies

Again, start from the 360° view. Zoom in on 'Patents'. There, switch the tag cloud to 'Company'. Explore and collect.

### (5) Big players

Now, from the 360° view, we zoom in on 'Industry News'. Explore the companies tag cloud. If you want to keep things simple, just take a screenshot of the tag cloud.

### (6) SMEs

For now, ignore the problematic question of what exactly qualifies as a "startup". From the 360° view, zoom in on 'Startups'. Use an appropriate tag cloud, depending on your topic and on your goal, to narrow down the results by selecting one or more filter terms (drag&drop terms from the tag cloud into the search bar).

In order to gauge the momentum of a company (i.e. how many patents, publications, news mentions etc. it has), click on 'Show more'.

### (7) Companies with R&D funding

Almost there. From the 360° view, zoom in on 'Funded Research Projects'. There, a good companies finding venue is 'Show SBIR funding', rather than 'Show all research funding'. This brings up companies funded by the Small Business Innovation Research program.



# The *Technology Licensing* Tour

## HIGHLIGHTS

Discover new prototypes coming out of universities and other R&D organizations worldwide.

## TYPICAL DURATION

15 - 30 minutes. Can be shortened by skipping steps. Steps do not build upon each other.

## HAZARDS

Using overly general search terms. Instead, try to describe your topic in more technical terms.

### (1) Start

Search for your topic, go straight to Tech Licensing view.

### (2) Explore the Organizations tag cloud

Do you see your “favorite” or “most trusted” university or R&D organization? If so, consider zooming in on them.

### (3) Try some other tag clouds

Depending on your topic, try switching to a Technology (for computational topics), a Disease (for life science topics), or a Material (for life or material science topics). Zoom in on tags that sound interesting.

### (4) Use “document context”

When you see a particularly interesting licenseable technology, try the “document context” popup. This lets you discover other, topically similar documents (e.g. research papers or patents).

# The R&D Tour

## HIGHLIGHTS

Discover technologies, applications, and researcher social networks.

## TYPICAL DURATION

20 - 40 minutes. Can be shortened by skipping steps. But notice that steps (4) and (5) build on previous steps.

## HAZARDS

Using non-technical terms that are very broad.

### (1) Start

Search for your topic, go straight to R&D view.

### (2) Explore Patent Class tag cloud

Zoom in on patent classes that seem interesting to you. In order to select multiple classes / tags, drag and drop them into the search bar, and then hit return.

### (3) Explore Technologies, Materials, etc. tag clouds

Depending on what makes sense given your topic, now switch the tag cloud to Technologies, Materials, etc.. Zoom in on interesting tags.

### (4) Look at the researchers social network

Switch the tag cloud to Person. Then select the graph view ("Open graph"). Use the chart to explore co-authorship social networks (-> who plays a central role in the network? Is it one big network or several smaller ones?)

### (5) Intersect researchers and technologies, patent classes, etc.

Now, instead of the graph, use the sankey view ("Open sankey"). Depending on your interests, select appropriate entity classes for each side in the sankey chart. Then zoom in on interesting entities or combinations of entities.

# The *Basic Patents* Tour

## HIGHLIGHTS

Discover which companies hold patents, and who the inventors are.

## TYPICAL DURATION

15 - 20 minutes. Can be shortened by skipping steps. Steps do not build upon each other.

## HAZARDS

Using overly general search terms, or “trendy” (i.e. non-technical) terms. Instead, try to describe your topic in more technical terms.

### (1) Start

Search for your topic, go straight to Patents view.

### (2) Explore the Companies tag cloud

Do you see your “favorite” or “most trusted” company? If so, consider zooming in on them.

### (3) Explore the People tag cloud

Open graph here. This shows you a network of co-inventors. In the graph, add Company as a tag category if you like.

### (4) Try some other tag clouds

Depending on your topic, try switching to a Technology (for computational topics), a Disease (for life science topics), or a Material (for life or material science topics). Zoom in on tags that sound interesting.

### (5) Use “document context”

When you see a particularly interesting patent, try the “document context” popup. This lets you discover other, topically similar documents (e.g. research papers or patents).

# The *Basic Venture Capital* Tour

## HIGHLIGHTS

Discover venture-funded companies in the context of your topic.

## TYPICAL DURATION

15 - 20 minutes. Can be shortened by skipping steps. Steps do not build upon each other.

## HAZARDS

Using terms that are too specific or too technical. Ignoring companies that are not spot-on with respect to your interests (they may still be relevant, if not now, perhaps in the near future).

### (1) Start

Search for your topic, go straight to Venture Capital view.

### (2) Explore 5-10 most recently funded companies

Sort the funded companies by date. What do they do? What is their business model? Who are the investors?

### (3) Explore 5-10 companies that received the biggest funding rounds

Now sort the companies by funding amount, and ask the same questions as in (2). Do these companies differ in some way from the most recently funded companies? Can you see a development (e.g. recently funded companies doing different or new things)?

### (4) Look at the Investors tag cloud

When you look at the investors, do you recognize any of them? Are there names that surprise you? If so, click on them and check out the companies with which they are associated.

# Medium Tours

# The *Topic Triage* Tour

## HIGHLIGHTS

Compare the momentum of alternative or competing topics across R&D, venture capital, industry, and news. Topics could be anything, ranging from technologies to companies.

## TYPICAL DURATION

40 - 60 minutes. Can be shortened by skipping steps. But notice that Steps (1) and (2) are required.

## HAZARDS

Getting “topic granularity” wrong (i.e. comparing very specific with very general topics). Comparing topics that are not disjoint enough.

### (1) Define and save your topics

Iteratively define the query for each topic, and then save each topic. Use the 360° view and occasional zoom-ins into details to evaluate if your topics are defined well.

### (2) Add your topics to topic triage

Go to “manage my topics”, and select the topics for your topic triage. You can select up to 15 topics.

### (3) In topic triage, order topics by growth

Compare the growth rates of your topics. What drives growth? Are growth drivers the same across topics? What does growth look like if you exclude one or more information category (industry news, patents, etc.)?

### (4) Order topics by size

Now order topics by size, and do the same types of comparisons as in (3).

### (5) Zoom in on details

Now zoom in on information categories that drive growth or size. Think about how the results may impact what you or your organization should do next. Do this for all topics.

### (6) Optional: group topics

You may have definitions of topic types (e.g. “if it is dominated by science publications and has not much else, it is a *Basic Research* topic”; “if it has equal parts of all types of information, from R&D to industry, it is a *Mainstream* topic”). If you have such definitions, you can now apply them to your topics, and group them.

# The *But-it's-just-a-blog-post* Tour

## HIGHLIGHTS

You found an interesting blog post. But now you need to substantiate your finding with other information. Otherwise some people may not take you seriously (“well, but it’s just a blog...”). This tour is about finding such other information.

## TYPICAL DURATION

20 - 40 minutes. Can be shortened by skipping steps. Steps do not build upon each other.

## HAZARDS

Blogs often use different language than, for example, patents or science publications. Be sure to consider this in your search queries.

### (1) Check document context

For your blog post, click on document context. Zoom in on relevant entities, or on relevant similar documents (best from different information categories, i.e. science publications, patents, market news, etc.).

### (2) Do 360° tours on central concepts from the blog post

For each central concept from the blog, collect corroborating information via 360° tours. Re-word the concepts if necessary.

# The *Subsidiarity* Tour

## HIGHLIGHTS

“Subsidiarity” here means that an R&D topic should only be addressed by a central R&D unit if there is no business unit that already has the topic in its scope already anyways. The Subsidiarity Tour tests where a topic best resides.

## TYPICAL DURATION

60 - 90 minutes.

## HAZARDS

Using “incompatible” query terms to describe the R&D topic on the one hand and the business units on the other hand. This may make the topic and the business units appear less related than they actually are.

### (1) Define your R&D topic

Iteratively define the query for each topic. Use the 360° view and occasional zoom-ins into details to evaluate if your topic is defined well.

### (2) Define your business units as topics

Now do the same as in (1), but for your business units.

### (3) Save combined topics

Set up combined R&D and business unit topics (e.g. “*machine learning*” AND “*medical devices*”; “*machine learning*” AND “*manufacturing equipment*”). Save these combined topics.

### (4) Run topic triage for combined topics

Add all your combined topics to topic triage.

### (5) Make subsidiarity decisions based on topic triage

For each R&D-topic-business-unit combination:

- Check the triage chart and assess share of R&D vs. business (industry news and VC).
- Assign balanced or business heavy topics to the respective business unit(s).
- Assign the remaining, R&D heavy, topics to your central R&D unit.



# The Advanced Venture Capital Tour

## HIGHLIGHTS

Discover the broader context of venture-funded companies.

## TYPICAL DURATION

60 - 90 minutes. Step (1) is required, other steps may be skipped.

## HAZARDS

Using query terms that are too specific to individual companies. Not differentiating query terms for different types of information (science publications vs. patents vs. industry).

### (1) Do the Basic Venture Capital Tour

Discover relevant venture-funded companies via the Basic Venture Capital Tour.

### (2) Explore the market context

For each company discovered in (1), explore topically related market segments, and, where available, market participants (companies), using graph views.

### (3) Explore the technology context

For each company discovered in (1), explore...

- ...topically related science publications and their authors (and these authors' social network, using graph views).
- ...topically related technology licensing offers, and the institutions behind them.

### (4) Explore the patents context

For each company discovered in (1), explore topically related patent classes, patent-holding companies, and inventor networks (using graph views).

### (5) Explore the blogosphere context

For each company discovered in (1), use technology queries and patent class queries to explore the tech blogosphere.

# The *Advanced Patents* Tour

## HIGHLIGHTS

Discover the broader, non-patent, context of patents.

## TYPICAL DURATION

60 - 90 minutes. Step (1) is required, other steps may be skipped.

## HAZARDS

Not differentiating query terms for different types of information (science publications vs. patents vs. industry).

### (1) Do the Basic Patents Tour

Discover relevant patents, patent classes, companies, and inventors via the Basic Patents Tour.

### (2) Explore the market context

For patent classes, technologies, and companies discovered in (1), explore topically related market segments, and, where available, market participants (companies), using graph views.

### (3) Explore the technology context

For patent classes, technologies, and companies discovered in (1), explore...

- ...topically related science publications and their authors (and these authors' social network, using graph views).
- ...topically related technology licensing offers, and the institutions behind them.

### (4) Explore the venture context

For patent classes, technologies, and companies discovered in (1), explore topically related venture-backed companies. You can do the Basic Venture Capital Tour to do this.

### (5) Explore the blogosphere context

For patent classes, technologies, and companies discovered in (1), use technology queries and patent class queries to explore the tech blogosphere.

# The Neighborhood Tour

## HIGHLIGHTS

Discover innovations and technology near you, or in another specific geographic region.

## TYPICAL DURATION

30 - 45 minutes.

## HAZARDS

Underestimating the amount of decentralized activity, i.e. things that are not assigned to any specific region (think Automattic, for example, the company behind WordPress that has no physical headquarters).

### (1) Use a “Country” tag cloud

Do this as first approximation only. This brings up data that mention a selected country, not data that originate from a selected country.

### (2) Go to Patents, explore country-specific patent numbers

In the Patents view, e.g. for US patents, enter “US\* [patentnumber] ” as an AND-combined search.

### (3) Add some locations of interest to your search

If you are interested in things happening in or around Boston, add “Boston” to your search. Or “Munich”. You get the idea. Use the NEAR operator if you like.

### (4) Use some language-specific terms in your search

If you are looking for contents in a region where the language is not English, add some language-specific terms to your search. For example, *onderzoek\** (= Dutch for ‘research’), if you want to keep things rather generic. Or *bildgebend\** (= German for ‘imaging\*’), to mention a more topically specific example.

# Difficult Tours

# The *Conjectures* Tour

## HIGHLIGHTS

Discover hints at things that have not happened yet, but that may happen in the near future.

## TYPICAL DURATION

90 - 120 minutes.

## HAZARDS

Getting lost in details and irrelevant branches of your topic. Being too careful (or timid) with your query term combinations.

## Before you start

We are interested in conjectures about innovations or technologies that may happen or develop. The goal of this tour is to discover such conjectures.

### (1) Do a 360° Tour of your topic

In order to stake the ground, explore the various angles of your topic via a 360° Tour.

### (2) Explore the blogosphere

Technology blogs can be a good source of conjectures. In order to discover them, add words like “disruptive” or “ground-breaking” to your search query. You can also try temporal terms like “in five years”, “before 2020”, etc..

### (3) Try unlikely query term combinations

For example, if your topic is more of an enterprise topic, try adding consumer-oriented search terms. Or add technologies that usually do not appear in the context of your search. Use your results from (1) to estimate what makes sense here. Try this with query terms, patent classes, or anything else that makes sense to you.

# The *Emergent Innovations* Tour

## HIGHLIGHTS

Discover emerging companies, technologies, materials, etc.. In this tour we directly use URL parameters.

## TYPICAL DURATION

40 - 60 minutes.

## HAZARDS

Unfortunate choice of URL parameters.

## Before you start

The purpose of this tour is to discover companies or other entities whose frequency distribution over time is going up. In order to spot such entities, Mergeflow can rank entities by their frequency distribution slope. But this capability is currently only available via setting URL parameters directly. In the Emergent Innovations tour, we will work with these URL parameters.

## (1) Go to a view with a tag cloud

Take your query to a view with a tag cloud (i.e. any view except Markets, which has no tag cloud). Select the tag category that you want to explore (e.g. company, technology, investor, patent class).

## (2) Work with URL parameters

Now add the following URL parameters in your browser: `&tagtype=rising&rl=90`. This will rank tags by how much their slope increased during the previous 90 days, compared to the 450 days (i.e. 5 x 90) days before. "90" is just an example value. Depending on how you estimate the temporal dynamics of your topic, or what temporal granularity level you are interested in (fast-moving vs. slow-moving), you can experiment with different values here. The tag cloud always displays "rising tags" of the category you selected.

## (3) Explore the rising tags

In order to explore the rising tags you find most interesting, simply zoom in on them, or examine them via one of the other tours.

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