# Worker Intelligence

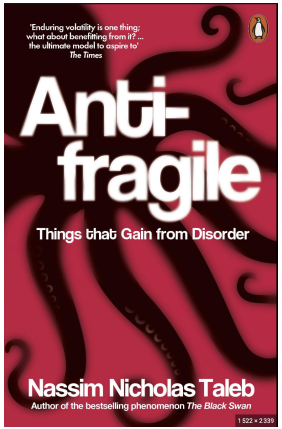
*Alexandre Cela*

# About me

*Big football fan, played in my Uni's Team*


Big PSG fan, even though it's tough right now

*Decision making under uncertainty. Favorite book, favorite author*




***More generally, leveraging math, business acumen, instinct, knowledge, tech, AI to improve life's day to day, especially decision making***

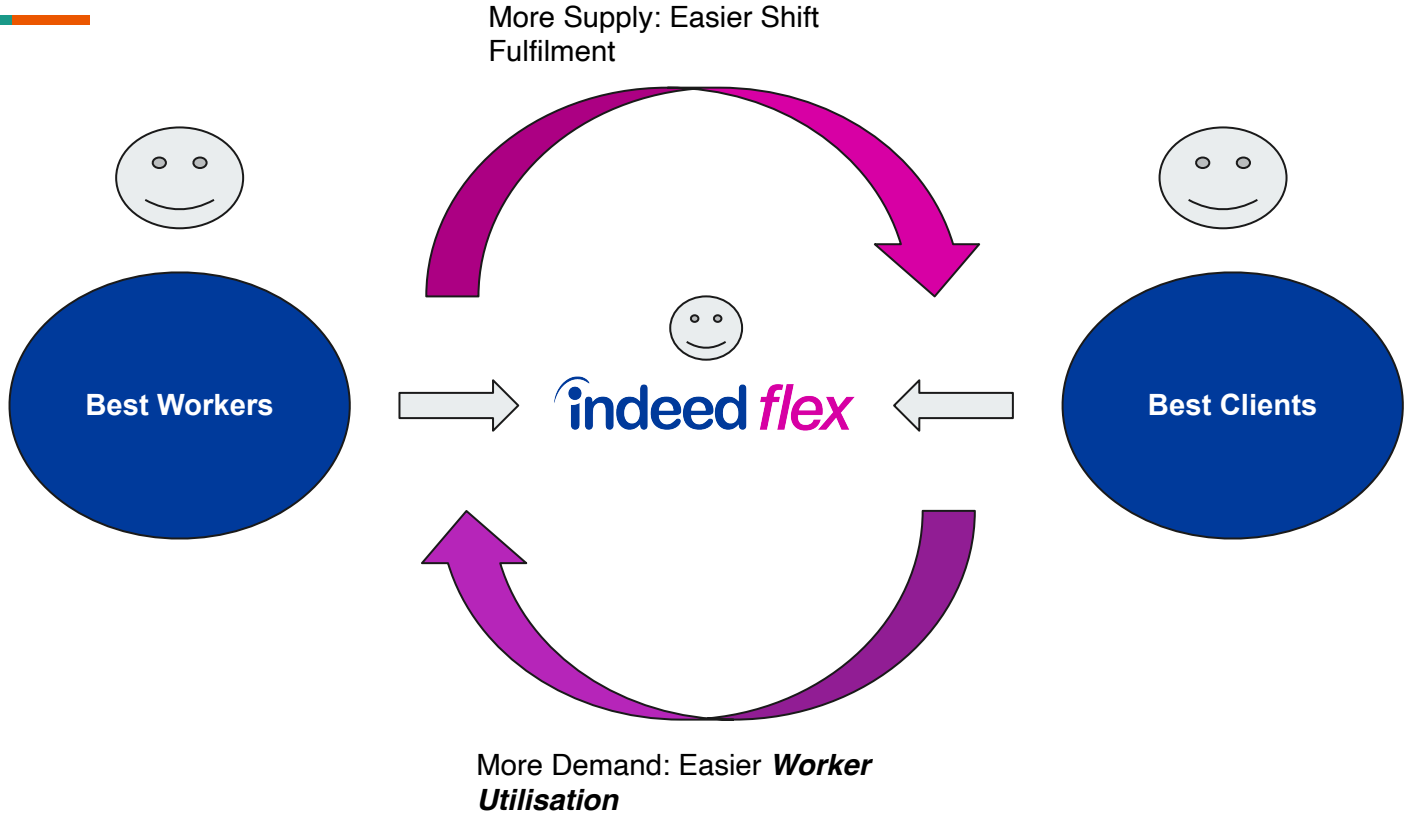
*I love Youtube as I can learn anything there. Love the quite decentralised aspect of it as well*

YouTube

# Project: Worker Intelligence

*Data Platform leveraging technology, coding, business acumen, logic, to make day to day life easier at work, especially when it comes to gathering information, and making decisions*

# Context: IF Business model, and new focus on workers



# But who are our best workers? Do we know our workers?

# Problem Statement

*And more generally… How to **Enable**, **Simple** and **Fast**, **Consistent** and **Reliable** key information consumption and research about our users?*

# Enable

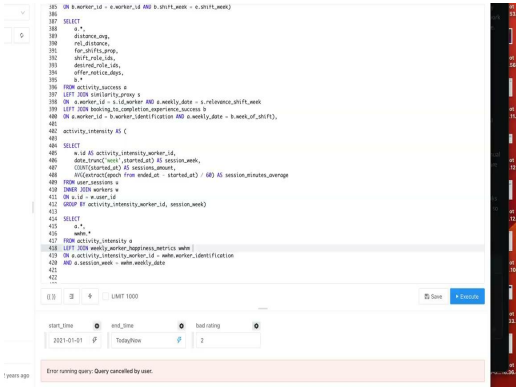
*As a Business Stakeholder, is there a **go to place** where I can quickly access **key user information**, such as who are our best users, how do they do over time. Who is trying to find work but is not. Who is not doing anything. Who is expected to find work, if so, how many? etc…*

*As an Analyst, is there a **go to place** where, for example, I can **quickly conduct research, hypothesis testing**, on which kind of job searching experience is increasing workers likelihood of finding work?*

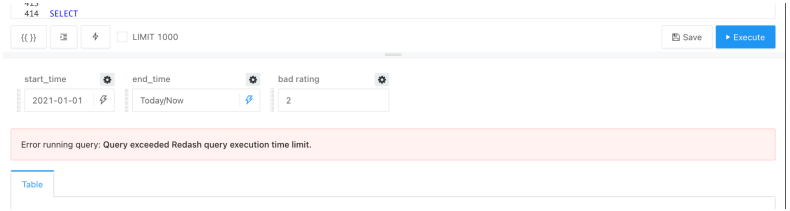
# Simplify, Fast

*Is there a **go to place** where I can **instantaneously** access **key user information**, in a **self serving way,** with just the use of a SELECT *?*

*Let's avoid that*




This incomplete ,compared to the actual solution, query is not doing the job. It's a very long and complicated query, and the result takes too much time to show, or does not show



# Consistent

*How to make sure the information I am gathering is going to **be useful for quite some time**. How to be **robust against seasonality,** and to display information that will be **useful to as many stakeholder as possible, for as much time as possible?** Indeed, we would not want to need to change the query every week !*

We need to create a ***objective framework, which breaks down the end to end experience of the user when interacting with our product,*** in key different and successive steps, and compute metrics for each of these steps that give good information without providing too much noise

Having weekly data for every worker, ***including when there is no data available for a given week for a given worker (a gap)***, would enable consistent information about churn or not, and be robust against seasonality

# Reliable

*How to make sure I can trust the data I see?*

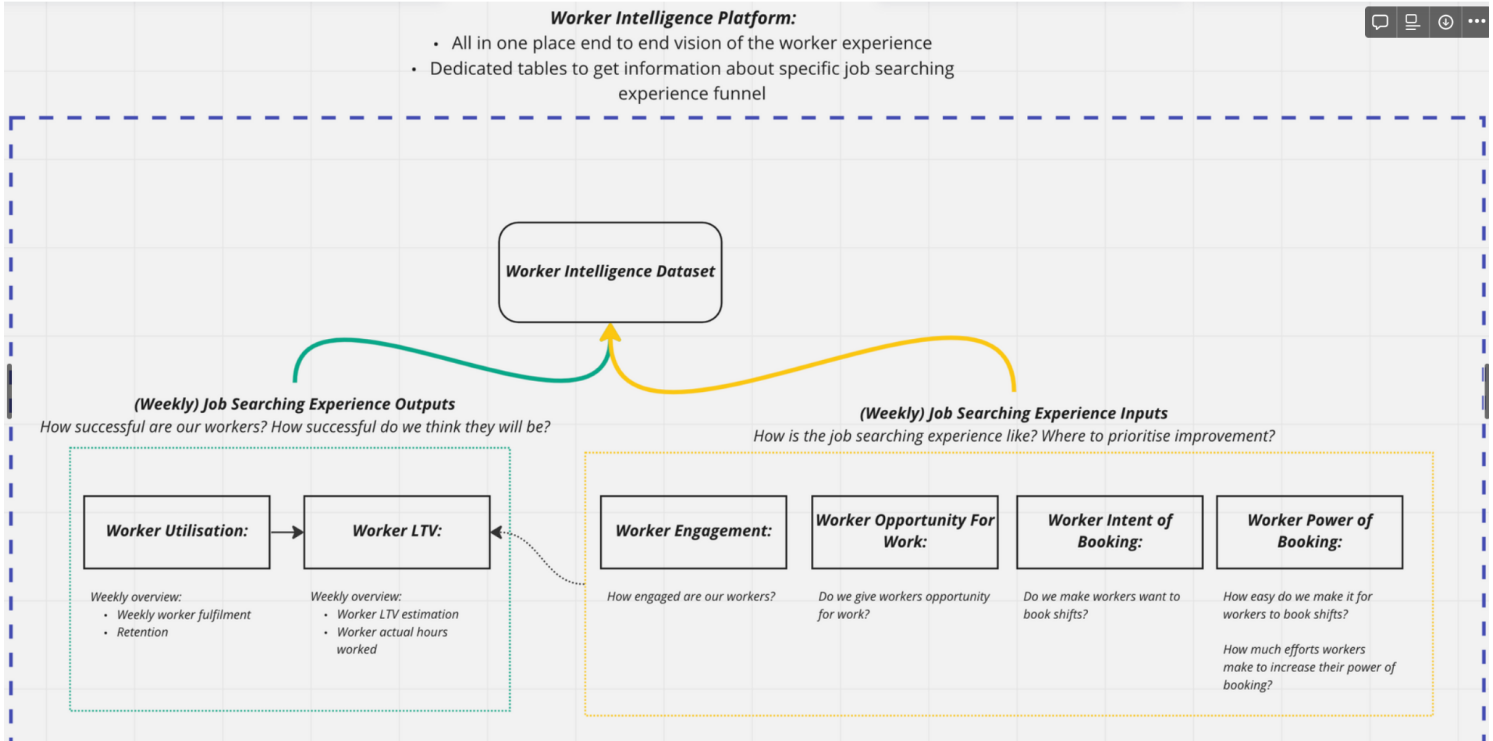
We would need to implement testing for every key metrics. This is not so easily done with only SQL

# Solution: Worker Intelligence Platform, in DBT

- ***An all in one*** weekly dataset, combining 30+ raw tables, ***enabling easy, fast, consistent and reliable key user information*** :
  - Workers **output information:** How are our workers doing in terms of success?
  - Workers **input information:** What's going on with our workers, when they are looking for work? All above, for every (relevant) worker, and every (relevant) weeks. To provide a holistic view of the worker journey, and take seasonality into account.
- The platform is created in DBT through many SQL models, linked together to create the platform, which is then available for instantaneous querying in Snowflake. Thoroughly built with ***Testing and Peer Review*** (Git Hub), enabling ***reliability***
- ***Supercharging self serving research, EDA, hypothesis testing***

# Solution: Worker Intelligence Platform Framework

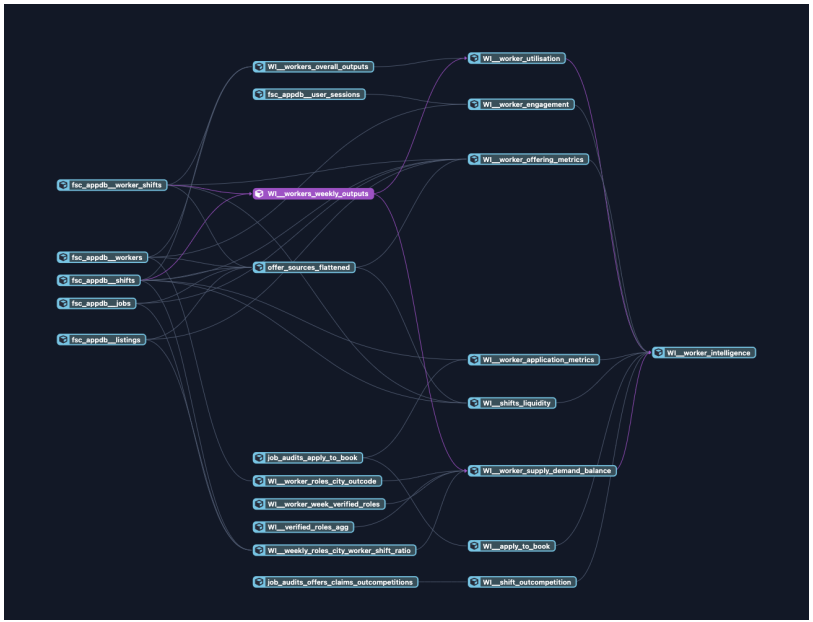
*Consistency thanks to the Framework. Precise but also general enough info. Framework can lated be expanded*

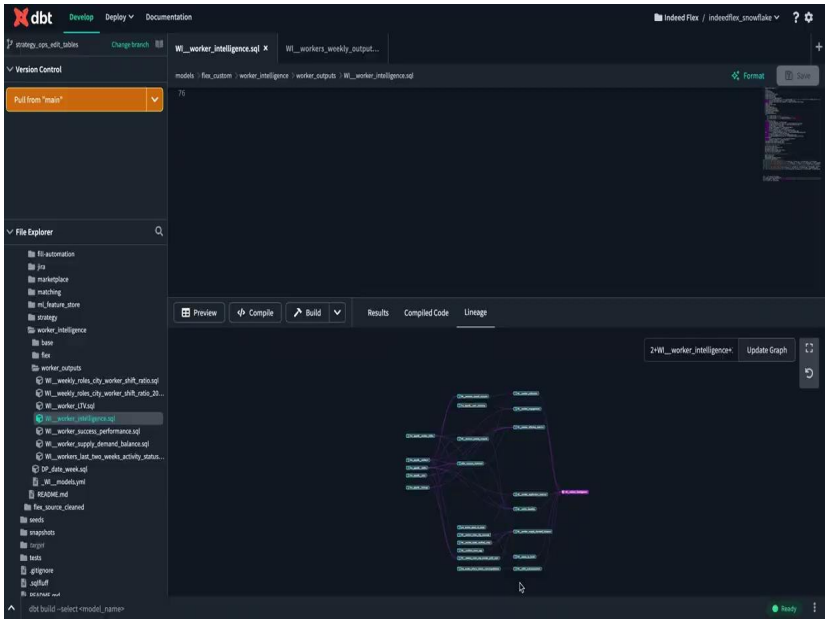


# Solution: Platform enabled by DBT

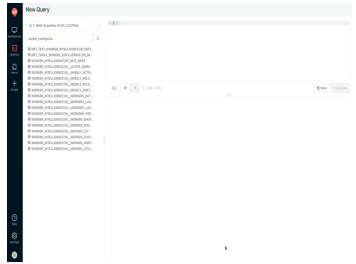
*Simple and fast, as well as reliable, information consumption, thanks to the (huge) work under the hood in DBT*

*Tree of the final dataset. Each of those bricks have their own lineage as well*



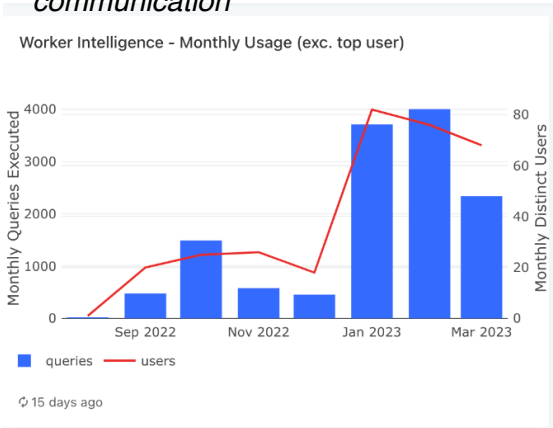



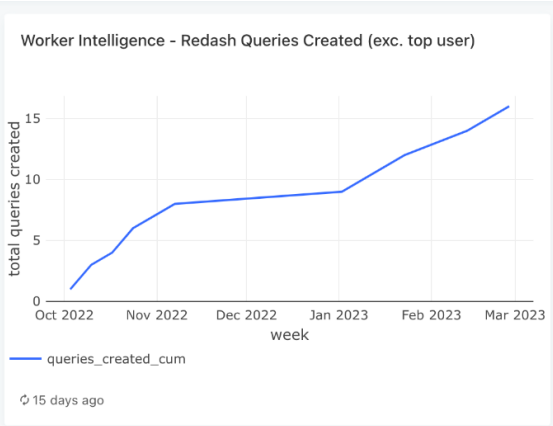
# Results: Self served, fast, robust information consumption

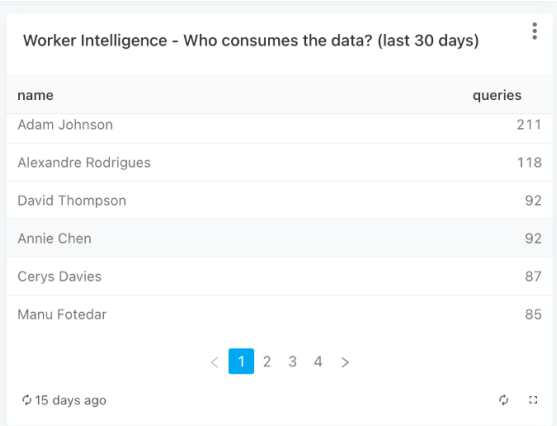


- Easy and fast ***self served, robust*** information access, for every stakeholder. ***Even from business stakeholders.*** 5 sec max to wait
- Thanks to the framework, the metrics within the platform ***cover most of the use cases / needs from PMs and business stakeholders***, which, even when they cannot self serve, ***supercharges the dashboard creation time*** allowing me to save more time for deeper analysis. Along with better tracking (e.g better WAU tracking)

*The platform usage, by many stakeholders including SQL beginners, increases, and this with pending company wide communication*



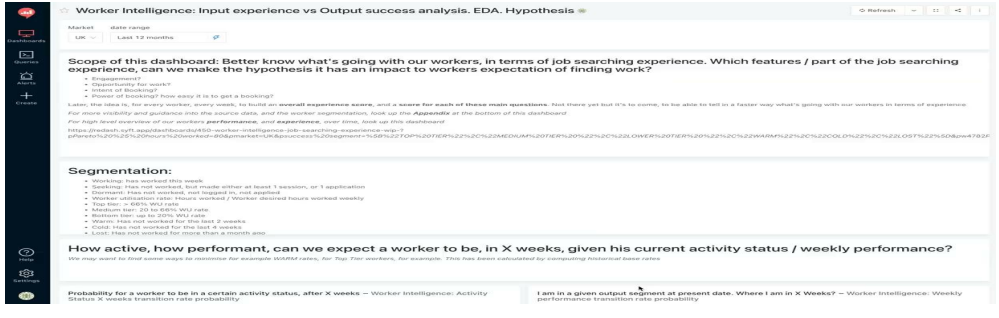
# Results: Supercharging Data Analysis, Hypothesis Drawing, ML

- The data is almost a training data on its own. Combining success output metrics with input user experience metrics. In any case it makes easier to gather, over time, key features and use them for different purposes. The table is currently used for instance for a deployed LTV model

- Which I plan to trying to enrich, by adding more features from the user experience with our product. And it's super easy to analyse all features against success and draw hypothesis on which features can be useful for Data Science Use cases, or in any case to solve identified business problems

- No need to recompute again and again similar queries. And the query execution time is skyrocketed, reducing the feedback loop

*Video extract of an Inputs vs Outputs EDA dashboard, making it easier to draw hypothesis*



# Conclusion

- In short, it was very common that Senior Leadership people would insist on how we should shift more our business model towards our users and less the clients, but to me the actual resources needed for people to concretely be able to turn their attention more towards our users was not there

- It was almost impossible for business only people to access key and robust information about users, especially over time. It was possible but very time consuming, not scalable, for Analysts. Information was too scattered, some useful metrics had to be created, and making sure the data was okay added more time

- To this problem came my idea and the development of the Worker Intelligence platform, which, from DBT, outputs datasets in Snowflake which enables and simplify fast, consistent, and reliable key information about our workers. With just the use of a SELECT * or basic group by commands

- This platform is currently quite successful, especially without official communication. Business people are using it to self serve thanks to basic SQL, Analysts like me spend less time working on some dashboards for business people as the information is already there, which leaves more time to dive deeper and contribute to solving more intricate problems

# Why I am proud about this project

- I identified a significant gap in the product, and took the initiative to fill it by ideating, and developing, on my own, this Data Platform. I had a bit of help from a Data Engineer in skilling up in DBT, and also designing the within architecture and testing. I basically worked as both a PM and a developer on this fully fledged engineering product. ***I think having the ability to take a step back, identify key gaps and acting on it by owning projects and products should be relevant to the role here at Intuit***

- I created actual value for all the analytics community, by creating a go to place when it comes to consuming company wide user information. By shrinking massively the time needed to extract and analyse key information. PMs spend less time doing basic research, Analysts have more time to run more value added and deep analysis to solve business problems. ***For a company who aims at being even more data driven, I think being able to bring scale, and more ability to dive deep, are key***

- Even though the product has not yet been communicated company wide, there are many stakeholders using it already, including PMs with very basic SQL knowledge, which was one of the objective. ***The ability to create value and communicate this value efficiently, basically to be able to speak to business audience, is important***

- I learned many new things, including best practices when it comes to Data Engineering / Software Engineering principles. I learnt fast, while also maintaining my strong SQL coding capacities

# Thanks