

## **Group Number # 22**

### **Name of solution: Labyrinth**

#### **Executive summary:**

Labyrinth addresses the problem of finding meaningful partnerships that companies could strike within the industry and the research world. Labyrinth analyzes the data of the stakeholders in a specific field and provides a web application to its clients that they can use to identify and rank the key players in specific fields according to several key indicators. Labyrinth also includes facial recognition software to identify the attendants of key events and their relationships; this technology can be used to identify the latests and most trendy clusters of interest.

#### **Problem** (what is the challenge that you are addressing?)

In a day and age when technology and data are widely available to the large public, an era when each year we generate twice as much information as we had ever created before, it has become increasingly difficult to draw relevant conclusions from the available data. Being able to cut through the noise and assess the relevance of the information has become not a priority, but a necessity.

Companies focusing on research in different fields of science wish to expand their market share by establishing meaningful partnerships with relevant stakeholders such as Universities, other companies, and research groups that have a competitive advantage in the area.

However, because of the large amount of data available, it is difficult to beat competitors at finding out who the best possible new partners could be, where they are located and how they relate to the other stakeholders. On top of that, the proliferation of fake news and the existence of duplicates make this problem even harder. A system able to find, analyze and rank the key players in the field is essential.

#### **Target User / Customer** (who are your targeted users and/or customers?)

Our customers (and target users) are companies like Novo Nordisk, which seek to find the most relevant stakeholders in a specific market or research area. Labyrinth finds and analyzes the key players so that our clients can establish promising partnerships to strike in both the academic and the corporate world.

#### **Your solution and how the concept is feasible**

Our solution, Labyrinth, processes information about the stakeholders that a user is interested in and blends it with publicly available data (from websites like LinkedIn or ResearchGate) to create a "Labyrinth Network". This network contains key information about Companies, Universities, Researchers and Employees that are of interest for possible partnerships with our users, saving their contact information, relevance and how they relate to each other.

The end product is a web application that our customers can use to launch tailored queries and generate reports. Labyrinth receives as an input photos and videos obtained from relevant events, such as conferences, job fairs and company meetings; it includes facial recognition software which can be used on this visual material to identify the key players, remove duplicates and create clusters of interest present in the material.

The solution can be implemented using facial recognition and identification software, like Microsoft Azure's Face API, which is able to match, identify and search faces within a repository consisting of up to one million people's photos. Scraping of publicly available information is legal and there are software packages that provide this functionality already.

**Four unique value propositions:** (what makes your solution/concept unique?)

1. Scraping of relevant publicly available data from both the Corporate (LinkedIn) and the Research (ResearchGate) world. This allows us to create the initial network of relevant stakeholders.
2. Facial recognition software for identifying the attendants of key events and their relationships.
3. Generation of tailored “Labyrinth Networks” which blend specific customer data with our databases.
4. Deployment of a web application that can generate reports and a list of stakeholders ranked according to the parameters indicated by the user (publication impact, revenue, etc.).

**Financials** (what is your business model?)

**Labyrinth’s costs:** The main cost of the project are related to: 1) Administrating the servers that host the data and the created “Labyrinth Networks”. 2) Development of the specific “Labyrinth Networks” for the client, blending their additional data with ours. 3) Servers that hold the Webapp which the clients use to solve their queries and generate reports. This includes the development of the software and the cost of running a facial recognition software like Microsoft’s Face API. 4) Additional paid data sources.

**Labyrinth’s revenue streams:** We will establish tailored partnerships with companies (Novo Nordisk) which will pay for the initial building of the tailored “Labyrinth Network” and the maintenance of the web application and database through which they can query the needed information and generate a wide range of reports about the key players in their respective fields.

**Impact** (what is the potential positive impact your solution/concept are creating)

Our solution would mainly impact the companies within certain fields of science that are interested in finding the key partnerships with Universities, companies and research groups. The possibility of identifying the most relevant players in an automatic way by combining publicly available data and face recognition could disturb the way partnerships are initiated. Better stakeholder’s assessment and increased visibility of emerging players could draw more attention and funding to the respective conferences, universities, start-ups, etc. which would in turn create greater value for their industry partners.

**Links for more information:**

[Microsoft Face API](#)    [HiQ case against LinkedIn](#)    [Code repository](#)

**Team** (who is in your team and what are your skills and motivations?)

Our team consists of three DTU students with different backgrounds: Mathematical Modeling, Computer Science and Engineering and Materials Engineering. Our backgrounds are somewhat consistent with our skills: we show aptitudes within the fields of Data Science, IT, Business and Entrepreneurship.

We believe we are lucky to have been born in a day and age when technology is widely available and is advancing at a pace that we had never imagined possible; we would like to be a part of this advancement and use our skills to contribute our skills to the development of our respective fields.

**Group members** (list full name and e-mails (preferably not your student e-mail))

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