This project is part of the course Digitalisation of the Business Processes at the University of Applied Sciences Northwestern Switzerland. In the progress of the course members could choose from a variety of given processes or come up with their own. Our project team has decided to come up with BananaAnalytics, a group that digitalizes analytical processes for audit companies.

# **About**

Originally, the analytical process is done by the audit firm. By automating this process, BananaAnalytics opens a new business because the entire process from the data request until the data delivery can be outsourced now.

The digitization of business processes, also in the audit business area, brings with it many new challenges and opportunities. The current audit approach and audit processing, e.g. through the use of standard structures, document checks and invoice-specific requirements, are very work-intensive and almost inefficient. In order to achieve the necessary complex regulations both from the point of view of the audit team and for the company to be audited, new support technologies are necessary for an efficient audit process.   
  
To meet the necessary regular requirements, BananaAnalytics offers the right solution for this requirement with new technology for the audit process. BananaAnalytics has bundled the data preparation requirements and implemented a tool to prepare the data more efficiently for the audits.   
  
BananaAnalytics' simple and useful solution controls all the steps through the data analysis process. As a result, most of the manual steps can be automated. The solution allows the use of a mobile analysis solution or the installation directly on the client, without data loss.

Limitations: In case BananaAnalytics is really becoming an own company, we would need to deal with user access rights during the entire process. This has not been done in this case.

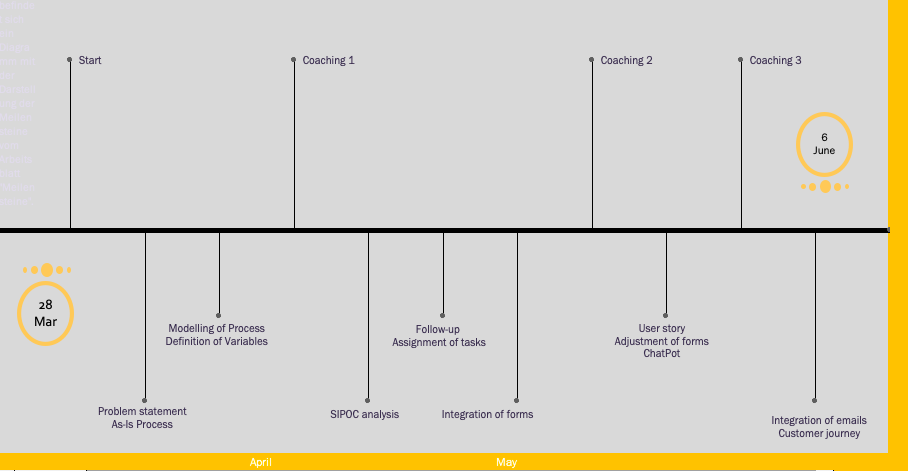
# **Project Timeline**

After the project team first wanted to create a new process, it was limited by the lack of expertise in that process. Therefore, the team decided at the end of March to choose a new process in which one member can act as process owner.

In a first step, in this case the first three weeks, we designed the process, analyzed it using SIPOC and defined the variables that are needed in each task. To ensure we are on the right track, we had a first coaching session. This one convinced us not to use a chatbot. Instead we decided to use a form.

In a second step, we assigned the work to be done among the group members. Then the actual work with the establishment of forms, creation of user stories and integration begun and lasted until end of May.

Finally, everything was put together and tested. At the same time the presentation was created.



# **Process Overview**

## As-Is Process

**Painpoints**

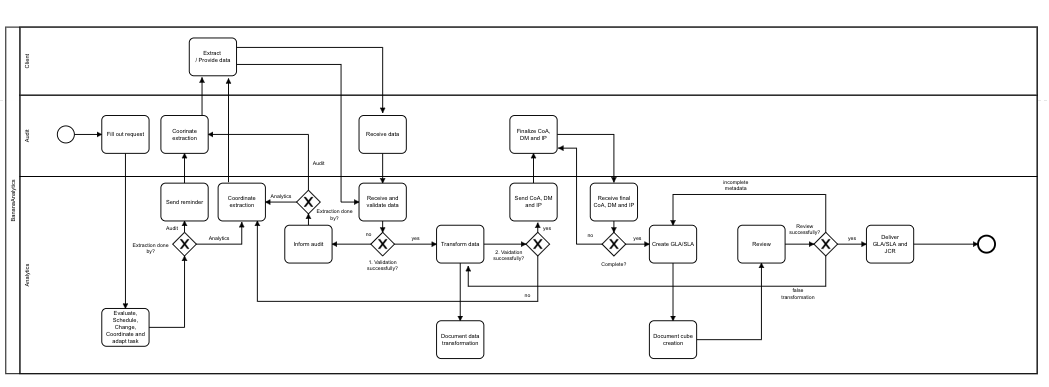
* No workflow tool (camunda is a solution), you have no idea where the request actually stands (no possibility to inform Audit in case of questions). With camunda you can draw real time statistics
* Evaluate part is an excel file and each time a new one is generated and you have no idea which one is the most recent one
* Communication is based on emails and before you get an overview, you might need to read 25 emails
* Extraction -> everything fine
* No overview what is requested, what is done, who is doing what
* Everything is done manually, transformation from Excel to Sharepoint

**Automization**

* Request management (it is in one system, with one click you can confirm it or reject it)
* Audit communication (emails can be generated automatically)

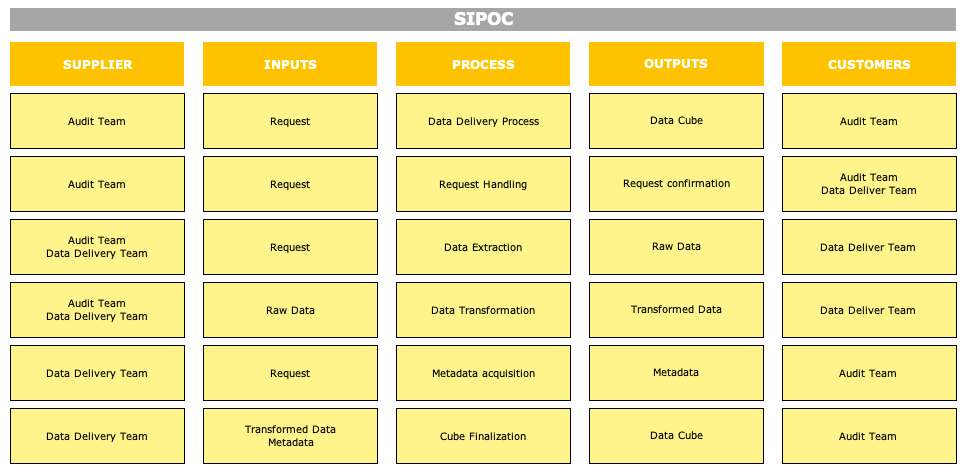
The screenshot below shows the current analytical process of audit companies. This process has some major pain points:

1. No workflow tool is in place. This results in not transparent situations, where no one has an actual overview nor over the process itself, neither over tasks performed. An overview what has been requested, what has been done or who is assigned to which task is not available.
2. The request is done by Excel and each adjustment creates an additional Excel. Leading to not having a common point of truth, since the most recent Excel cannot be identified easily.
3. Communication is done by email and is hardly traceable. To find a specific request, several emails have to be reviewed.
4. A lot of tasks are done manually, as for instance the transformation from Excel to Sharepoint.

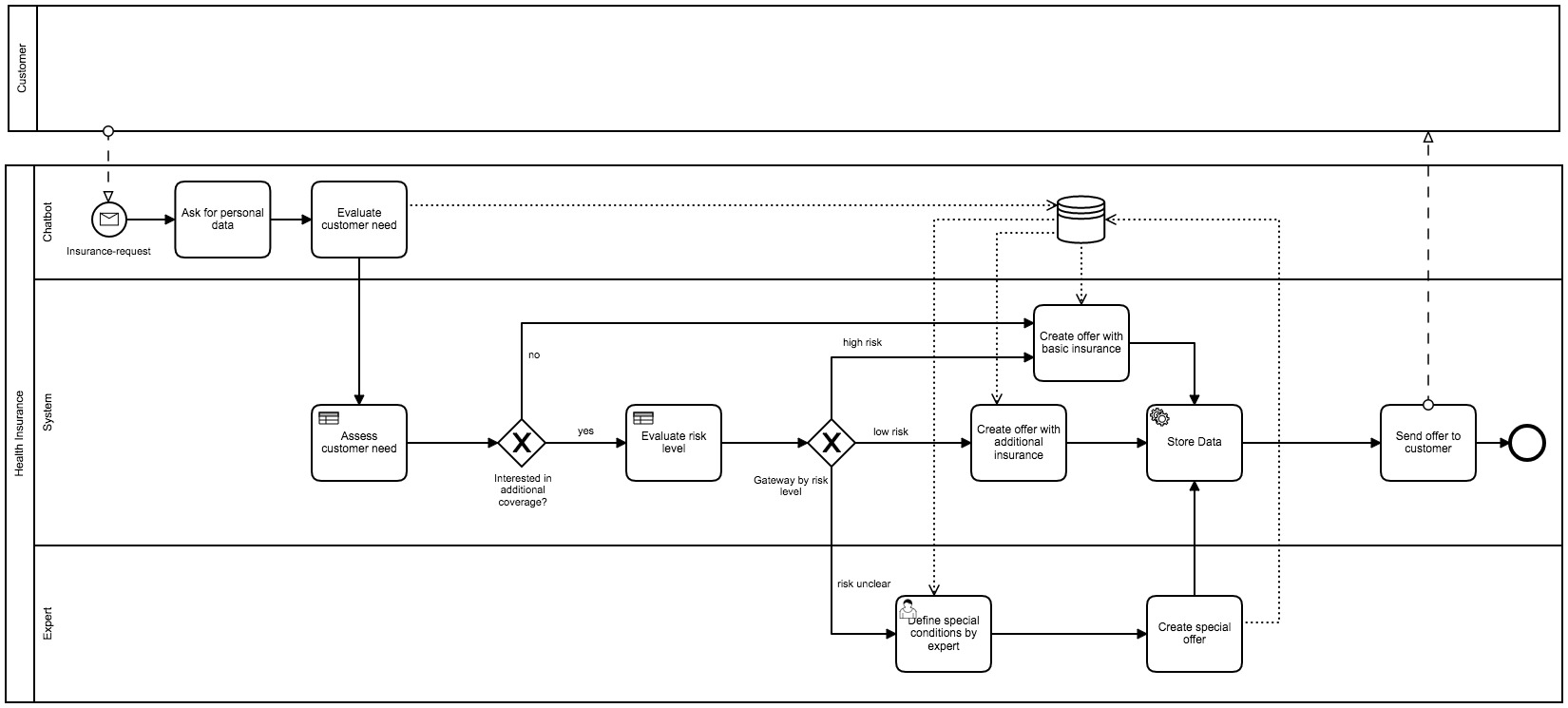


After analyzing the process using SIPOC, the project team came up with a redesigned process involving automated tasks to make the process less time-consuming and more user friendly. Possibilities to automate the process were identified at the below listed tasks:

1. Request Management



## To-be Process

As we can see in the process below, human interaction is almost completely absent besides a task where a human decision making is needed to assess the necessary risk level in unclear cases. The process is also user friendly as the user only has to provide information at one point and the second time he already receives an insurance offer. A more detailed description of the solution can be found [here.](https://github.com/DigiBP/digibp-jungfrau/wiki/Solution) 

# **Solution**

## Integration

* Picture of integration

Every integration is based on a google sheet saved in Drive. It is coming from JotForm, but we don’t use JotForm anymore.

### Integromat

The request handling starts with an initial form that is submitted by the audit team to BananaAnalytics. This request is automatically generating a folder in Google Drive where all documents are saved. Furthermore, the request is entered into a Master Google Sheet where all request can be tracked.

* Receive call from Camunda
* Enter new request into request management sheet (automated)
* Creation of new request folder and request data sheet

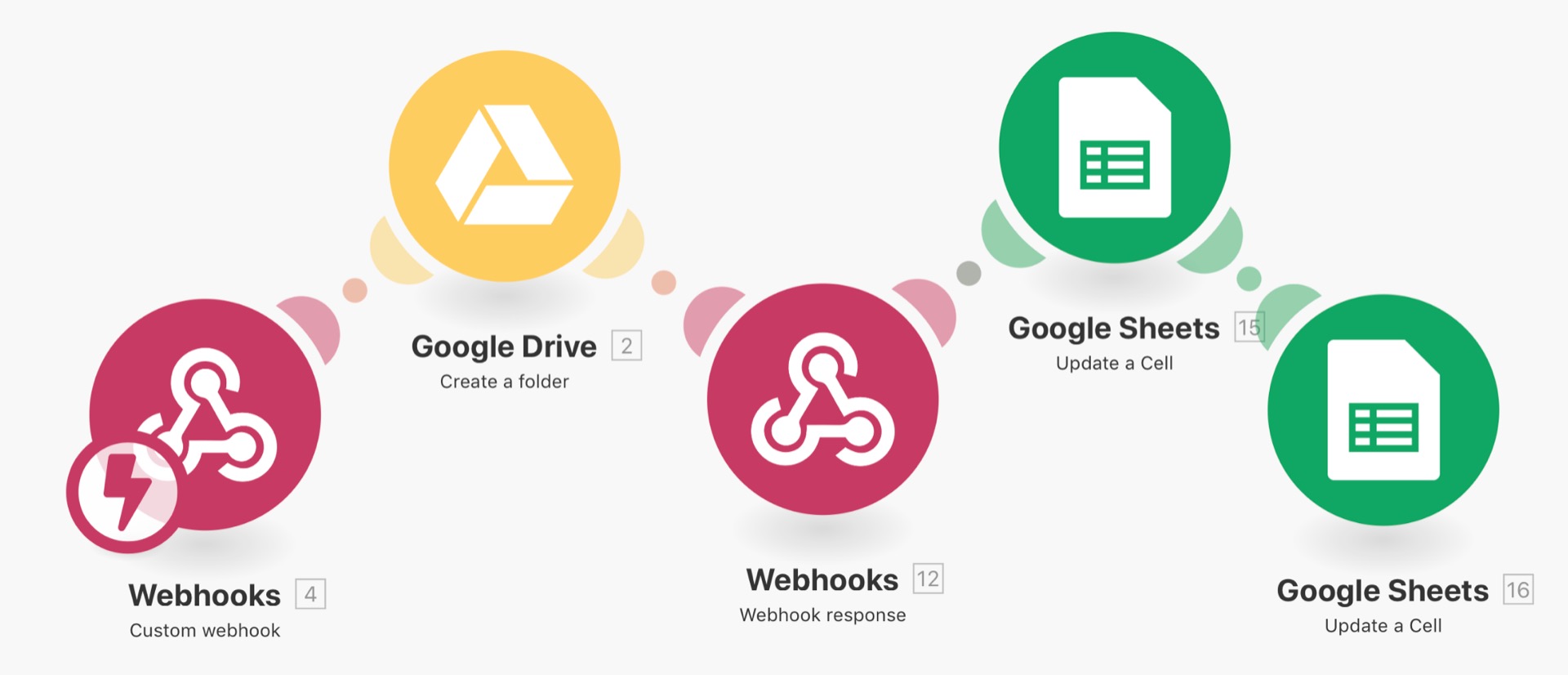


**Citrix\_ShareFile\_CreateShareFileFolder**

* After receiving the request creation of new client account
* Creation of data upload folder
* Subscribe for data upload notification
* Completing for requesting data

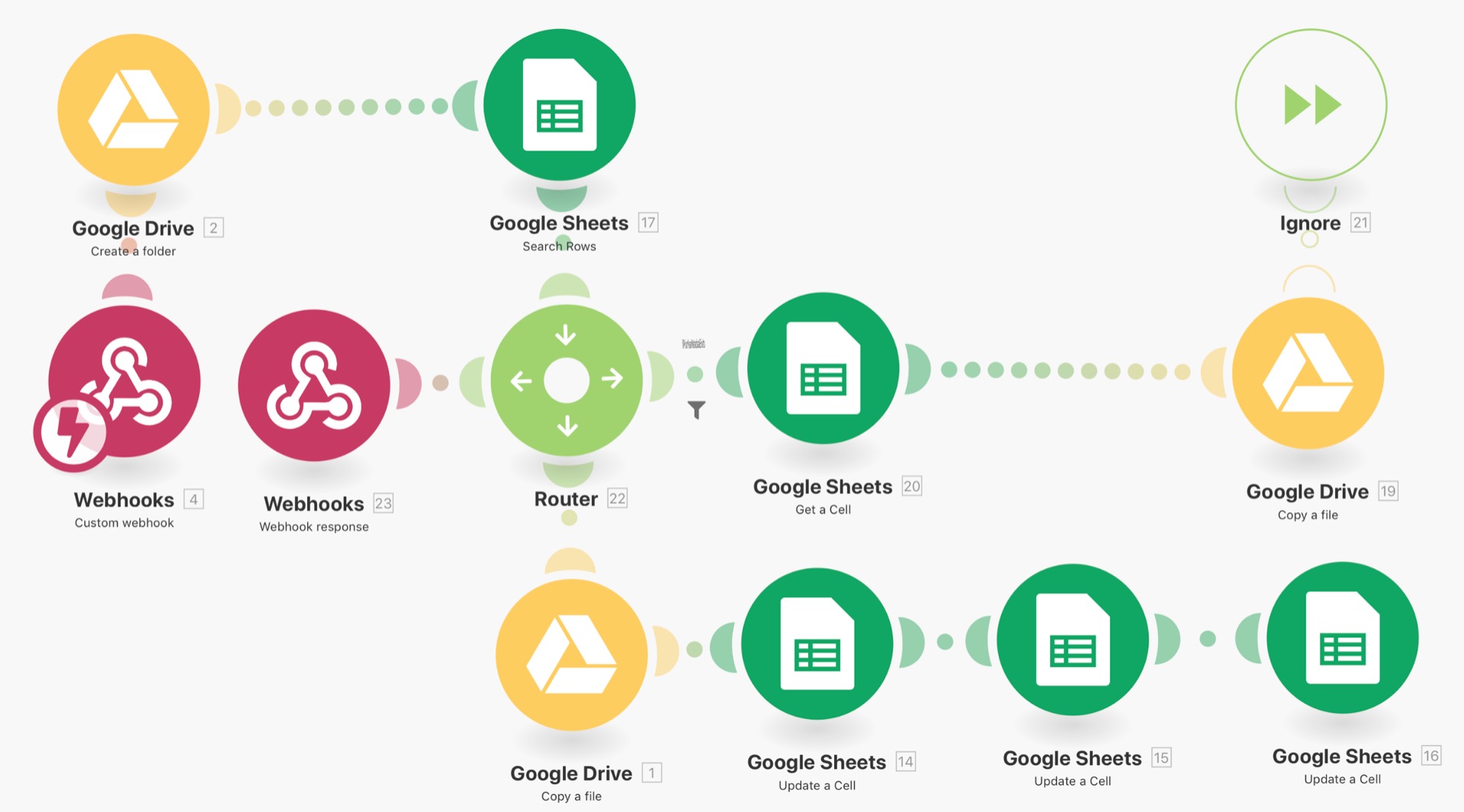


The client is asked to upload the data that is then validated by BananaAnalytics. This data remains unaltered in the file share. BananaAnalytics is transforming a working copy that is saved in the team share.

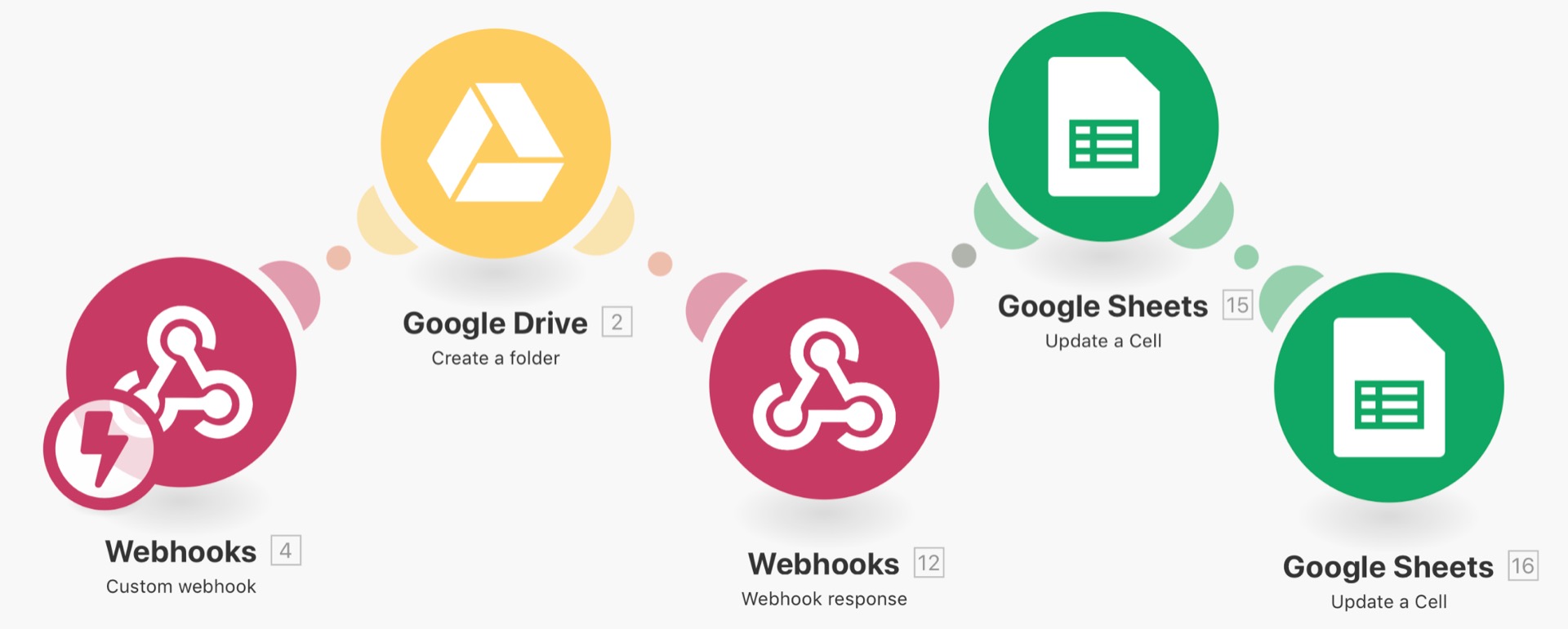


Before the Cube can be finalized, BananaAnalytics also has to validate the metadata. A new sheet must be created so that the metadata can be checked on the one hand and amended on the other.

* Still preparation work
* Create meta data folder after camunda request
* Check if previous year metadata exists (if so include in folder)
* Compete metadata folder and sheet information in request data



Afterwards, all the data is saved together and the Datacube can be created and saved in the team share.



* To make Camunda work, Share File gives signal to transform the information to a message that Camunda can process
* Unsubscribe from data upload notification (to delet the webhook / cleaning)
* Update process status in request management



### SendGrid

* Predefined templates
* http post request
  + applying post request to make send grid personalize the template and send it (as an email) to the receiver

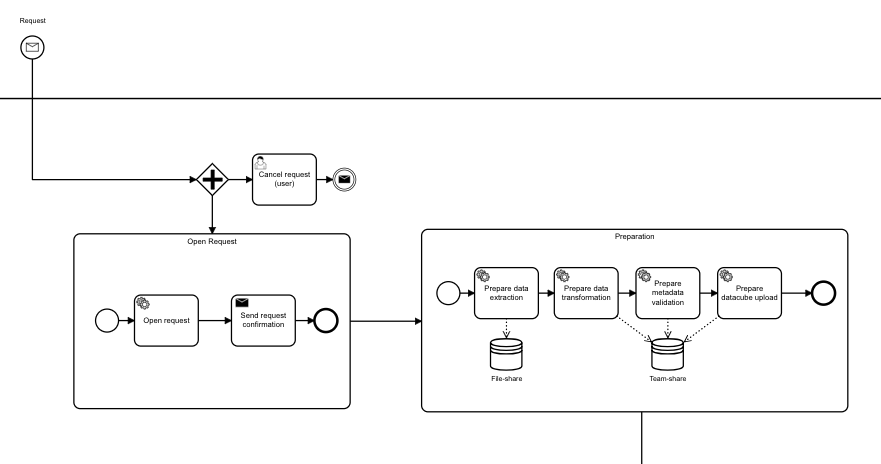
### DialogFlow

* dialoge asks how the status of a request is and google sheet answers (using information of management google sheet) -> possible status to be taken from process

## Process Features

* insert picture

## Request Handling

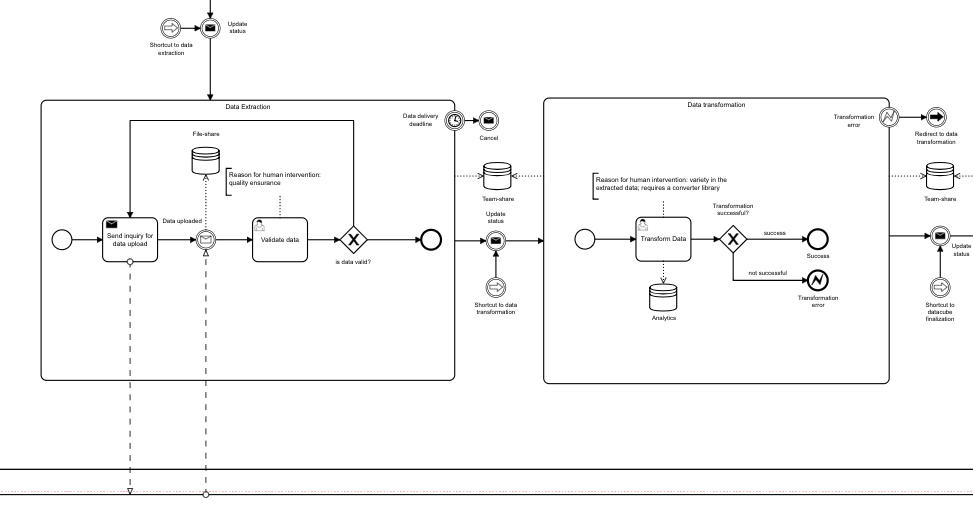
  
- the auditor fills in the form in Camunda. This request is directly transferred to Google Drive and entered into the request sheet with status prepared. (🡪 everything is created online)

-it is always possible for the auditor to cancel the request (the request is then presented in the request sheet as status cancelled)

- file share to collect data from customer / team share to work with the data as BananaAnalytics

The process is triggered through google assistant which has been created using dialog-flow. Dialog-flow/Google assistant was chosen as it allows natural language processing as well as an easy interaction with the user. By using natural language the user can easily interact with the google assistant and is informed on the different types of insurances which are being offered and can easily apply for a new insurance. When applying for a new insurance google assistant guides the user through a series of questions based on selected choices, collects the required user information and assigns variables to them.  
  
In this part of the solution, Integromat fetches all variables from google assistant. It then stores these in a google sheet before passing them on to Camunda. The google sheet in this step is not necessary for the process to work but it allows a more efficient debugging of the process and does not produce a noticeable interruption.

## Data Extraction & Transformation

  
- The client is asked to upload the data into the file share (via email including an upload link)

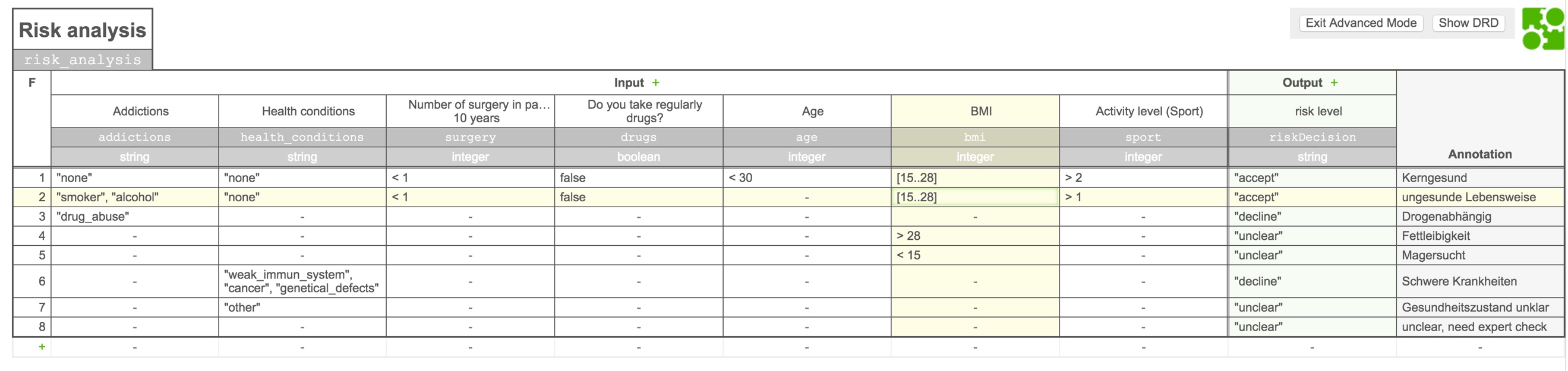
- BananaAnalytics can then validate the data

- Everything that is uploaded by the client is unmutated and remains in the file share. BananaAnalytics is saving a working copy into the team file (google drive)

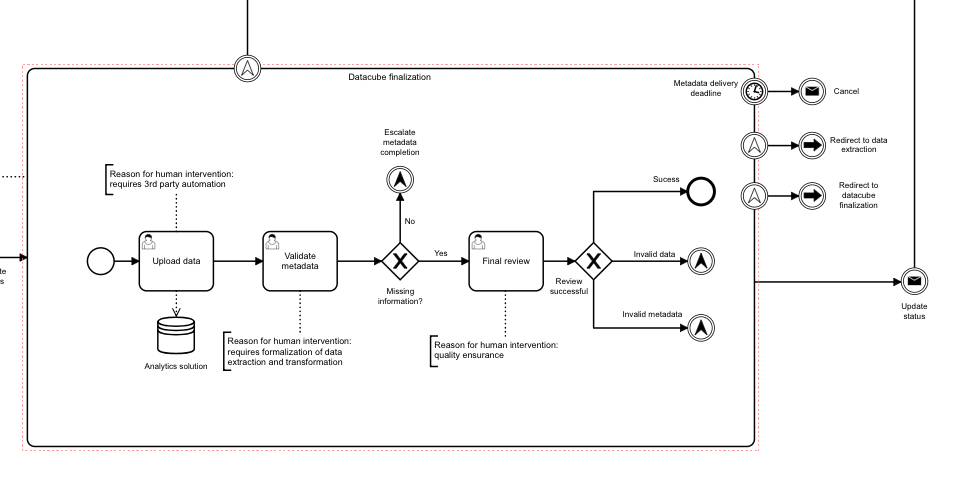
- same happens to metadata

- in case metadata cannot be validated, the task is going to audit team. They then have to complete the metadata and upload the amended version. This is then validated by BananaAnalytics again.

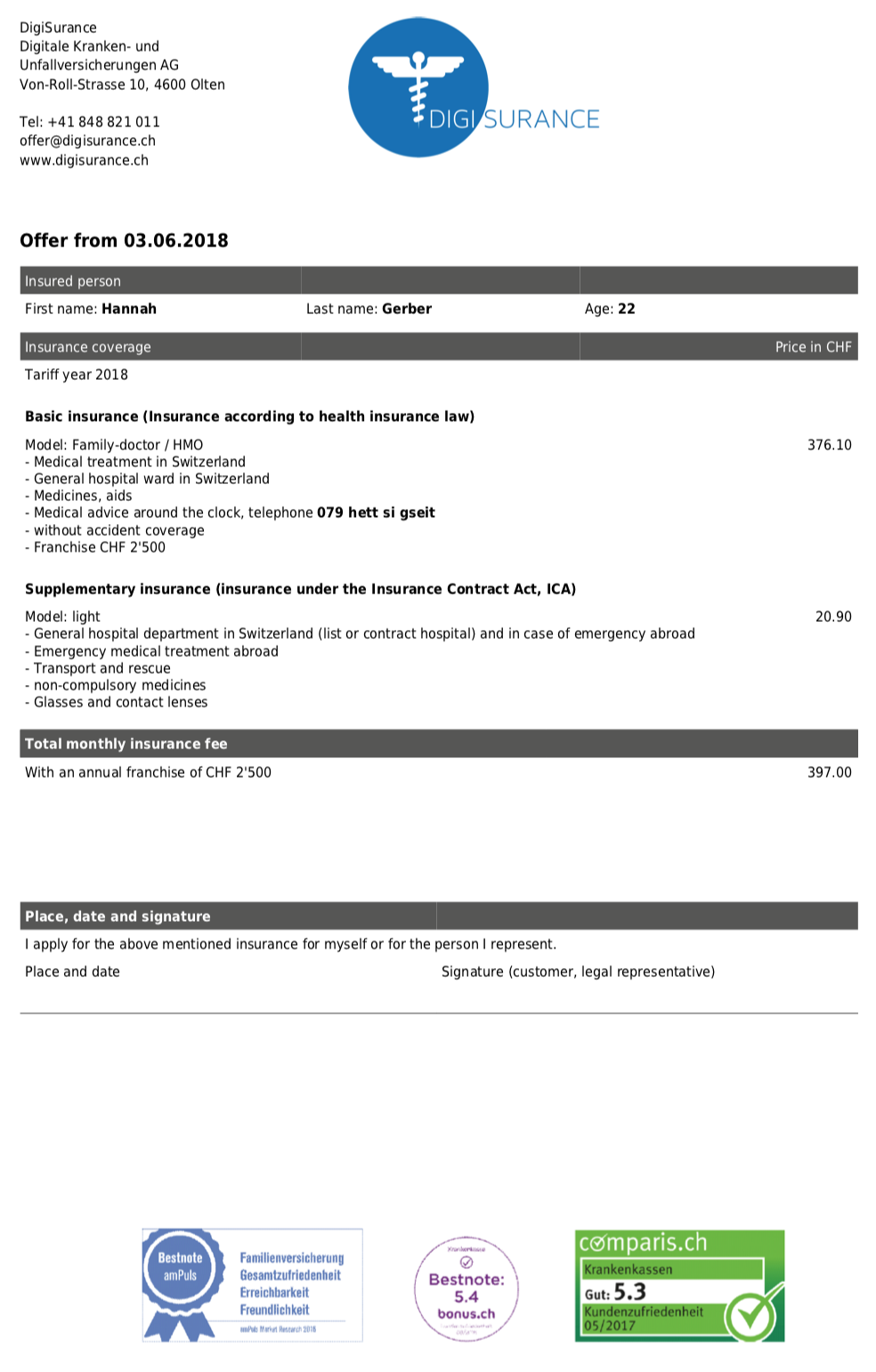
In Camunda is where all of the magic happens. Through decision tables, logic is applied to the process. Based on the choices of the user and the answers given, Camunda automatically calculates the associated risk class. There are three risk classes in total:

* low risk: The applicant immediately gets his Insurance
* high risk: The applicant gets denied private or semi-private hospitalisation and is offered basic insurance
* unclear risk: The decision is wavered to a professional human who decides in which risk class the applicant falls into.  
  If users apply for basic insurance without any add-ons the applicant is accepted automatically. In all other options the user only is accepted if the right conditions are met which will not result in a higher living risk of the applicant. The output of the process is that the users are either accepted or declined. 

## Data Cube Finalization

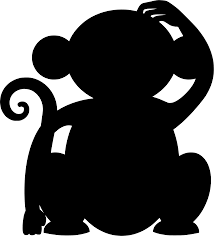
  
- all data is then saved all together

- after the final review, the data cube is uploaded to the team share

In this part, a second instance of Integromat fetches the calculated risk class as well as all other user provided information. It then generates a timestamp for each entry and stores it in a database (Google-Sheets). A request to a PHP-Server is then being made with all information to generate the offer in a PDF document, with filled out fields from the information provided. In a last step a mail-service (in this case Gmail) sends the insurance policy offer with the PDF as an attachment to the applicant. Should the provided email-adress of the customer not work, the billing team of DigiSurance is asked to get in touch with the customer. 

# Project Members

### David Fürer

  
Project Role: Project coordinator

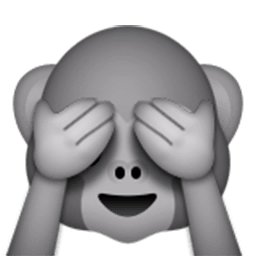
### Felix Schenker

  
Project Role: The Researcher

### Anton Lorvi

  
Project Role: The Programmer

### Rahel Wehrli

  
Project Role: Wiki-creator and Project Management support

# Licencing

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