2022 Patent Landscape Analysis

Model Answer

For the Patent Landscape Analysis, candidates were asked to perform three tasks based on a provided set of patent publications numbers on the topic Ice Cream. This model answer is an example of how the tasks could have been performed.

It is taken into account that e.g. the numbers of families per assignee or numbers of families per year may vary per tool and how the data set was reduced.

The 2022 model answer shows family reduction in an Excel workbook and visualizations in this word document. Other ways of cleaning up the data and generating charts than the ones shown in the workbook and this document, are also acceptable.

It is important to stress that many ways of handing in the results and several formats are accepted, e.g., word, excel, power point and pdf.

Candidates were asked to explain their choices, in order to be able to assign marks. Explanations of choices are not included in this model answer, but below is illustrated what should be included in the answers and what the following explanation should cover.

Task 1: Data processing (Max 20 points)

- Please provide a family reduction of the collection and submit a workbook with your results.

*See **workbook** covering family reduction.*

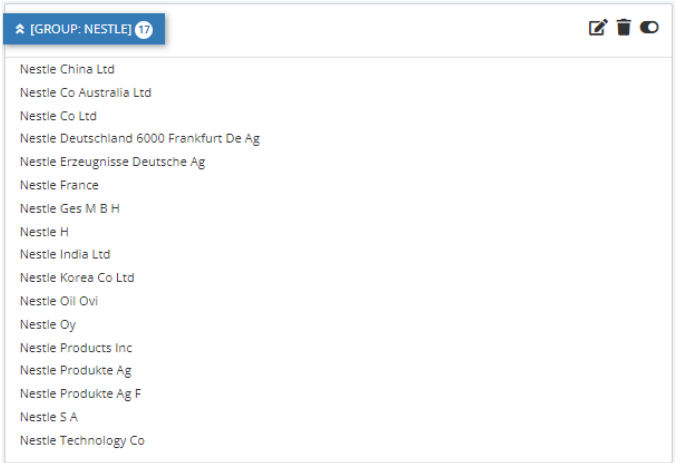
- Please share which reduction method you used and why you used the selected method.

*Candidates are here expected, **in writing**, to explain their choice of type of patent family. For example, why you chose to use simple or extended families and what are pros and cons with the selected reduction method, so the candidates shows that they understand the theory around patent families and understand the family reductions in their preferred tool.*

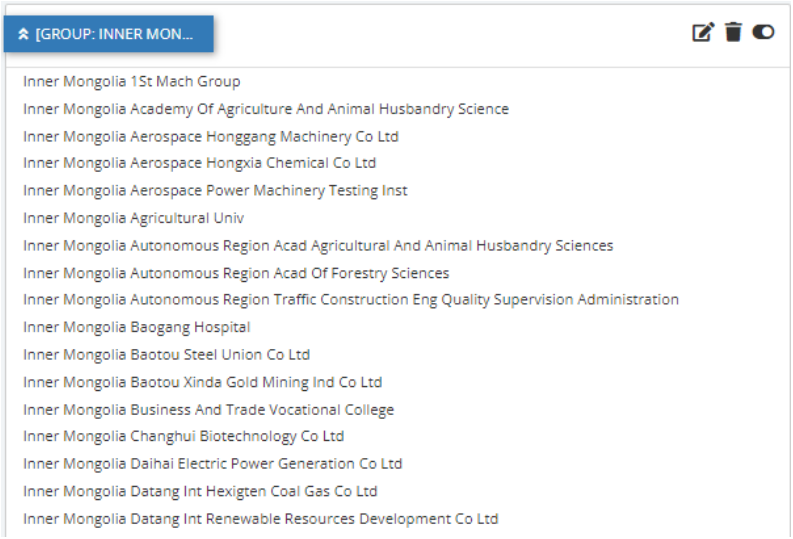
- Please discuss your method of assignee harmonization and give five examples of assignees that were harmonized (show the starting and harmonized assignee group).

*Candidates are here expected to **visually show** at least five harmonized families (the different names included in the harmonization) and explain, **in writing,** how they cleaned up the assignees (e.g., with help of a tool, codes for assignees, manually, etc.).*

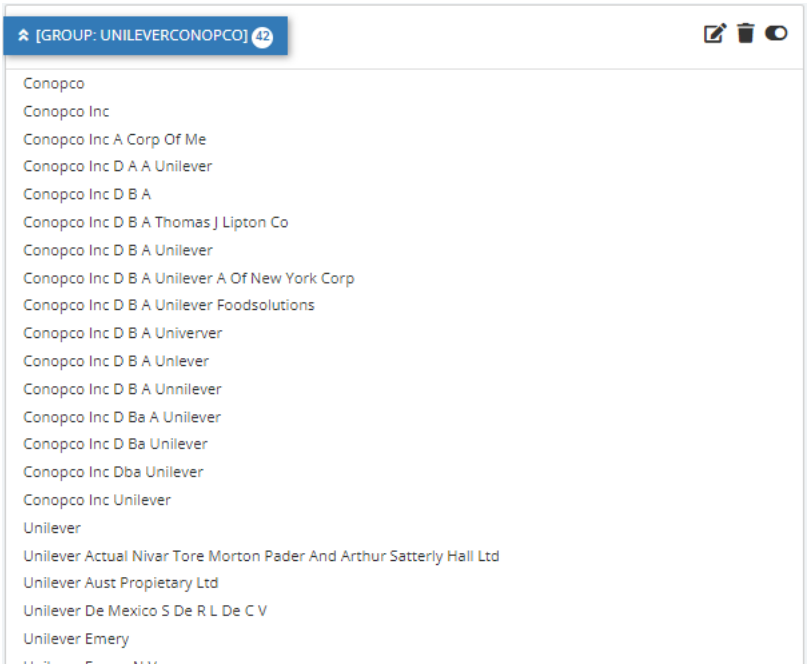
Group NESTLE SA



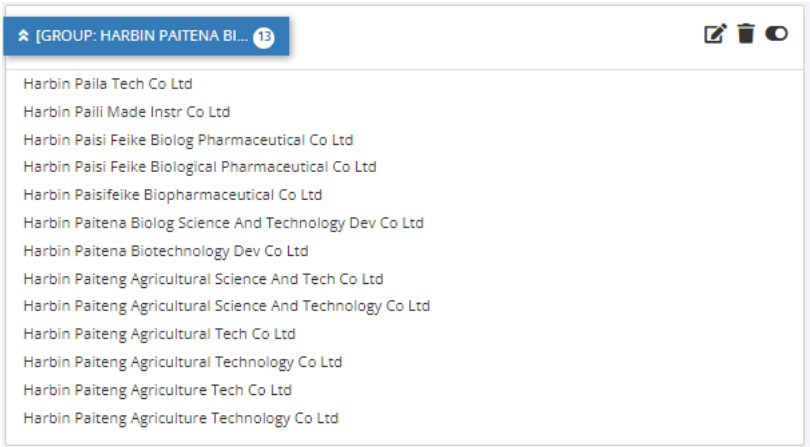
Group INNER MONGOLIA MENGNIU DAIRY GROUP CO (not complete list included, since very long)



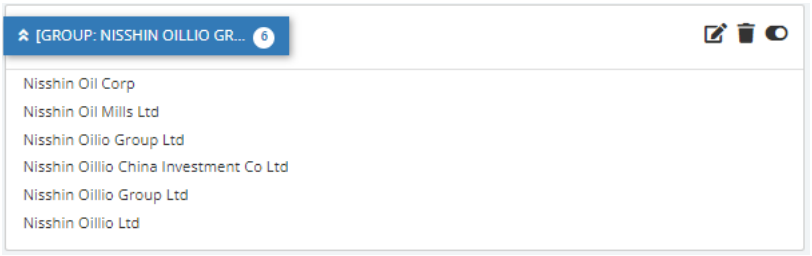
Group UNILEVER/CONOPCO (not complete list included, since very long)



Group HARBIN PAITENA BIOLOG SCIENCE AND TECHNOLOGY DEV CO LTD



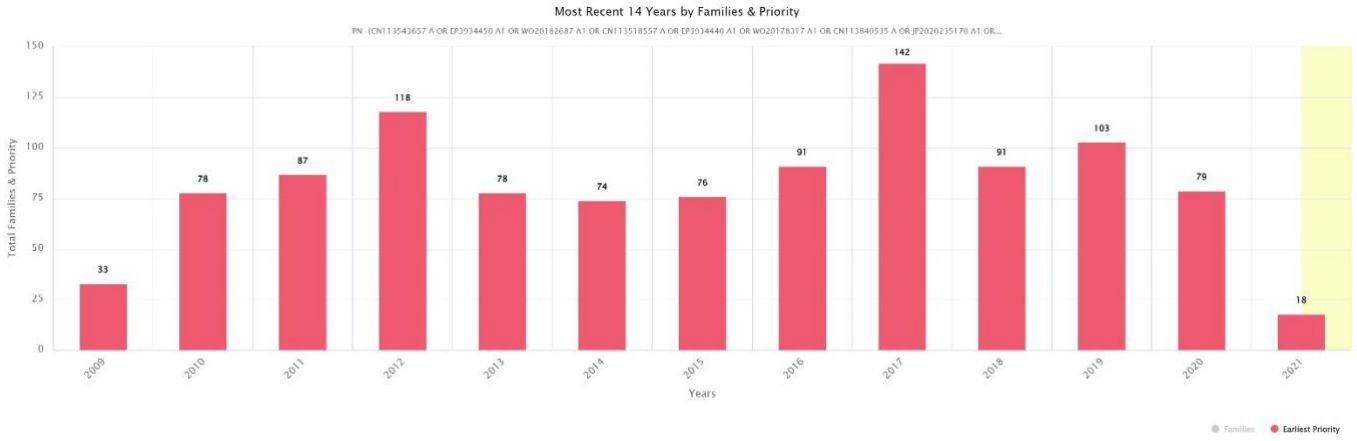
Group NISSHIN OILLIO GROUP LTD



Task 2: Data analyzing (Max 30 points)

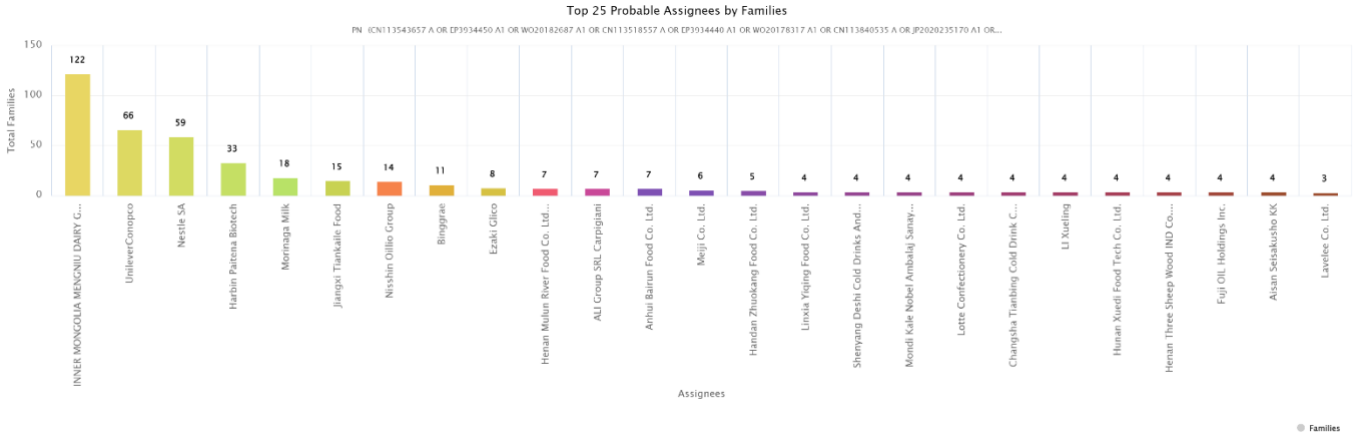
1. Create a chart that shows the general trend of the collection over time. Explain your choice of date field for this visualization.

*Candidates are here expected to **visually show** an illustration showing general trend of the collection over time, and discuss, **in writing,** the date field they have used for the analysis, i.e., why they have used either (first) publication date, (first) application date, (first) priority date etc.*



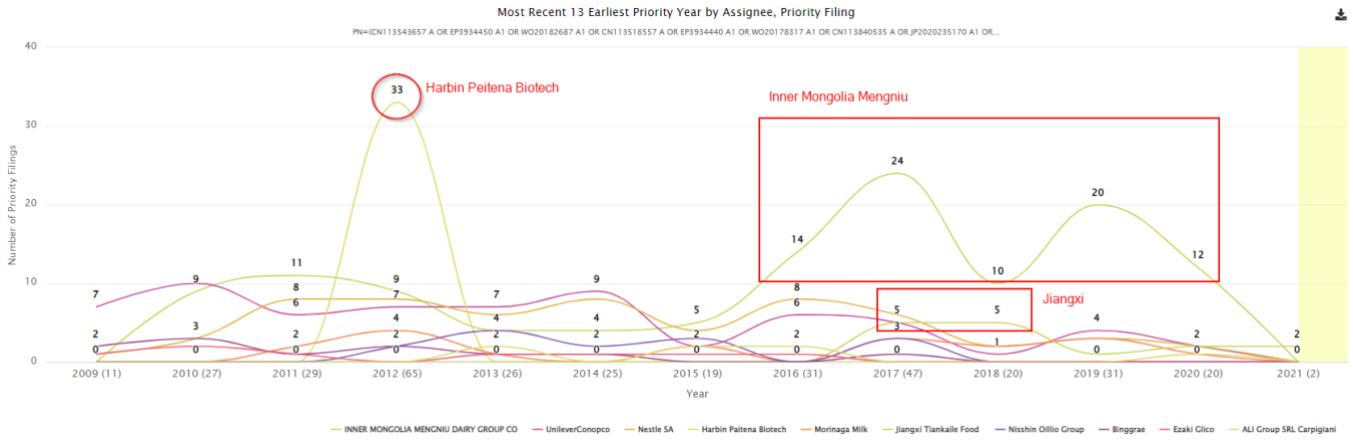
2. Provide a visualization of the top 25 assignees.

*Candidates are here expected to **visually show** an illustration showing top 25 assignees (using the assignee harmonization).*



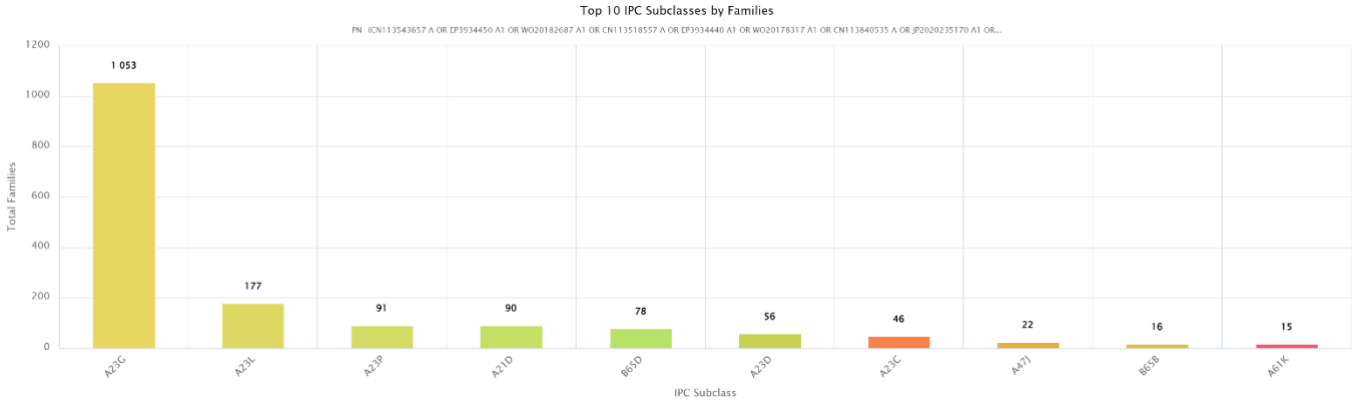
3. Provide a visualization of top assignees over time and give two-three examples of a dramatic change in assignee rank based on more recent publications.

*Candidates are here expected to **visually show** an illustration showing top assignees over time and discuss, **in writing**, examples of assignees showing clear changes.*



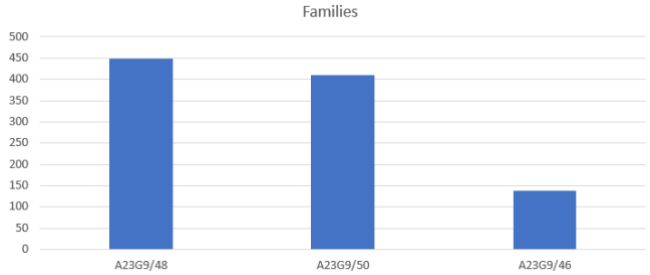
4. Categorize the collection using a patent classification scheme to identify the top technologies and provide a visualization (select hierarchy level of the patent classification scheme and explain your choice).

*Candidates are here expected to **visually show** an illustration showing top technologies, and discuss, **in writing**, why the selected hierarchy level as well as patent classification system have been used.*



5. Categorize (a selection) of your collection into at least three technological sub-categories and provide a visualization (explain your choice).

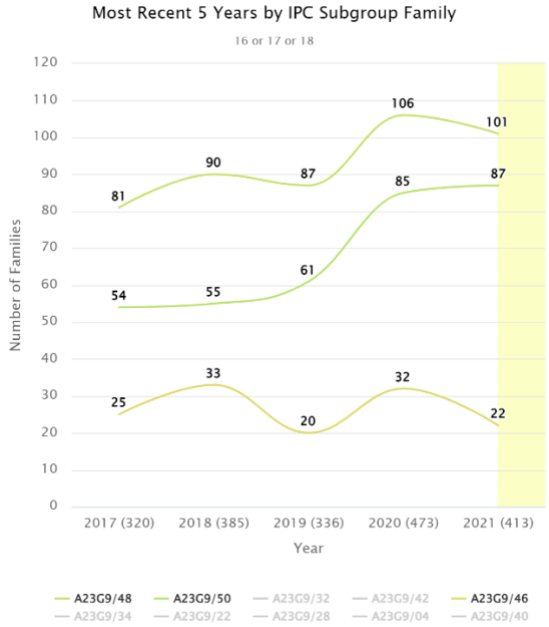
*Candidates are here expected to **visually show** a selection of relevant subcategories. In addition, it is expected, **in writing**, to discuss the choice of subcategories.*



Ex. These sub-groups allow to categorize the collection into these three technological subcategories: A23G9/46: Aerated, foamed, cellular or porous products; A23G9/48: Composite products, e.g. layered, coated, filled; A23G9/50: Products with edible or inedible supports, e.g. cornets. All three sub-groups are in the group "Frozen sweets, e.g. ice confectionery, ice-cream; Mixtures therefor - characterized by shape, structure or physical form" (A23G9/44).

6. Provide a visualization of the above sub-categories over time and give two-three examples of how these sub-categories have changed over time.

*Candidates are here expected to **visually show** sub-categories development over a selected time period. In addition, it is expected, **in writing**, to give examples of the development of the categories over time.*

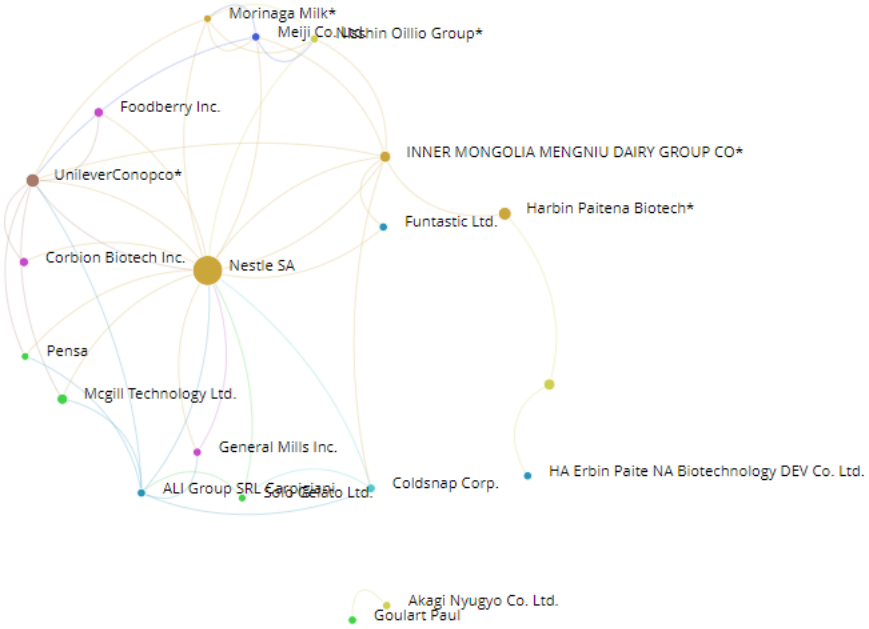


7. Provide an automated or semi-automated technology-based clustering of the collection, such as a spatial concept map or a machine learning based classification and explain the value of this type of analysis.

*Candidates are here expected to **visually show** an automated or semi-automated clustering of the collection. In addition, it is expected, **in writing**, to explain how the automated or semi-automated clustering can be used in patent landscaping and what knowledge can be extracted.*

8. Provide a citation analysis of the collection, such as a citation network diagram and explain the value of this type of analysis.

*Candidates are here expected to **visually show** a citation network diagram of the collection. In addition, it is expected, **in writing**, to explain how citation networks can be used in patent landscaping and what knowledge can be extracted.*



Task 3: Reporting (Max 20 points)

- Please provide a list of the insight generated from the visualization from task 2.

*Candidates are here expected, **in writing**, to list insights generated from the visualizations and analysis made in task 2. Below are examples.*

- *The general trends show a relatively stable temporal development (with a few peaks) throughout the last 10 years.*
- *Top players are Inner Mongolia Mengniu Dairy, Unilever/Conopco and Nestle SA.*
- *Inner Mongolia Mengniu is the largest player in the field and dominate the space with sizable new filings.*
- *Harbin Paitena Biotech have 33 patent families – however all from 2012.*
- *The graphs show that there is one interesting newcomer like Jiangxi Tiankaile Food, with 15 publications over the last 5 years.*
- *Composite products and products with edible or inedible supports are slightly increasing whereas aerated, foamed, cellular or porous products are more stable.*

- Write an executive summary, including actionable next steps based on your analysis.

*Candidates are here expected, **in writing**, to make a short summary of the findings and propose what to do next. Below is an example.*

The market of ice creams is not very heterogeneous, as the 4 main assignees own more than a quarter of the total of the analyzed patent data set (280 patent families over the 1070 patent families of the collection).

Inner Mongolia Mengniu Dairy owns around 11% of the patent families. Outside top 4-7 the other assignees are relatively small players.

The citation map shows that Nestle seems to be the most cited patent assignees, which may mean that their patent portfolio related to ice creams may have a significant value.

Proposed next steps:

Evaluate the portfolios of the large players as well as the up-coming players at a deeper level, to understand what exact technologies they are working with.

Look into potential collaboration partners, e.g., some of the smaller players.

Create a patent watch monitoring the field for new players or technologies that are entering the space.

Identify white spaces, to detect potential technological aspects where investing R&D and then filing patent applications may lead to a competitive advantage.