# Intelligent IT Services Model with NLP

Analyzing Received Customer Feedback

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# Background

On average IT receives 14,000 text input from customers. These comments either express general feedback, recommendation or complain. The trigger of them are notification message after completing a CRM request, solving Remedy ticket or the annual Customer Experience Survey.

# Business Impact

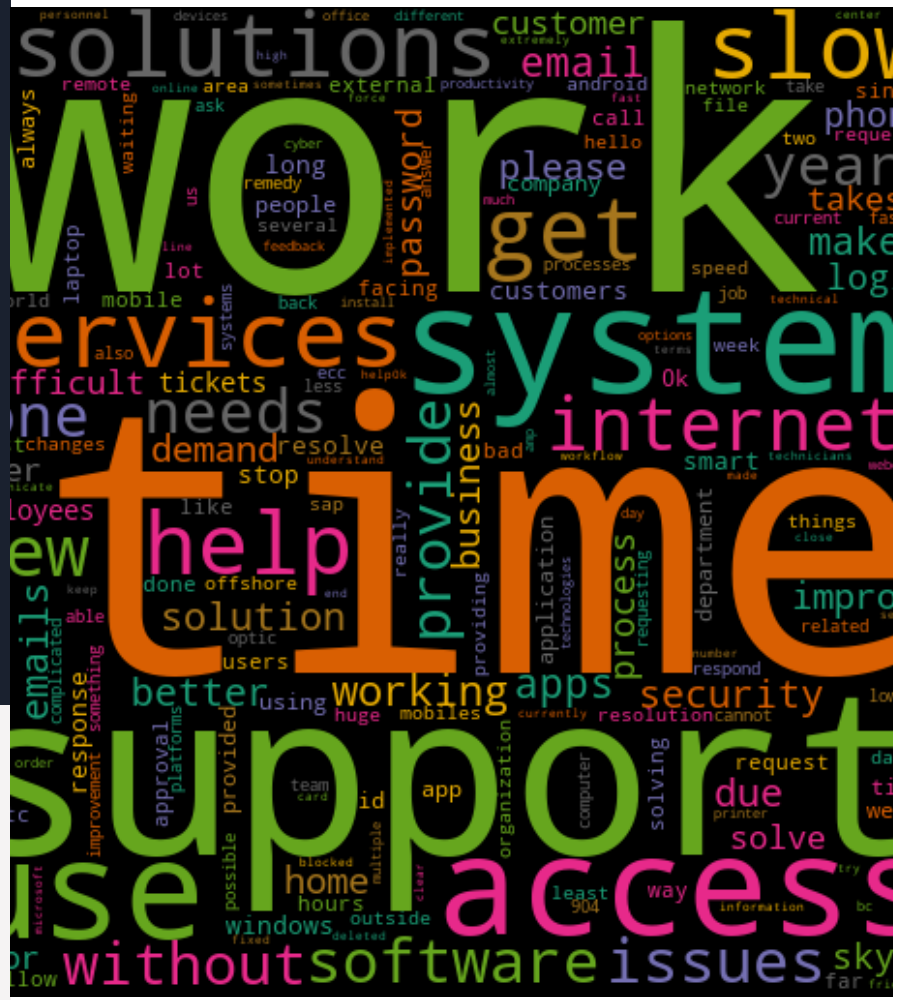
There are massive amounts of text data received on daily, monthly and annual basis related to customers feedback and their overall satisfaction and experience about IT provided services. This input is an important source of information to understand the customer's expectations, opinions, and experience. Data Mining and NLP techniques can identify subjective information in texts, automate the reviewing process, cluster and corelate information with user profile for better decision making process.

# Data Sources

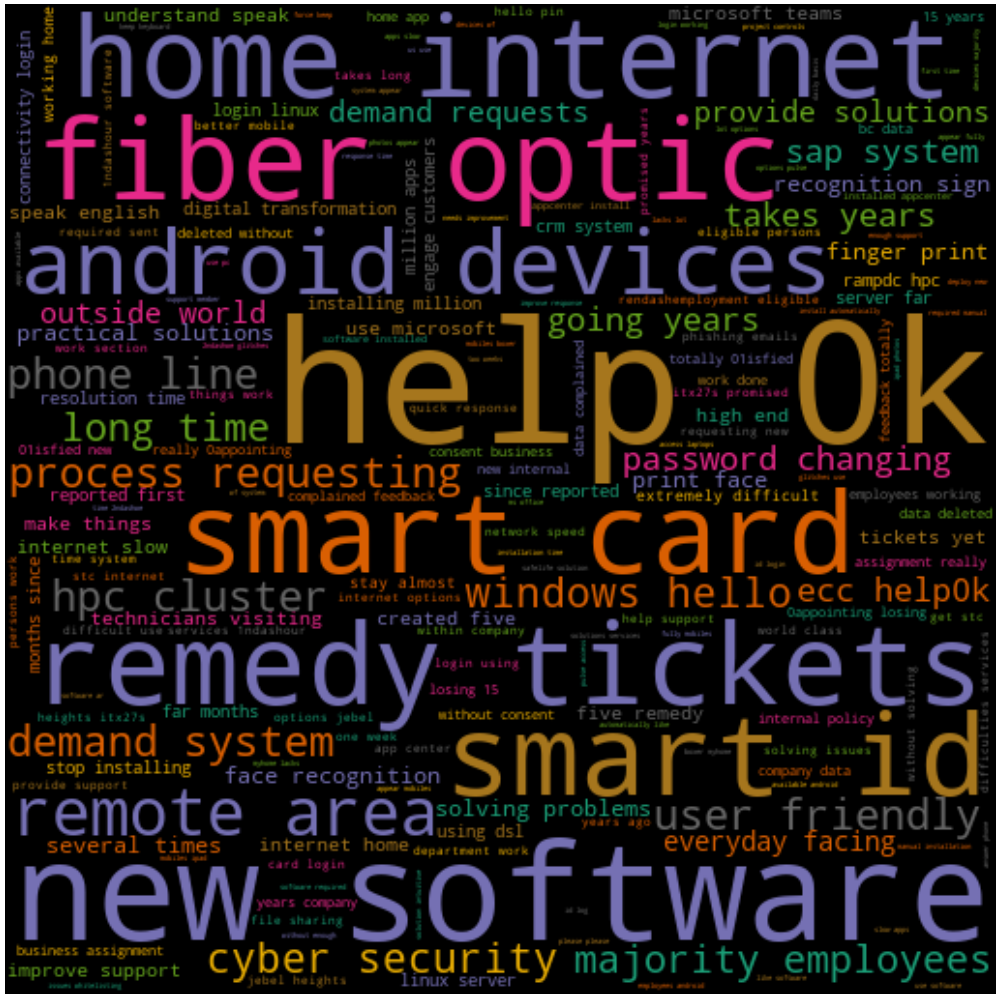
- CRM Request Feedback
- Annual Survey
- Incident (trouble Ticket) Feedback

# Exploratory Data Analytics 1 of 2

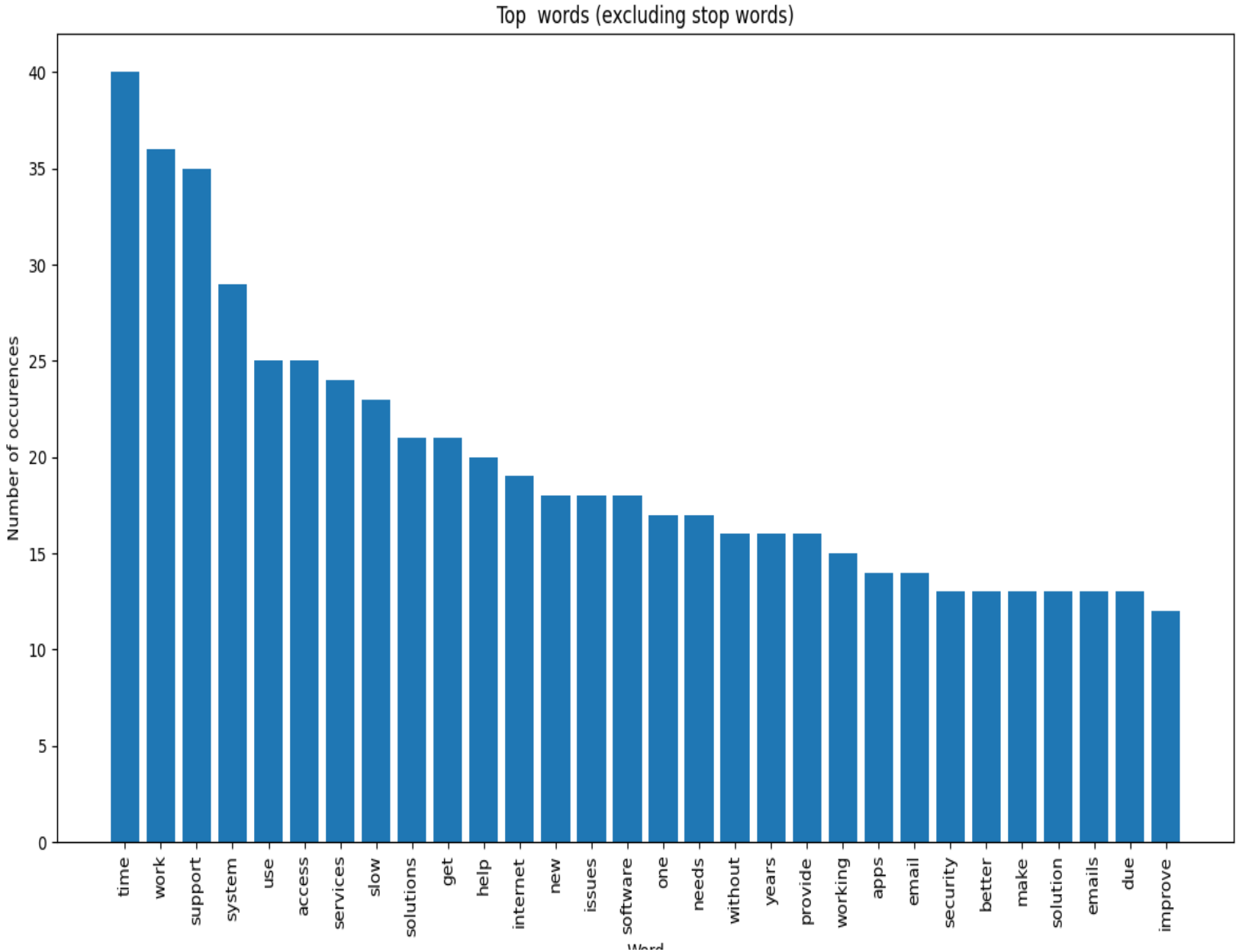
**Uni-Gram**



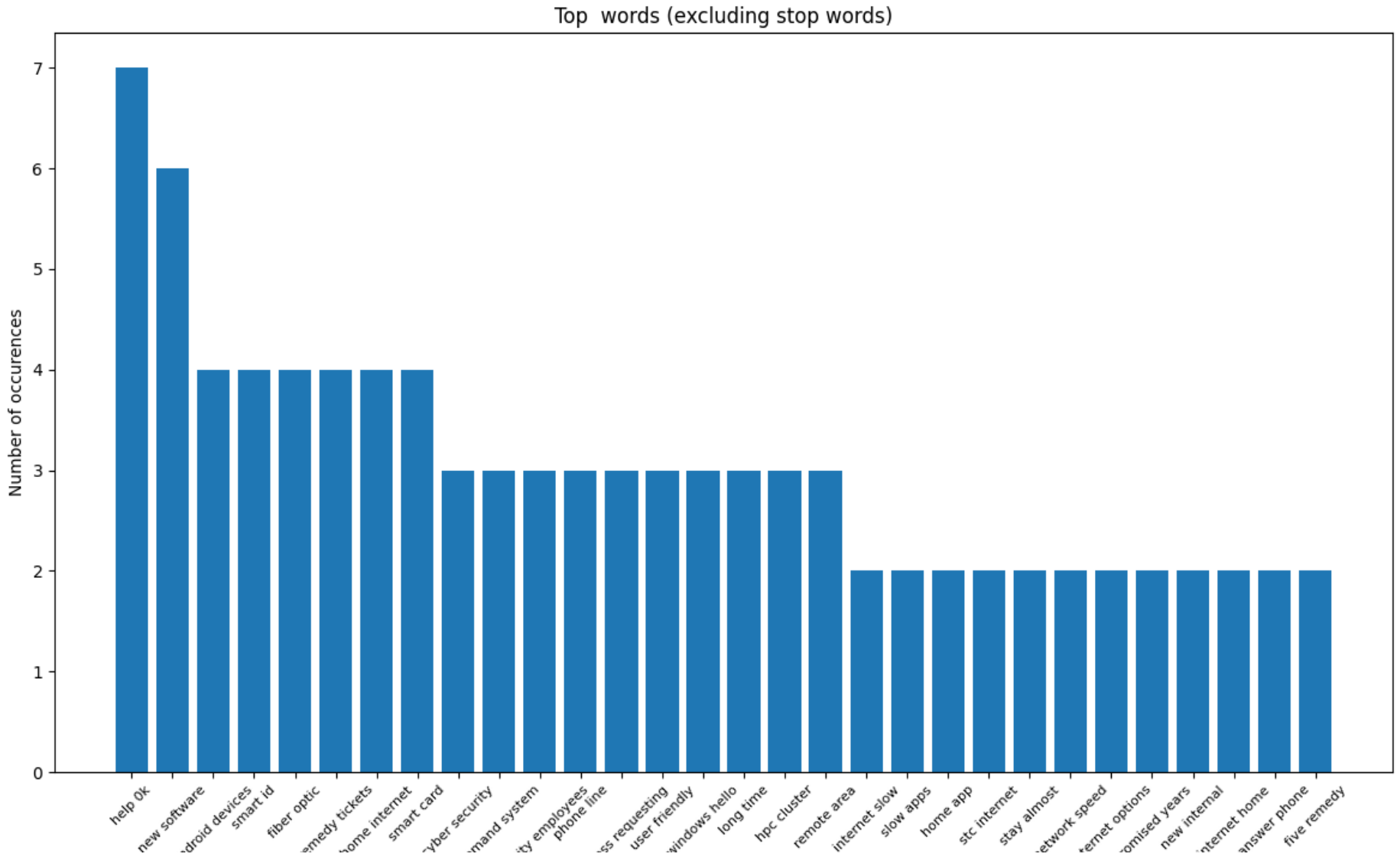

**Bi-Gram**



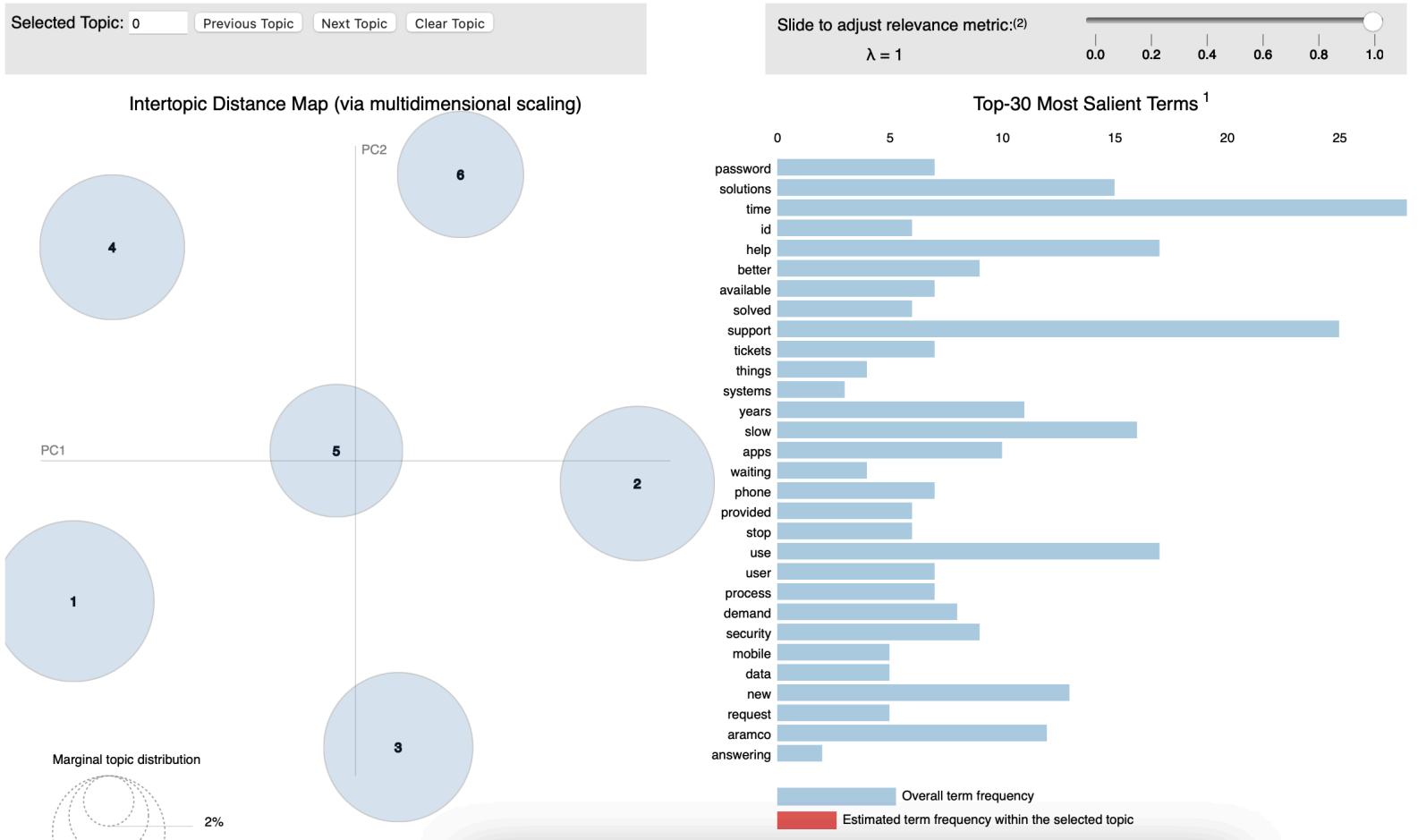
# Exploratory Data Analytics 2 of 3



# Exploratory Data Analytics 3 of 3



# Topic Modeling: LDA







Hyperlink

# Topic Modeling: GSDM

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Number of documents per topic : [153  97 113 179  92  82]

Most important clusters (by number of docs inside): [3 0 2 1 4 5]

Cluster 3 : [('help', 11), ('time', 11), ('skype', 10), ('work', 9), ('issues', 7), ('software', 7), ('improve', 7), ('email', 7), ('slow', 6), ('working', 6)]

Cluster 0 : [('time', 21), ('ticket', 12), ('tickets', 9), ('solved', 8), ('software', 8), ('services', 7), ('required', 6), ('closed', 6), ('follow', 6), ('new', 5)]

Cluster 2 : [('time', 8), ('solution', 8), ('id', 8), ('demand', 8), ('help', 7), ('customer', 6), ('access', 6), ('printer', 5), ('business', 5), ('users', 5)]

Cluster 1 : [('access', 8), ('apps', 8), ('android', 6), ('aramco', 6), ('data', 5), ('devices', 5), ('slow', 4), ('new', 4), ('phone', 4), ('laptops', 4)]

Cluster 4 : [('work', 15), ('solutions', 13), ('emails', 9), ('customers', 6), ('services', 5), ('people', 4), ('access', 4), ('external', 4), ('demand', 4), ('phishing'

Cluster 5 : [('slow', 9), ('internet', 8), ('years', 7), ('laptop', 7), ('apps', 6), ('stc', 6), ('aramco', 5), ('app', 5), ('issues', 4), ('days', 4)]
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# Thank you