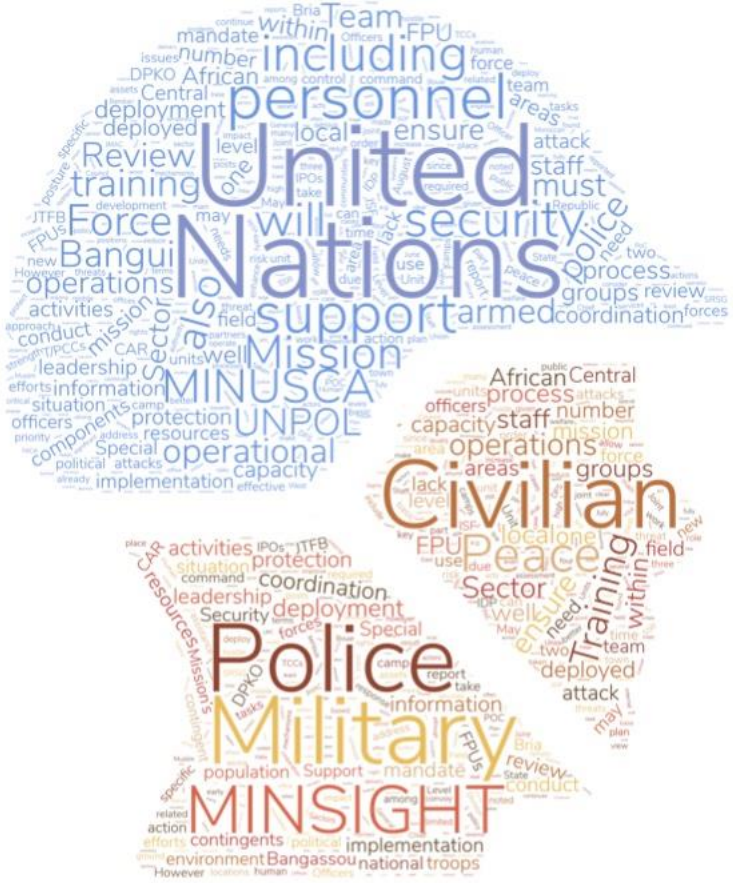
MINSIGHT

Actionable reporting application



Presentation

Application developed by

the United Nations Department of Peace Operations & funded by the U.K.

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Introduction

Peace operations are complex and multidimensional. Improving performance generates a multitude of reports, with each component adding its own unique contribution. Recommendations become hard to track and sometimes get lost or forgotten over time – a persistent and urgent challenge.

MINSIGHT has been designed to tackle this problem. With funding from the United Kingdom, innovative algorithms, combining natural language processing and supervised machine learning, were developed to help navigating United Nations reporting, structuring information and maintaining institutional knowledge. MINSIGHT leverages data as a strategic asset, operationalizing the Secretary General's "Data Strategy for Action by Everyone, Everywhere".

It serves three essential objectives:

3 objectives

Synthesize Recommendations

Cross-functional collaboration

Accountability Framework

Synthesizing recommendations surfaces critical insights from a variety of reporting products to drive future performance improvements. MINSIGHT retrieves institutional knowledge and turns data contained in reports into insights that will help people understand and improve performance in line with A4P.

Cross-functional collaboration as a means to promote efficiency and improve reporting across offices. MINSIGHT provides a tool to collaborate and maximize what exists within the organization to decrease any duplicate efforts and help bridging various data work streams.

The accountability framework uses technology to create a commonly accessible recommendations repository for teams to continually capture and curate knowledge to make recommendations a living, evolving and actionable body. Recommendations become institutional, digital and actionable.

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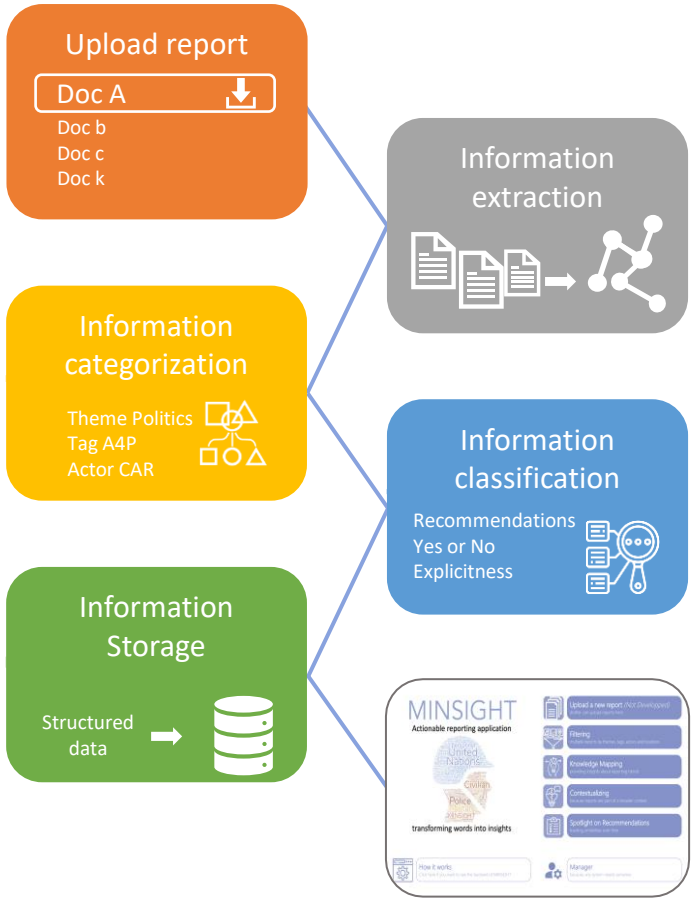

How it works

Because knowledge just sits in documents waiting to be utilized, MINSIGHT extracts, categorizes and classifies information to turn it into actionable knowledge.

Extraction is the cornerstone of the application. In the absence of reporting standardization, it uses advanced technology to extract information from a variety of sources. Using 17 themes built around Security Council mandates and the A4P agenda, crosscutting tags and a comprehensive actors and locations library, it categorizes information to label data accordingly.

MINSIGHT uses multi-layer models to analyze sentences and structures to detect and classify recommendations. It evaluates their explicitness to determine how to process them.

Finally, all this structured relevant information is stored to allow for easy user access through four features.

Filtering
multiple report files by themes, tags, actors and locations to focus only on specific information based on user interest.

Mapping
knowledge from reports and transforming them into insights about recommendation trends with quantitative analysis and visualizations.

Recommendations
spotlight to compare and measure the similarity of issues over time and find other ways of tackling them.

Contextualizing
reporting, as a recommendation is made in a broader context, including political and security.

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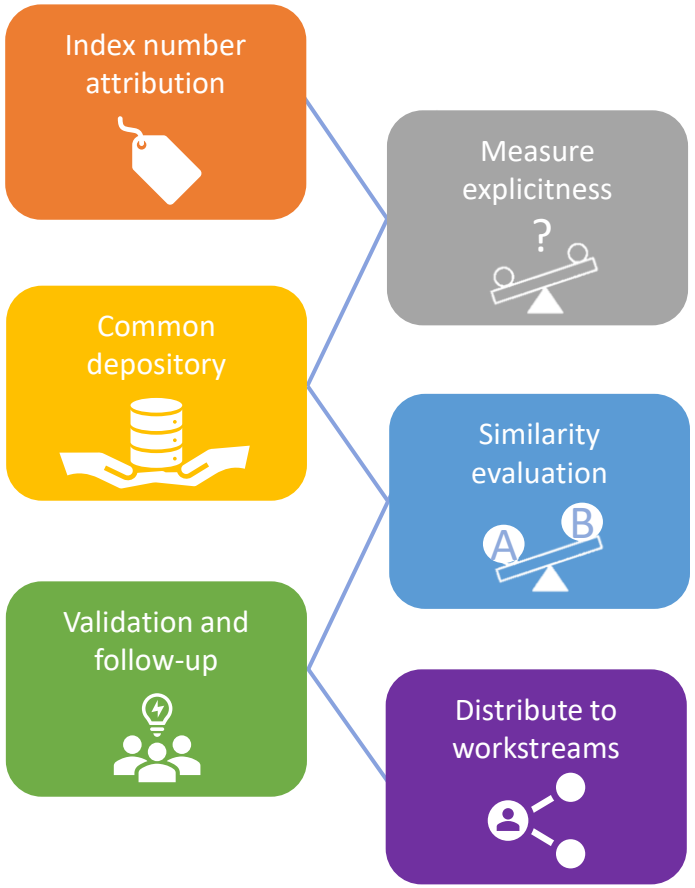

Journey of a recommendation

Recommendations are hard to track and fragmented across the organization, making any follow-up actions difficult. MINSIGHT streamlines the journey of a recommendation by attributing a unique index number to each recommendation.

MINSIGHT measures the explicitness of a recommendation, because some recommendations are not directly presented as recommendations (not a priority or too sensitive) in reporting, but issues remain important to track. Recommendations can be compared to detect similarities and duplications and identify "systemic" issues based on redundancy.

All recommendations are synthesized in a common depository, becoming digital and institutional knowledge. Users/managers manually validate MINSIGHT's work and distribute implementation to other workstreams until the implementation is completed.

While the application is making innovative use of IT tools that have only recently been acquired by the UN, it faces institutional limitations:

Confidentiality and access
Access to reports by staff is not yet cleared and the UN cloud does not allow strictly confidential documentation.

Supervised machine learning
Given the political sensitivity and UN language, algorithms require more learning.

Standardization
The absence of data and reporting standardization impacts performance and the use of stronger models.

Collaboration
The application will not eliminate the need for collaboration. Making it work will require a collective effort.

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Actionable reporting application

1. Migration

Migration of the application to the UN server under Microsoft Azure architecture to ensure online access and processing

2. Piloting and testing

Piloting and testing of the application, including functionality, integration and workflow, in MINUSCA with HQ support

3. Final development

Final development by improving the overall performance, including algorithms using machine learning with new reports

4. Production and scaling up

Production and scaling up of the refined and tested application to be publicly available to users

Final Product

Next steps

Today, MINSIGHT is a functional application that demonstrates its potential for other workstreams in the United Nations. Its performance and functionality will continue to improve as the algorithm 'learns' from additional reports.

The application comprises source code for data structure and algorithms based on the Python programming language and visualization interfaces developed under Microsoft Power BI. To put it simply, the machinery is developed. It requires full piloting and final development to enable production in a UN supported environment. Once fully integrated, data entry interfaces and a common recommendations repository could be added to the application.

Further development of the application, to make it fully functional and available to colleagues, will require the following additional resources:

- 2 tech staff for 6-8 months to focus on backend and frontend of the application, implementing the next phase (as described on the left).
- 1 application manager (existing substantive staff allocating 20%/time) overseeing the next phase and retaining responsibility afterward

Application Manager

Software / Architecture engineer to focus on backend (Azure, ML, NLP)

Information Management officer to focus on testing and interfaces (PBI, GIS)

Work in tandem during the 4 steps

6 to 8 months