**UN AIMS**
United Nations Augmented Intelligent Mobility System

“A holistic and equitable mobility system aimed at career success”

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<tr>
<td>Abhiram Tarimala</td>
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</table>
Overview

UNICEF

Mission
UNICEF is mandated by the United Nations General Assembly to advocate for the protection of children’s rights, to help meet their basic needs and to expand their opportunities to reach their full potential.

Vision
A future where all children are healthy, families thrive, communities prosper and the cycle of poverty is broken.

Values
UNICEF is non-partisan and its cooperation is free of bias and discrimination. Prioritise children and countries with the greatest need to deliver life saving service efficiently.
Overview

UNDP

Mission
The United Nations Development Programme (UNDP) is the UN’s global development network, advocating for change and connecting countries to knowledge, experience and resources to help people build a better life.

Vision
A future where poverty is eradicated in all its forms and dimensions, structural transformations are accelerated and the world is resilient to shocks and crisis.

Values
UNDP actively monitors development indices across the world and strives to equitably propel development through sustainable innovation.
“Nothing we do is more important than hiring and developing people. At the end of the day, we bet on people, not on strategies”

- Lawrence Bossidy
  (Ex-COO General Electric)
Talent Mobility is defined as the movement of employees from one position to another or their movement from one geographic location to another within an organization.

- Why is mobility necessary?
- How much mobility is good?
- What mobility is good mobility?
- What role does gender play in mobility?
- What are the features of an ideal system?
**Overview**

Why Mobility?

- Talent Requirement
- Exposure for employees
- Efficient burden allocation

Why not Mobility?

- Expensive
- Organisational Hassle
- Logistics Hassle

A Mobility system that is:

1) Empathetic of employee growth
2) Cost Effective to organisation
3) Functionally and Geographically integrated

**The need of the hour**
Overview

Employee Attrition

Hardship Distribution

65.8%
of the employees who have worked in locations classified as H or A have worked only in such locations

57.1%
of the employees who have worked in locations classified as D or E have worked only in such hardship locations
**Overview**

**Mobility & Gender**

**Mobility & HQ**

**Solution**

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**Empathy**
- Understand the mobility system and mirror UNICEF and UNDP employee’s interaction

**Define**
- Explore, clean and furnish the data
- Define metrics and KPIs

**Ideate**
- Brainstorm hypothesis
- Hypothesis testing
- Consolidate Insights

**Prototype**
- UN AIMS: United Nations Augmented Intelligent Mobility System

**Test**
- Understand impediments
- Define future scope

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**Framework**

United Nations Augmented Intelligent Mobility System (AIMS)

Wharton PAC 2020 • Team Java the Hutt
Overview

Framework

Mobility & Success

Mobility & Gender

Mobility & HQ

Solution

United Nations Augmented Intelligent Mobility System (AIMS)

Framework

UN AIMS

Mobility Metric (S)

Number of Hardship stints

Cumulative Hardship Score

Number of Unique Posts

Number of Unique Locations

Employee Performance Rating

Success Rate of Job Application

Job Competitiveness

Encoded Speed

Number of Promotions

Number of Promotions
Mobility & Success

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Number of Hardship stints
Amount of time spent in location having hardship classification (C,D,E)

Cumulative Hardship Score
Effective time spent in a location having a hardship classification. Used a Heuristic\(^1\) Multiplier (A:B:C:D:E:H :: 1:2:4:8:16:1)

Number of Unique Posts
Number of unique posts a particular employee has worked in

Number of Unique Locations
Number of unique geographic locations a particular employee has worked in

Employee Performance Rating
Annual performance ratings for all staff members at UNICEF & UNDP from 2016-2019. Used a subjective\(^2\) ranking approach (1-7)

Success Rate of Job Application
Fraction of the number of positive job offers received to total number of applications submitted by an employee

Job Competitiveness
Fraction of the total accepted candidates to the total number of applications received for a particular requisition number

Encoded Speed
Ratio of jump in rank to time taken to make that transition weighted with a multiplier [Memo] An implication of ease of transition

Number of Promotions
Number of promotions during the studied period (increase in grade)

Annual performance ratings for all staff members at UNICEF & UNDP from 2016-2019. Used a subjective\(^2\) ranking approach (1-7)

\(^1\) Exponential Heuristic derived from the International Civil Service Commission (ICSC-2019)

\(^2\) Employed a 7-Point Lickert Scale to subjectively allocate a positive score to a textual rating

Derived for each employee as a function of time in organisation to truly identify cause and effect

United Nations Augmented Intelligent Mobility System (AIMS)

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Overview

Mobility & Gender

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Framework

Mobility induced Breadth vs Organisational Depth?

Hardship Location and Success?

Lens of the analysis

Mobility & Gender?

Mobility & Headquarters (HQ)
Primitive speed is defined as the ratio of Rank jump to time taken to execute that transition. Encoder speed is defined as the ratio of Rank jump to time taken to execute that transition weighted by transition difficulty (Memo).

Relation of speed (Primitive & encoded speed) with mobility is inconclusive. Inclusion of speed as a career success parameter does not have a formal data backed basis.
1) H1: Experience working in 3 unique locations is most optimal to having a high job acceptance rate, since it enables optimality of breadth and depth of experience in the employee.
It is observed that the Average performance rating increases with number of unique posts prior up-to a critical optimal number of unique posts (5-6) in both organisations.

1) H1: UNICEF employees with exactly 5 unique posts have the highest performance increase
2) H1: UNDP employees with exactly 5-6 unique posts have the highest performance increase
On average, successful transitioners were found to have spent more **hard time** (i.e.) in hardship locations compared to those who saturated/still at the base rank of the transition.
Gender & Mobility

**INSIGHT**

1) Men outnumber women [>52:48] at high peak ranks i.e. 14-19, corresponding to Headquarters locations

**Mobility & Gender?**

<table>
<thead>
<tr>
<th>Type of test</th>
<th>Proportion One Sample</th>
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<tbody>
<tr>
<td>P-value(s)</td>
<td>4.78E-06</td>
</tr>
<tr>
<td>Conclusion</td>
<td>H1</td>
</tr>
</tbody>
</table>
Overview

Framework

Mobility & HQ

Mobility & Success

Solution

Gender & Mobility

INSIGHT

1) H0: Ratio of female to male employees remains constant (2:3) when number of hardship stints >1
2) H1: Female employees outnumber (55:45) male employees among those with no hardship location

Conclusion 1

<table>
<thead>
<tr>
<th>Type of test</th>
<th>Proportions—Two Samples</th>
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</thead>
<tbody>
<tr>
<td>P-value(s)</td>
<td>0.99</td>
</tr>
<tr>
<td>Conclusion</td>
<td>H0</td>
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Conclusion 2

<table>
<thead>
<tr>
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<tr>
<td>P-value(s)</td>
<td>4.85E-05</td>
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<tr>
<td>Conclusion</td>
<td>H1</td>
</tr>
</tbody>
</table>
1) **Men** are more likely [>]11.5%] to **apply** to a hardship location than women.

2) **Women** are more likely [>]1.5%] to **get** a hardship job than men are, when both apply.

**INSIGHTS**

**IMPLICATIONS**

There is no bias against women in selection, but certain local factors increase inhibition of women applicants.

Fewer women apply to hardship locations and fewer selected women actually accept the role.
Bimodal distribution with peaks at 0.5 and 1. This indicates that there is a large group of employees that apply only to hardship locations. The second main group consists of employees with an assortment of applications to multiple locations.
**Mobility and Headquarters (HQ)**

**Conclusion 2**

<table>
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<tr>
<th>Type of test</th>
<th>Means—Two samples</th>
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<tbody>
<tr>
<td>P-value(s)</td>
<td>4.46E-01</td>
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<tr>
<td>Conclusion</td>
<td>H0</td>
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1) **H0**: There is no conclusive evidence that more hardship time results in a drop in HQ selection rate. The crisis profile tag is not valid.

2) **H0**: Low early hardship time does not significantly increase HQ selection rate (<1%)
The most relevant insights from the current state of internal mobility in UNICEF and UNDP

What mobility is good mobility?
Successful grade jumpers in both organs report spending more time in hardship locations.

What role does gender play in mobility?
There is no selection bias. Hence the issue must be with the fit to location - perception mismatch.

Why is mobility relevant organisationally?
Both UNICEF & UNDP report performance rating increases with internal mobility.

Why does this gender skew manifest?
Women are apprehensive to apply to their first hard location. Onwards, gender ratio is maintained.

How much mobility is good?
Experience working in 3 unique posts is most optimal for getting a high job selection rate.

How does HQ tie in with mobility?
HQ selection rate and mobility are de-coupled. Depth of roles are preferred over breadth.
UN AIMS

Overview

Augment
Provide clear visibility into internal job opportunities on the UN AIMS dashboard. Communicating the right opportunities to the right target employee is key.

Intelligent
Approach internal candidates with relevant opportunities: Recommend the right roles to employees using an AI tool that is driven by the success metrics and empathetic to the employee’s discrete needs.

Mobility
Enable the employee to get the most out of the mobility program by recommending the right role, mapping the right resources and monitoring progress effectively.

Solution

Mobility & Gender

Mobility & HQ

Framework
The training objective is to accurately obtain a mapping from a given mobility state (at the end of a job) to the nearest ‘optimal’ mobility state (at the end of his next job).

<table>
<thead>
<tr>
<th>Model Description</th>
<th>Hidden Layer Units</th>
<th>Training Cost Function</th>
<th>Test Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-output ReLU regressor</td>
<td>-</td>
<td>2.99E+04</td>
<td>74.70%</td>
</tr>
<tr>
<td>2-layered Neural-Net regressor</td>
<td>10</td>
<td>2.46E+04</td>
<td>79.64%</td>
</tr>
<tr>
<td>2-layered Neural-Net regressor</td>
<td>20</td>
<td>2.46E+04</td>
<td>79.70%</td>
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From any given state, the model outputs optimal career moves by learning to match mobility states that would have been taken by successful employees.
**Benchmarking**

The Need: Mobility Report of the Secretary-General July '15

**Future Prospects**

1) Integrating the UN AIMS solution UN wide across organs

2) Specific focus on decreasing the number of non-rotational positions

3) Leveraging personal goals through an active feedback mechanism

4) Initiating a buddy program
“More than ever before in human history, we share a common destiny. We can master it only if we face it together. And that, my friends, is why we have the United Nations”

- Late Kofi Annan
7th Secretary General UN

Thank you

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