IT Services Challenge: Improving IT Service Delivery to Federal Departments

For Shared Services Canada (SSC)

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Findings of Data Analysis

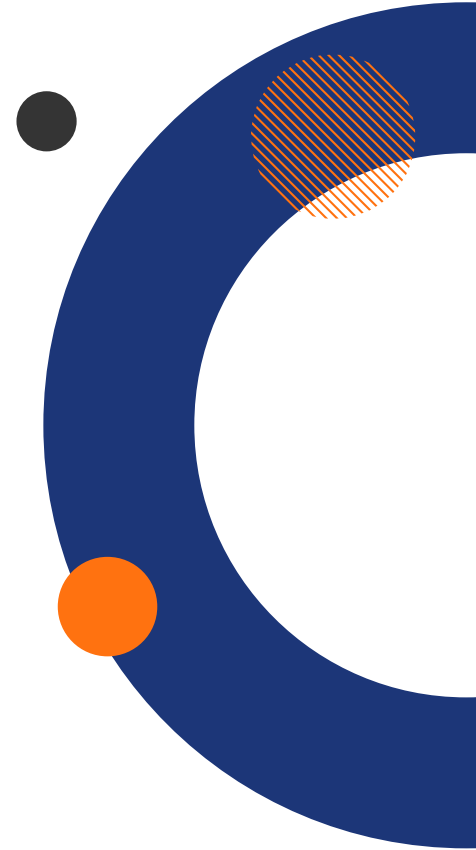Correlation analysis
and causation

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01 Problem Statement

Challenge: Identify areas for process improvement that will enable SSC to improve on its ability to meet service target for incident management.

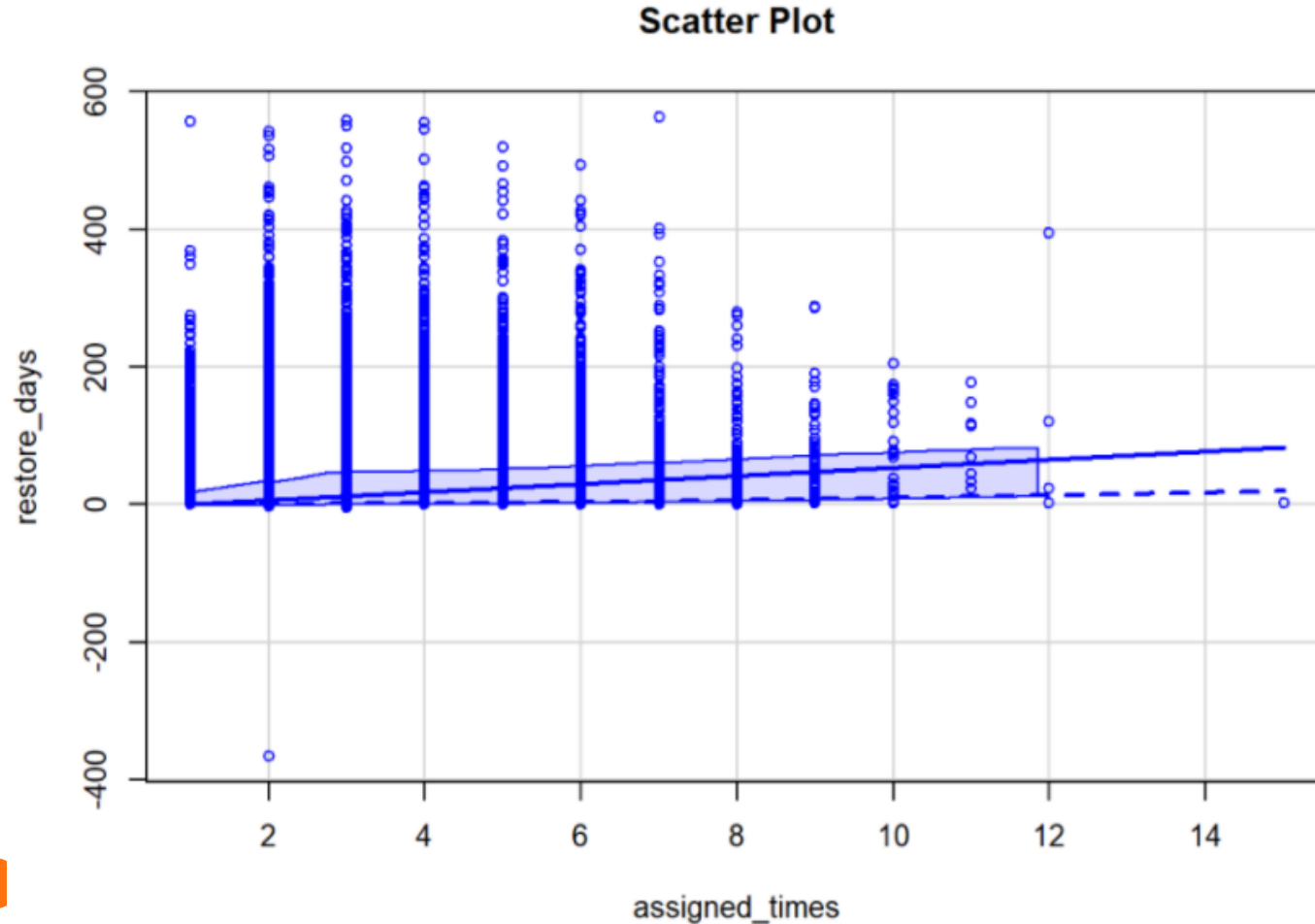**Objective:** Propose solutions to decrease the number of incidents where the time to resolve the issue exceeds the target.
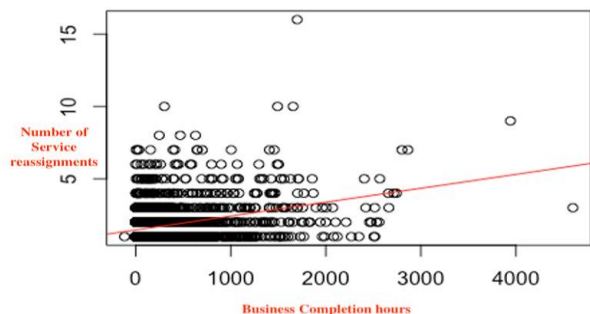
02

Findings of Data Analysis

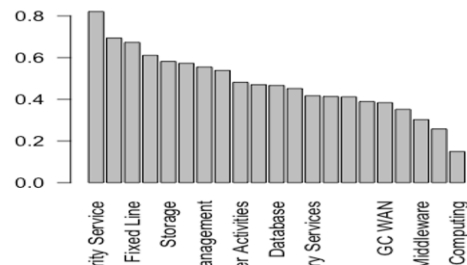# Correlation between Assigned Times and Restore Days

Scatter Plot

Which factors correlate with the number of missed targets?

Number of reassignments ?

Services ?

Proportion of missed deadline by parent service

We also observed correlations between The proportion and missed targets and:
- The organisations
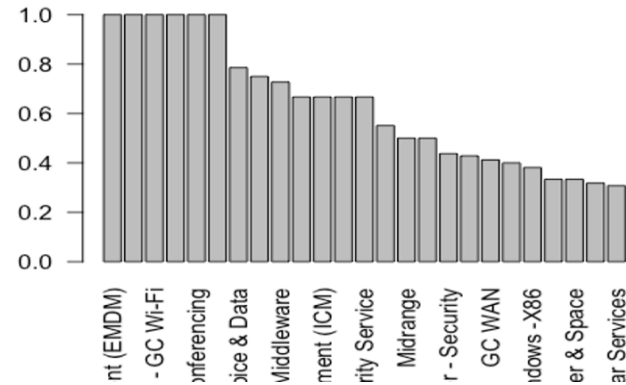- The type of incident
- The external system

Particular services causing large resolving times?

We observed that some services receive a high number of reassignments, while others reassign a lot to other services.

Average number of reassignements to service
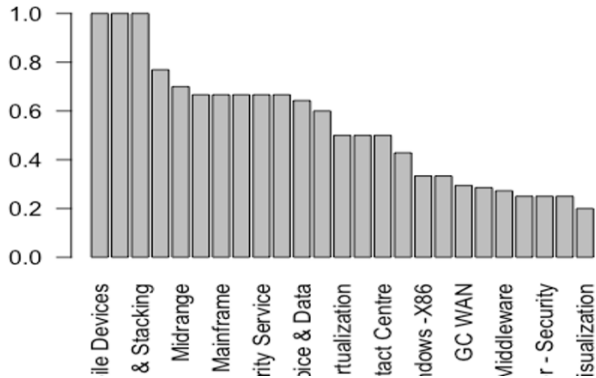
Average number of reassignements from service

Average = (Number of distinct ticket numbers reassigned to this service)/ (Total Number of distinct ticket numbers that went to this service)

For Services with high numbers, it could be due to services that collabore a lot with others but there's also the possibility that the incidents are wrongly assigned

Top 5 Organizations by # of tickets

Organization	# of Tickets	Median # of days till actual completion
1342	75443	0.85
1047	32789	0.70
1062	27054	0.58
1028	12910	1.53
1045	7312	1.86

Top 5 Groups by # of tickets

Group	# of Tickets	Median # of days till actual completion
DC000203	13323	0.13
DC000152	11876	0.22
NW000417	9728	1.50
ESI00011	9711	3.02
NW000412	7603	5.89

Top 5 Service by # of tickets

Service	# of Tickets	Median # of days till actual completion
Midrange - Windows -X86	30689	0.49
GC WAN	25757	1.10
Other - Service Management	20724	0.80
Middleware	15235	0.30
High-performance Computing	13271	0.89

Top 5 Groups on Midrange - Windows - X86 Service

Group	# of Tickets	Median # of days till actual completion
DC000203	13323	0.13
DC000202	5032	0.83
DC000115	4624	1.95
DC000236	1948	0.79
DC000200	1290	1.70

Particular Services with Long MTRS

IT Continuity Support Service

- Medium Priority
- Assigned Four Times
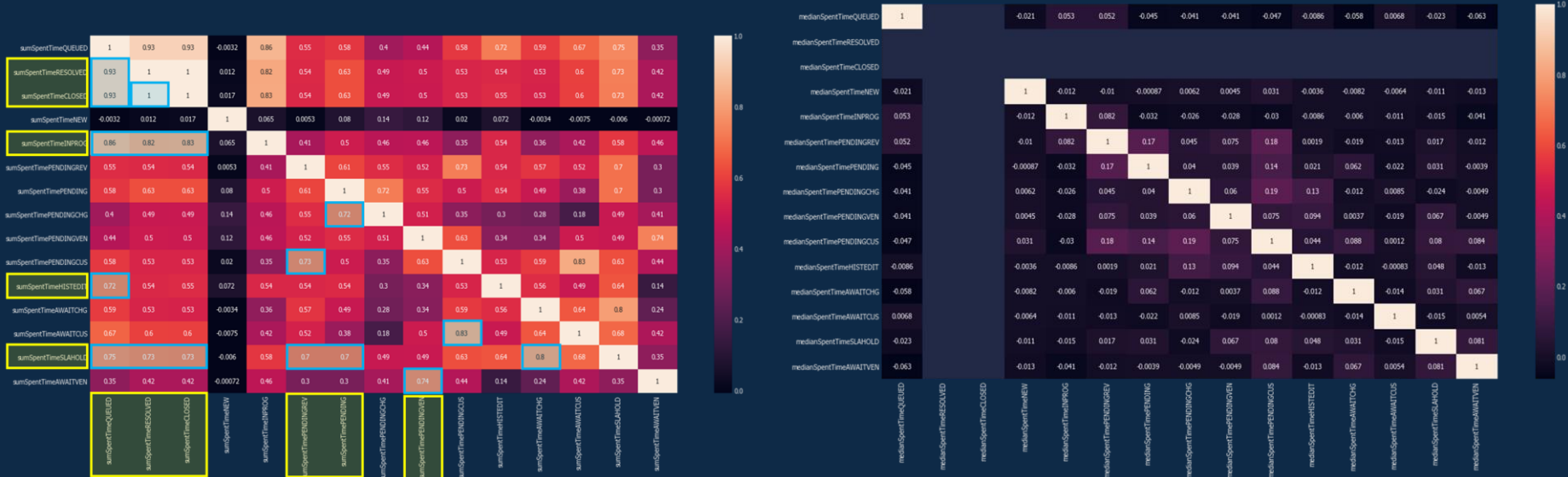- 421.9 Business Completion days

Solutions Integration Service (SIS)

- Low Priority
- Assigned Three Times
- 117.3 Business Completion days

Correlation Analysis

By Parent Service:
- The time spent in the AWITCHG and AWAITVEN status is correlated with SLAHOLD status.
- The Total number of hours have be saved from SLAHOLD status is 12365h

Heatmap 1 & 2: Total Vs. Median Time Spent by Assigned Group

We calculate the mean of the time spent by each group in every status. then plot the correlation matrix. There are clear corrections between the time spend in each group at the level of status.

The event management tickets does not take much time in average and has not big impact on the timeline of a ticket life cycle.

03
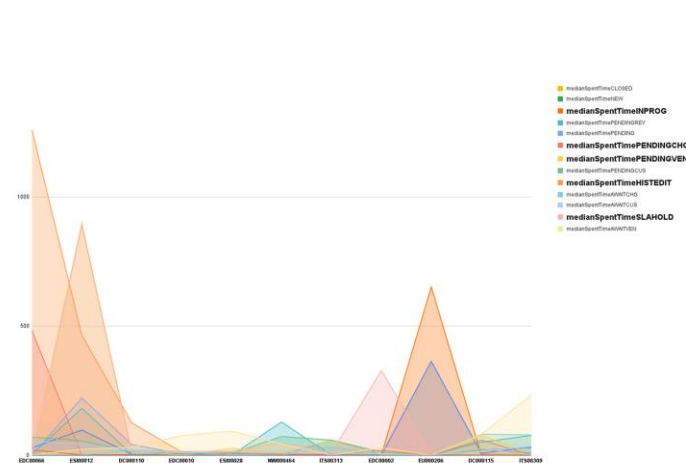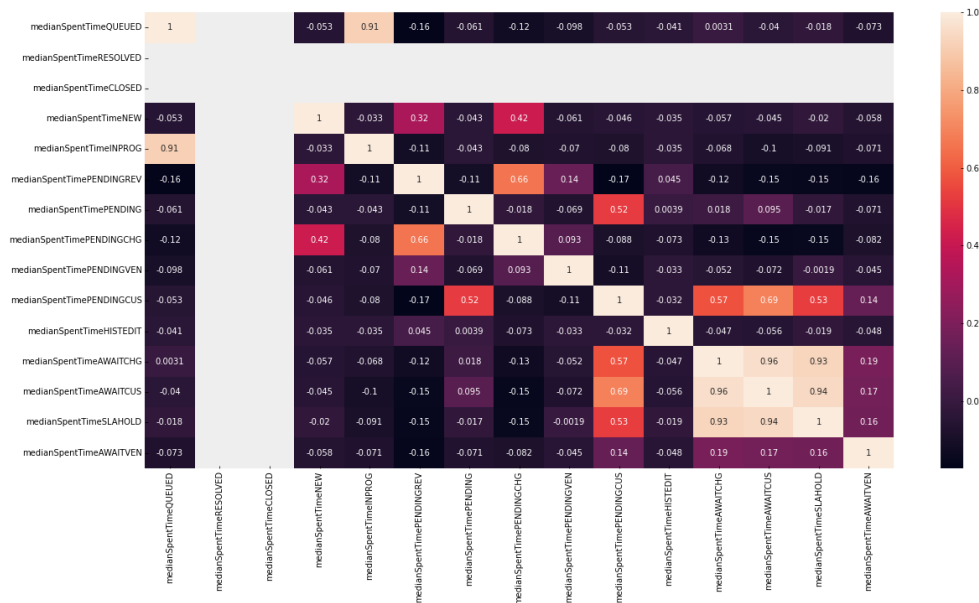
Recommendations
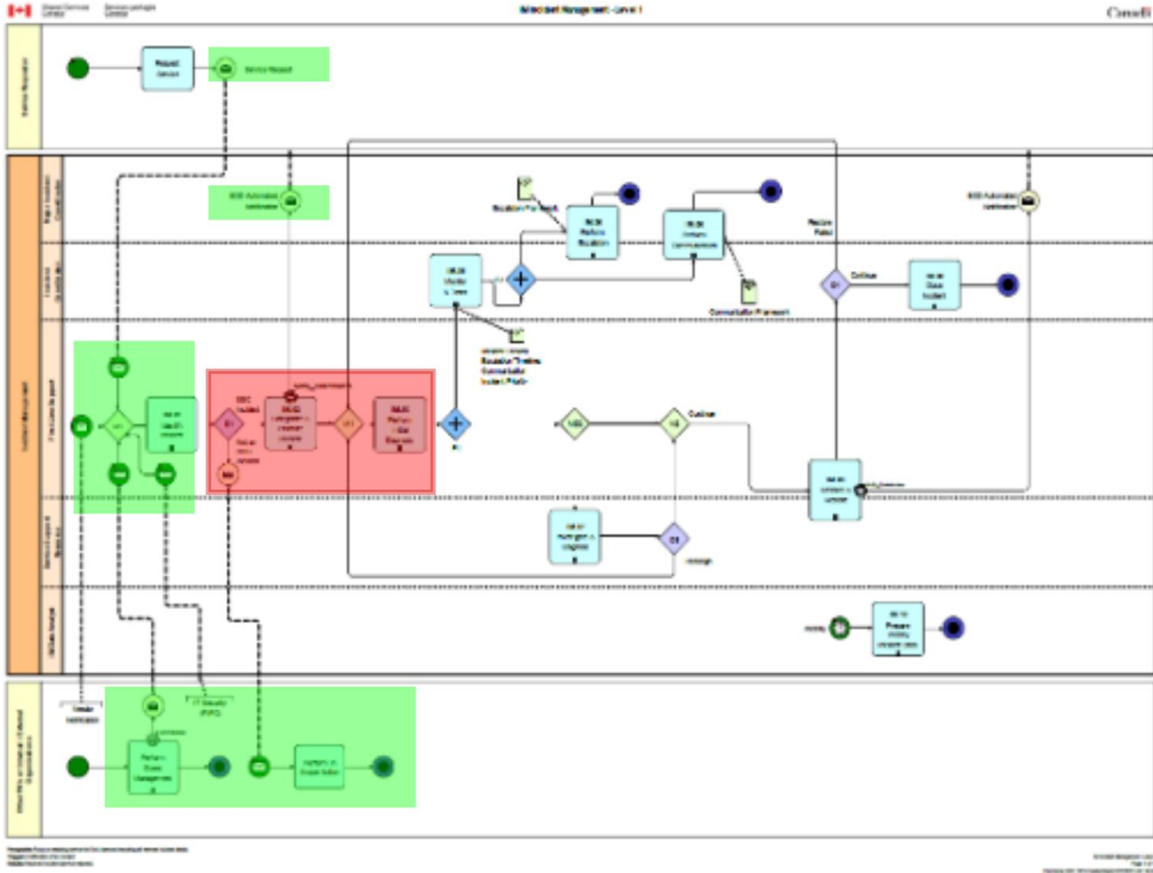
Problem.
The red block is causing the reassignment (wrong assigned group, multiple assigned group, …)

Solution.
The green blocks are the descriptions of the incidents given from different sources. We propose implementing a Machine Learning algorithm that helps the frontend classify tickets and assign them to the proper group. The model would be trained on the existing data SSC holds.

What we are suggesting...

Question List for
Incident Definition

Information Processing
Before Assigning

Task Prioritization

Process Monitor

04 Future Expansion

- For services that receive a lot of reassignments look at what services they receive it from.
- For services that reassign a lot, look what services they reassign to.
- This could help detect where wrong assignments are coming from.

Thanks for Listening
Any Questions?