

POLIS Conference

Data in Brussels Public Transport

1-12-2020

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Head of Data & Analytics



.brussels 



Some Figures

2200 stops
1263 vehicles

- 4 metro lines
- 18 tram lines
- 60 bus lines

Operates an integrated network +/- 650 km

Operating 7/7 and 20h/24h

48,3 million km driven per year

9420 employees

Transports more than **one million**
Brussels residents and commuters
every day (433,5 million trips/year)

North Star Vision on Data & Analytics



Where are we in 5 years?

Top Management



Middle Management



Operational Management



1500 Users (400 creators 1100 consumers)

Data Lab Community



Symbiosis IT & B

Data & Analytics IT Support



Data Enablement

Data Analysts



100 Data Analysts



Change Management is at the core

Front-end workshops B & IT mixed (online sessions today)
+- 80 people trained & now via STIB-Academy



Analytics Hub (POC with CPC BI/SBT "by B for B")

BI Solutions

Home All Assets My Favorites Content Management Edit mode

Refine

- Domains
 - Client & Marketing 4
 - Operations 4
 - Human Resources 3
 - General Management 3
 - Sales 2
- Business Units
 - BUT 6
 - BUM 4
 - BUB 4
 - SUFS 4
 - IS 3
- Data Types
 - Report 11
 - Dashboard 5
 - Data Set 3
 - Indicateur 2

15 assets Views

- Absentéisme** (Updated yesterday) - Taux d'absentéisme et indice Bradford. Afwezigheidsindex en Bradford score. ALL STIB-MIVB | Report | HR
- Taux de réalisation kilométrique** (Updated 2 days ago) - Productivité de l'offre de mobilité par rapport à la planification. SMN
- Effectifs** (Updated 2 days ago) - Nombre de collaborateurs. Aantal medewerkers. HR | ALL STIB-MIVB
- Satisfaction Clientèle** (Updated 2 days ago) - Degré de satisfaction de la clientèle. Tevredenheidsbarometer, Barometre satisfaction client. SMN | ALL STIB-MIVB
- Daily Dashboard - Tram** (Updated 2 days ago) - Daily Dashboard Tram. BUT | Dashboard
- HR for Managers** (Updated 7 days ago) - Workspace met alle relevante HR rapportages voor managers. HR | Report | ALL STIB-MIVB
- Go 360°** (Updated 2 days ago) - Tableau de bord du Point de Vente GO. Dashboard met al de rapportages rond de Go verkoopautomaten. SMN | Dashboard
- Sésame** (Updated yesterday) - Tableau de bord du Gestion du Réseau des portillons. Dashboard voor het beheer van de toegangspoorjes. Overzicht fraude, frequentation,... SMN
- Reporting Movement - Tram** (Updated 2 days ago) - Reporting Movement Tram, overzichtrapportage movement Tram met indicatoren zoals aantal incidenten en duurtijd, kosten, ETPs,... Movement | BUT | Dashboard



Support via MS Teams



Data Lab Community

General

Ask a Data Scientist

Head in the Analytics Cloud

Jabba The Analytics Hub

POC Data and Analytics

We've got the Power BI!

Where are we today with data?

Actual projects together with the business

Om welk uur is het in de week het drukst op ons netwerk?

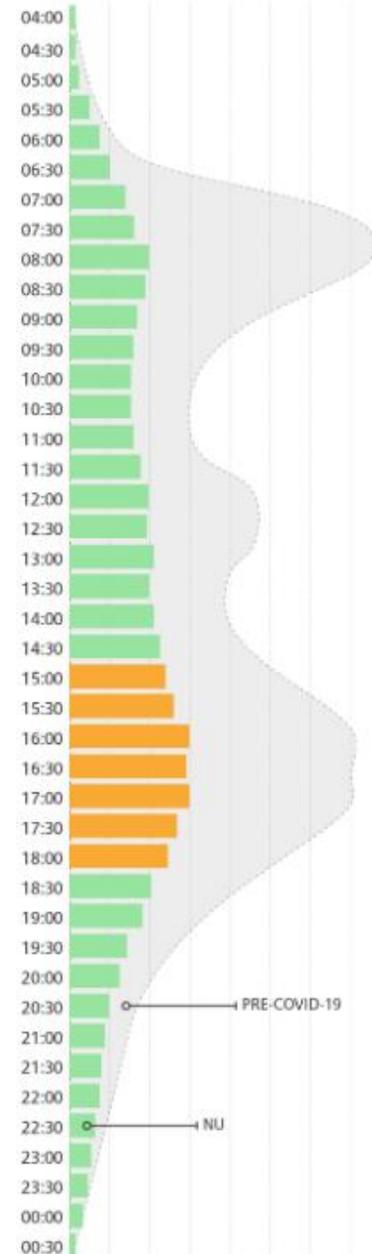


Project Tokyo

Implemented during Covid Crisis

Agile sprints:

- Prepare data for network recalculation
- Visualise on website for users
- Integrate into mobile app
- (next) show interactive data



STIB-MIVB launched MaaS-Pilot



Closed test panel

±2000 participants
Users trained on features and limits of pilot

MSPs integrated

4 OTP
+ 2 electric bikes
+ 2 kick scooters
+ 1 car-sharing + 1 taxi

Geographical area

Brussels & agglomeration

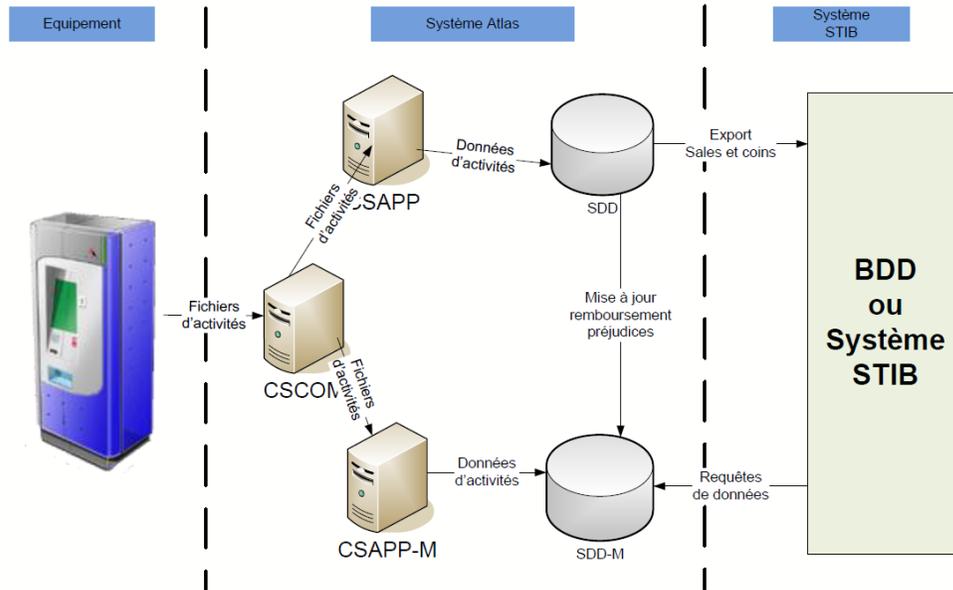
Launch: Sep 16, 2020
Duration: 9 months



New Ticket Vending Machines

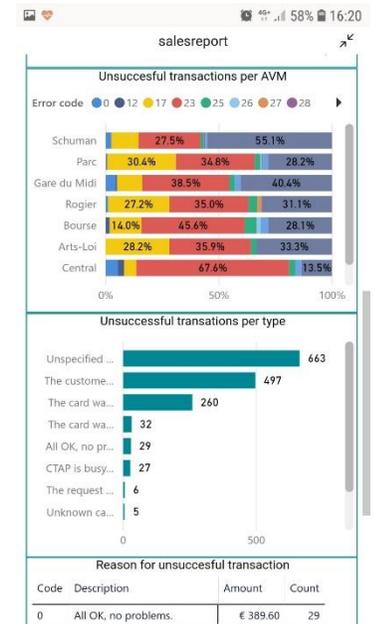
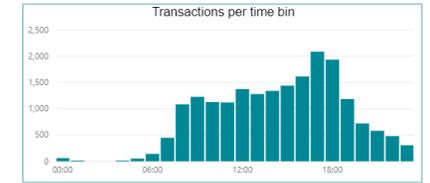
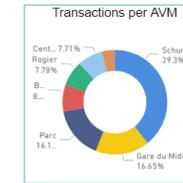
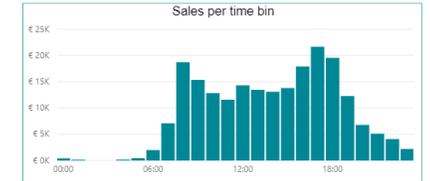
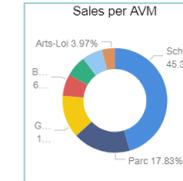
Full access to data of supplier (in contract)
 Operational copy every 15min into STIB data lake
 Azure Data Lake operational in STIB-MIVB cloud
 « Self Service » reporting in MSFT Power BI (and gsm)

Diagramme de flux



Heron: main dashboard

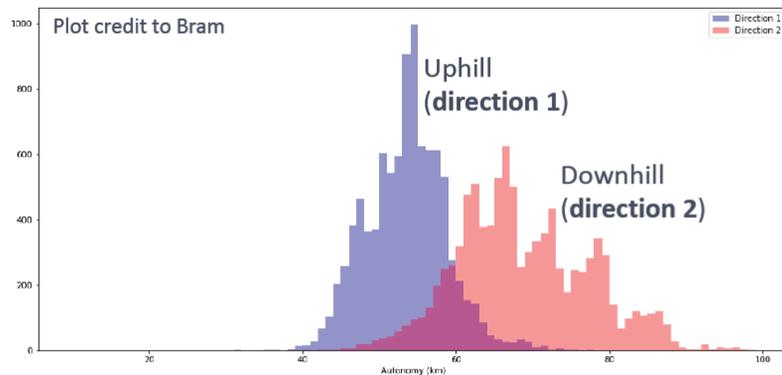
Sales	N sales
€ 212.8K	25.4K
N TSC	N Mobib Basic
16.7K	1352
N transactions	N payments
19.6K	19.6K



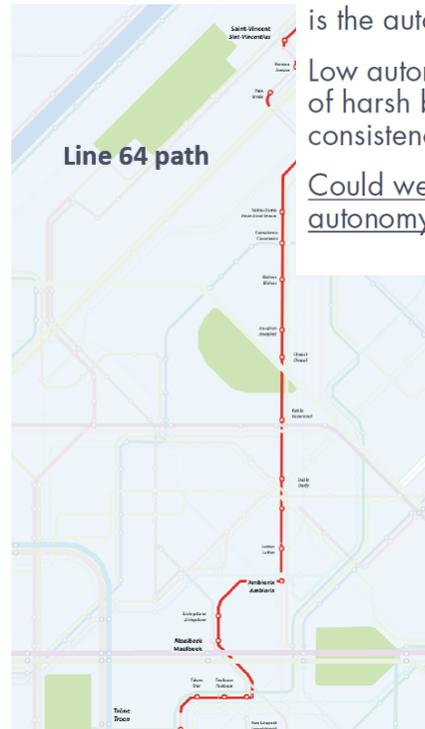
Autonomy of Electrical Busses

Data science support from D&A team to General Staff
 Decision making based on learnings (data driven)
 Ongoing project based on POC learnings of last years

Direction of travel is a strong predictor of autonomy



- Necessary to split the analysis by direction!
- **Note:** Interesting multiple spikes in direction 2



We identified driver groups which should be trained in eco-driving.

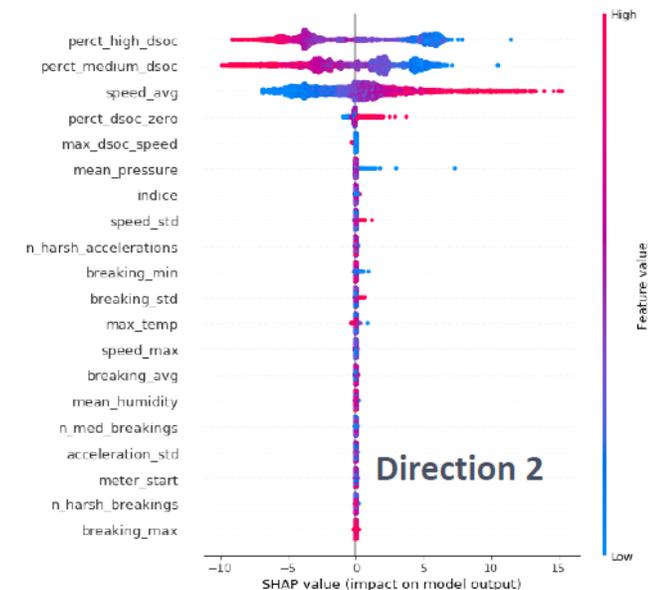
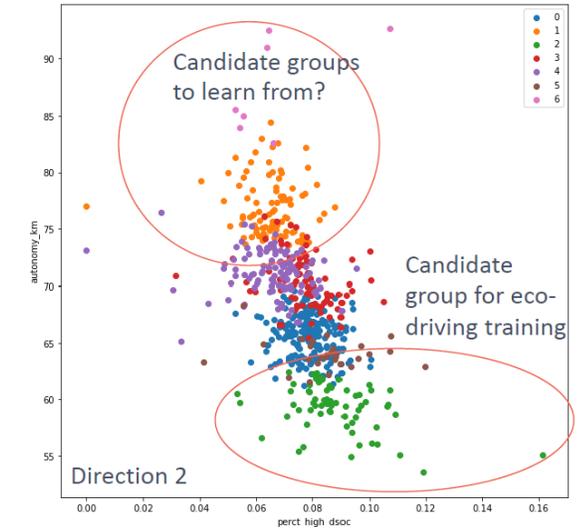
Driving style important => identify groups of "suboptimal drivers"

We clustered the data (Agglomerative clustering) to identify groups with low autonomy

The most important clustering dimension is the autonomy

Low autonomy groups had high numbers of harsh brakings (not surprising, but a consistency check)

Could we learn something from the high-autonomy groups?



Data Stories

10 manday budget (innovate)

Together with Marketing & GS

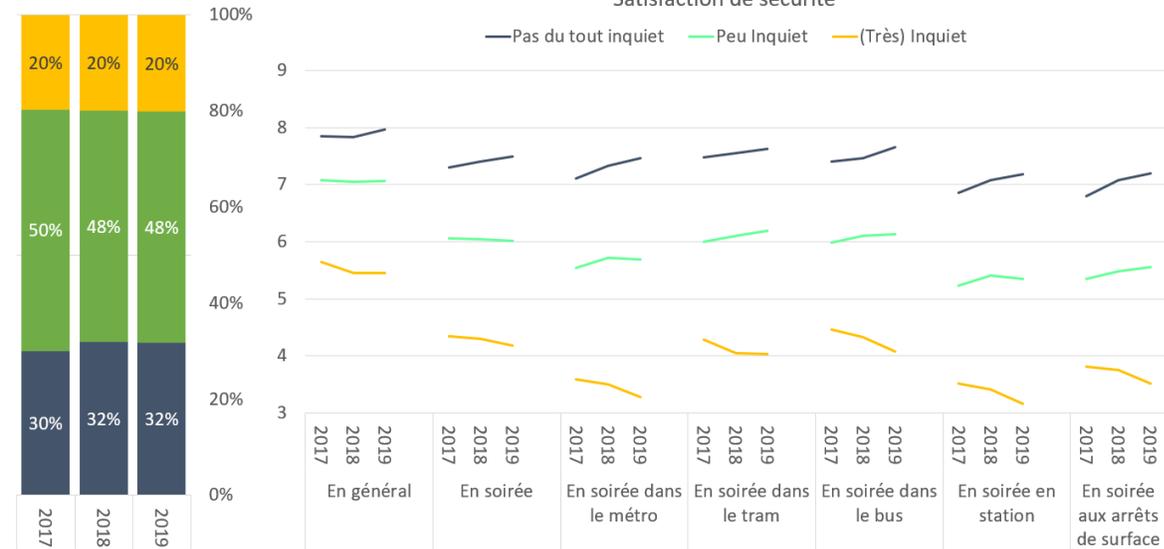
Expert data designer to review our visualisations

Veiligheidsgevoel

EN SOIRÉE

Satisfaction de sécurité

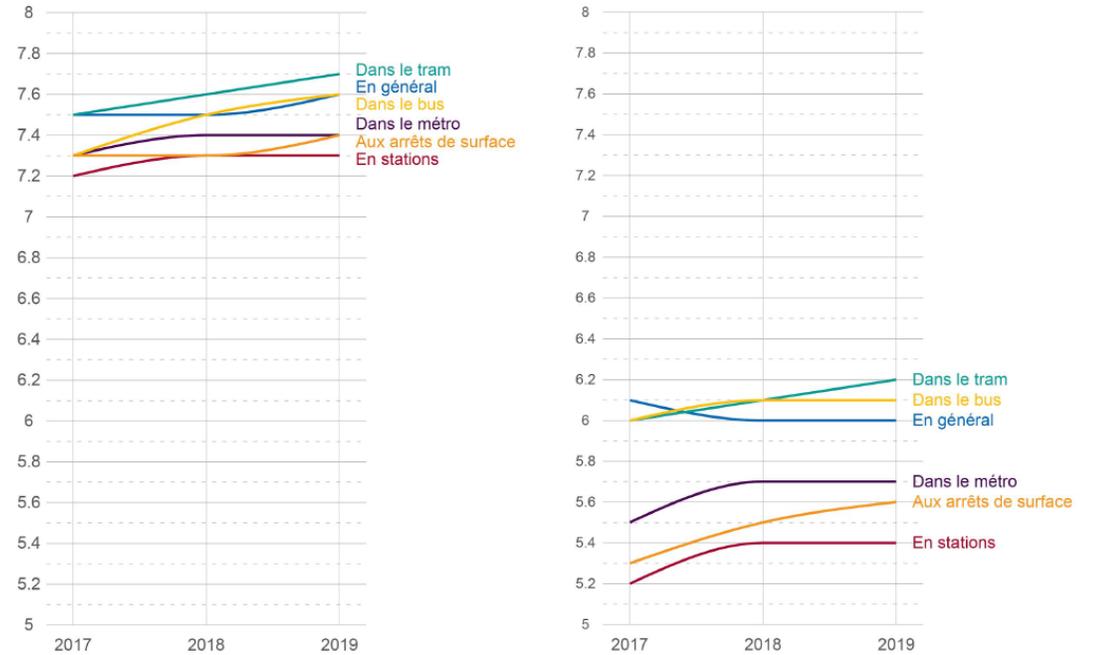
— Pas du tout inquiet — Peu Inquiet — (Très) Inquiet



Veiligheidsgevoel Peu inquiet

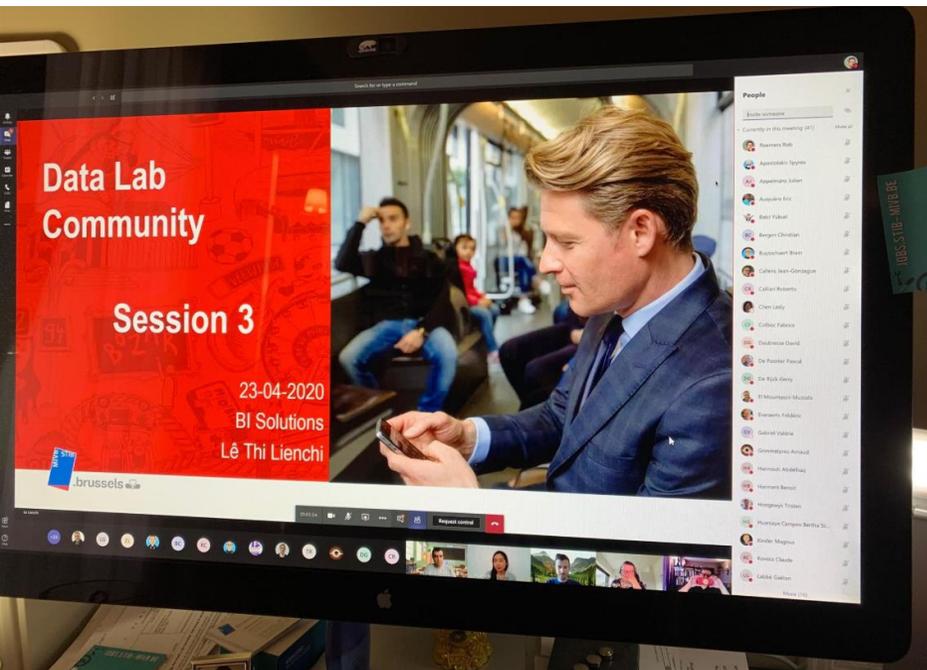
En Journée

En Soirée



Not only a technical story... this is only an enabler

It's about **change management**, **backplanning** and setting the right **goals & objectives**, **saying no** to what doesn't get us there... and **working together**



Muntstroom.brussels – Living Lab on people flow

Testing by means of use cases in 2022. We're looking for partner(cities) now

4 project partners



With the support of



Explainer Video's



Challenge for technology providers

Challenge for parties interested in People Flow-data

Discussion

