REVENUE ENHANCEMENT – FORWARD THINKING
Utilizing <u>Business Process Data</u> to identify areas for improvement on the entire **municipal value chain**
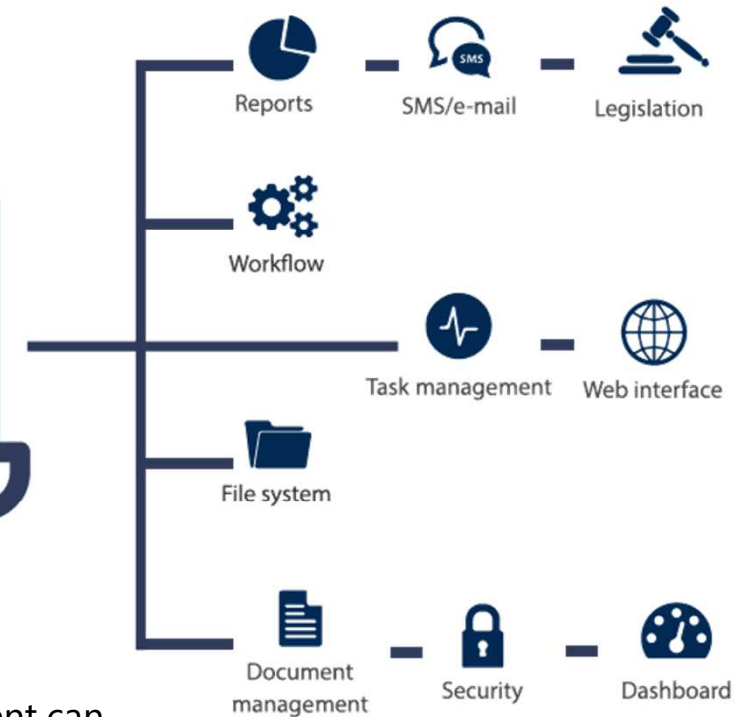
Municipal Revenue – Value Chain

Systems which influence the entire value chain and promotes enhanced efficiency across the entire organization
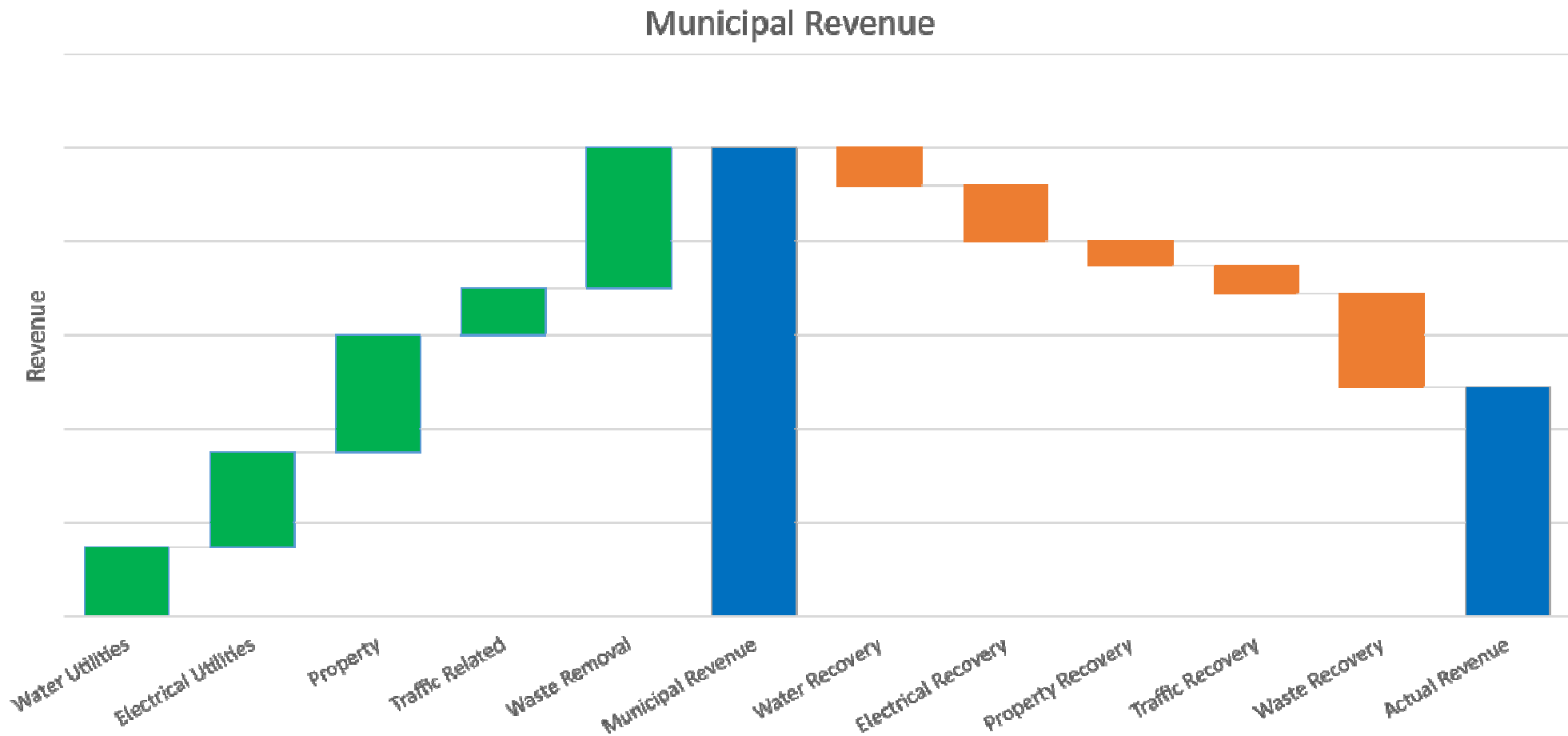

Let us look at the example of how fleet management can through advance data analytics can promote REVENUE ENHANCEMENT

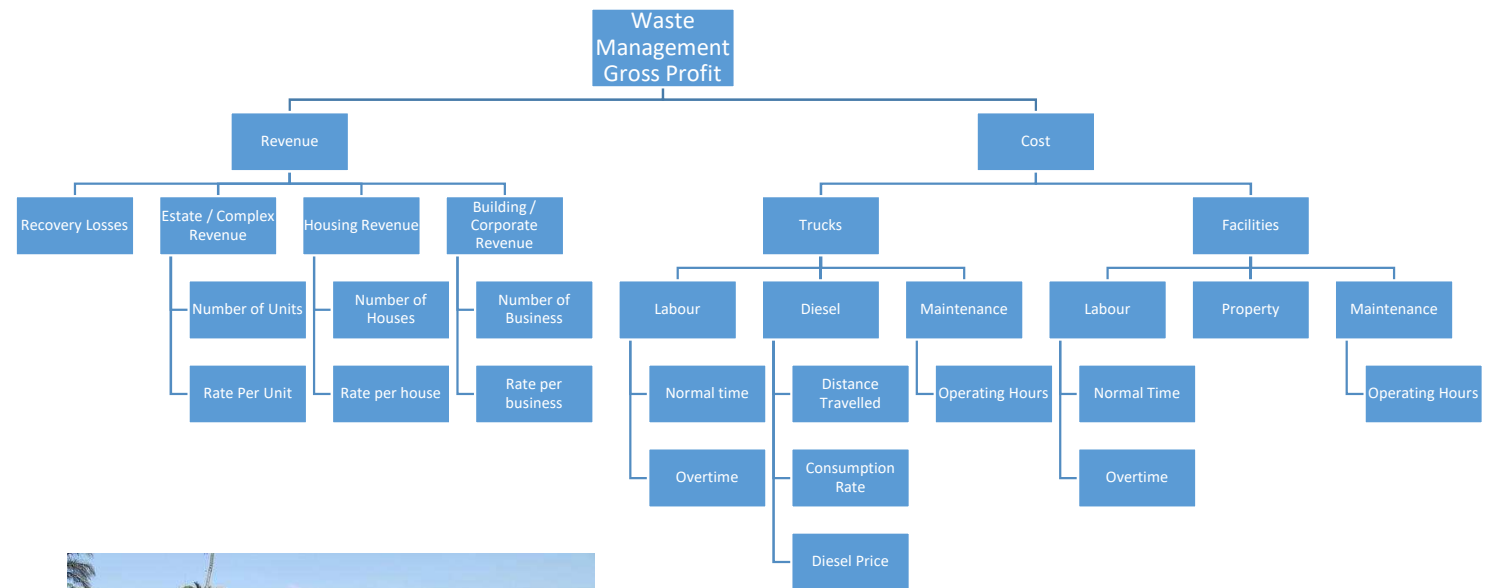# Municipal Revenue

Municipal Revenue

Municipal Waste Management – Profit Model

Profit for Waste Management is driven by revenue and costs.

- Waste Revenue is based on rates charged to clients, based on number of bins and types of clients.
- Cost driven by facilities and trucks
  - Labour
  - Diesel
  - Property
  - Maintenance, etc.


```
                          Waste
                        Management
                        Gross Profit
              ┌──────────────┴──────────────────┐
           Revenue                            Cost
    ┌────────┬────────┬────────┐       ┌────────────┴──────────┐
Recovery  Estate/  Housing  Building/  Trucks              Facilities
Losses    Complex  Revenue  Corporate
          Revenue           Revenue
             │        │        │     ┌─────┬──────┬──────┐  ┌──────┬──────┬──────┐
          Number   Number   Number  Labour Diesel Maint.  Labour Property Maint.
          of Units of       of                  enance                 enance
                   Houses   Business
             │        │        │       │      │      │      │              │
          Rate Per  Rate per Rate per Normal Distance Operating Normal  Operating
          Unit      house   business  time   Travelled Hours    Time    Hours
                                        │      │              │
                                     Overtime Consumption  Overtime
                                              Rate
                                              │
                                           Diesel Price
```

- **But what happens when more bins are being loaded than what is planned?**

Municipal Waste Management – Profit Model
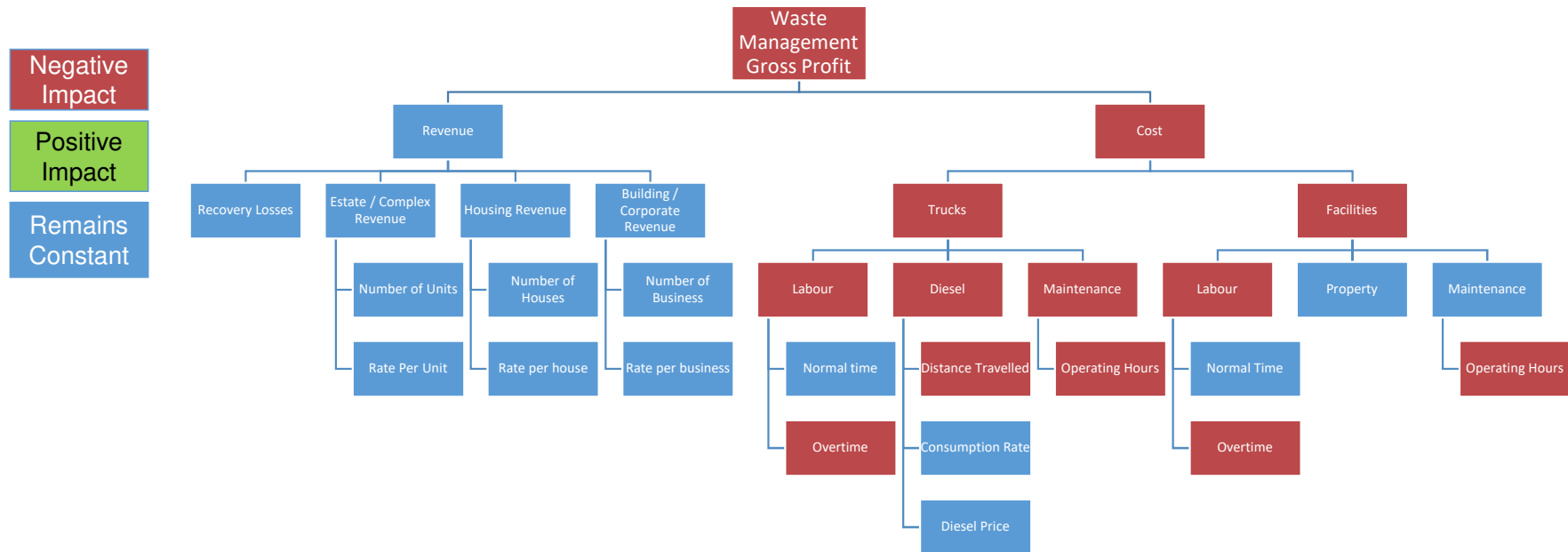
Revenue ultimately doesn't change

- Charges are applied to consumers based on defined rates.
- The rates do not currently change based on volumes.
- More bins loaded are not accounted for.

We need to develop an improvement agenda for revenue

Costs increase due to many reasons

- Increased time loading trash – Labour costs, fuel costs
- Trucks filling faster prompts return to facilities. Increased travel distance (fuel, time), delays (traffic, labour costs)
- Potentially increasing trucks quantity (Capital, maintenance, labour, fuel).

Identifying Areas for Improvement

Main Focus Areas:
- Revenue Recovery
- Cost Reduction
- Rate Increases

- Data Analyses can assist in pointing towards sectors where recovery can improve.
- Cost increase due to services increasing in areas where excessive waste is generated (through various means).
  - Cost based Rates could be applied to problem areas allowing increased revenue here.
  - Also incentivises waste reduction to save costs.
  - Operational Diagnostics available due to actively monitoring the business drivers.


Waste Management Gross Profit
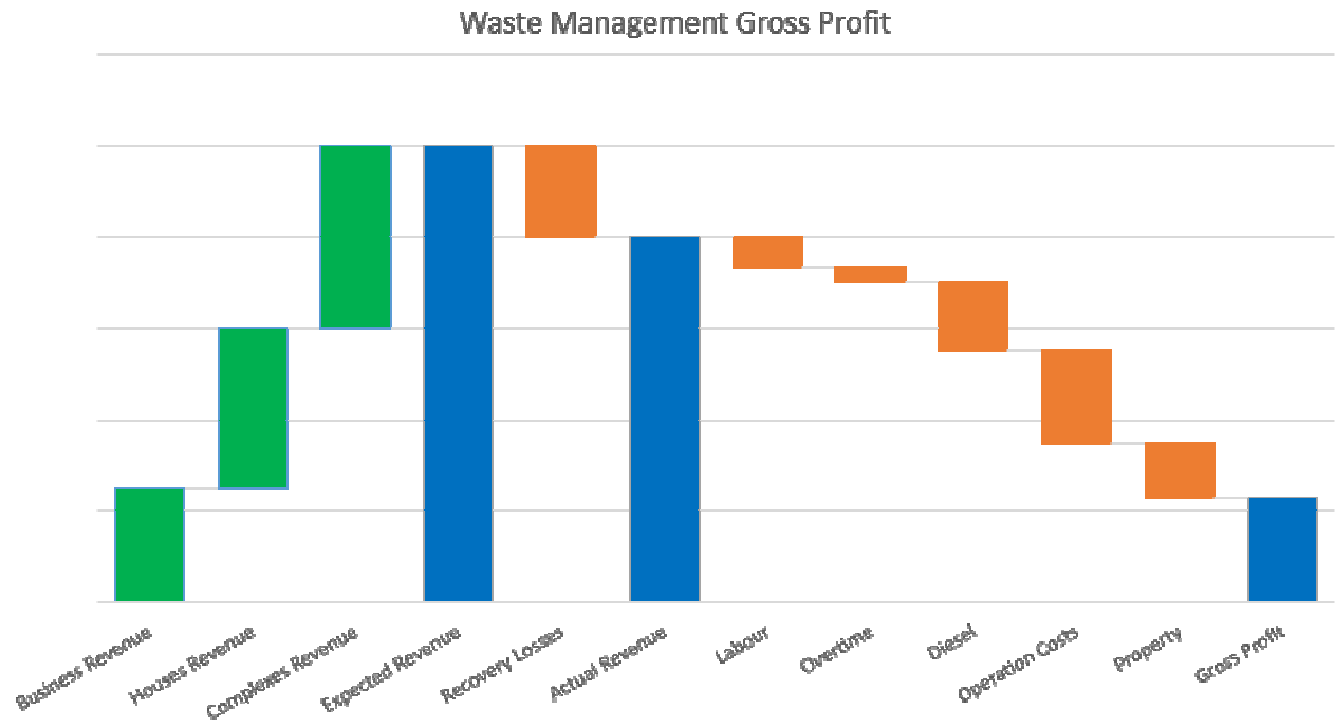
Understanding Fleet Movement

Helping to optimise the fleet and improve consumer charges

- Understanding where time is lost could contribute where revenue should be recouped.

- Monitoring dump trucks in key zones allows for estimating where deviations from the schedule occur:
  - Delays infer additional bins to be collected in some areas,
  - While others are unaffected.

- Knowing how vehicles are operating allows:
  - Plans to be optimised
  - Strategic deployment times
  - Additional vehicles in problem areas
  - Allocating penalty costs for areas with unauthorised bins.

Accuracy <10m on standard units, sufficient for most equipment. High accuracy units available.

Polygon geo-fencing of multiple areas and apply rules for what you want to pick up in those areas.
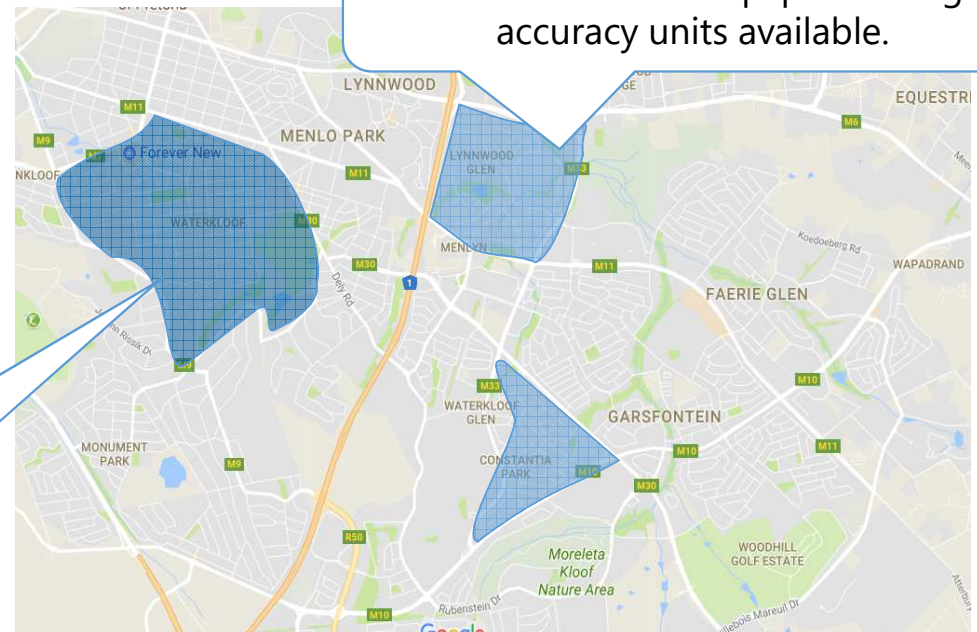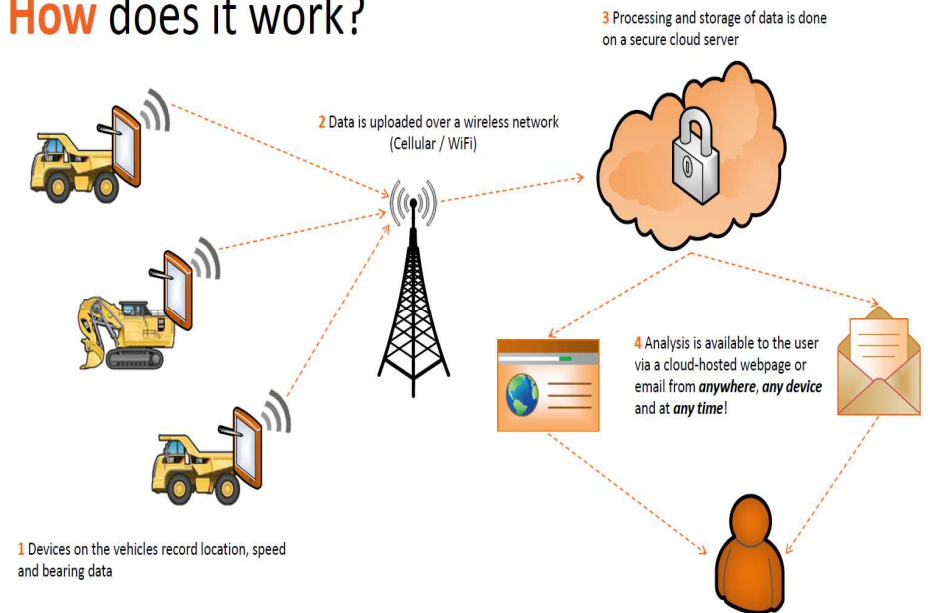
DIAL Operational Diagnostics

What makes DIAL a solution for optimising fleet management and business optimisation?

- **Capture critical fleet data** (*latitude, longitude, bearing, speeds and distances*)

- **Perform analytics on the data collected in order to quickly and easily indicate instances and quantify reasons for operational non compliance** (*geospatial analytics, geo-fencing, time analysis, speed analysis, idle time analysis, production of key performance indicators and compliance analysis*)

- **Present the findings of this analysis in a highly graphical, interactive and intuitive way** (*graphic, web-based reporting, mapped to a physical image of the operation, accessible to mobile phones and tablets, interactive slicing and dicing of data*)

How does it work?

3 Processing and storage of data is done on a secure cloud server

2 Data is uploaded over a wireless network (Cellular / WiFi)

4 Analysis is available to the user via a cloud-hosted webpage or email from *anywhere*, *any device* and at *any time*!

1 Devices on the vehicles record location, speed and bearing data

Understanding the Current Capabilities

Data Capture

- Low cost, flexible **Android** devices are used to record data real-time.
- Built in **3G and Wi-Fi** capability uploads the data on a frequent basis, little or no reliance on on-mine and IT infrastructure.
- Redundancy, backups and device diagnostic logging delivers a robust, **reliable** solution.
- Data captured allows **diagnostics** of truck performance.
- Cloud-based analytics: Granular information from the devices is uploaded which results in the flexibility of the solution.

Activity Ribbons

Analytics

- Geo-fencing: Analysis of the amount of time spent at locations such as workshops, tips, shovels and hard parks.
- Path analysis: to understand cycle times, speeds, road conditions. etc
- Time analysis: capability to compare trucks' performance based on idle times, shift changes etc.
- This allows the production of Key Performance Indicators as well as monitoring of compliance.

### Value Driver Tree linked to Activity

Presentation Layer

- Completely **graphically** orientated, allowing information on compliance and performance to be obtained easily.
- **Web-based** reporting means that reports are available on almost any computer, mobile device or tablet with internet connectivity.
- Reports are **emailed** several times a day to compensate for sites where connectivity is sporadic.
- **Interactivity** means data can be sliced and diced to show the exact areas of non-compliance or non-performance.

Performance Based Analyses

Example of Truck Shift Data
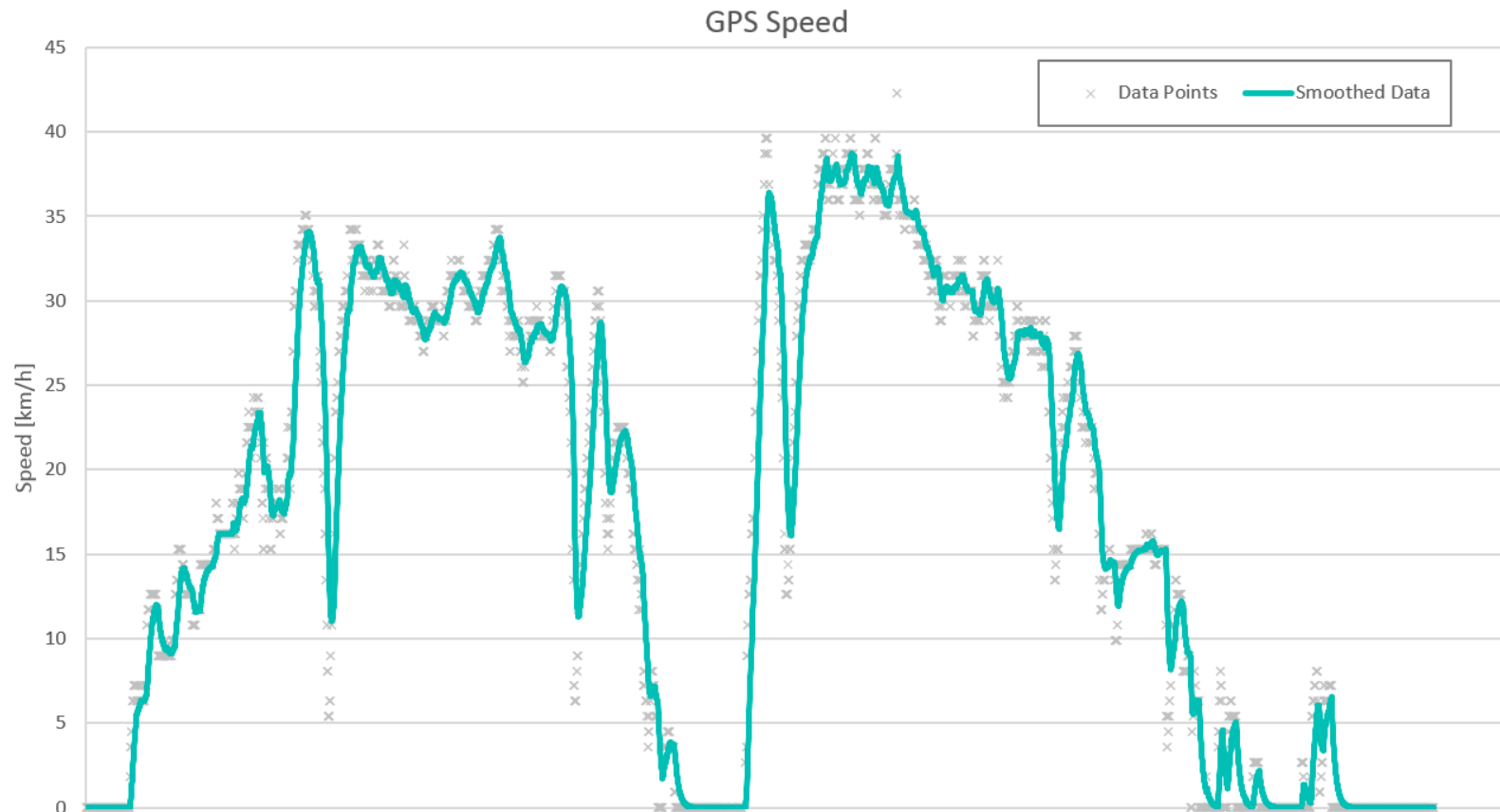
Message of Support

The future lies with systems

The vast intelligence offered through such systems carry immense benefits for all sectors of business:

- Revenue enhancement through process and people optimization
- Streamlining daily processes
- Identifying fruitless and wasteful expenditure before it occurs
- Powerful reporting tools to CFO's and MM's
- Restores community confidence in municipalities

- To mention but a few.

Sebata understands this principle, this is why we have invested in developing INNOVATIVE TECHNOLOGIES for the public sector.

Thank you for the opportunity to present our service offering to you

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