Fleet Forum

Innovative Strategies for the Road Ahead

DATA ANALYSIS

INTRODUCTION

DATA

a set of values of qualitative or quantitative variables.

facts and statistics collected together for reference or analysis

Data is measured, collected and reported, and analysed, whereupon it can be visualized using graphs, images or other analysis tools.

"If you cannot measure it, you cannot manage it"

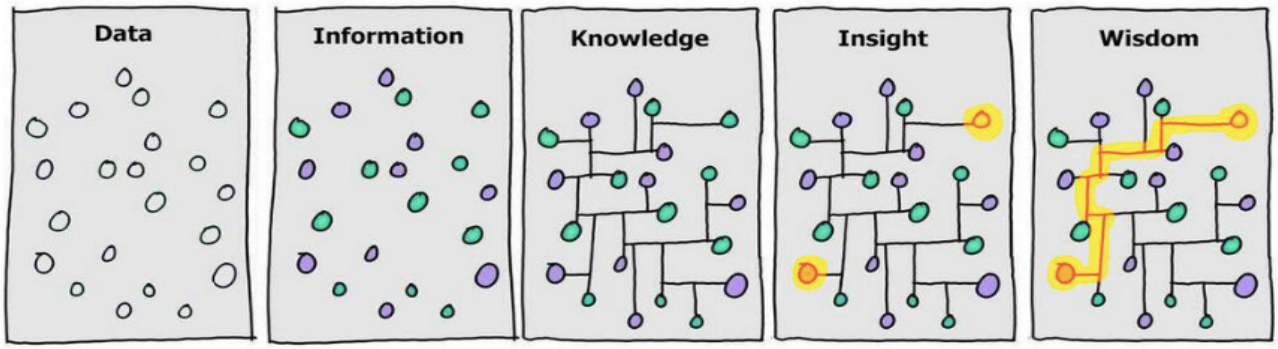
Management thinker Peter Drucker is often quoted as saying that "you can't manage what you can't measure." Because, if you can't measure something, and know the results, you can't possibly get better at it. However, we need to avoid that the focus on management and measuring results in an attitude of: "What can't be measured isn't worth managing"?

Difference between data and information

People use data and information to express the same thing, they are used interchangeably. Fleet Forum uses the terms as follows:

- Data: a range of numbers, statistics that in itself does not allow us to draw conclusions or base our decisions on.

- Information: when we combine data sets that allow us to make decisions.



An example
Kilometres driven per week: this is data as by itself it doesn't allow us to make any conclusion. If a vehicle has driven 50 kilometre per week, is that a good thing or a bad thing? We cannot tell. Only in relation to other data, we are able to draw a conclusion.

If this vehicle is an armoured vehicle, we might conclude that the 50 kilometres are good enough. If this is a soft skin we might conclude that the vehicle is underutilized.

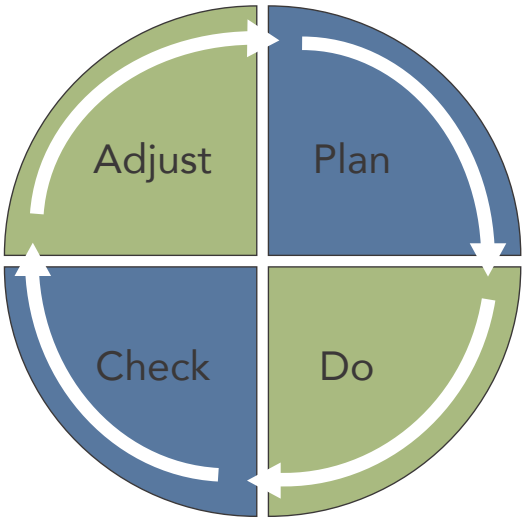
Why is data analysis important for fleet management?

- To operate in a safe way (number of crashes, number of fatalities and injuries as a re sult of a road crash, number of near misses) and to mitigate future risks;
- To know if the fleet supports programme delivery (in other words: because of the transport service programme staff can reach more beneficiaries). This is often expressed in: how many beneficiaries reached per kilometre, availability and utilisation of the vehicles, number of hours that staff spend in the field (with beneficiaries) etc.;
- To have insight in costs (Total Cost of Ownership, fuel costs, maintenance and repair costs, etc.) and operate the fleet in the most cost-efficient way;
- To operate in a green and clean way: emissions, litres of fuel per 100 km, number of kilometres driven by hybrid or electric vehicles.

Plan-Do-Check-Act cycle in relation to data analysis

Typically, organisations rely on data analytics to answer business questions during planning and measurement phases

- Compare performance of strategy against benchmarks (in- or external)
- Compare before and after (strategy) implementation
- Track key business metrics (productivity, risks, costs etc) to iterate small local changes



- Understand current state
- Build future state scenarios
- Prioritize scenarios in likeihood and impact
- Use insigths to develop action plans for best strategy
- Assess risks of strategy
- How to best use current resources and plan for future changes

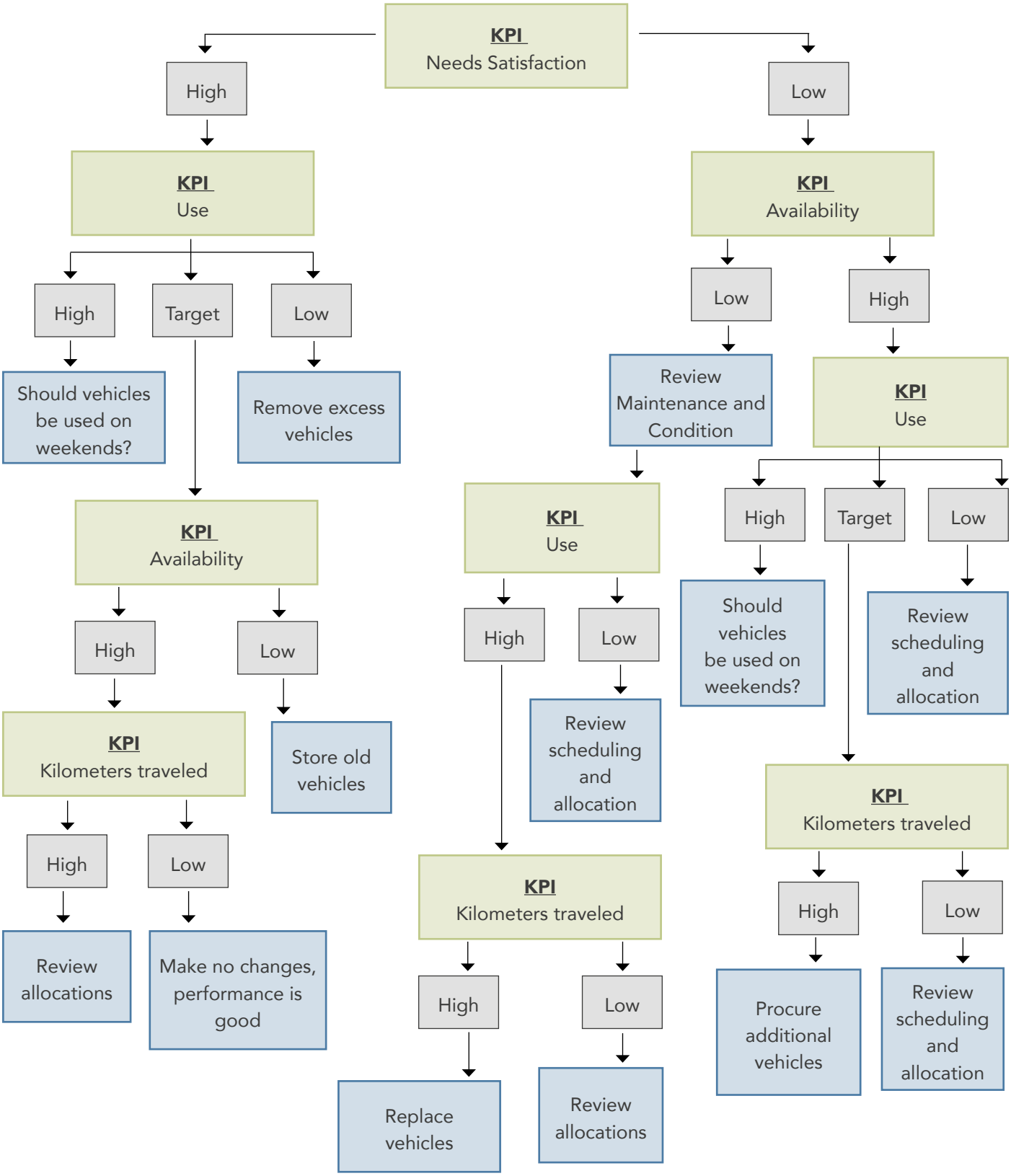
What is benchmarking?

When we talk about benchmarking we evaluate something by comparing it with a standard. Benchmarking can be internal, for example, comparing performance between different groups or teams within an organisation or external, for example comparing performance between different organisations or or even across industries.

INTERPRETING AND DECISION MAKING

What does the data tell you?

Whenever we have turned the data into information we can use to make decisions around our fleet and to put actions in place if our fleet is not performing to a satisfactory level. The decision tree might be of help.



Source: Transport Management, a self-learning guide for local transport managers of public health services, Transaid, 2010.

Illusion of control (data overload)

Nowadays people receive the information of 74 newspapers every day. More and more often individuals find it difficult to go through and filter the essentials and what is important to them.

Organisations are increasingly interested in their performance (also to answer to beneficiaries, donors and other stakeholders) and they see the value of data analysis. However, there is another side to having too much data or where the data is confusing, misconstrued and send the organisation in unexpected direction or wrong conclusions.

Ways to mitigate this risk:

- Stay focussed on the objectives of the department
- Collect relevant data
- Question the source
- And put your theory to test before running with it.

PRESENTING DATA

(source: www.skillsyouneed.com/presenting data)

Many people are uninterested in tables of numbers and may struggle to understand graphs. How can you help them understand your argument or use the data to tell (sell) your story.

Remember that you are telling your audience a story and your presentation is basically a story-telling opportunity. Humans are being hard-wired to enjoy and respond to stories. If you tell your audience a story, they are likely to listen much more carefully and move towards a logical conclusion: the insight to which you are trying to lead them.

Use Data to Tell the Story

You are not presenting data as such, you are using data to help you to tell your story in a more meaningful way. This means that whenever you are required to present data you should be asking yourself:

• What is the story in this data?, and then
• How best can I tell this story to my audience?

A PICTURE SAYS MORE THAN A 1.000 WORDS

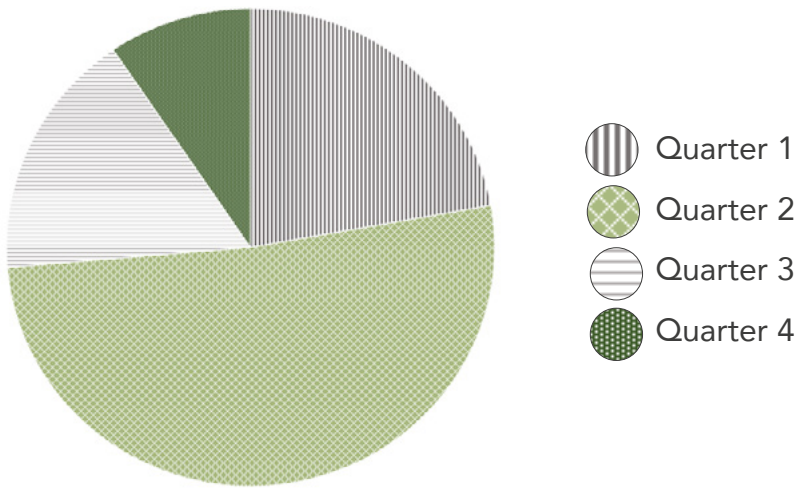
There are many people in the world who do not find it easy to understand numbers. There are also many people who will simply switch off if you present them figures in a table. But if you use a graph or a pie chart, you make a pictorial representation of the data. It makes the data much easier to understand. Trends and proportions become more obvious.

Consider this set of data:

Fuel costs per quarter	USD
Quarter 1	12.999
Quarter 2	30.135
Quarter 3	9.856
Quarter 4	5.570

Even for the highly numerated, the immediate point is only that there were a lot of fuel costs in quarter 2. You would have to do some adding up and dividing to work out the relationship between the four numbers.

Now consider the same data in a pie chart:



It is immediately obvious, even for those who struggle with numbers, that half of the fuel costs occurred in the second quarter. What's more, nobody is going to be straining from the back to read your figures. You really can see a lot more from a picture.

But, and this is important, make sure that the graph is a good one.

Check that the chart of graph is visually appealing, that the labels are clear, and that you have used an appropriate type of graph or chart. You really don't want to confuse people by sloppy graph-making.

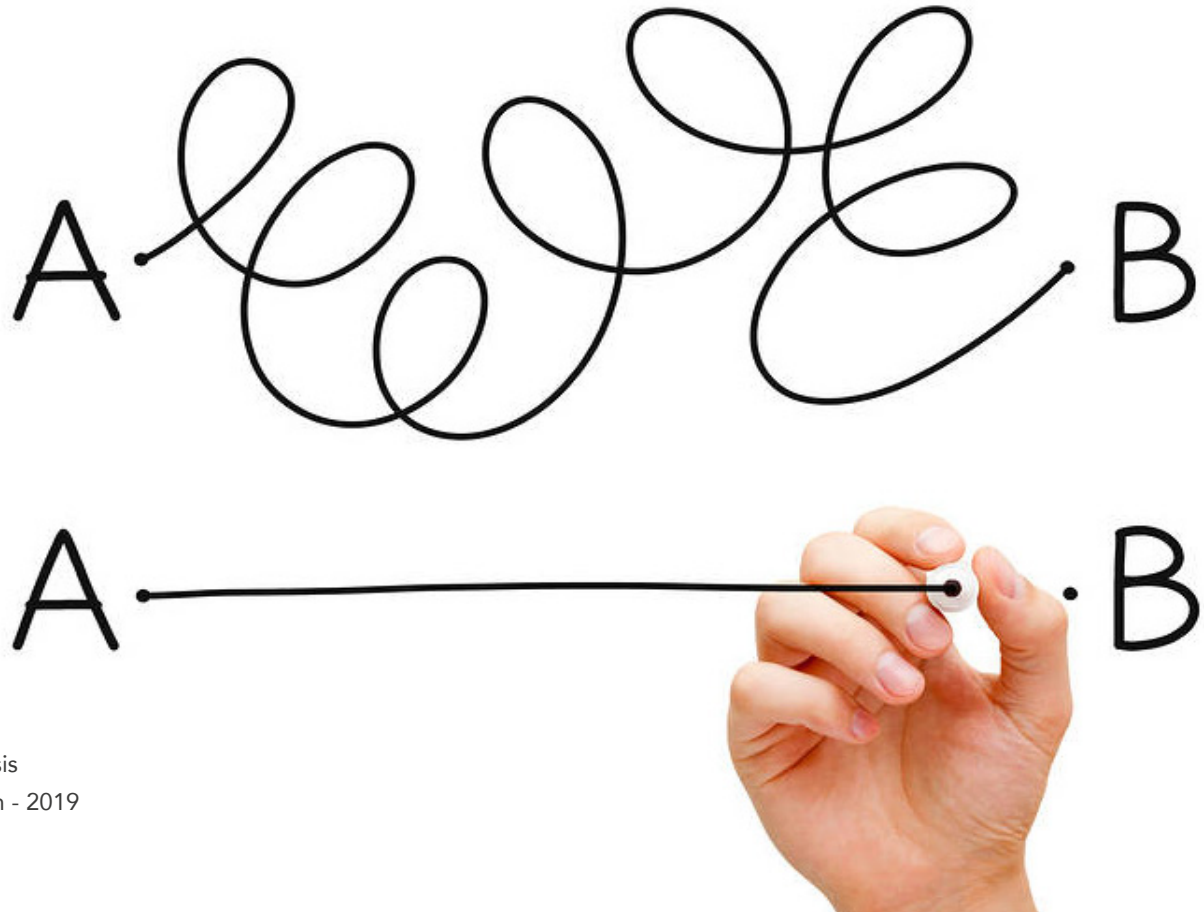
THE KISS-PRINCIPLE: KEEP IT SIMPLE, SILLY!

When you are good at statistics, it's very tempting to do some really whizzy analysis. And once you have done that, you really want to show everyone how clever you are, and how much work you've done.

But does it really help to make your point?

No?

Then don't present it.



In the (actually really rare) cases when you actually need some really whizzy analysis, you then need to ask yourself whether anyone will understand it. And, in these days of presentations being posted on intranet or the internet, will the casual reader of your slides understand it later?

Once again, the answer is 'probably not', which is it likely to be in about 90% of the cases, then don't use it.

Leave It Out

If you cannot summarise your analysis in one or two brief and clear sentences, then don't include it.

It also follows that if you don't need to include data to make your point, then it may be best not to do so. A slide that is apt to be misunderstood or produce confusion is worse than no slide at all. So cut out all necessary data, and focus what you really need to tell your story.

Keep it simple, silly.

HIGHLIGHT THE MAIN FEATURES TO DRAW OUT THE INSIGHTS

We are not suggesting that you should 'dumb down' your presentation, but there is no harm in highlighting the key features as well as cutting out unnecessary data.

Suppose once again that you are using the fuel figures from the last four quarters. You want to show the actual figures. Why not use a highlighting tool to emphasise that the second quarter is more than half?

Fuel costs per quarter	USD
Quarter 1	12.999
Quarter 2	30.135
Quarter 3	9.856
Quarter 4	5.570

With PowerPoint and other presentation software, you can make each highlighted data set appear individually and discuss the insights.

A little creative use of the technology can help you to highlight certain figures and, once again make the story clearer.

TAKE-HOME MESSAGE

Crucially, your presentation of any data should be, paradoxically, designed to move the conversation away from the data and into the insight and action that should result from it.
In other words:

'What happened there?' and **'What are we going to do about it?'**

If you look at your presentation, data and all, and you can't see how you get from the data to the insight and then the action, it is a good idea to look at it again.

Remember, it's the story that matters….and then what happens as a result.

ANNEX
FORMULAS OFTEN USED IN FLEET MANAGEMENT:

Total cost of ownership (of a vehicle):

Formula: Cost to purchase + all cost that incurred to manage and operate the vehicle + Disposal costs - Revenue from disposal (in cases where the disposal method is the selling of the vehicle)

For more information on TCO, click here.

Fuel consumption:

- Litres of fuel per 100 kilometres:
  Divide the litres it took to refill the tank by the distance travelled and multiply by 100.

  Example: 60 litres / 800 km x 100 = 7.5 litres per 100 km (expressed 7.5l/100km)

- Kilometres per litre:
  Divide the kilometres travelled by the amount of litres it took to refill the tank.

  Example: 800km / 60 litres = 13.3km per litre

Running cost per kilometre

Formula: [Quantity of fuel used x fuel price] + [maintenance cost + cost of tires] / Total kilometres traveled = Running cost/KM

Example: [339 litres x 0.43 USD] + [16.66 + 50.00USD] / 3524 km = 0.06 USD/KM

Crashes per million kilometres driven (also fatalities or injuries per million kilometres driven)

Formula: (Total Crashes x 1.000.000) / (Total Kilometres)

ANNEX
FORMULAS OFTEN USED IN FLEET MANAGEMENT:

Lost Time Injury Frequency Rate
(Injury cases involving days away from work)

Formula: [Number of lost time injuries in the reporting period] x 1,000,000 / (Total hours worked in the reporting period)

Availability

Formula: ([total days in the period - total days in the garage] / [total days in the period]) x 100

Example: ([22-2] / 22) x 100 = 90.9%

Utilization / Use of the vehicle

Formula: (total days used / total days available) x 100 = use (%)

Example: (17 / 20) x 100 = 85%

Needs satisfaction:

Formula: (number of trips made / number of trip requests for official work received) x 100

Distance travelled:

Formula: Current odometer reading - previous odometer reading