



UPGRADE YOUR INTEL: FROM INFORMATION TO INSIGHT

Building true business intelligence to
achieve commercial success

INTRODUCTION

PAGE 3

DATA & THE BUS INDUSTRY

PAGES 4-6

CONVERTING DATA INTO INSIGHT

PAGES 7-9

BI FOR BUS OPERATORS

PAGE 10-12

HOW CAN YOU GET FROM INFORMATION TO INSIGHT?

PAGES 13-14

FINAL NOTES

PAGE 15-17

INTRODUCTION

There is a common saying in business circles, taken from the famous *The Art of War* book:

“Know thy enemy.”

What people often forget is the first part of this adage:

“Know thy self.”

Let's take a quick check before we get started to determine how well you know your business.

- How many buses have I got?
- How many drivers do I employ?
- How much fuel is my fleet using?
- Am I compliant with legislation around safety and financials?

It's likely you'll know all this off the top of your head, and if you don't then someone else in your business does.

But what happens if we get niggly and drill down into the detail? Do you still know the answers, or have a quick way to find them out?

- How many buses have I got **according to age and model?**
- How many drivers do I employ **who have less than 1 year's experience?**
- How much fuel is my fleet using **by bus model?**
- Am I compliant with legislation around safety and financials – **do I know which employees need driver refresher training in the next 6 months?**

How long would it take you to pull this information together?

DATA & THE BUS INDUSTRY

Not long ago, this is what things used to be like for us in the bus industry:

- Number of buses off road unknown until counted by workshop staff
- Bus locations unknown once they leave the depot until they arrive at a stop
- Costs and revenue unknown until end-of-month accounts tallying
- Paper records – manual look-up for single-use cases

It was difficult to get reports: the process was time-consuming, prone to human error and involved double-handling by multiple people within the company.



Then, we had this little thing called the **BIG DATA REVOLUTION.**

During this revolution, everyone started gathering data on everything from everywhere. Big data was seen as the key to all knowledge and the way of the future.

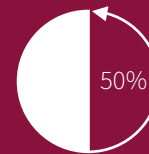
Initially, big data was the province of scientists and technology developers. Then the concept grew beyond research, experiments and IT into the business world, and companies across the globe eagerly embraced the idea of collating data for evidence-based decision-making.



The results were stunning and exciting.



Companies reported getting **\$13 back for every dollar** they spent on business analytics.



Organisations that had invested in big data experienced **50% higher growth rates** compared to those who lagged behind.

↑ 2.6X

Businesses that were intensively using customer analytics were found to be 2.6 times more likely to have a higher ROI than competitors.

With results like these, it was no surprise that investment in big data boomed. Big data technology developed rapidly to support new demand from businesses thirsty to know more...and more...and more.

Where we were once held back by the difficulty and inefficiency of recording things by hand on paper, we now had access to technology that could store vast amounts of data digitally. The new challenge lay in gathering your data in the first place, and vendors around the globe began to work on solving the challenge of manual data collection.

Fast-forwarding to the present, we now have the ability to gather all kinds of data from all kinds of places with minimal effort.

Thanks to new technologies made with data collection in mind, there's no end to all the information you can obtain if you put some effort into it.

Vehicle telematics:

- Odometer readings
- Braking patterns
- Driving speed
- Engine oil levels
- Battery lifespan

Real time information:

- Location of any bus at any point in time

- Arrival / departure information
- Early / late running

Whole-of-business ERPs:

- Passenger interaction records
- Human Resources information
- Inventory
- Financial data
- Payroll records
- Fleet data
- Fuel consumption
- Breakdowns and faults
- Duty rosters and schedules

...and more!

BUT...

with all this interesting and in-depth data, a **new problem** has appeared.

We have gone from having **no information** to **drowning in data**.

Big data has become information overload. Where do we go from here?

CONVERTING DATA INTO INSIGHT

Because it's now within our power to capture so much data about our fleet, our costs, our staff and our business, we now need to go that **extra step** to make sense of it all.

Information is great.

But when it lives in a thousand lines of a spreadsheet or individual files, sometimes you can't see the forest for the trees.

Or in this case, you can't see the insights for all the data.

It takes a lot of time and manpower to pull all the records together, crunch the numbers and analyse the data before you can see the trends and patterns of your busi-

ness and take action on the hidden stories your data can reveal.

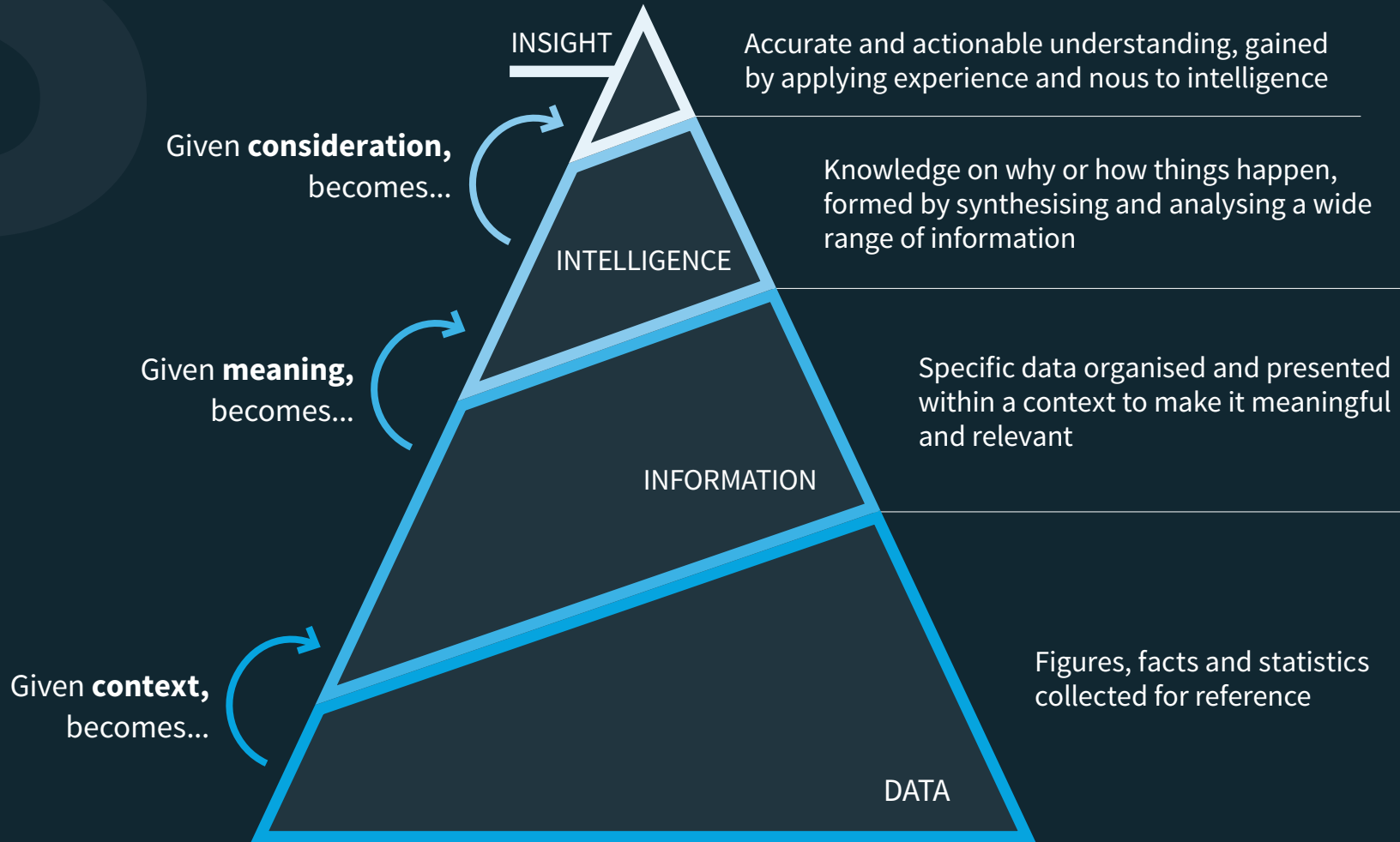
In the past, companies hired data scientists and statisticians to help with the analysis; however, this is not a feasible long-term solution. It takes too long, costs too much and is not sustainable.

So how do we sort complex, detailed data into meaningful business intelligence (BI) to get insights that you can use to succeed?



Too many “in” words!

We're throwing around a few “in” words that look very similar, so let's take a moment to differentiate between **'information'**, **'intelligence'** and **'insight'**.



Adapted from ContentQuo and CSEstack

It's important to remember that using data to develop business insights is **not** about disregarding your employees' experience, knowledge or intuition.

Instead, it is about **empowering** and **enabling** your staff and leadership team with the information they need to figure out:

- What is going on in your organisation
- What is going to happen
- What to do about it

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INTUITION VERSUS DATA IS A FALSE DICHOTOMY. GREAT ANALYTICS TEAMS LOVE INTUITIVE THINKERS WHO LOVE DATA, BECAUSE IT'S THAT INTUITION —THAT HUMAN SPARK — THAT BRINGS IDEAS AND INNOVATION.”

—Jim Sprigg, Director of Database Marketing and Analytics of the InterContinental Hotels Group

Source: MIT Sloan Management Review

BI FOR BUS OPERATORS

Enough of the theory! Let's put this into context for a bus operator.

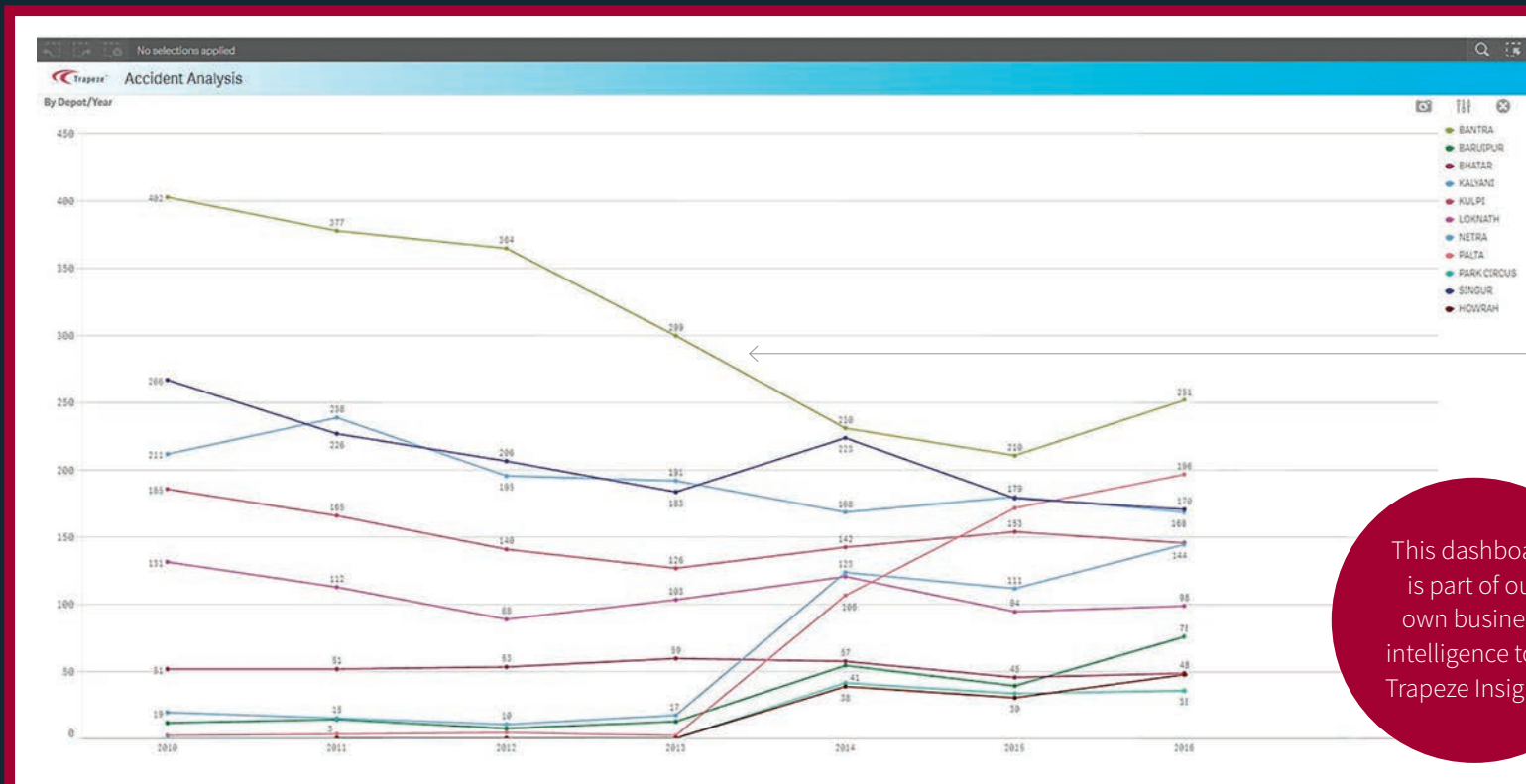
As part of your reporting requirements, you collect data on all the accidents that happen involving your fleet and staff:

- Damage type
- Accident ID
- Vehicle
- Depot of vehicle
- Driver
- Route
- Time and date
- Reason for accident

How can you use this data to improve safety? Let's use a real life example.

First of all, you need to compress all this **data** into logical groups of **information** by putting them into context.

Using a dashboard that shows you the number of accidents by year will help you analyse trends.



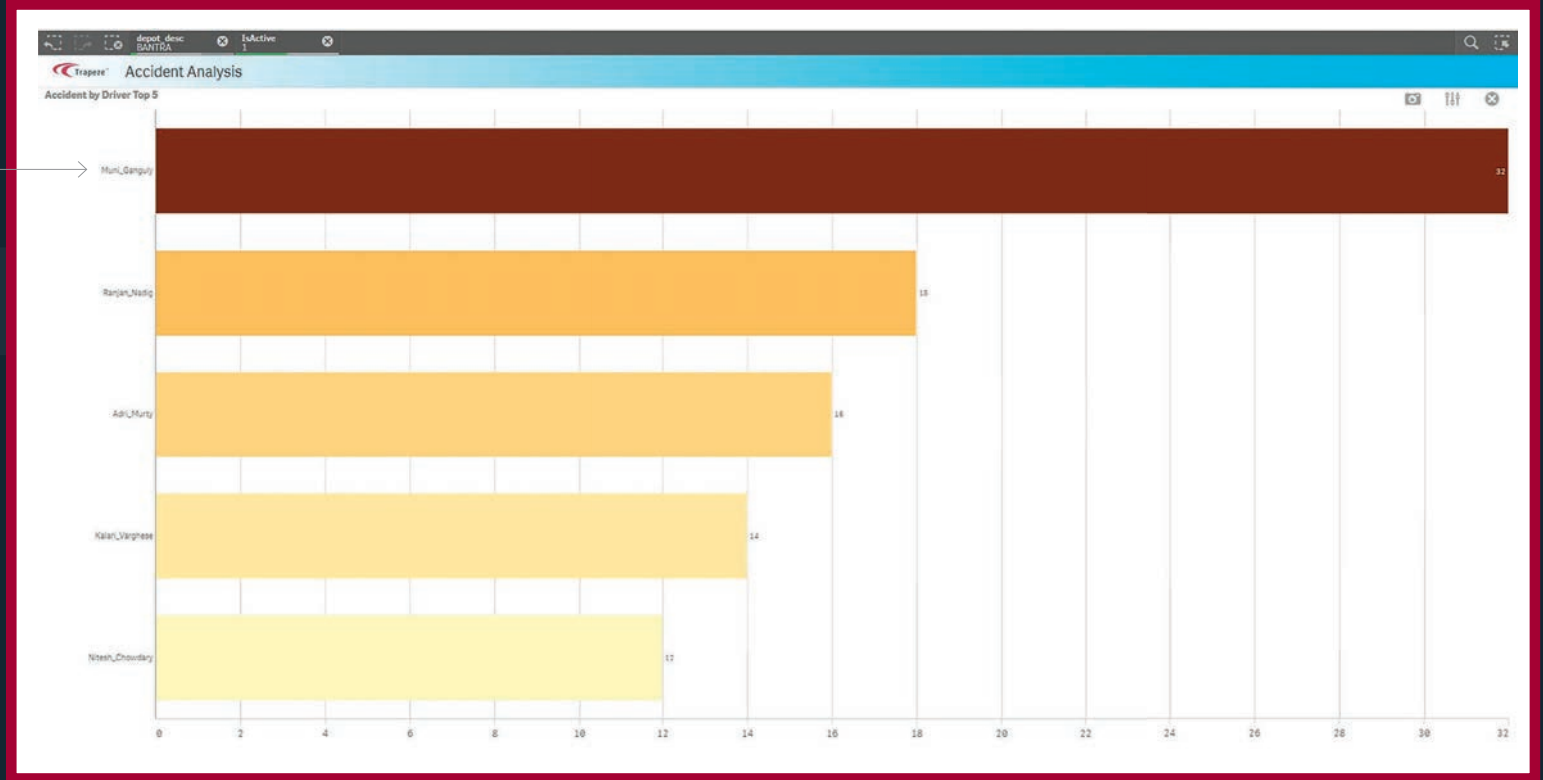
You can see here that Bantra depot has the most accidents.

This dashboard is part of our own business intelligence tool, Trapeze Insights.

*All names have been changed to protect privacy.

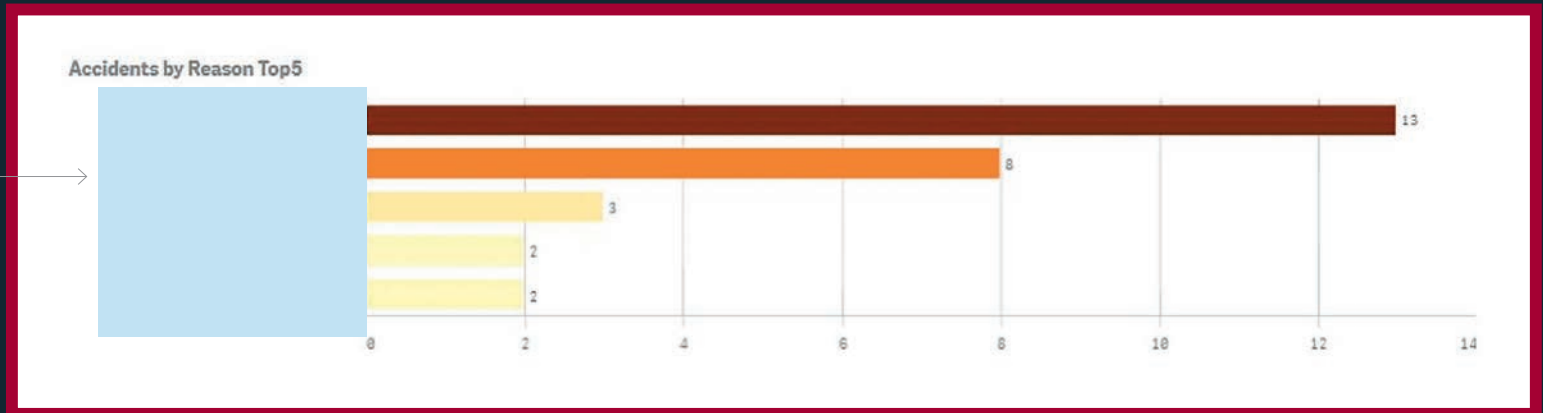
UPGRADE YOUR INTEL:
FROM INFORMATION TO INSIGHT

Drilling down further,
you can see that most
accidents were caused
by a single driver.



Checking out this driver's
record, you can see the main
reasons for his accidents.

Many accidents are due to
the bus hitting other vehicles
or objects, both stationary
and moving.



On checking his HR records, you see that he has only done driver training once in 2010.

Driver Training					
FullName	Training Code	Training Date	Training Status	Pass	
Muni_Ganguly	DRV001		Required	COMPETENT	

Putting together all this **information**, you form **intelligence** on why this driver is having so many accidents: he has not had any driver training for years and may have forgotten safe bus driving techniques.

Applying your experience to this intelligence, you then gain **insight** into the action that needs to be taken: to send Muni Ganguly on a driver refresher course.

You may also want to check the records of other drivers at the Bantra depot to see if the lack of training is a recurring issue, in which case you need to speak to the supervisor about managing training requirements.



HOW CAN YOU GET FROM INFORMATION TO INSIGHT?

As we move into the high-speed, high-tech information era, there are no shortage of BI tools out there:

- **Dedicated BI solutions** which can pull data from any kind of database (a CRM, an Excel file, Access database) and display it in an easy-to-consume format, such as Qlik or Tableau.
- **Basic BI functions** that come with most database-type systems, such as the charts or graphs that are auto-generated in Microsoft Dynamics or Salesforce.
- **Specialist BI solutions** which are created for specific industries or software to display performance metrics and executive dashboards, such as Trapeze Insights or SAP BusinessObjects.

BUT REMEMBER...

Not all BI tools are created equal.

Knowing what you need to achieve is key to finding the right BI solution for your organisation.

- **Dedicated BI solutions** if you have sufficient skills and resources in-house to create data models, set up software integrations and build the right dashboards for your business.
- **Basic BI functions** if you do not already have a system with a database.

You can review your options for the main system and see what features they provide for BI; if it doesn't meet your needs, you can always look at adding on another solution with better BI capabilities.

- **Specialist BI solutions** if you are in a niche industry and do not have the time or resources to spend on customising generic BI solutions to fit your business needs and data models.

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For bus operators, we recommend BI tools that give you:

- High-level executive dashboards with drilldown capability
- Information at your fingertips
- The ability to bring trends and patterns to the surface from a broad base of data
- Instant insights into your business from any angle

Once your BI tool is set up and all the behind-the-scenes work of integration, database cleaning and data modelling is done, you should be able to explore and play with your data to discover new insights or answer business questions as necessary.

For example, Trapeze Insights is a specialist BI application created specifically for the bus industry. It features:

- Bus industry-specific dashboards and performance metrics
- Self-service visualisation: intuitive searching and filtering so you can manipulate and explore your data on your own
- Extensive fleet and vehicle intelligence capabilities
- Rostering and staff costs monitoring and reports

FINAL NOTES

1. BUSINESS INTELLIGENCE IS AN ENabler, NOT A SILVER BULLET.

It allows organisations to leverage their own data with more sophistication and precision so they can better understand and manage operations by determining why things happen, monitoring actions and results.

However, installing a BI tool will not solve problems all on its own – a cultural shift also needs to happen so that your databases are maintained consistently and the insights generated by the tool are used effectively.

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COMPANIES NEED TO UNDERSTAND THAT IT IS NOT THE **IT** THAT COUNTS SO MUCH **AS WHAT YOU DO WITH IT.**”

Source: McKinsey & Company

UPGRADE YOUR INTEL:
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2. DO NOT UNDERESTIMATE THE “SOFT” BENEFITS.

Many companies find that the increased accessibility and visibility to business information allows employees to generate insights via increased innovation, learning, and collaboration.

While you may initially only introduce business intelligence tools at a senior management level, you should still consider allowing other employees access to this information once you have successfully tackled the initial teething problems.

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THE NEXT GEN THINKING COMPANIES SAY
**BUSINESS ANALYTICS CANNOT BE DONE
BY A CENTRALIZED TECHNOLOGY GROUP.**

WHILE YOU NEED CENTRAL ARCHITECTURES
AND SCALABLE IMPLEMENTATIONS, **WE NEED
TO DEMOCRATIZE ACCESS.”**

—Oliver Ratzesberger, Chief Product Officer of Teradata

Source: Forbes

3. A BI TOOL IS ONLY AS INTELLIGENT AS YOU MAKE IT.

“Garbage in, garbage out” is an old saying, but still extremely true when it comes to databases and BI.

If the data in your existing database is incomplete, inconsistent or inaccurate, any business insights generated by your BI tool will be the same.

The starting point for any BI project is not actually the BI tool itself, but your business processes for data collection and storage. If you aren't sure where to start, it's worth brainstorming with other senior managers to determine what business questions you want answered.

Once you know what insights you want to know, you can work out what data must

be gathered, how to collect and record it, and the frequency of collection. This ensures your database is clean, sustainable and ready to use, and will set you up for success.

If you do not have any existing database or plan to replace your current ERP or day-of-operations software, look for a system that helps your staff keep records consistently and easily. If you install a system that is painful to use, it will be harder to get


everyone enthused and eager to collect the data you need on an ongoing basis.

To build good data practices into your employees' daily life seamlessly, look for features such as workflows to guide data entry; integration so data is only entered once; and user permissions to safeguard data integrity.

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THE AVERAGE FINANCIAL IMPACT OF POOR DATA QUALITY ON ORGANIZATIONS IS \$9.7 MILLION PER YEAR. DATA QUALITY IMPROVEMENT IS NOT A “ONCE-AND-DONE” ACTIVITY. UNLESS A SUSTAINABLE ENVIRONMENT FOR DATA QUALITY IMPROVEMENT IS ESTABLISHED, IT WILL RAPIDLY REVERT TO ITS ORIGINAL POOR STATE.”

Source: Gartner



Trapeze Group works with public transport agencies and their communities to develop and deliver smarter, more effective public transport solutions. For more than 25 years, Trapeze has been here for the journey, evolving with our customers around the world to help them move people from point A to Z, and everywhere in between.

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