

# Forward thinking supply chains

**SAPICS**  
THE PROFESSIONAL BODY FOR  
SUPPLY CHAIN MANAGEMENT

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## 45<sup>th</sup> Annual SAPICS Conference

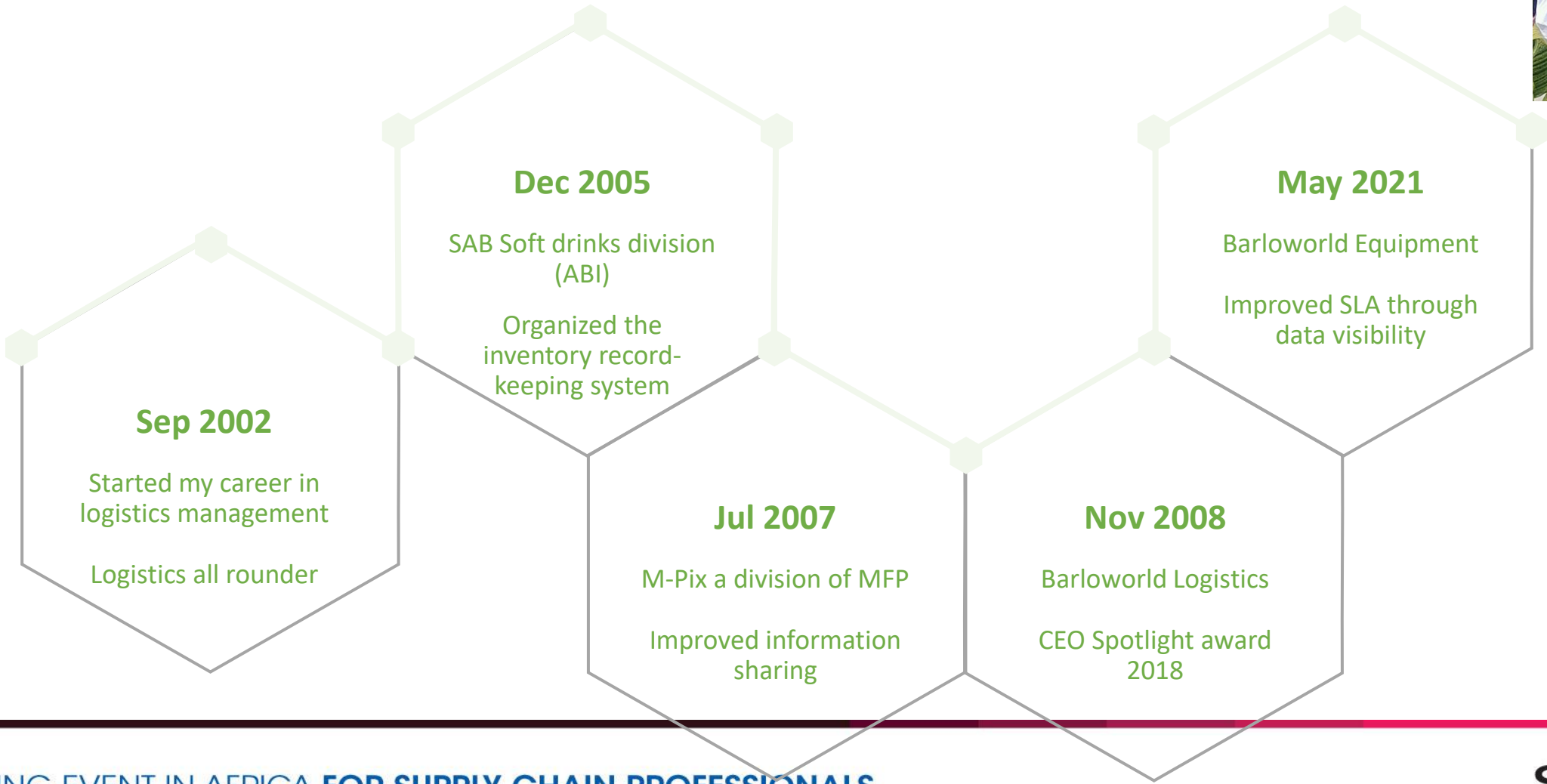
Century City Conference Centre, Cape Town, South Africa

### Leveraging data analytics in SCM

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Lee-Ann Bartlett

# About me



# What do we know about SCM?

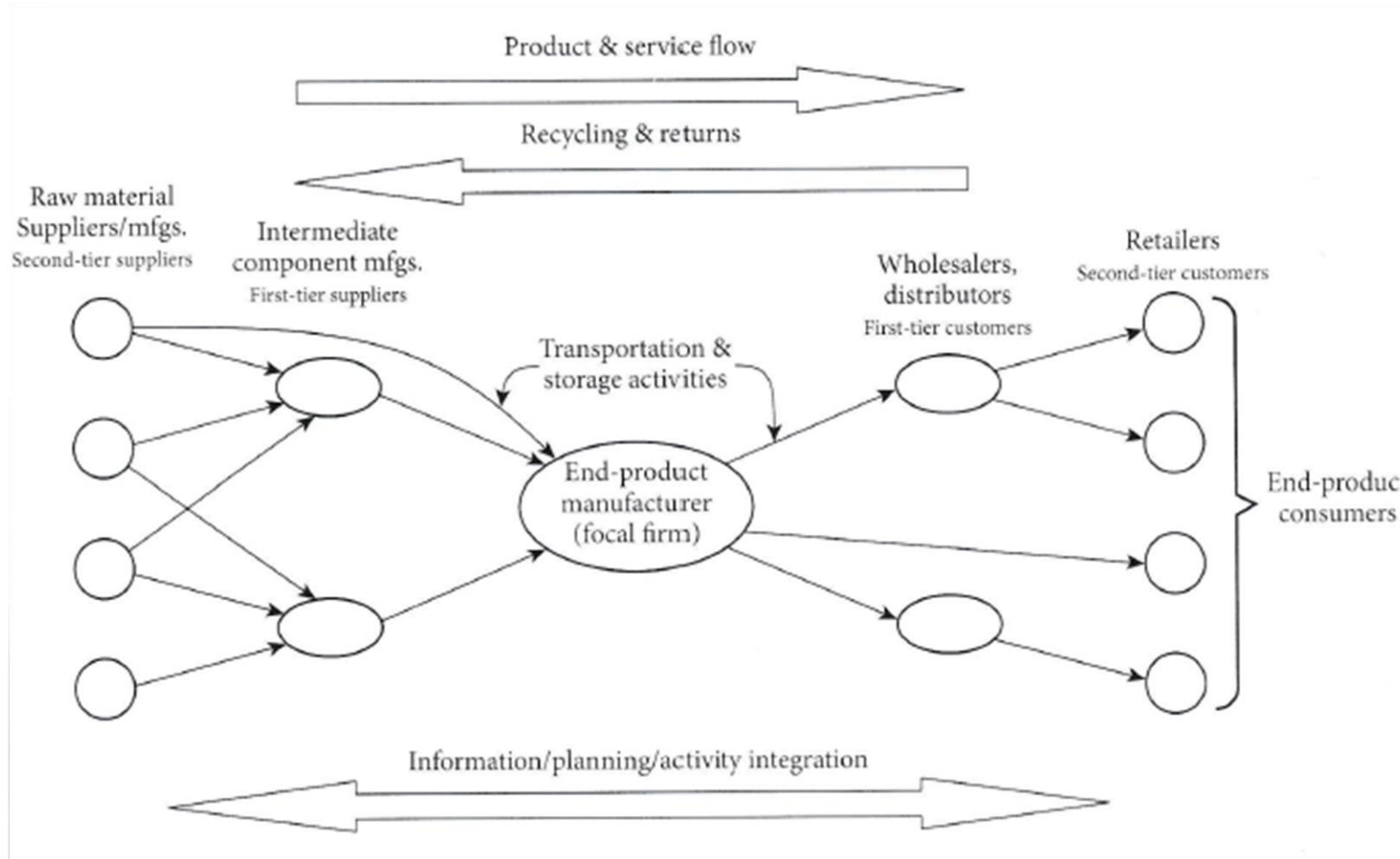
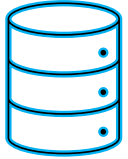


Fig. 1: Generic supply chain, Principles of SCM 4<sup>th</sup> Edition, 2016

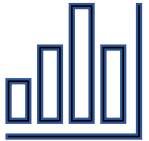
## APICS Definition:

The design, planning, execution, control, and monitoring of supply chain activities with the objective of creating net value, building a competitive infrastructure, leveraging worldwide logistics, synchronizing supply with demand, and measuring performance globally.

# Data vs Information



Data - facts and statistics **collected** together for reference or analysis



Information - facts provided or **learned** about something or someone

# Business planning levels



Common business issues

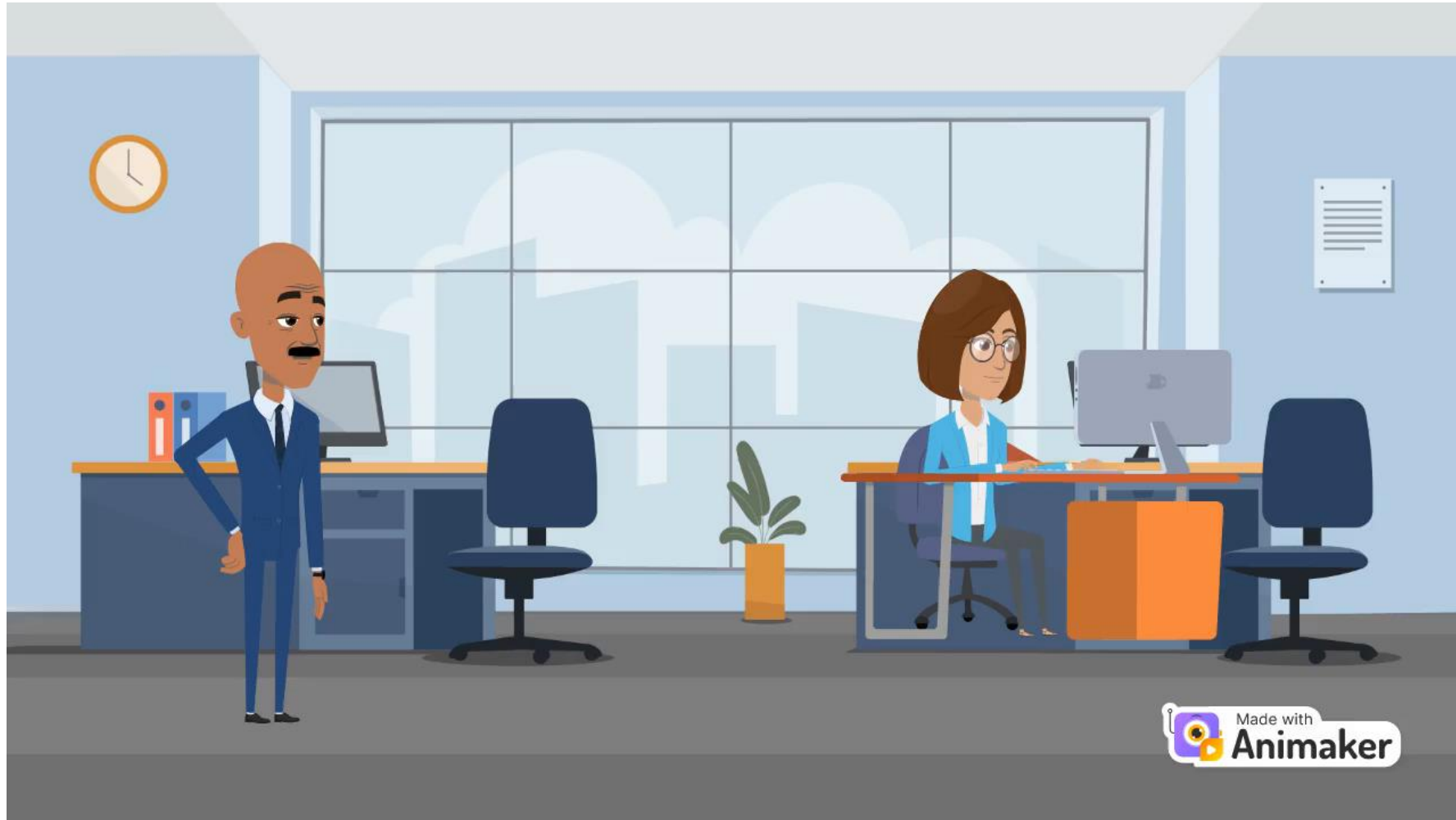
High lost sales  
High working capital  
High transport cost  
Low resource throughput

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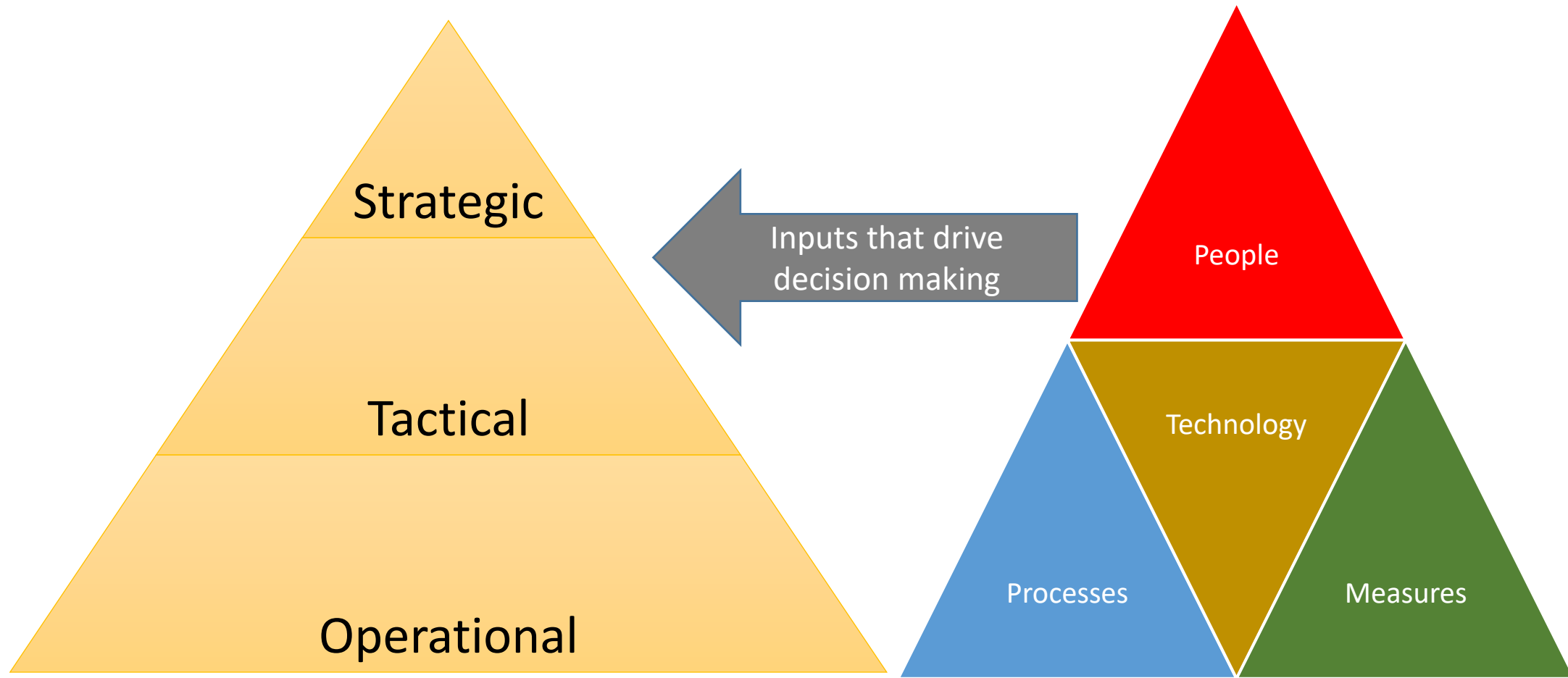
- Strategic, tactical, and operational alignment
- Measures are aligned with business drivers and objectives
- Processes drive continuous improvement
- People are motivated and focused on value-adding activities
- Technology creates visibility that drives proactive action



# Why did I choose this topic?



# Business planning levels and its verticals



# Data sources





# Data sources



-  ERP
-  WMS
-  CRM
-  TMS

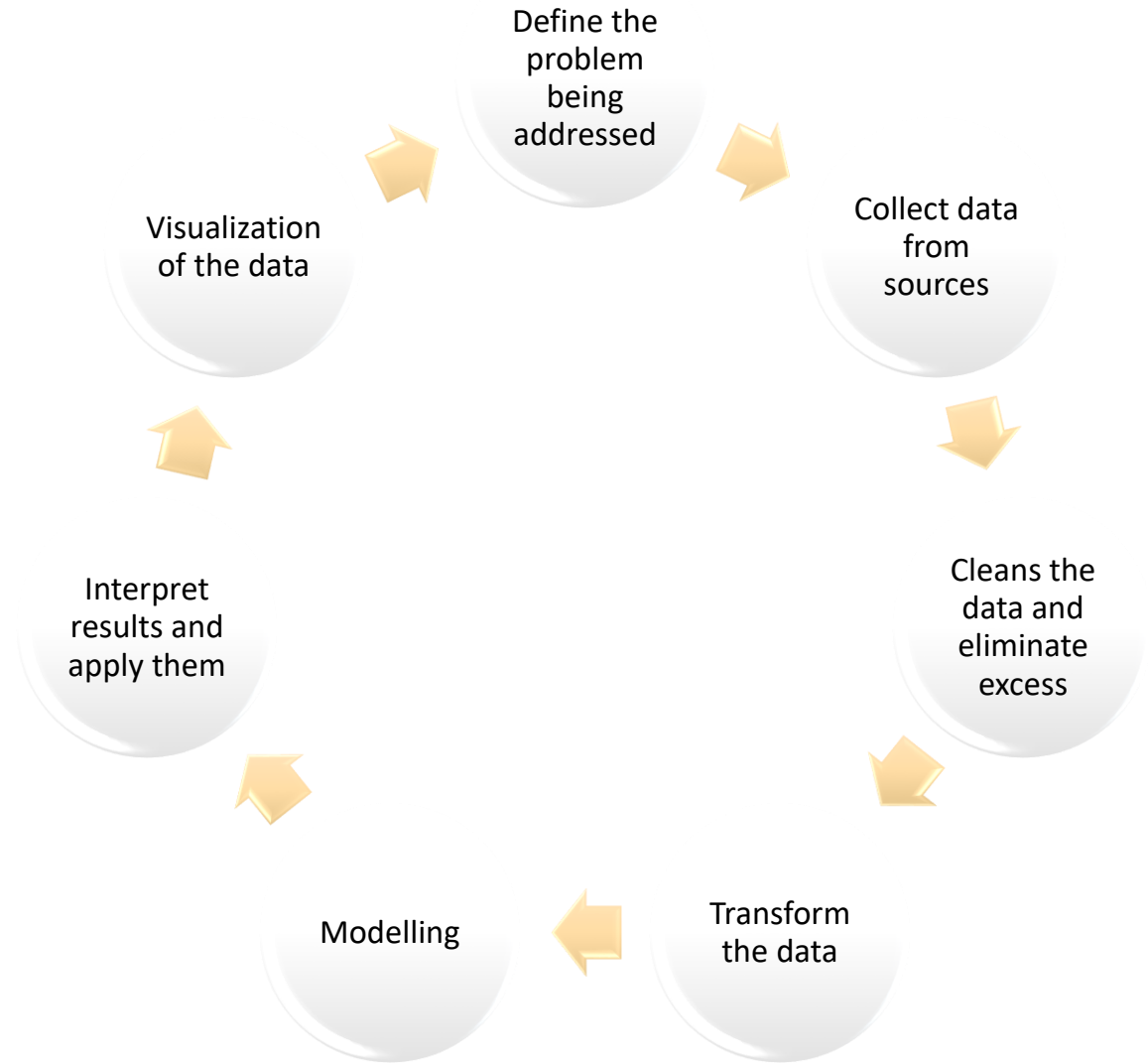
Data Insights

# What is data analytics?

Data analysis is the process of examining and **evaluating** data in order to **draw conclusions, answer questions**, and make **informed decisions**.

It involves cleaning, organizing, and analysing data in order to identify patterns, trends, and relationships.

Data analysis techniques can be used to gain insights into a business, product, or market, and to provide an understanding of people's behaviour and preferences.



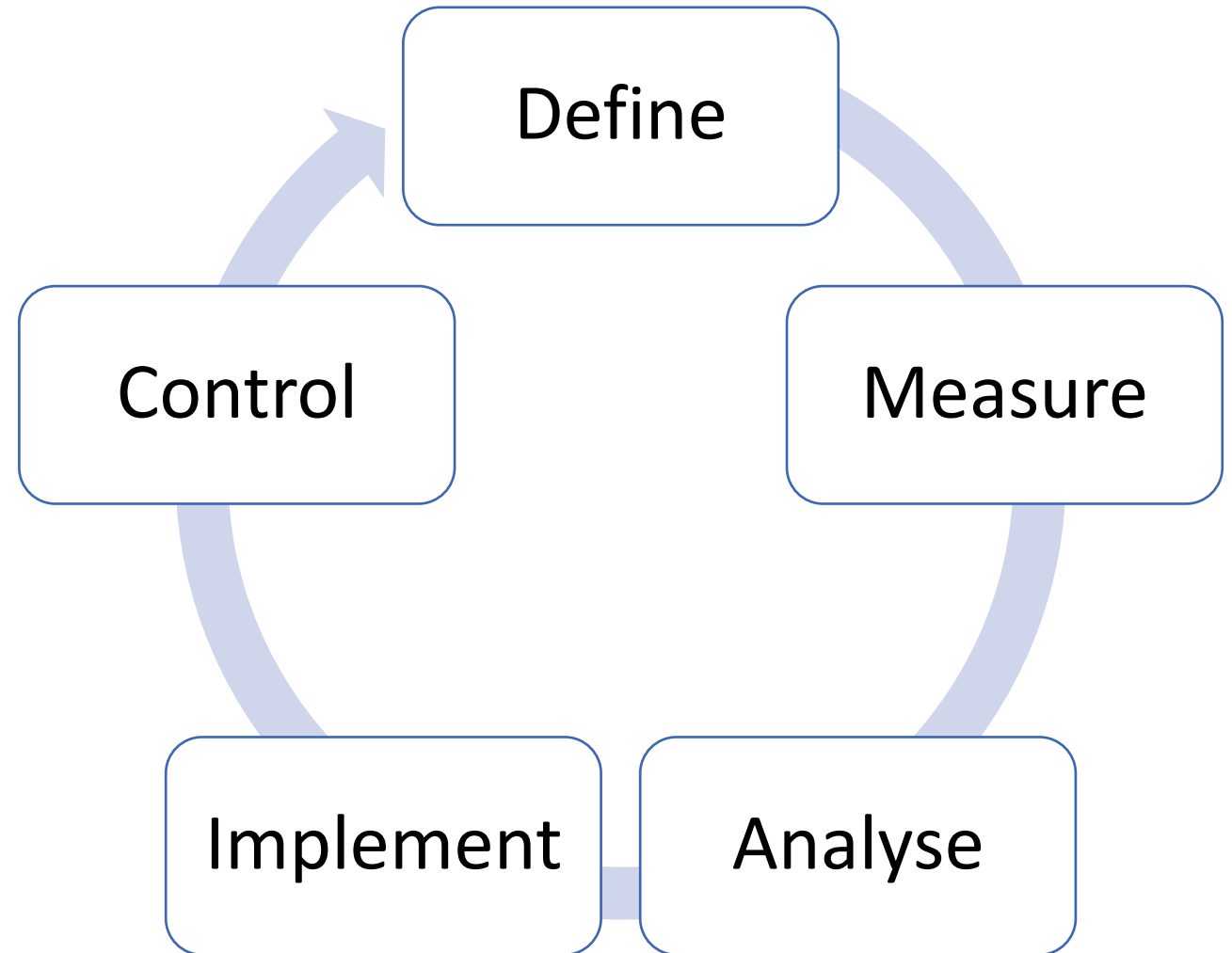
# LEAN six sigma methodology

## ASCM definition:

A methodology that combines the improvement concepts of lean and six sigma. It uses the seven wastes of lean and the DMAIC process from six sigma.

## Lean 7 wastes:

- Transport
- Inventory
- Motion
- Processing
- Waiting
- Overproduction
- Defects



Data analytics cycle	Six Sigma		
Define the problem	Define		
Collect data			
Cleanse data and eliminate excess		LEAN Wastes	Data wastes
Transform data		Transport	
Modelling	Measure	Inventory	How many information systems are employed in the value chain?
Interpret results	Analyse		
Visualise the data	Implement	Motion	
	Control	Processing	Having multiple spreadsheets calculating the same result.
		Waiting	Data processing time is lengthy
		Overproduction	
		Defects	Reworking the results of a data collection process.

# Achieving high process efficiency

Merging the continuous improvement and data analysis cycles is a powerful way to achieve high process efficiencies.

**Continuous improvement** involves a cycle of analysing performance data, identifying areas for improvement, implementing changes, and monitoring the results.

**Data analysis**, on the other hand, involves gathering, organizing, and analysing data to uncover patterns and trends.

When combined, these two cycles create a **powerful feedback system** that helps **identify areas of improvement** and **measure the effectiveness of changes**. This helps organizations increase the efficiency of their processes by reducing waste and optimizing how resources are used.

Additionally, it can help organizations identify potential opportunities for process improvement, allowing them to stay ahead of the competition.

# Achieving high process efficiency





# Gartner's magic quadrant

Gartner's magic quadrant lists the most impactful tools for data analysis, as of February 2018. There are several tools available in this space but only 3 listed as visionary leaders quadrant namely:

- **Tableau** – which requires specialised skills in programming and modelling
- **Qlik** – also a tool that requires specialised programming and certified skills
- **Microsoft** – provides a user-friendly, cheap platform, that is easy to grasp.



# Cost comparison

## Baseline time spent

<u>Activity</u>	<u>Hours</u>	<u>Rate</u>	<u>Cost</u>
Data sourcing	32	500	16000
Data cleansing	16	500	8000
Data transformation	8	500	4000
Analyse and visualise	16	500	8000
	<u>72</u>		<u>36000</u>

## Post implementation

<u>Activity</u>	<u>Hours</u>	<u>Rate</u>	<u>Cost</u>
Data sourcing	32	500	16000
Data cleansing	1	500	500
Data transformation	1	500	500
Analyse and visualise	2	500	1000
	<u>36</u>		<u>18000</u>

## Project cost

<u>Activity</u>	<u>Hours</u>	<u>Rate</u>	<u>Cost</u>
Development time	320	500	160000
		500	0
		500	0
		500	0
	<u>320</u>		<u>160000</u>

## Project long term saving

<u>Activity</u>	<u>Hours</u>	<u>Rate</u>	<u>Cost</u>
Baseline time spent	72	500	36000
Post implementation	36	500	18000
<b>Saving achieved</b>	<u>36</u>		<u>18000</u>
Project			
Development time	320	500	160000
	<u>8,89</u>		

# Conclusion

- Create awareness about the amount of data gathered daily and understand what is useful and what is not.
- We have established that there is a lot of data being generated and collected on a monthly bases within the supply chain. The problem statement must be well defined and the deliverables thought through so that the project effort is directed into value-adding activities.
- Explaining the flow of data from the myriad of information systems to create insightful reports.
- There are several information systems being used within the business to enable the flow of information up and downstream in the supply chain. These systems provide business function-specific information which is integral to executive decision-making.
- Merging the continuous improvement and data analysis cycles to achieve high process efficiencies.
- The fine art of finding synergy between continuous improvement and data analytics cycles can unlock high process efficiency.
- Saving achieved through investing in data analytics outweigh the cost associated with the development.
- The initial development of the solution will be the highest portion of the total cost of the project. Once the solution is in place, middle and senior staff should have time to focus their energy on value-adding actiities.

# Questions

Thank you