Dashboarding

An approach by Merkle

Joyce Thomas

14-11-2019

Even voorstellen..

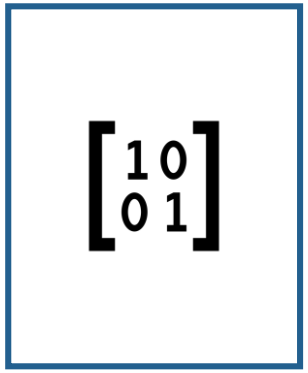
Joyce Thomas

Data Scientist in Team **Insights**

Dashboarding & Reporting **Data Consultancy** **Advanced Analytics** **Technology**

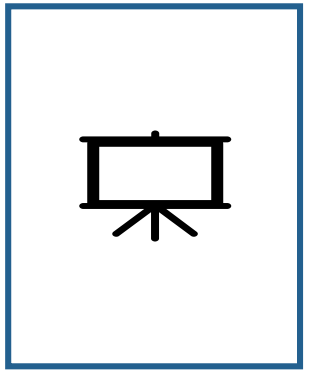
MERKLE

Reporting & Dashboarding



Data

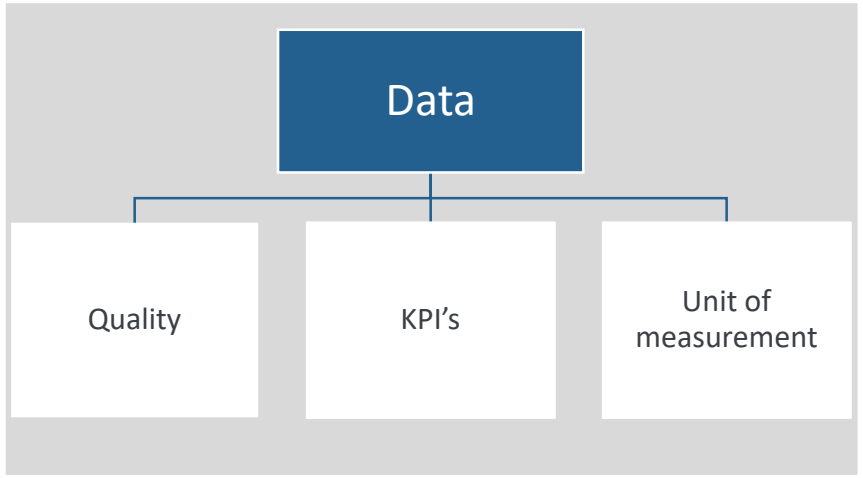
Users

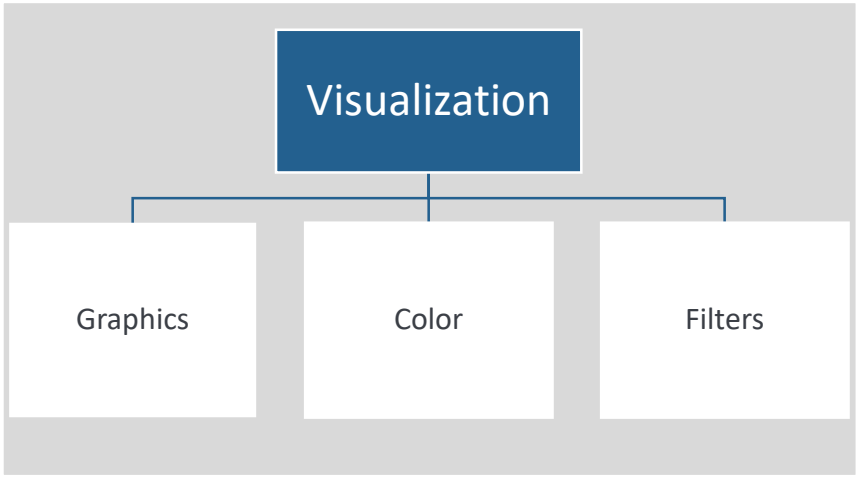


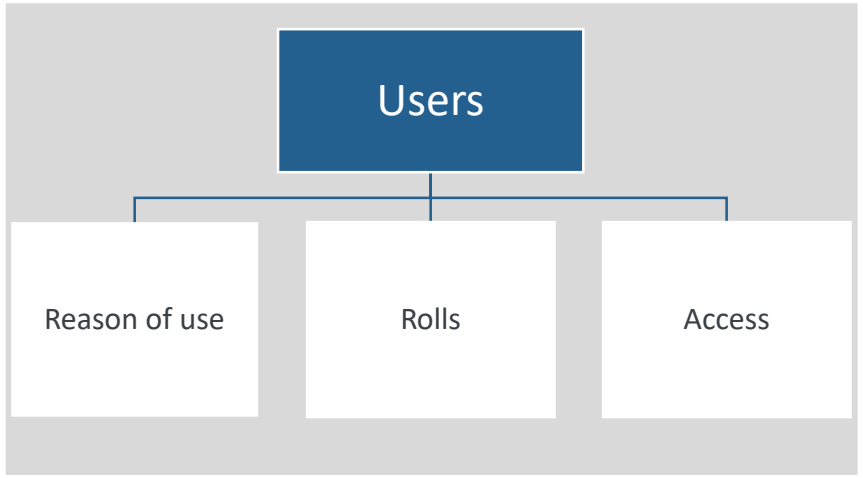
Visualization

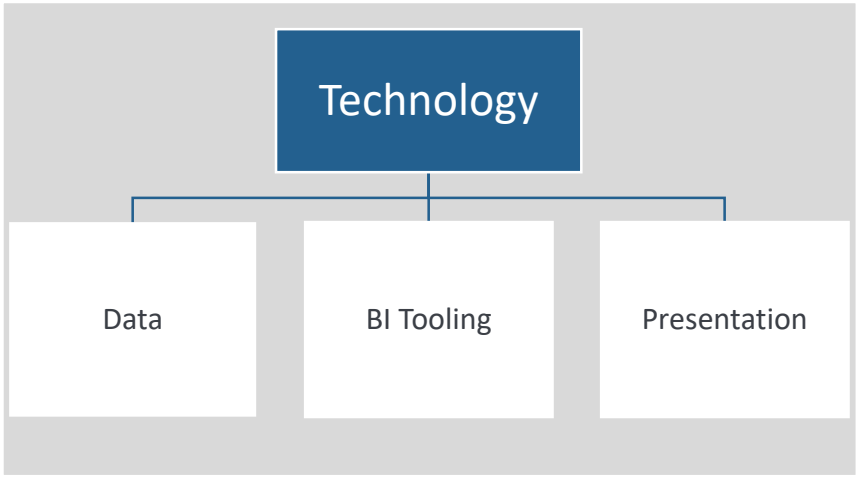
Technology

Foundation of dashboarding

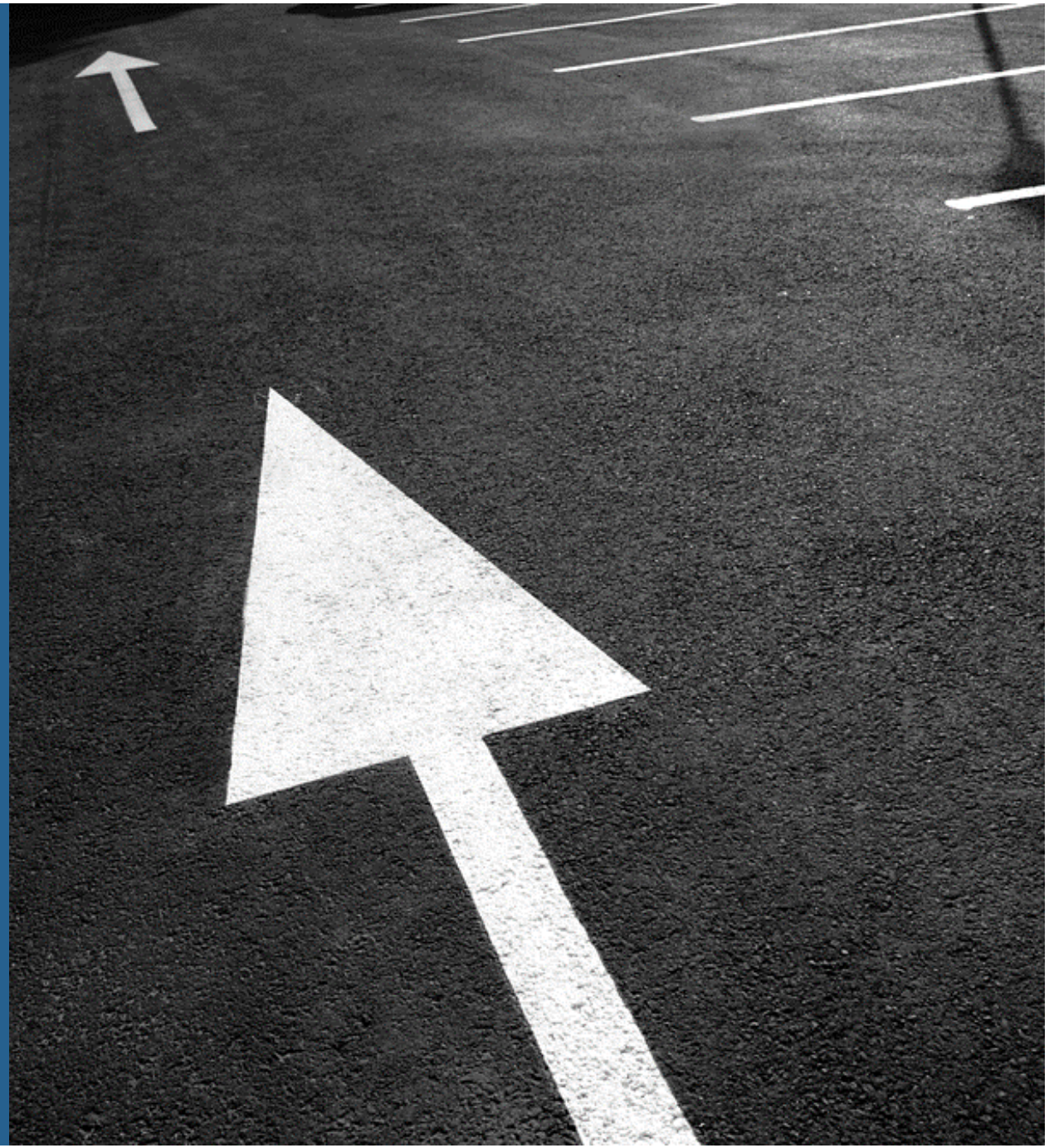




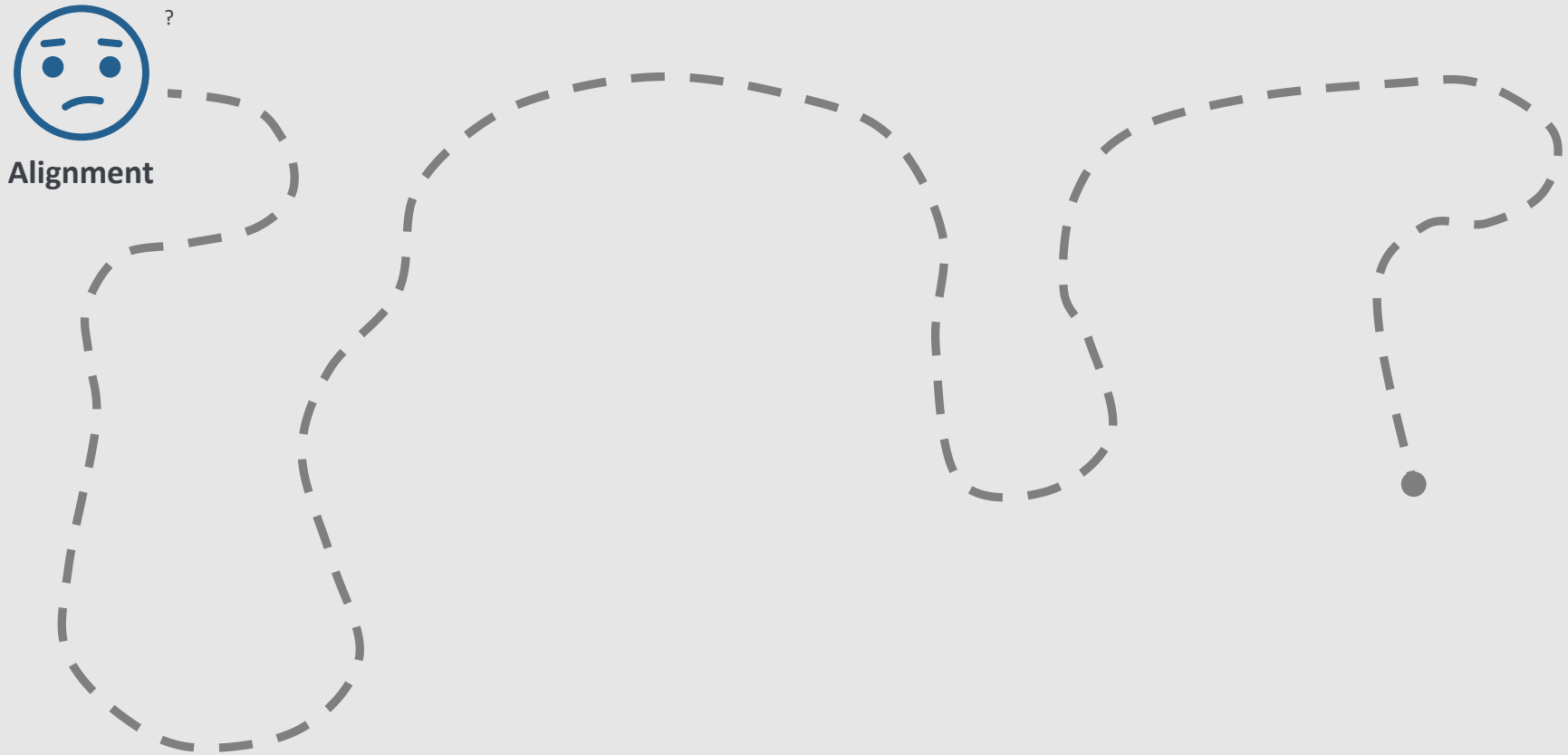




Roadmap –
“From data to dashboards”



Roadmap

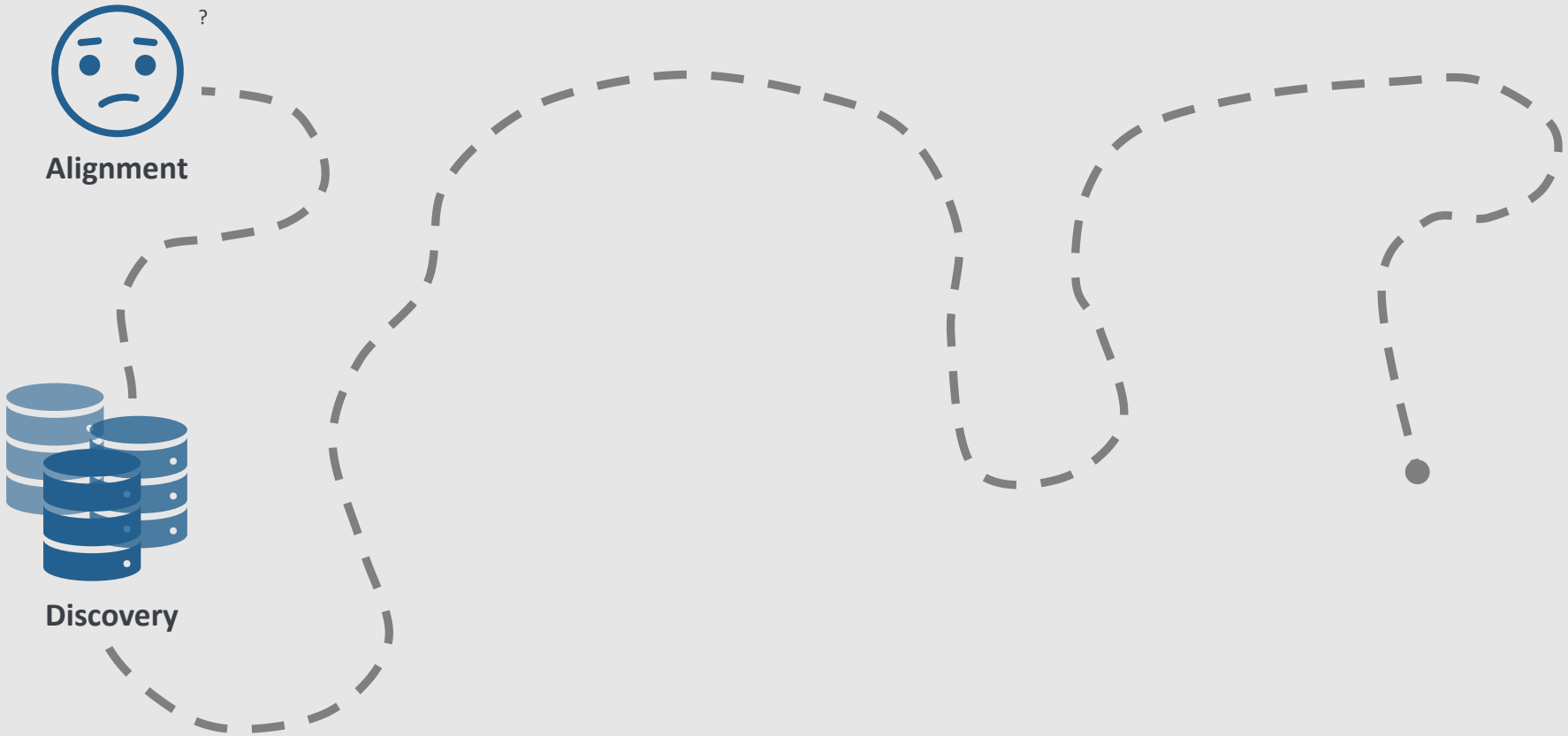


“From data to dashboards”

Frustrated?

- Your campaign is not performing good, but why?
- In what area are the sales high?
- And what is a potential are for increasing sales?
- Why are certain stores lagging behind the rest?

Roadmap



“From data to dashboards”

Discover the data

Availability

- Is the data you need available?

Accessibility

- How accessible is the data?
- Is all data coming from the same source?

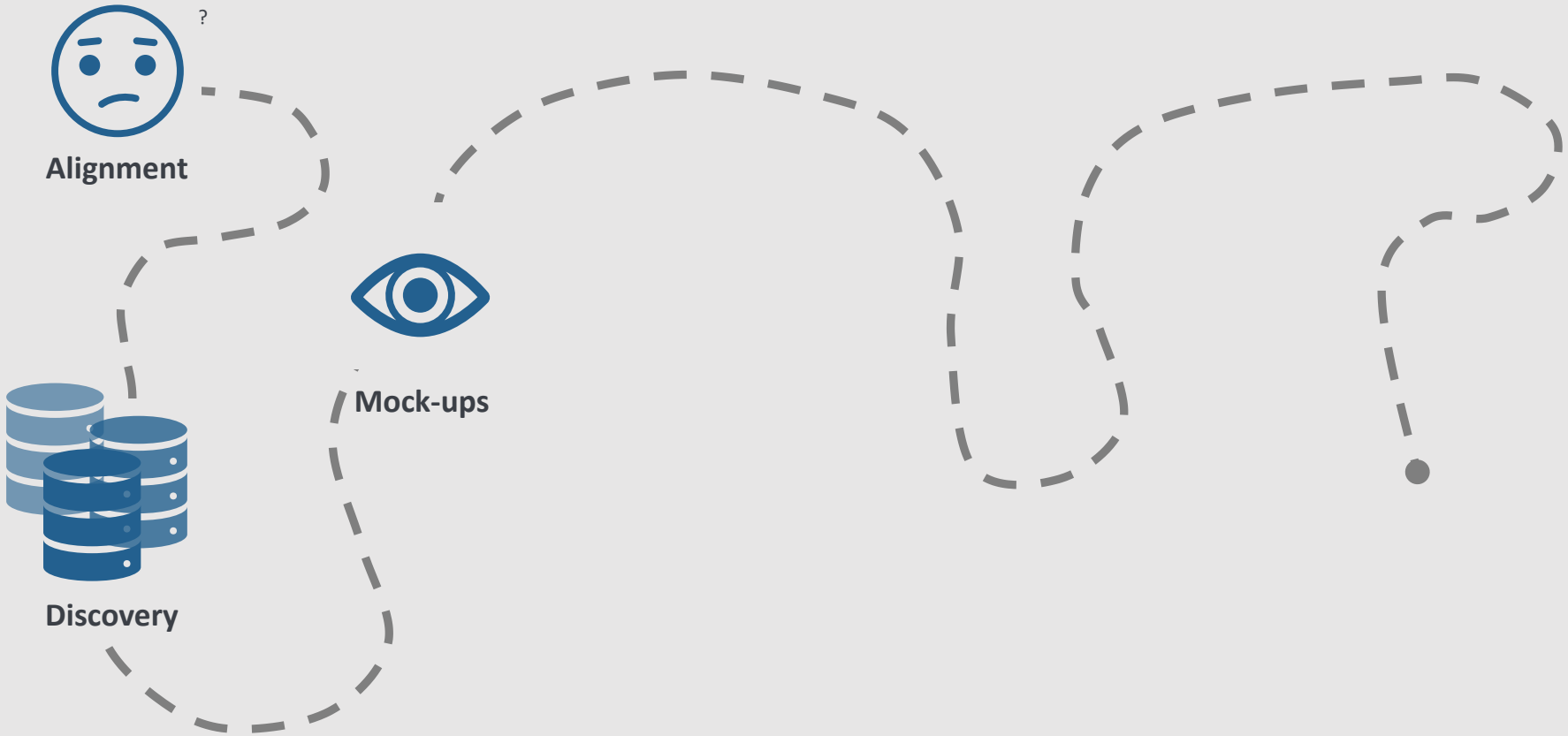
Functional

- Can you answer the questions in the storyboard?
- Can assumptions be made if data is missing?
- Does there exist a logical funnel in the data?

Technical

- What is the quality and quantity of the data?
- Which keys are available in the data?
- Can we automate the supply of data?

Roadmap



“From data to dashboards”

MERKLE

1 Audience

2 Story

3 Chart and color usage

4 White space

5 Filters

1) Choose your chart

What would you like to show?

categories · time · part to whole · distribution · geospatial · relationship · 6 exact value

categories

- barchart — one measure
- grouped bar — two variables
- diverging stacked bar — opposing variables
- deviation bar — delta between
- floating bar — delta between
- stacked bar — one category + total
- panel bar — multiple categories
- lollipop — like bar but thinner
- dumbbell — two groups
- proportional — sizing
- x/y coordinate plot — measure combination
- vertical waterfall — visual calculation
- bullet graph — bad/ok/good
- parallel coordinate — multi variate data
- pictograph — using icons
- wordcloud — not recommended
- radial column — not recommended
- radial bar — not recommended
- radar chart — not recommended
- gauge — not recommended

time

- line chart — continuous time
- dot-line chart — aggregated in time
- area chart — one measure
- column chart — one measure
- stacked column — like column + total
- stacked area — like area + total
- deviation column — above or below target
- deviation line — versus cumulative target
- waterfall — change in time
- timeline — order of events
- sparklines — mini trend
- slopegraph — two time stamps
- dot plot — before and after
- cycle plot — repeating time series
- horizon graph — high and low

part to whole

- 100% stacked bar — one categorie + 100%
- 100% stacked column — one timestamp + 100%
- 100% stacked area — continuous time + 100%
- 100% bar chart — adding up to 100%
- 100% stacked bar — category in time
- 100% stacked column — multiple categories
- Sankey diagram — flow
- waffle chart — 100 blocks filled
- tree map — nested part to whole
- 100% waterfall — breakdown
- parallel set — part to multiple whole
- Marimekko chart — plus extra variable
- nested area — parts inside other parts
- Pareto chart — 80 / 20 analysis
- pie chart — not recommended
- donut chart — not recommended

distribution

- dot matrix — frequency count
- age distribution — two categories
- histogram — per interval
- frequency polygon — distribution
- error bars — uncertainty
- box plot — with median
- violin — box plot + density
- ridgeplot — distributions over time
- number — single big number
- table — multiple numbers
- deviation box — focus on delta
- in bar labeling — more accuracy

geospatial

- route map — direction
- symbol map — classes
- flow map — movement
- chloropeth map — value by region
- isopleth map — value by area
- dot map — distribution
- hexbin map — value by hex
- bubble map — not recommended
- chart on map — not recommended

relationship

- funnel chart — conversion
- Venn diagram — overlapping
- flow chart — step by step
- Gantt chart — planning
- organization chart — hierarchical
- arc diagram — relations
- bump chart — rank over time
- sorted stream graph — rank + size over time
- heatmap — use color to show
- network diagram — relations + hierarchie
- risk map — visualizing risk
- scatterplot — correlation
- dendrogram — clustering
- sunburst — nested groups
- chord diagram — relations
- bubble — not recommended

exact value

Use this chart for: analysing · communicating · monitoring · confusing

2) Design your chart

Let your data speak

do's

Show in context

Rank your data in a relevant way so patterns and outliers become visible.

relevant ranking

Enrich you chart with target or benchmarks, to give the values more meaning.

target or benchmark

Support easy comparison

When you have more than 4 series, change you chart to small multiples.

small multiple

Gridlines make it easier to compare length of columns and bars and help to see the steepness of lines.

gridlines

Visual hierarchy

De-emphasize all non-data elements like axis and legend. The data is more important.

less is more

Highlight the most important element, to make it stand out.

emphasize

Show and tell

Create a title to name the insight in the chart.

descriptive title

Labels and annotation help your data to tell a story.

annotation

don'ts

Misleading design

A truncated axis in a column or bar-chart distorts the relative size of the columns

cutting of Y axis

Multiple Y-axis give a false meaning to lines crossing or to the space between lines.

multiple Y axis

Beauty over accuracy

Do not use 3D to make a chart prettier, it will make it harder and more confusing to read.

3D effect

Although fluid lines might look nicer, they are not representing the data properly.

fluid lines

Too much

The human brain can only process a maximum of 4 series in a chart.

more than 4 series

Things that are the same, should have the same color

too much or meaningless color

Hard to read

Show as little decimals as possible.
Always show the same number of decimals.

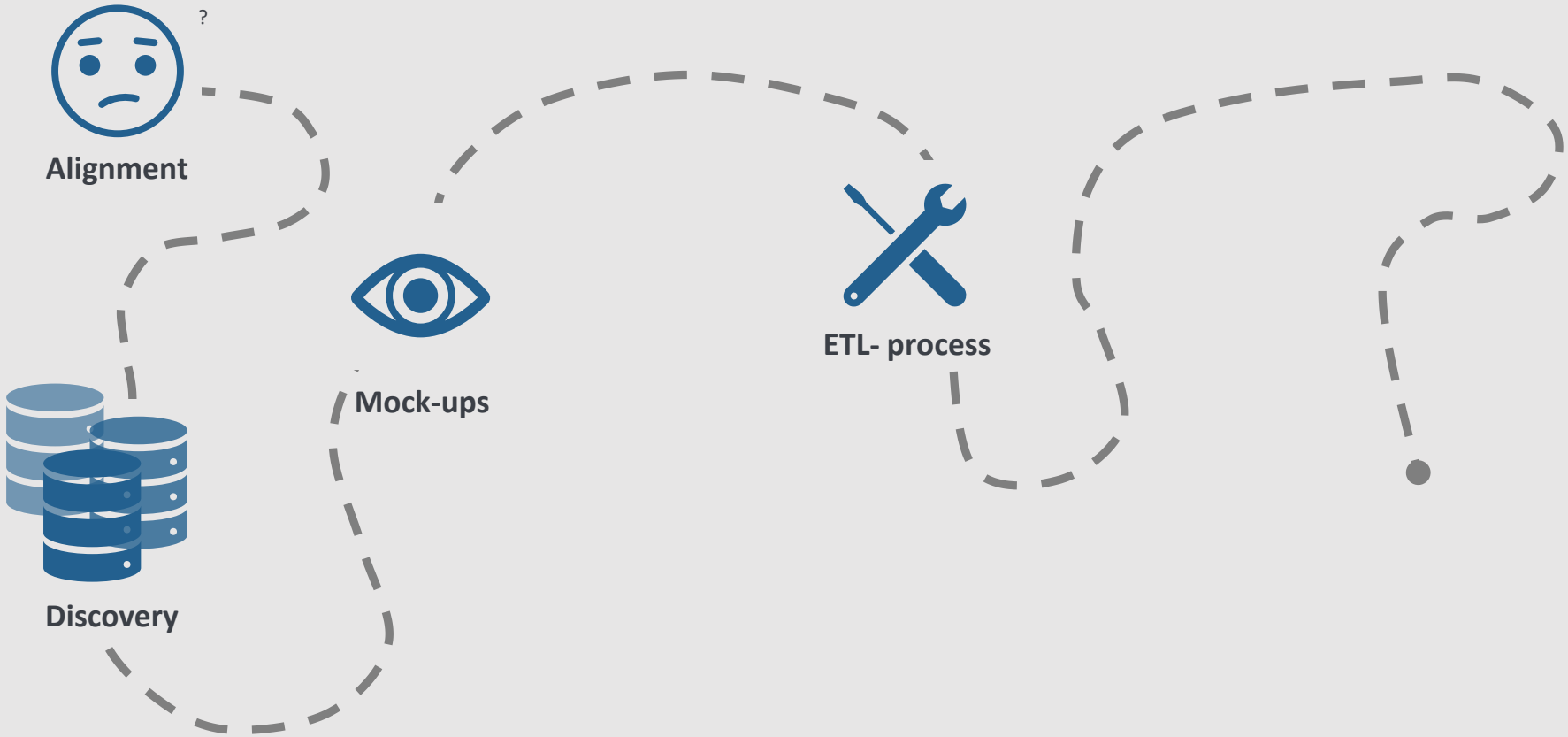
too much details

Text and numbers that are not horizontal aligned are harder to read.

align text other than horizontally

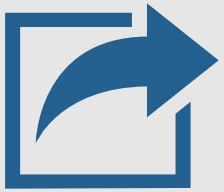
info@Chart.Guide · /ChartGuide · @Chart_Guide · /ChartGuide

Roadmap



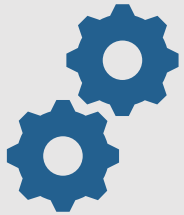
“From data to dashboards”

ETL-proces



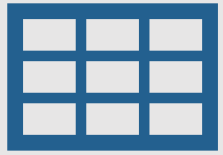
Extracting

Different systems / separate excel files to one data warehouse



Transforming

Inconsistent data / 10% of fields consist data / data deduplication



Loading

Data should be in appropriate format for BI tooling

Data Warehouses

- How advanced is the BI tooling itself?
- What do you want to spend on a DWH?
- Can you automate processes within the DWH?

Source: Gartner (January 2019)

Inconsistency

New York

New-York

NY

Brooklyn

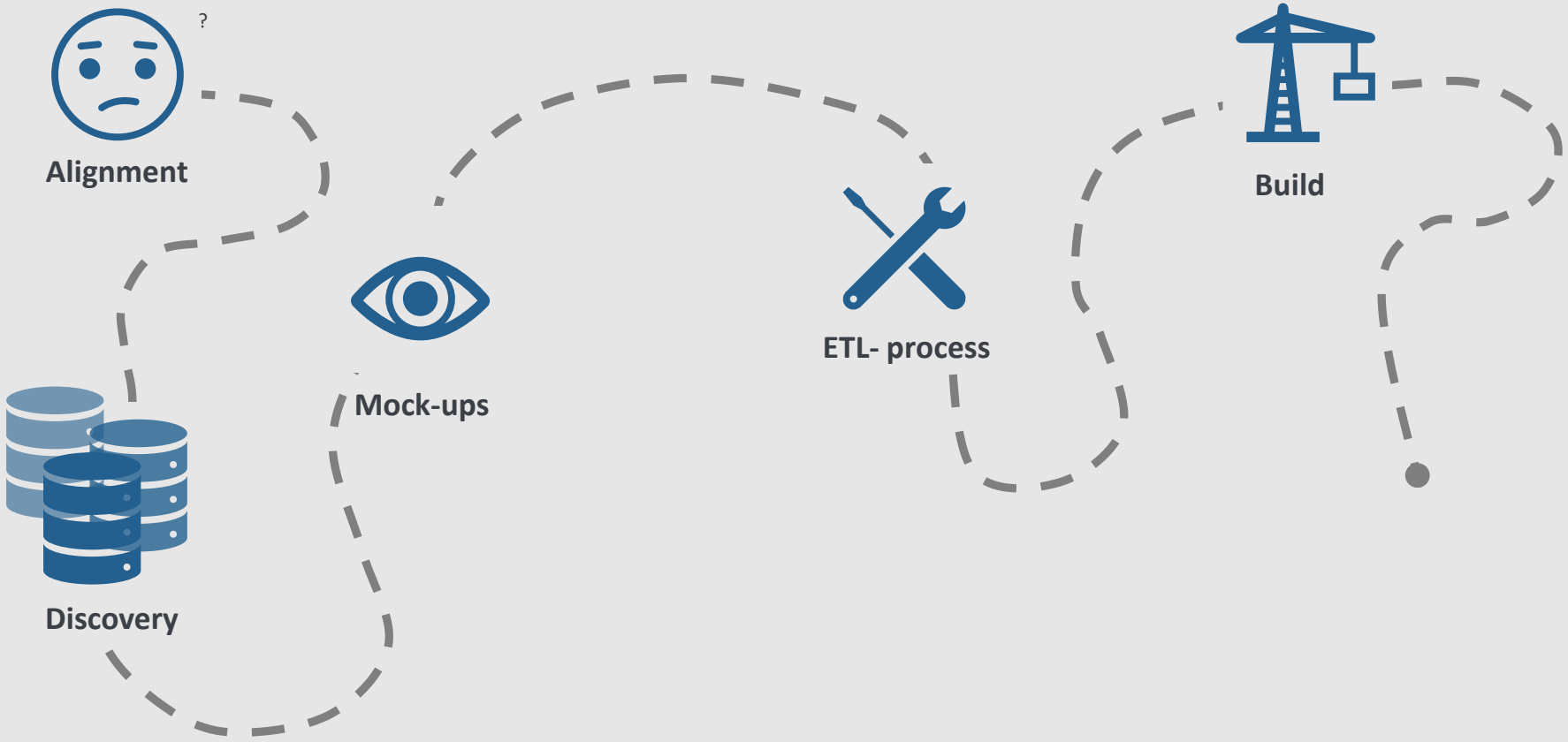
Nieuw York

Manhattan

newyork

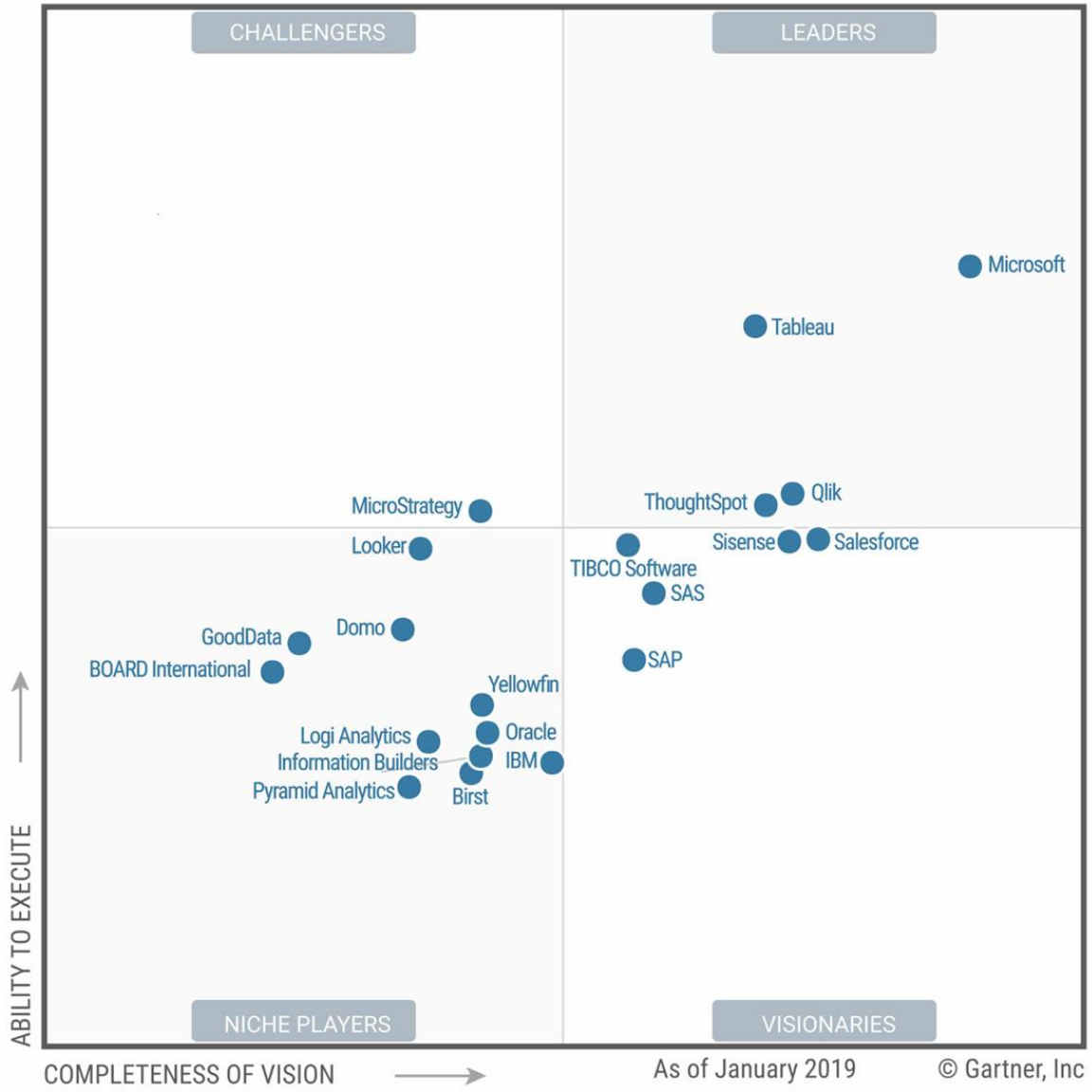
NEW YORK

Roadmap



“From data to dashboards”

The best BI tooling



Source: Gartner (February 2019)

Power BI

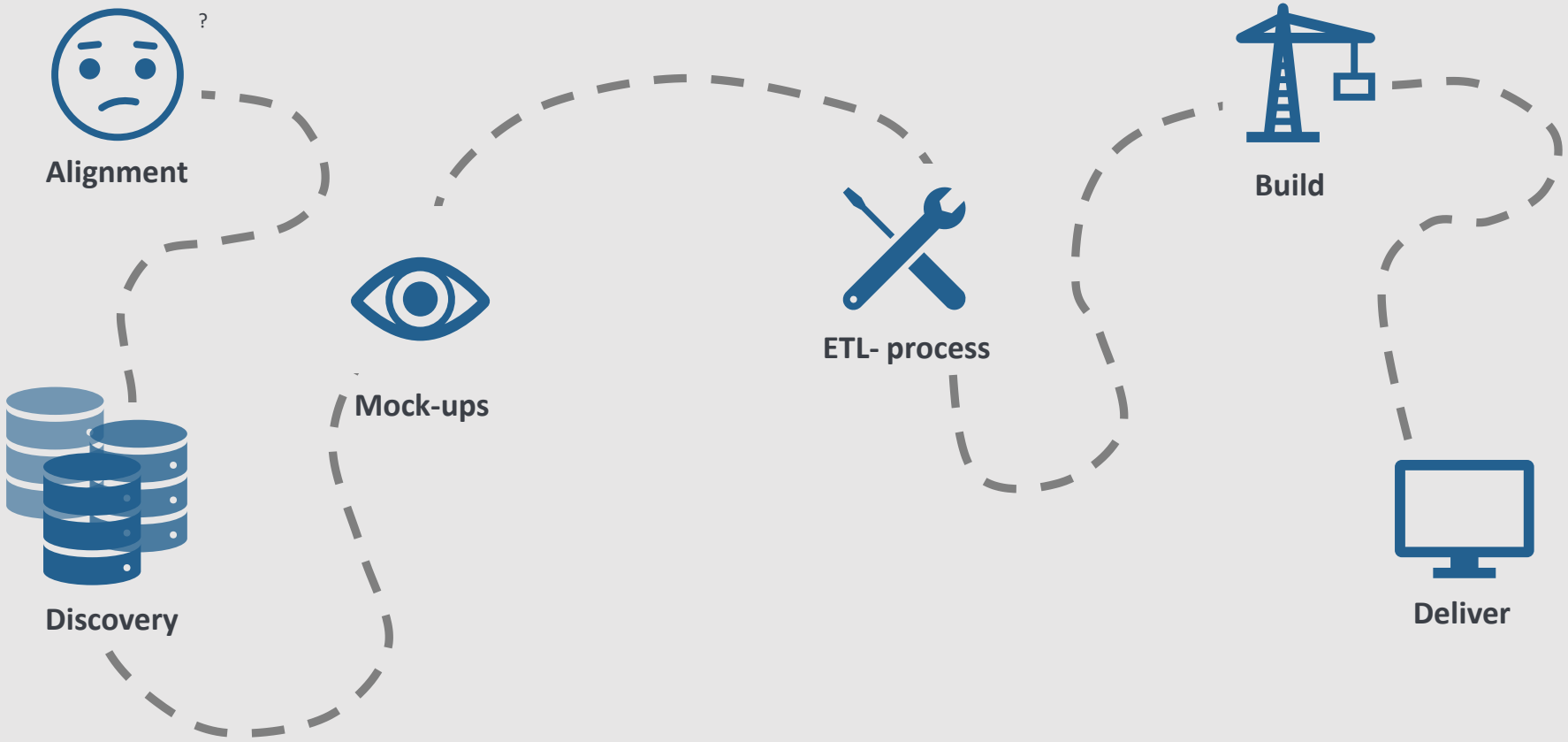
tableau

Qlik® Sense

ThoughtSpot

MERKLE

Roadmap



“From data to dashboards”

Storytelling

Dashboard

Sheet

Object

THANK YOU

MERKLE