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Road to agile data science in 12 steps

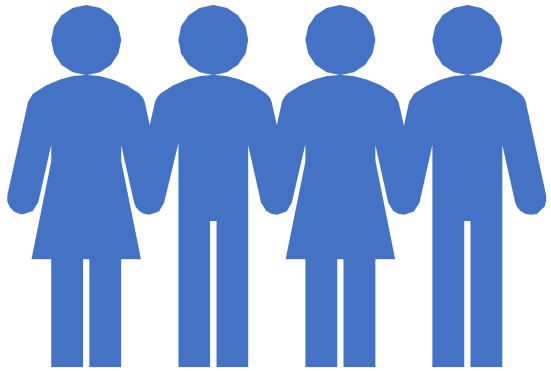
Steps of the path

TEAM COLLABORATION	ACTIVITY DEFINITION	TOOLS AND TECHNIQUES
1 Proceed in small steps	5 Shape backlog items	9 Adopt tools for communication
2 Establish roles and collaboration	6 Define user story lifecycle	10 Adopt tools for coding
3 Mitigate gaps	7 Shape user stories	11 Adopt tools for deployment
4 Establish delivery rhythm	8 Have fully-fledged user stories	12 Define testing strategy

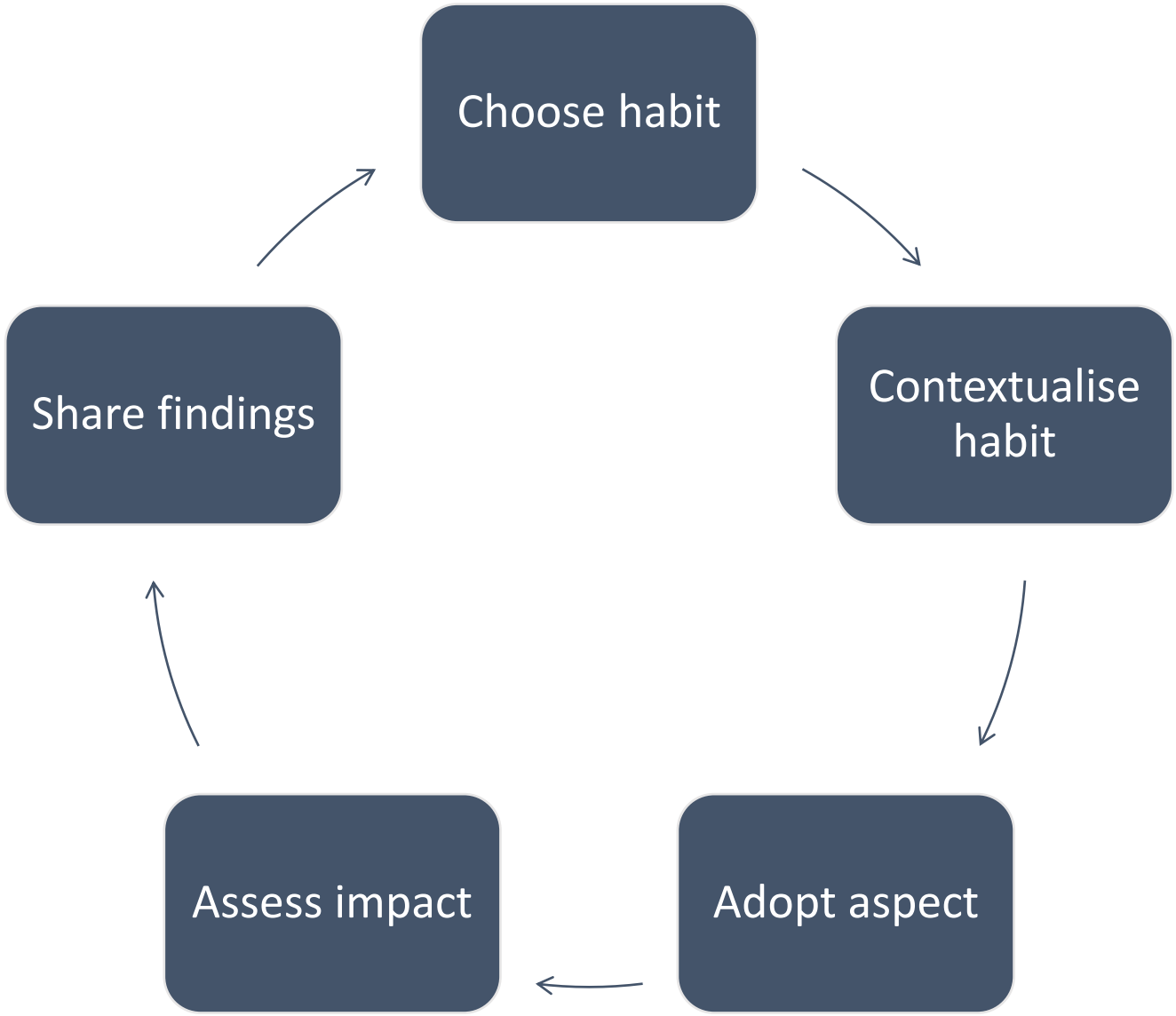
1 Proceed in small steps

Why small steps

- New team members
- Team not ready to work agile
- Agile methodology not fully understood



Process to adopt new habits



2 Establish roles and collaboration

Principles for team collaboration

FIT BROADER PROGRAMME APPROACH

UNDERSTAND INDIVIDUALS RATHER THAN ROLES

ESTABLISH KEY PLAYERS AND COLLABORATION

Examples of interactions with key roles

Product owner	identify personas and actions
	explain how insights trigger actions
Scrum master	establish delivery rhythm
	track progress
Tech team	onboard data
	define deployment collaboration

3 Mitigate gaps

Common gaps

strategy vs use cases

- understand strategic goal
- define tactical goal
- define analytical objective

solution vs value

- understand target value
- define required information
- define how to produce the information

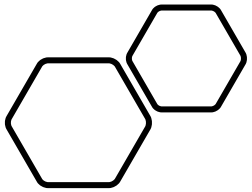
science vs engineering

- understand deployment requirements
- define activities
- define team collaboration

Solution vs value: example of value explanation

Completeness	Performance	Transparency
• More data • Complex patterns	• Measure accuracy • Improve accuracy	• Explain logic • Explain results

4 Establish delivery rhythm

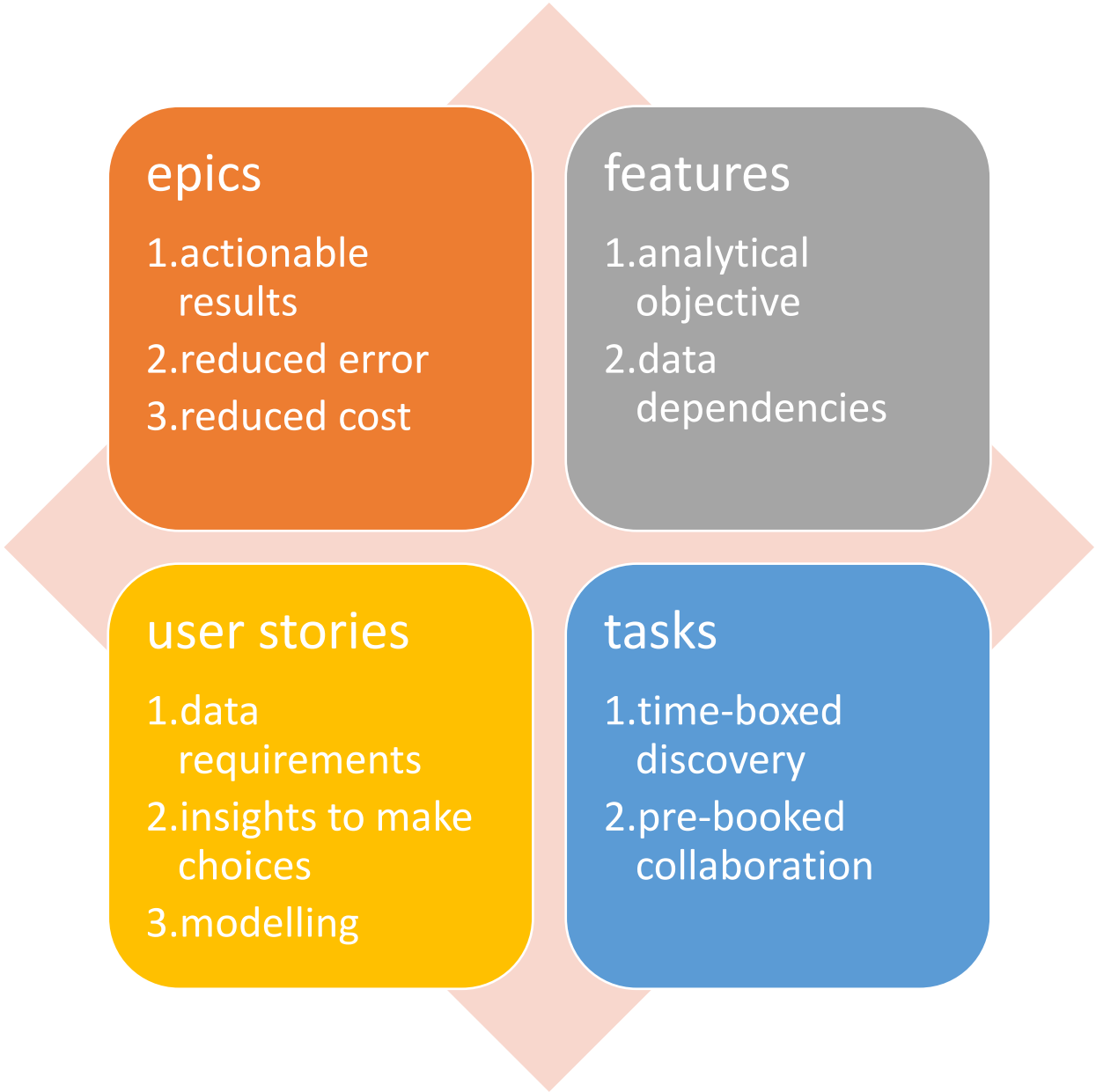


Delivery habits

- targeted checkpoints
- time-boxed activities
- smaller transaction

5 Shape backlog items

Data science aspects in backlog items



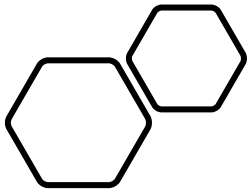
6 Define user story lifecycle

Contextualise TDSP process

UNDERSTAND TEAM COLLABORATION

DEFINE ACTORS

ALIGN TO OBJECTIVES



User story lifecycle

Solution modelling

- Business discovery
- Analytical discovery
- Technical discovery

Analytical delivery

- Data wrangling
- Analytical discovery
- predictive modelling

Technical delivery

- Wrangling deployment
- Modelling deployment
- Integration and testing

7 Shape user stories

Attributes of user stories

Definition

- Key user
- Purpose
- Outcome

Acceptance criteria

- Qualitative rather than quantitative
- Technical quality
- Communication

Sizing

- Depending on the category
- Time-boxed tasks

Types of user stories - example

Solution modelling

- Define objective
- High-level choices

Data wrangling

- Define data preparation
- Get the data

Analytical discovery

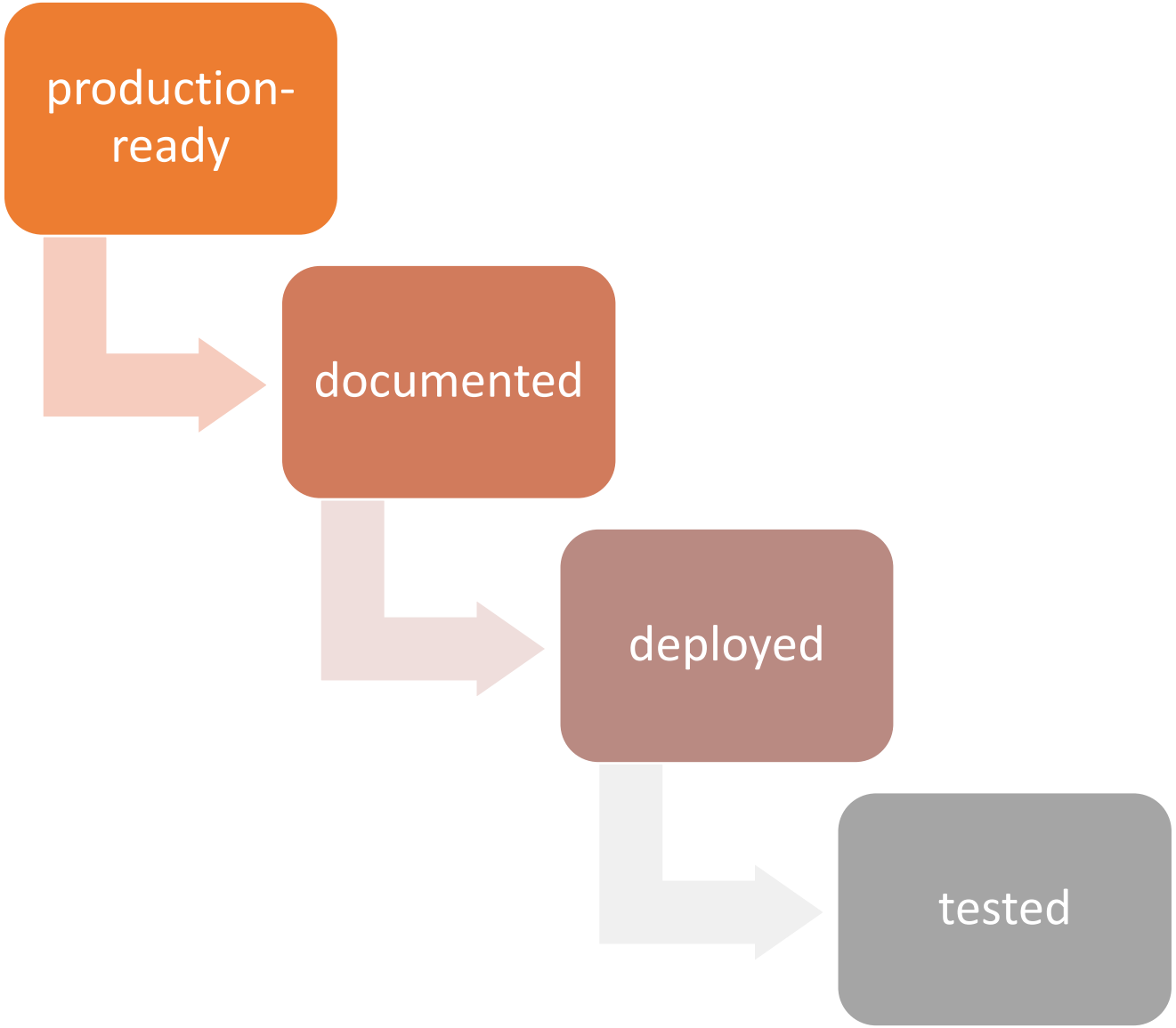
- Insight-driven choices
- Modelling draft

Data modelling

- Full data modelling
- Code ready for production

8 Have fully-fledged user stories

Steps to have complete user stories



9 Adopt tools for communication

Tools for communication

Documentation

- Modelling choices
- Insight-driven choices

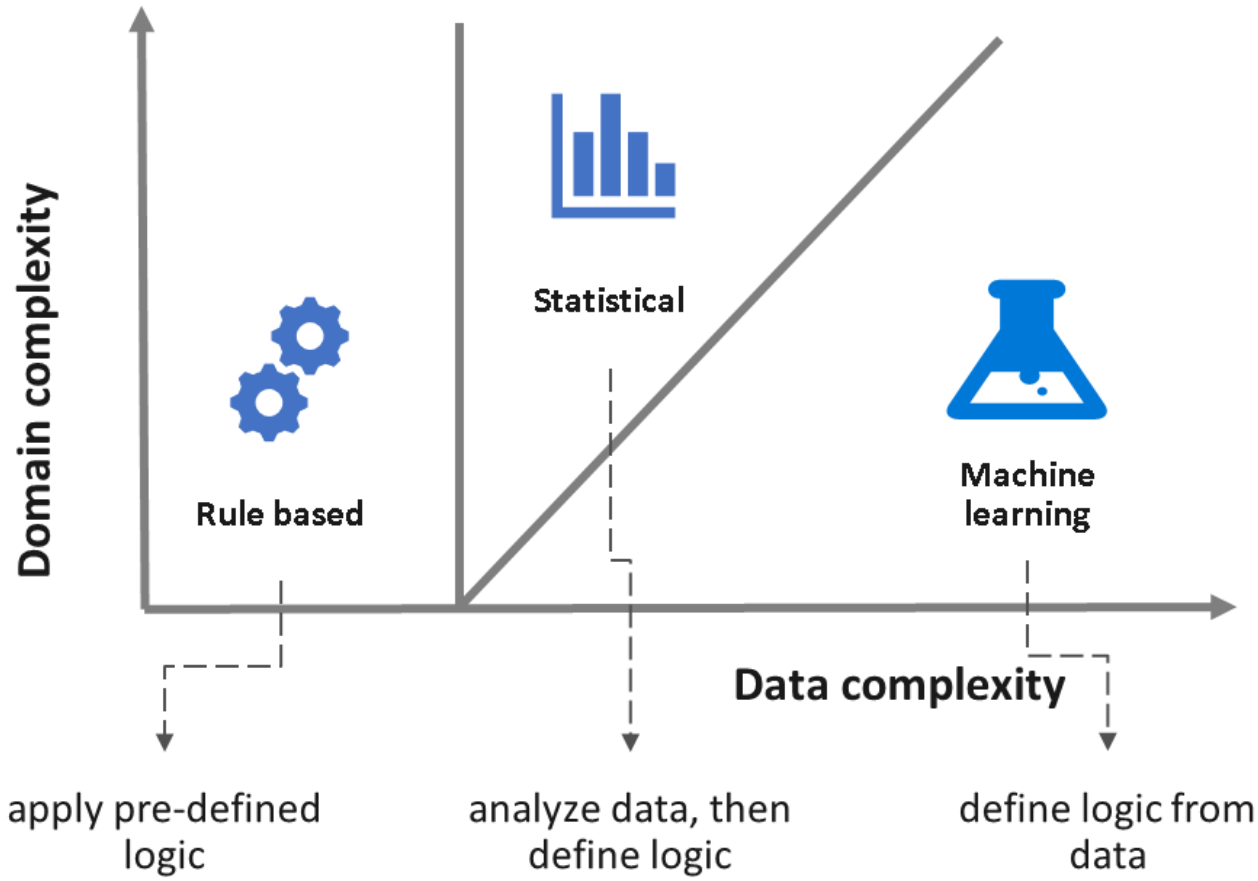
Performance KPIs

- Action-related KPI
- Regularly update

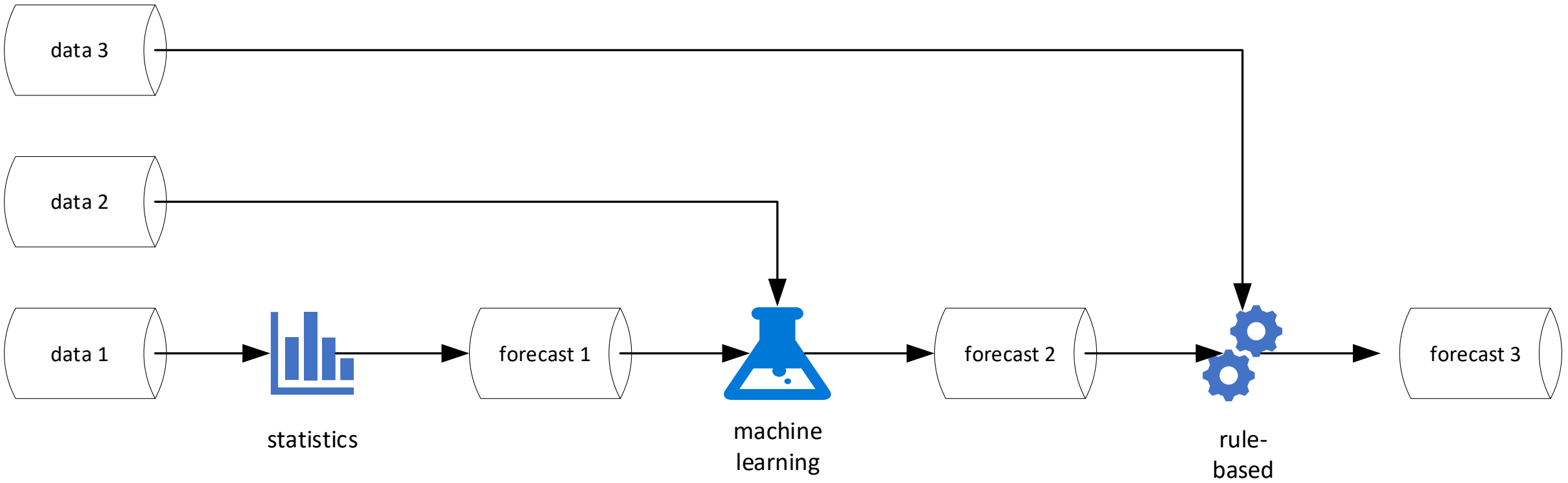
Result explanation

- Analytical flow
- Interpretability

Example: modelling choices



Example: analytical flow



10 Adopt tools for coding

Coding tools

Coding practices

- Code structuring
- Naming convention

Documentation

- Code documentation
- Technical documentation

Tools on Azure

- Machine Learning SDK
- .

11 Adopt tools for deployment

Example of tooling for deployment

Machine Learning Service

Azure DevOps pipelines

MLOPS reference architecture

12 Define testing strategy

Path to testing strategy adoption

01

Create separate testing user stories

02

Include testing as part of the acceptance criteria

03

Design tests as per the acceptance criteria