



From DevOps To DataOps

Data as a Product

資料專案教戰守則

ATHEMASTER CO., LTD.

DevOps, MLOps, DataOps

Anna Yen

About
Anna Yen



炬識科技總經理

臺灣資料工程協會常務理事

資訊與數據領域經驗逾 20 年

金融業資料專案經驗逾 7 年

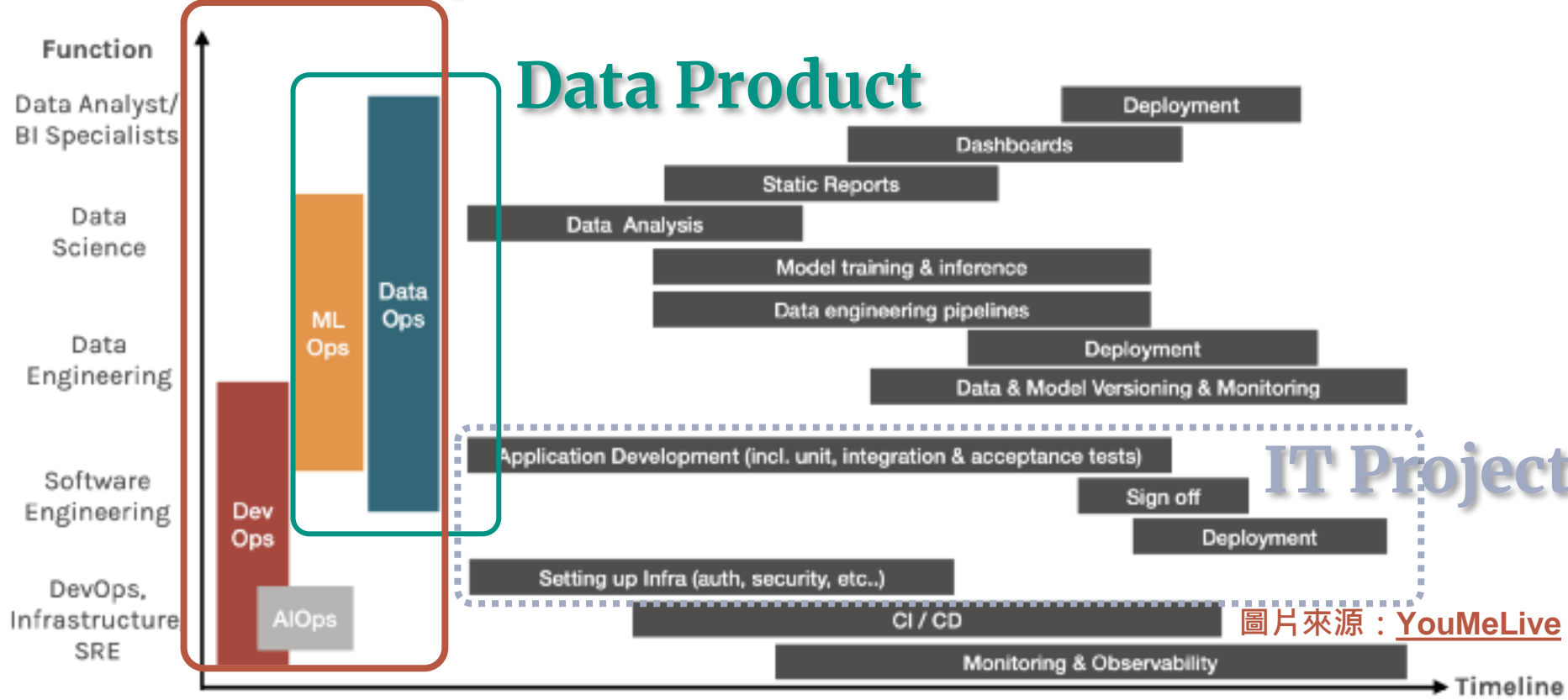
資安認證(ISO27001 LA)

專案管理認證(PMP)(CSPO)

大數據認證(CCAH)

What are
DevOps, MLOps,
DataOps
and Data Product, Data Project

Data Project



圖片來源: [YouMeLive](#)

Data Project Guide

Anny Bai



Anny

My
Data Project
Experience

Industry

Data

Destinate Data Product

Retail

Transaction, Commodity, Member and Activity Data

Derived Data Pipeline

Retail

POS Transaction Data

Derived Data Pipeline

Retail

Population, Geographic and Competitive Data

Decision Support Interactive Dashboard

Retail

Commodity, Activity, Member and Purchase Record Data

Consumer Personalized Recommendation Interactive Website

Financial

Consumer Persona, Customer Profile and Customer Purchase Record Data

Consumer Purchasing Behavior Analysis Interactive Website

Financial

Transaction and Customer Data

Derived Data Pipeline

Manufacturing

Manufacturing Machine and Production Data

Derived Data Pipeline

Manufacturing

Machine Status Data, Material Usage Data and Production Record Data

Yield Analysis Report

What Is
Data Product
We Called

“
A product whose primary objective is to use data to facilitate an end goal.

(Simon O'Regan, 2018: [Designing Data Products](#))

”

“
Data products are products which solve problems with data.

(everill.peter, 2022: [An intro to Data Products](#))

”

What Is
Data Project
We Are Going To Introduce

Data Project

Whose

Primary Objective

Is to

Deliver **Data Product**

Whose

Primary Objective

Is to

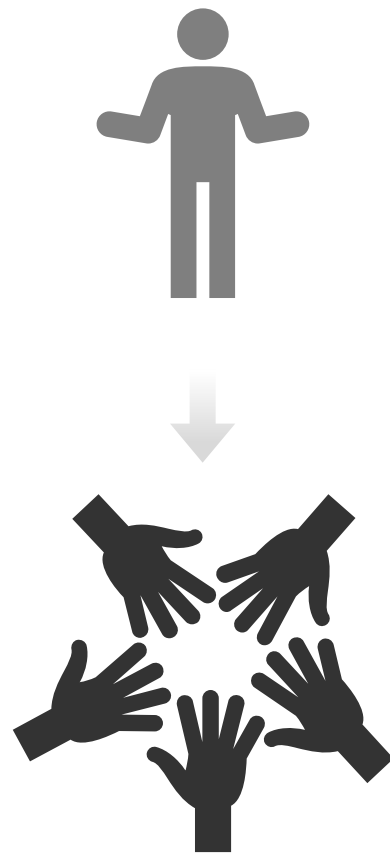
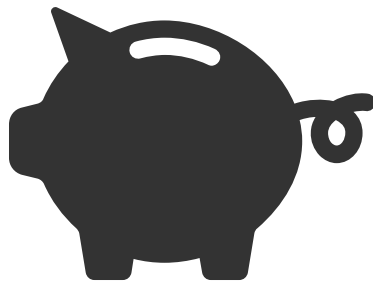
Use Data to Facilitate an End Goal

**Three
Most Asked
Questions**

WHY ALWAYS CHANGING REQUESTS?

WHY ALWAYS DELAYING?

WHY ALWAYS SUFFERING?



Before We Start...

Waterfall / Agile
Business Objective
Data Project Scale
Data Product Type
Platform

Three
Dimensions
of
Data Project

5



Stages

6



Roles

7



Checkpoints

5



Stages

6



Roles

7



Checkpoints

1 Build a Team

① Members and Roles List



2 Draw Up Information Exchange Protocol

- ① Communication Tools
- ② Collaboration Tools
- ③ Knowledge base management Tools



3 Design

Data Products

- ① Description of Data and Data Relation
- ② Data Flow Charts and Data Lineage Maps
- ③ Required Features List
(Includes Data Processing Rules)
- ④ Design documents
- ⑤ Test cases



4 Develop

Data Products

- ① Development Schedule and Task Division
- ② Test Results



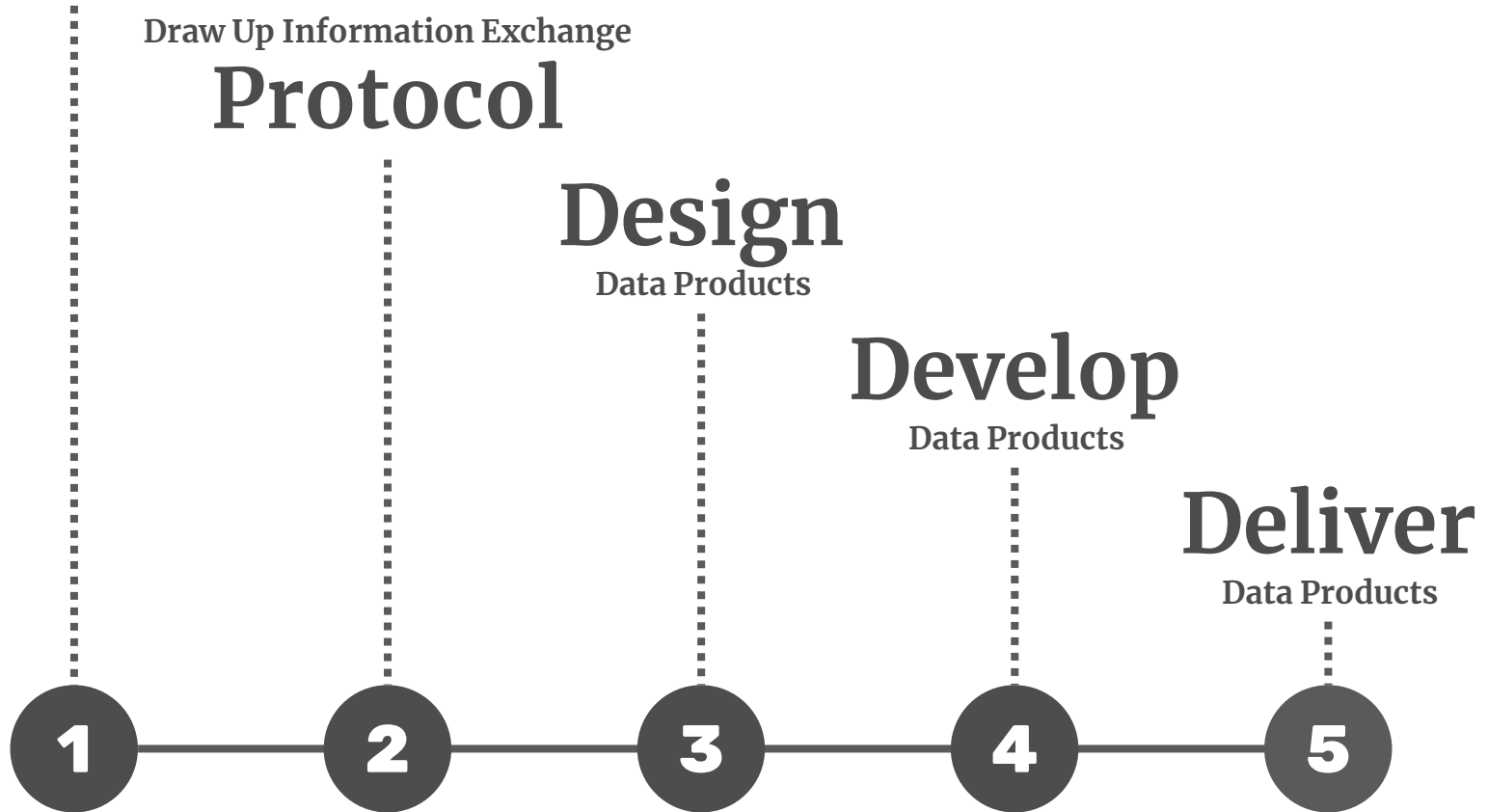
5 Deliver

Data Products

- ① Deploy Workflow
- ② Deployment
- ③ Gather Feedback



Build a
Team



A large, bold, dark grey number '5' is centered over a solid grey circle. The number is slightly offset to the left and top, creating a layered effect.

Stages

A large, bold, dark grey number '6' is centered over a solid light green circle. The number is slightly offset to the left and top, creating a layered effect.

Roles

A large, bold, dark grey number '7' is centered over a solid grey circle. The number is slightly offset to the left and top, creating a layered effect.

Checkpoints

Who Owns the Data Product

- Leading Position
- Planning and Decision-Making



Goals



Features



Benefit



Preventing
Risk

Who Is the User of Data Product

- ☛ Use the Output
- ☛ Confirm Data Scope Meets Business Objective
- ☛ Finding Unqualified Data

Who Defines the Data

- ✦ Defines Data
- ✦ Explains Data Definition
- ✦ Managing Data
- ✦ Have Right to Authorize

Who Operates the Data Product

- ✦ Operates and Maintains
- ✦ Proposing Requirements
- ✦ Serve Normally and Stable

Who Develops the Data Product

- Designing Architecture and Framework
- Implementing Features

Who Is the Sysadmin of the Platform Where Data Product Is Deployed

- System Criterion
- Coordinates Between Different Platforms

Who **Owens** the Data Product

Who Is the **User** of Data Product

Who **Defines** the Data

Who **Operates** the Data Product

Who **Develops** the Data Product

Who Is the **Sysadmin** of the Platform Where Data Product Is Deployed



5

Stages



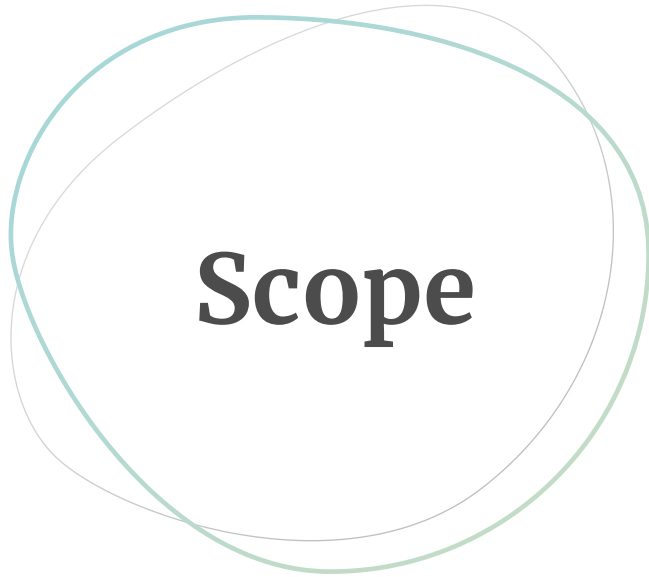
6

Roles



7

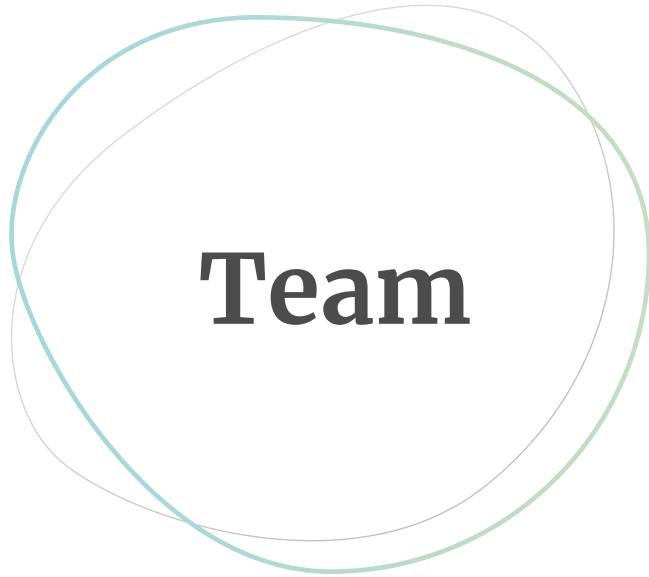
Checkpoints



Scope Change?

Check:

- 🍃 User stories
- 🍃 Test cases
- 🍃 Data lineage
- 🍃 Data processing rule
- 🍃 Data flow and exchanging behavior among relative systems



Team Change?

Check if the following situation exist:

- 🍃 Have to adjust member list
- 🍃 Have to assign new member to the role
- 🍃 Have to rebalance work loading



Task Division

Task Division Change?

Check if the following situation exist:

- Have to adjust tasks and assignees
- Have to assign new tasks to members



Schedule

Schedule Change?

Check:

- ✦ Project schedule
- ✦ Deliverable of project stage
- ✦ Participants of project stage



Risk Evaluation

Risk Evaluation Change?

Check if the following situation exist:

- ✦ Have to redo evaluation of risk
- ✦ Have to raise and evaluate new risk



Technical Cost

Technical Cost Change?

Check if the following situation exist:

- Training cost for new technique increase
- Operating and maintaining cost increase



Workflow

Workflow Change?

Check if the following situation exist:

- Have to shape new consensus for any workflow



Scope

Team

**Task
Division**

Schedule

**Risk
Evaluation**

**Technical
Cost**

Workflow

Three
Principles
of
Data Project

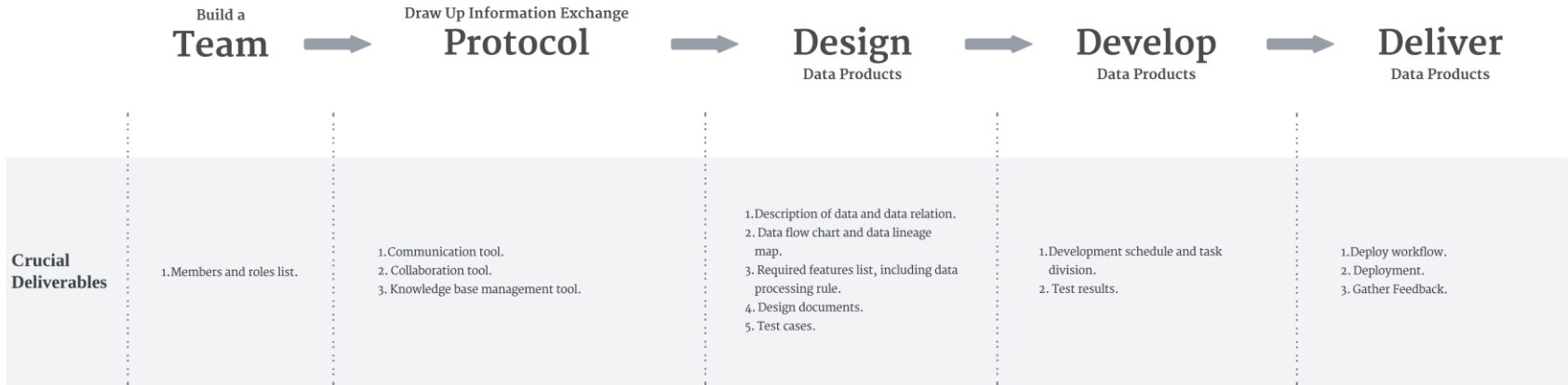
Information Transparency

Collaboration Friendly

Reasonable Schedule

Giveaways

5 STAGES OF DATA PROJECT



6 ROLES OF DATA PROJECT

<p>Who Owns the Data Product</p> <ul style="list-style-type: none">■ Who holds leading position during data products development and lifecycle.■ Responsible for planning and decision-making about data products' goals, features, benefit, and preventing risk.	<p>Who Is the User of Data Product</p> <ul style="list-style-type: none">■ Who has authority to use the output of data product.■ Responsible for confirming data scope meeting business objective and finding unqualified data from data product.	<p>Who Defines the Data</p> <ul style="list-style-type: none">■ Who defines source data or target data.■ Responsible for defining data, explaining data definition, managing data, and have right to authorize.
<p>Who Operates the Data Product</p> <ul style="list-style-type: none">■ Who operates and maintains data products.■ Responsible for proposing requirements related to operation and maintenance work and ensuring data products to serve normally and stable.	<p>Who Develops the Data Product</p> <ul style="list-style-type: none">■ Who designs and develops data product.■ Responsible for designing architecture and framework of data products and implementing features.	<p>Who Is the Sysadmin of the Platform Where Data Product Deploy</p> <ul style="list-style-type: none">■ Who manages, operates, and maintains the platform.■ Responsible for making sure data products complying with system criterion and coordinating behavior between different platforms.

7 CHECKPOINTS OF DATA PROJECT

Check the following points had been impacted or not when making decisions:

■ Scope Change?

- User stories of required features have been changed.
- Test cases of required features have been changed.
- Data lineage between source data and target data have been changed.
- Data processing rules between source data and target data have been changed.
- Data flows and exchange behaviors among relative systems had been changed.

■ Team Change?

- Have to adjust member list and arrange handover activities.
- Have to assign new member to the role.
- Have to rebalance members' existed work loading.

■ Task Division Change?

- Have to adjust tasks and assignees.
- Have to assign new tasks to team members.

■ Schedule Change?

- Project Schedule should be changed.
- Deliverable of project stages should be changed.
- Members who participate in the project stage should be changed.

■ Risk Evaluation Change?

- Have to redo evaluation of risk because of accordance had changed.
- Have to raise and evaluate new risk.

■ Technical Cost Change?

- Increase cost of training to learn new techniques or skills.
- Increase cost for operating and maintaining data products and relative systems.

■ Workflow Change?

- Any workflow has to review and renegotiate to reach new consensus.



Expiration Date | 2022-09-30

結語

數位轉型 工業社會進入資訊社會

科學家 發現法則，證明法則

工程師 利用法則，實現未來

THANK YOU

www.athemaster.com // info@athemaster.com