인공지능과 비즈니스

2020. 8. 1

윤 종 영

학기일정 (안)

W1 (7/4)	강좌소개 및 개요
W2 (7/11)	비즈니스 아이디어 구상과 발굴을 위한 문제 정리 및 분석
W3 (7/18)	사업 아이디어 타당성 검토 및 구체적 실행방안과 계획 수립
W4 (7/25)	데이터 전략 및 Prototyping 계획 수립
W5 (8/1)	시제품 제작

W6 (8/5)	중간발표
W7 (8/8)	UX 및 서비스 디자인 개선
W8 ( )	시제품 제작
W9 (8/22)	시제품 제작 완료
W10 (8/29)	프로젝트 최종발표

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일주일동안 어떻게 지내셨나요

Practical Artificial Intelligence

An Enterprise Playbook

Alan Pelz-Sharpe & Kashyap Kompella

Deep Publishing

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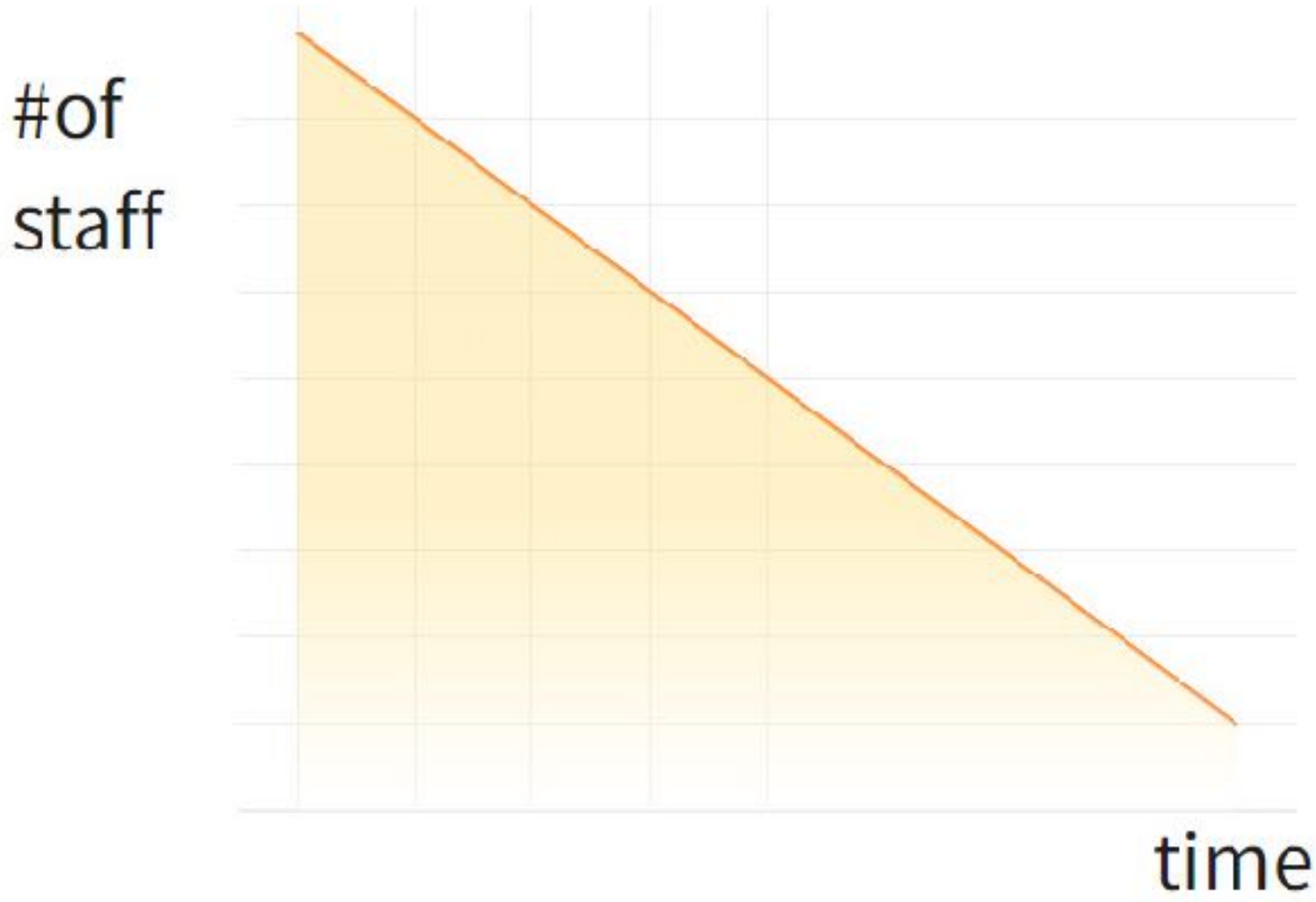
5. Running an AI Project

Finding AI Skills

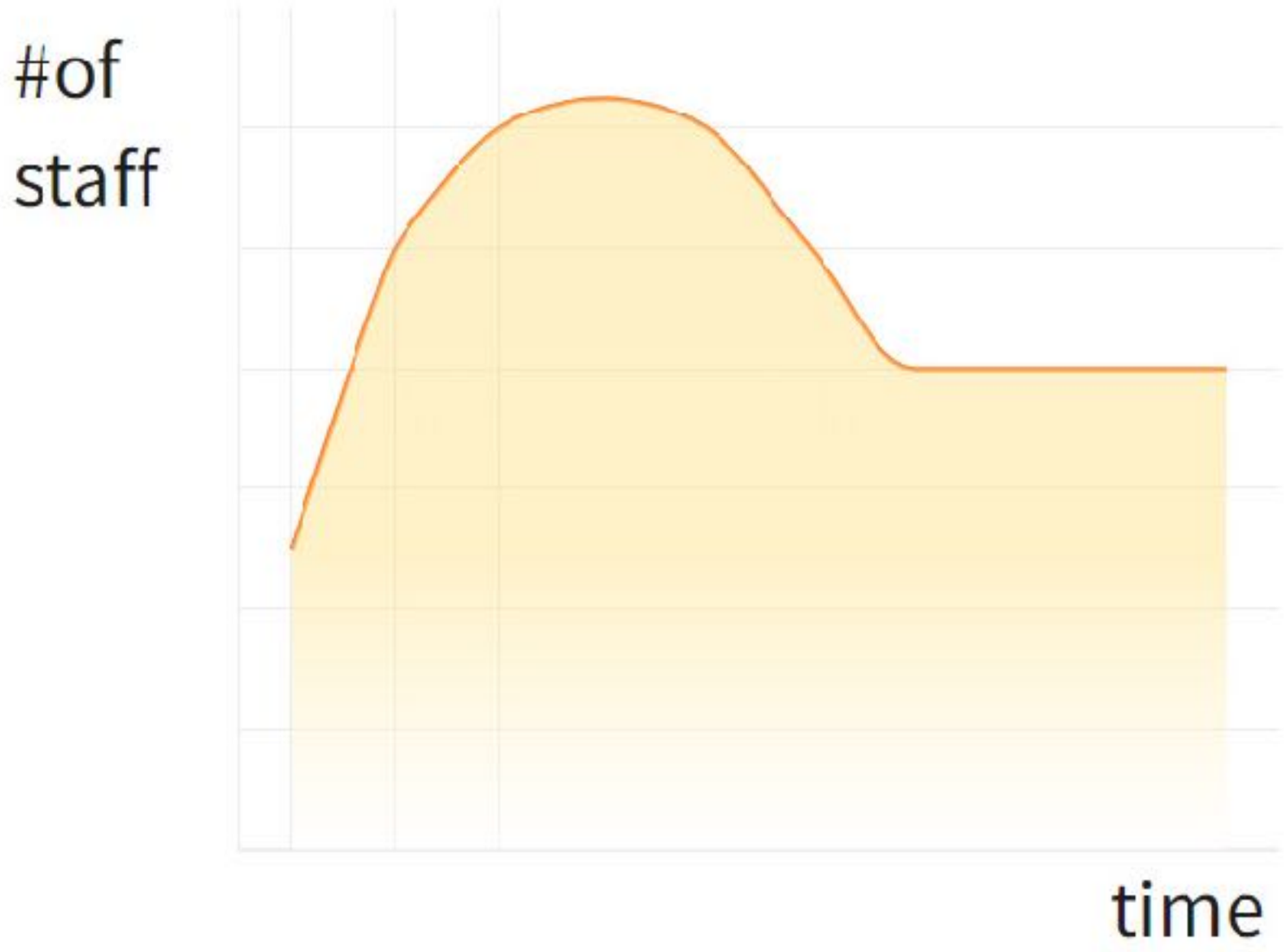
- Data Scientist
- DevOps experience
- Need a team with traditional IT, business, and core AI skills

How AI Projects Differ from the Norm

- Design - Implement - Deploy - Support?
- The lifecycle for AI is not linear, but circular. (It never really ends.)
- Create models - Train - Test - Deploy - Monitor - Optimize - Test & Optimize over and over again
- Traditional applications: degrades over time
- AI applications: improves over time (continuous process of improvement)
- When you initially deploy your AI, you will closely monitor it when it goes to production and expect it to differ from your test environment.
- Initially heavy, but becomes lighter as the AI learns, improves, and automates over time.



Traditional IT



AI

Staffing Your Project

- Data Scientist
    - Translate a business problem into a machine learning problem.
    - Create the machine learning model and test it.
    - Tune the performance and optimize the model over time.
    - *Hire or train someone internally (rather than a 3rd party contractor)*

- Business Analyst
    - Domain expertise
    - Subject matter expertise
    - Knows where internal data sources are located.
    - Bridge between business and technical domain

- Data Analyst or Data Engineer
    - Data importing, exporting, syncing, cleansing, normalization
    - Regular data quality checks

- Project Manager

- Machine Learning Developer
    - Write all the machine learning code
    - Access and use open source machine learning libraries
    - Use cloud machine learning APIs

- Even More Roles
    - UX designer
    - IT operations and infrastructure
    - Privacy, legal, and compliance guidance
    - Change management

AI Team and Org Structure

- Business group
    - Define the use case
    - Explore the features you require
- Data group & Machine learning group
    - Create and publish features
    - Build the model
    - Validate the model

- Who this team reports to?
    - CIO?
    - Business head?

- Do not give too many roles to outside consulting firm

Project Management Methodologies

- Knowledge Discovery in Databases (KDD)
    - Broad process of finding knowledge in data and applying data mining methods.

1. Data Selection
2. Data Pre-Processing
3. Data Transformation
4. Data Mining
5. Interpretation/Evaluation

- Sample, Explore, Modify, Model, Access (SEMMA)
    - Developed by SAS Institute

- Cross Industry Standard Process for Data Mining (CRISP-DM)
    - Developed by Daimler Chrysler, SPSS, and NCR in 1966

1. Business understanding
2. Data understanding
3. Data preparation
4. Modeling
5. Evaluation
6. Deployment

Team Data Science Process Methodology (TSDP)

- Developed by Microsoft (https://docs.microsoft.com/en-us/azure/machine-learning/team-data-science-process/overview)

- For use in data science and AI project

1. Business Understanding (problem definition)
2. Data Acquisition and Understanding (data preparation)
3. Modeling (model development and performance tuning)
4. Deployment (model deployment and management)
5. Customer Acceptance

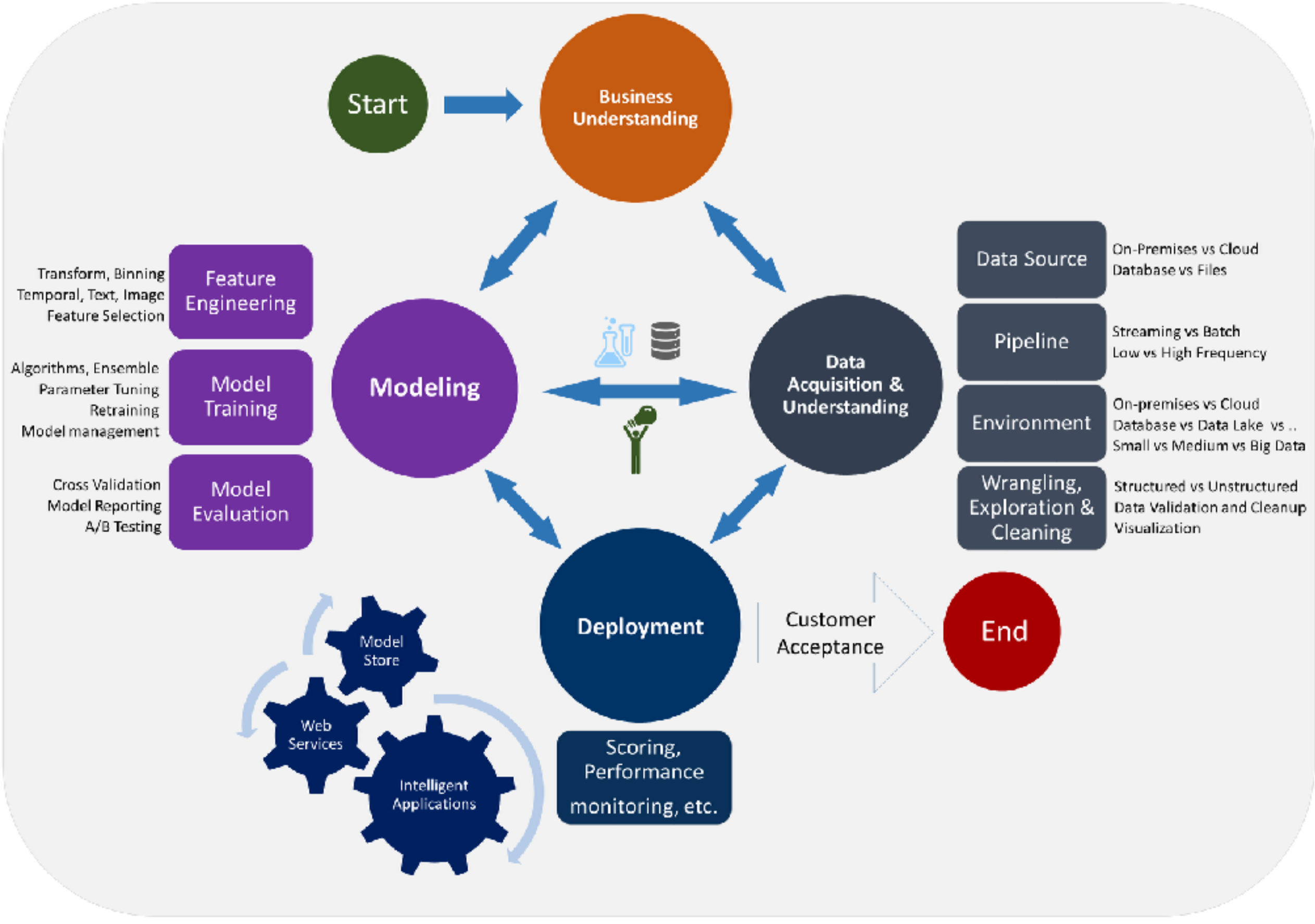
- Customer Acceptance
    - System Validation: Confirming that the deployed solution meets the customer requirements.
    - Project Hand-off: Handing the project to the team or group that will be running it in production.

- TSDP is well-documented
    - Goals, how-to's (specific tasks and guidance), and artifacts (deliverables and sample templates) are available for each stage.

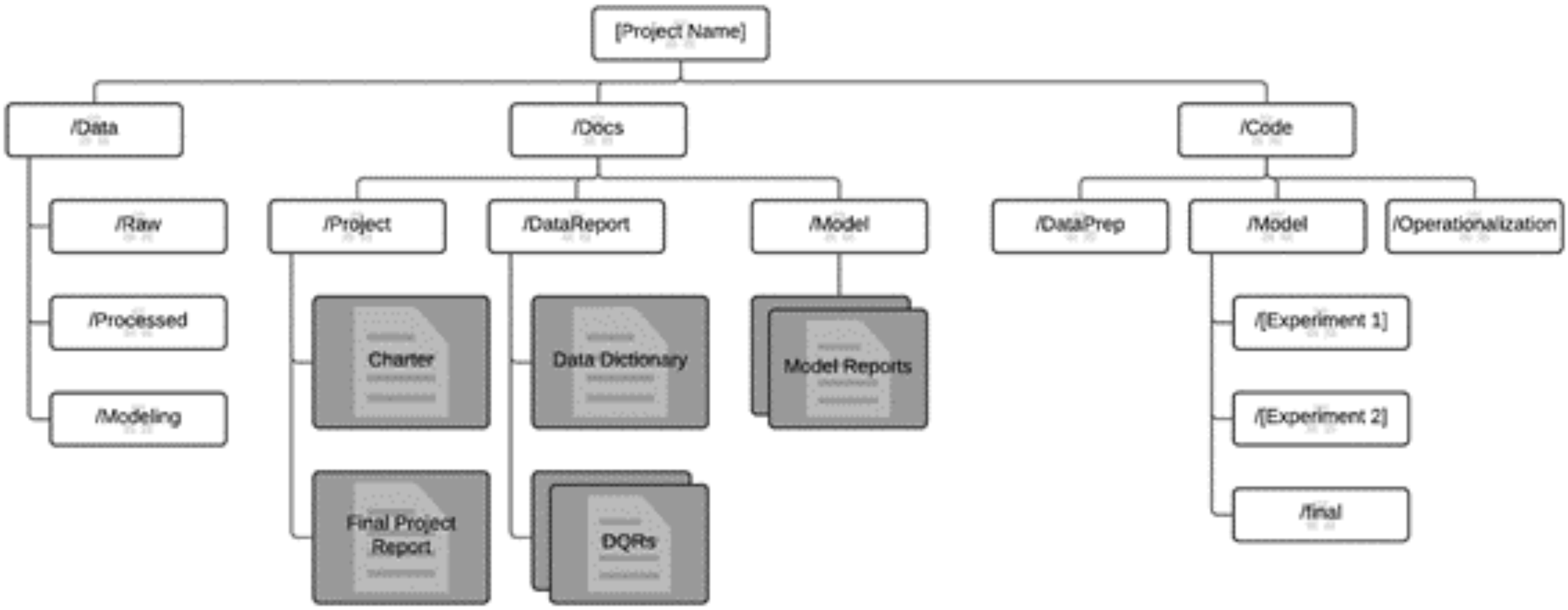
Key components of the TDSP

- A data science lifecycle definition
- A standardized project structure
- Infrastructure and resources recommended for data science projects
- Tools and utilities recommended for project execution

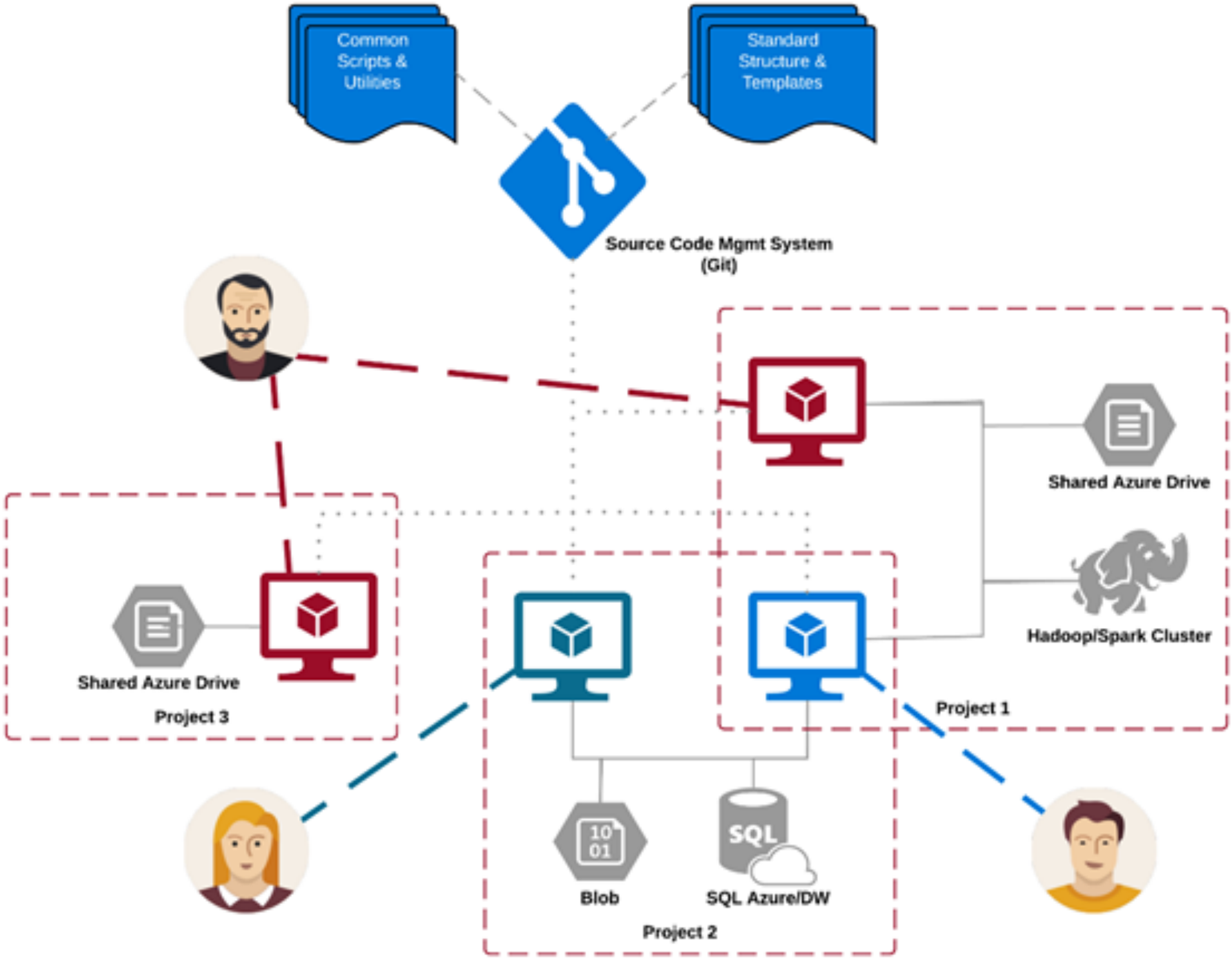
Data Science Lifecycle



Standardized project structure



Infrastructure and resources for data science projects



Key Points from this Chapter

1. AI skills are in short supply. Consider training your existing team members.
2. AI projects are very different to traditional IT projects and should be run differently.
3. AI projects never really end.
4. You need a Data Scientist for your project–they create and test the Machine Learning model.
5. Business analysts are critical–they need to know your business in-depth.

6. You need a clearly defined and authorized project manager.
7. Divide your AI team into a data group, a machine learning group, and a business group.
8. Some AI teams will be large, some small–but all the roles defined here need to be addressed. There are no shortcuts.
9. Always use a project management methodology–don't just wing it.
10. Consider using the TDSP Methodology developed by Microsoft.

Case Study

- AI Yangjae Hub -

Project Activity

- Modeling -

공지사항

- 8/5: 네이버 Clova 방문 (중간발표)
- 8/8: 특강 및 멘토링 – 노유경, Google Assistant UX Designer
- 8/29: 최종발표

- AI양재허브 방문 일정?
- 11월 AICon 발표?