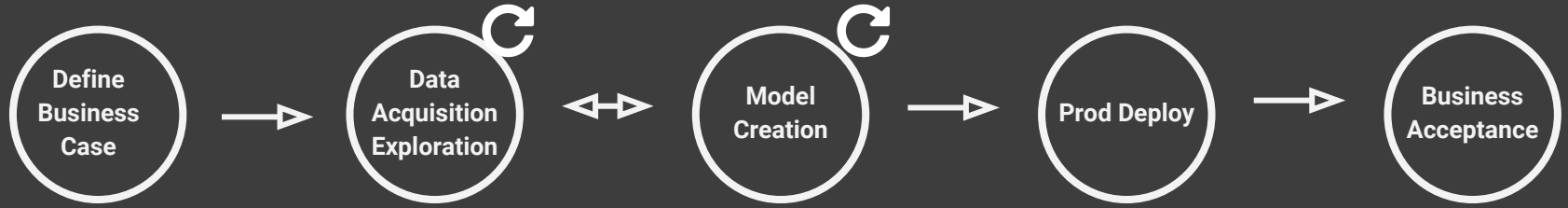
Data Science Development Operations

Haider Lasne

Technology Leader - Visionary - Team Player

linkedin.com/in/haiderlasne | haider.lasne@gmail.com

Development Lifecycle: Standardized and Pragmatic



- Define **Objective**: what
- Define **Goal**: How much/many, Which Category, Which group, anomaly, recommendation
- Define **Success SMART Metrics** such as Feature Usage (FU), User Churn (UC)
- Define **Data relevant to model target, features**
- **Milestones**
- Define High Level **RACI**
- Artifacts: Project Charter, Data Sources, SSOT, Data Dictionary, Project Repository for document and code

- Provision **Standard Data Exploration Environment**
- **Ingest Data**
- **Explore Data**: Clean Data, , identify data relevancy/ correlation, identify data transformations, identify additional data needed, data quality score
- Define **Data Pipeline Architecture** (streaming, batch)
- **Go No Go:** Based on data analysis, relevancy, business value
- Artifacts: Data Report, Data Pipeline Solution Architecture

- **Feature Engineering**, selecting features, creating additional features for model optimization (temporal for regression, hashing for text mining)
- **Build Model:** Select algorithms, split data for training/ validation/ testing, evaluate model, choose best solution
- **Go No Go:** Model effectiveness, additional approach consideration
- Artifact: Feature Set, Model Report

- Deploy Data Pipeline
- Deploy Model
- Monitoring
- A/B testing
- Artifacts: system health and key metrics dashboard, model report, solution architecture

- System Validation
- Model Validation
- Project Closure
- Handoff to Operations

Program Matrix Management

Portfolio	Applied Machine Learning	Demand Intelligence	AI Platform	AI Research
Executive	Leader	Leader	Leader	Leader
Product Management Office (Product Design)	Product Manager	Product Manager	Product Manager	Product Manager
Program Management Office (Execution, Business Alignment, Governance, Standardization, Risk Tracking and resolution)	Program Manager, Project Manager	Program Manager, Project Manager	Program Manager, Project Manager	Program Manager, Project Manager
Solution Architecture Team	SA	SA	SA	SA
Engineers Team, Analyst Team	Tech Lead, Eng,Analyst	Tech Lead, Eng,Analyst	Tech Lead, Eng,Analyst	Tech Lead, Eng,Analyst
Data Scientist Team	Data Scientist	Data Scientist	Data Scientist	Data Scientist
Infrastructure Team	Eng	Eng	Eng	Eng

Scrum Team

Program Tracking

Portfolio Metrics

By Strategic Goal, Business Unit, By Owner , By Project

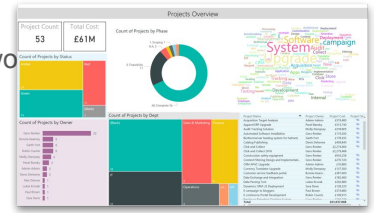
- Project Count by Status (red, green, yellow)
- Project Overall Health: Schedule Health : Risk Health: Cost Health, Issue Health
- Project Count by phases
- Project Cost Planned, Actual, Forecast
- Resource Utilization Planned, Actual, Forecast
- Roadmap timeline and status visibility
- Benefit Realization (achieved expected business gaol)
- Time to Mobilize (Ideation date - Start date)
- Expected ROI

Scrum Metrics

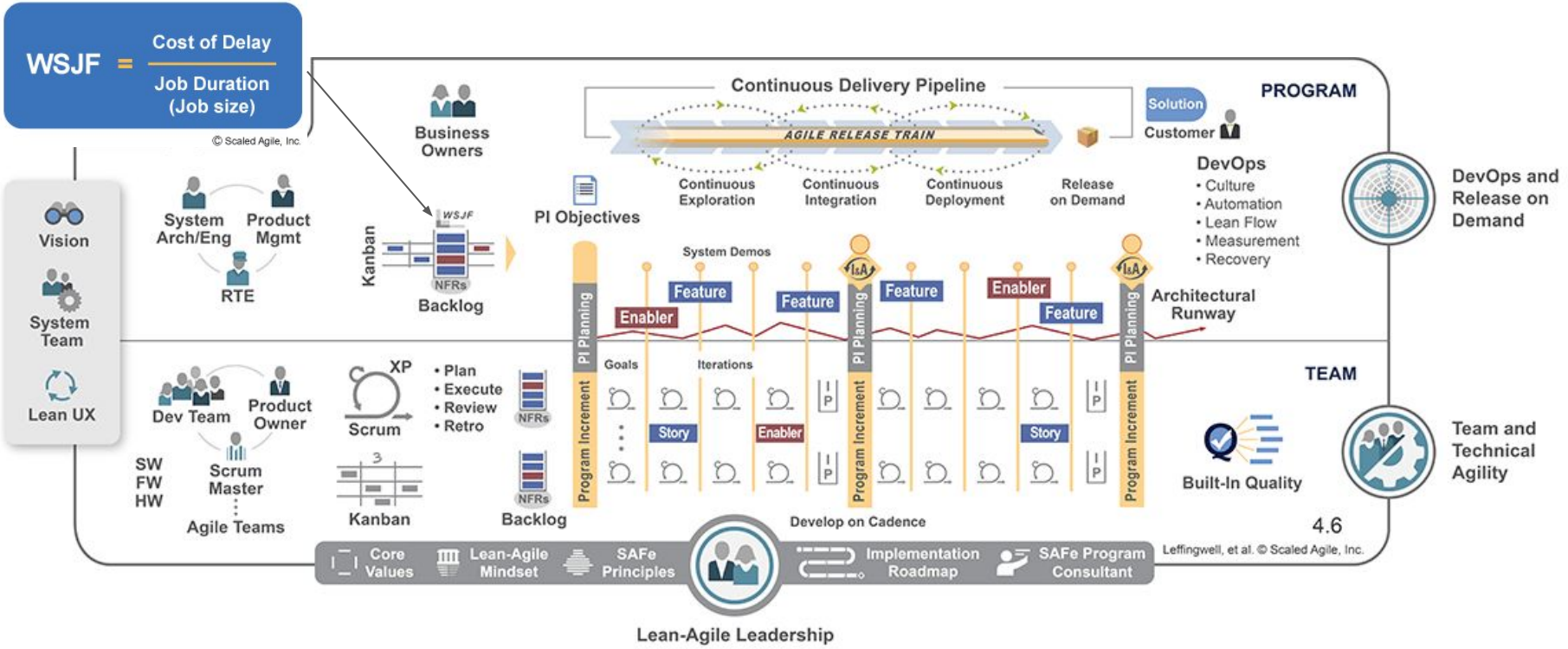
- Estimation Accuracy (stories committed versus stories completed)
- Velocity Consistency (work completed by sprints)
- Process Refinement(from retrospective)
- Quality of Deliverables (defect after delivery)
- Logged Defects (defects remain when a sprint is complete)
- Burndown Charts (daily basis)
- Burnup Chart (new items, remaining items)
- Motivation (team inspired to wo)

Product Metrics

- Customer Acquisition Cost (CAC)
- Customer Conversion Rate (CCR)
- Repurchase Rate (RR)
- Daily Active Users (DAU)
- Feature Usage (FU)
- User Churn (UC)
- Net Promoter Score (NPS)
- Customer Satisfaction (CSAT)
- Customer Lifetime Value (CLV)

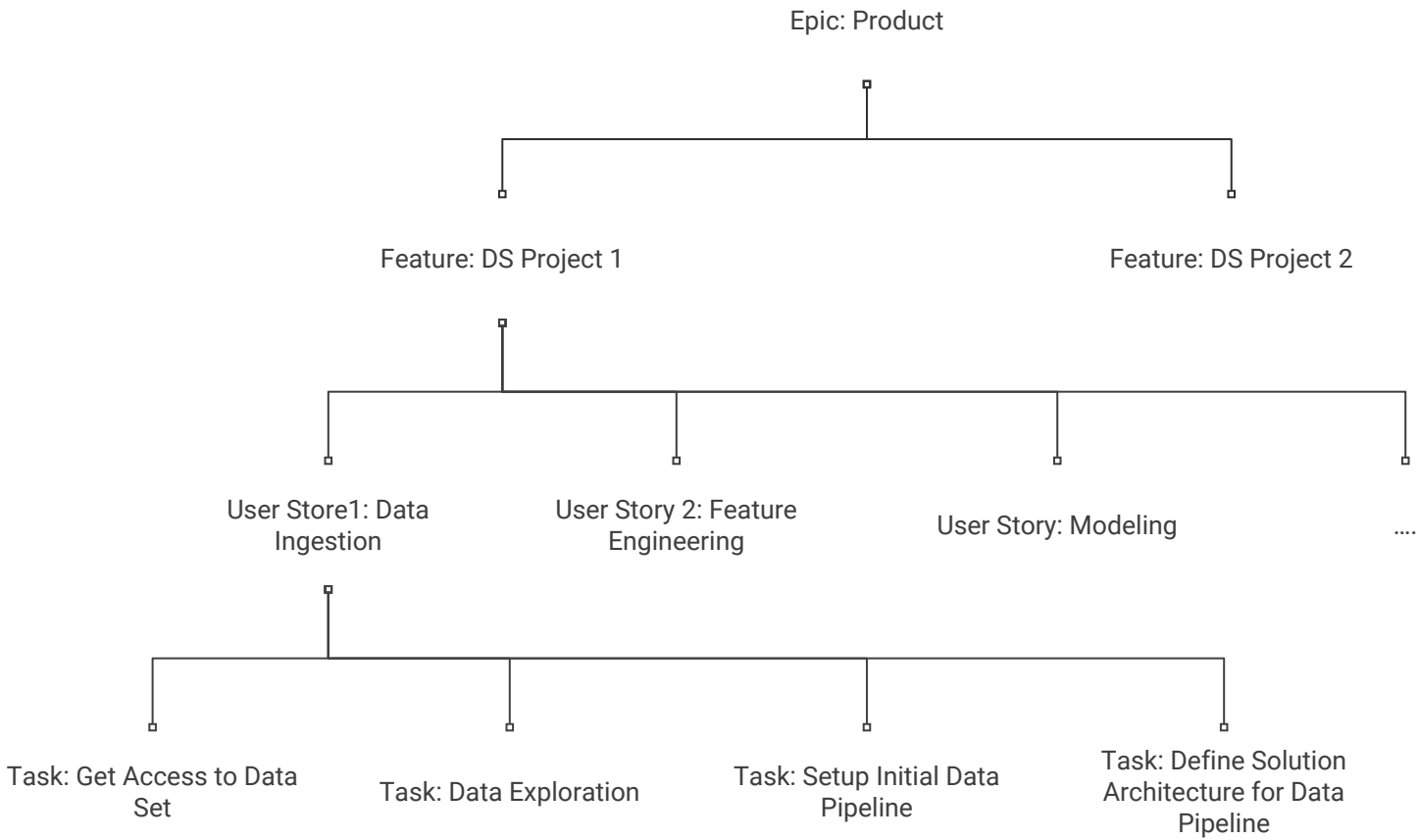


Scaled Agile Development



https://www.scaledagileframework.com/#

Agile Development Work Items



Thanks!

Any Question or Feedback?

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