Canary: Early Warning System for Process Quality

Canary is an ecosystem to enable early warning functionality in existing architectures. It is designed to me modular, scalable, and easy to integrate with existing software and organizational processes. This way, it can be leveraged to provide `Shift Left` capabilities within an organization, allowing for early detection of potential issues when they are still easy to fix. Like a canary in a coal mine, it's intent is to send out a warning signal when something is going wrong, so adequate measures can be taken to prevent (economic) disaster.

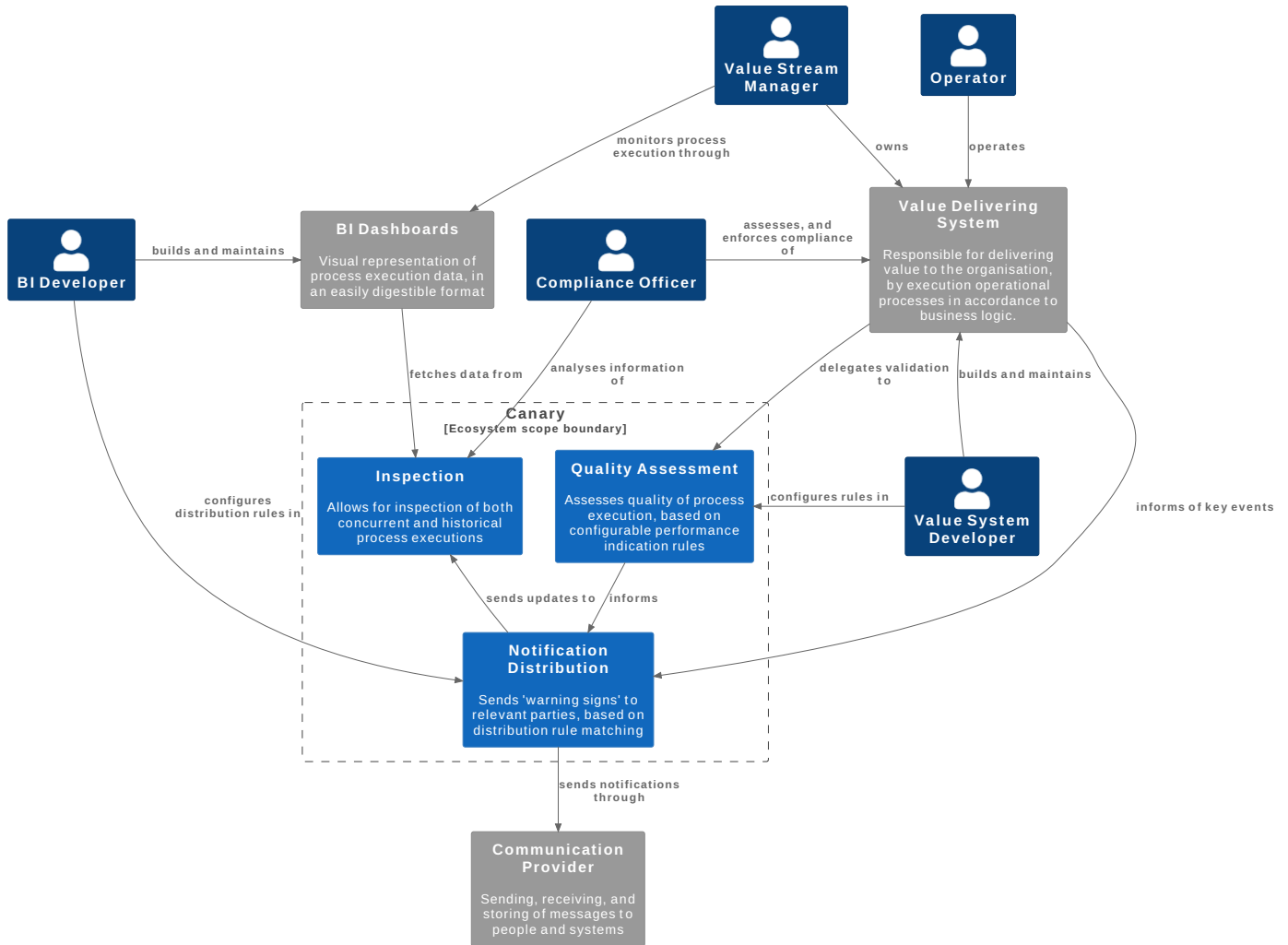## Business Context

Problem Statement

- Many organisations struggle with operational issues caused by late detection of problems in their processes.
  - The cost of fixing issues increases exponentially the later they are detected.
- Many organisations struggle with the complexity of their software systems.
  - Inherent complexity of the problem domain makes it challenging for teams to understand the system as a whole.
  - A mix between older and newer technologies makes it hard to implement a consistent monitoring solution.
- Economic pressure to deliver software faster and cheaper has a trickle-down effect on the quality of the software.
  - This leads to a higher number of defects in production, which in turn leads to higher operational costs.
  - Development teams are unlikely to take the time to implement monitoring solutions due to feature pressure.
- Legislative requirements are becoming more stringent, requiring organisations to have a better understanding of their systems.
  - This is especially true in the financial and healthcare sectors, where the cost of non-compliance is high.
  - Compliance is often achieved through manual processes, which are error-prone, slow, and difficult to scale.

> TODO: Add Causal loop diagram to illustrate the problem statement

Value Proposition

Architecture Overview

Canary: System Context Diagram

Value Stream Manager

Operator

BI Developer

builds and maintains →

BI Dashboards
Visual representation of process execution data, in an easily digestible format

Compliance Officer

monitors process execution through

owns

operates

Value Delivering System
Responsible for delivering value to the organisation, by execution operational processes in accordance to business logic.

assesses, and enforces compliance of

fetches data from

analyses information of

delegates validation to

builds and maintains

Canary
[Ecosystem scope boundary]

Inspection
Allows for inspection of both concurrent and historical process executions

Quality Assessment
Assesses quality of process execution, based on configurable performance indication rules

configures rules in

Value System Developer

configures distribution rules in

sends updates to

informs

informs of key events

Notification Distribution
Sends 'warning signs' to relevant parties, based on distribution rule matching

sends notifications through

Communication Provider
Sending, receiving, and storing of messages to people and systems

Legend
person
system
external system
boundary