

Low-Code

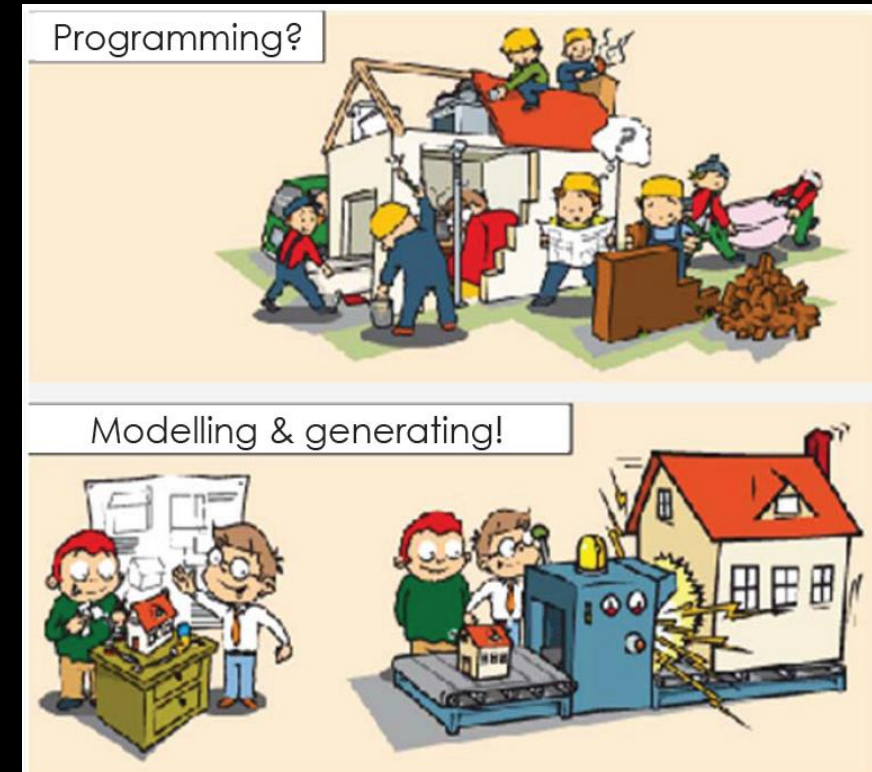
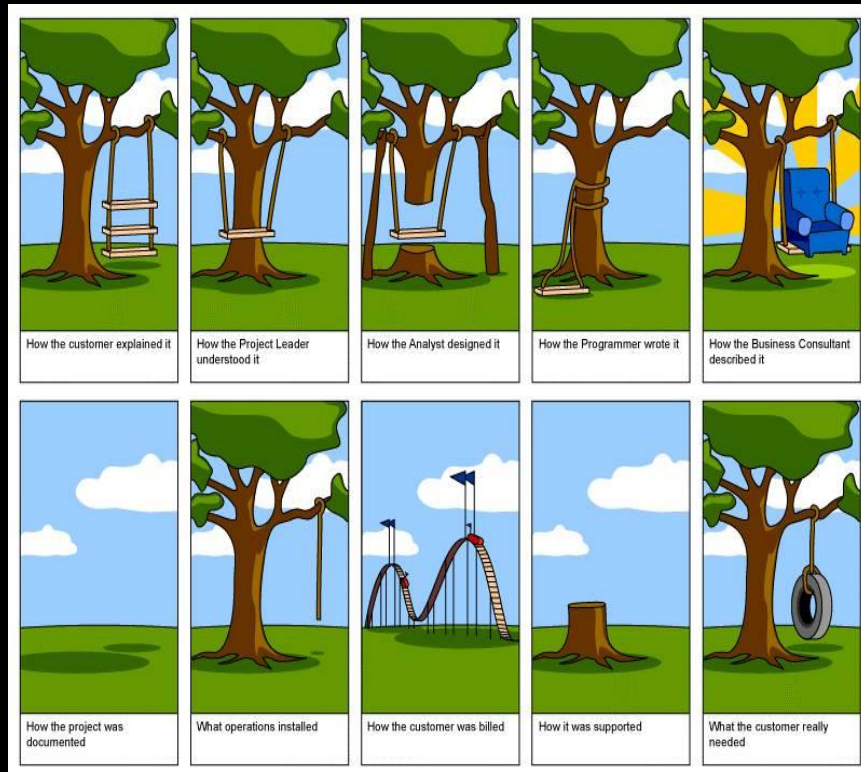
“Democratizing of Software Development”

Toine Hurkmans

Chief Architect, Mendix

toine.hurkmans@mendix.com

The Gap between Business and IT



Democratization of House Building



The Gap

The Past: Business Needs System Experts



Business



Experts

IT System



Finance



HRM



CRM



ERP



...



Middleware (system integration processes)

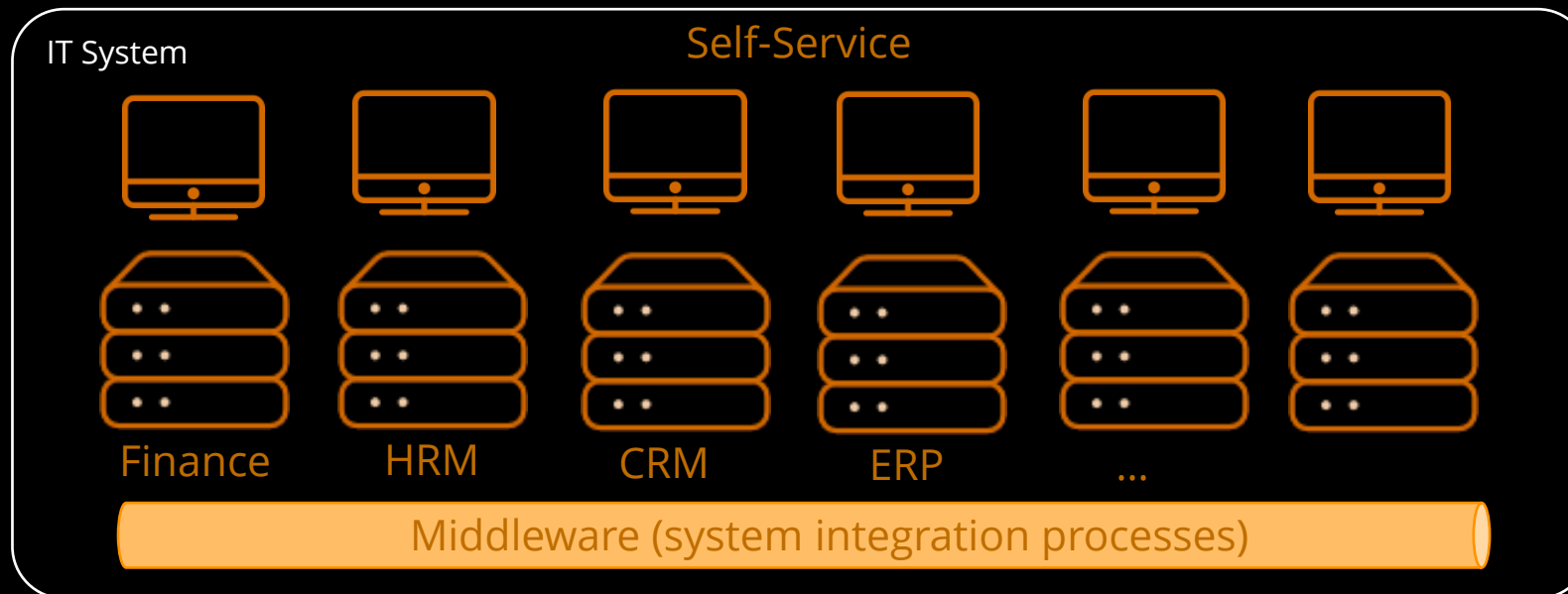


IT / Software
Development

The IT Solution: Self Service Portals



Business

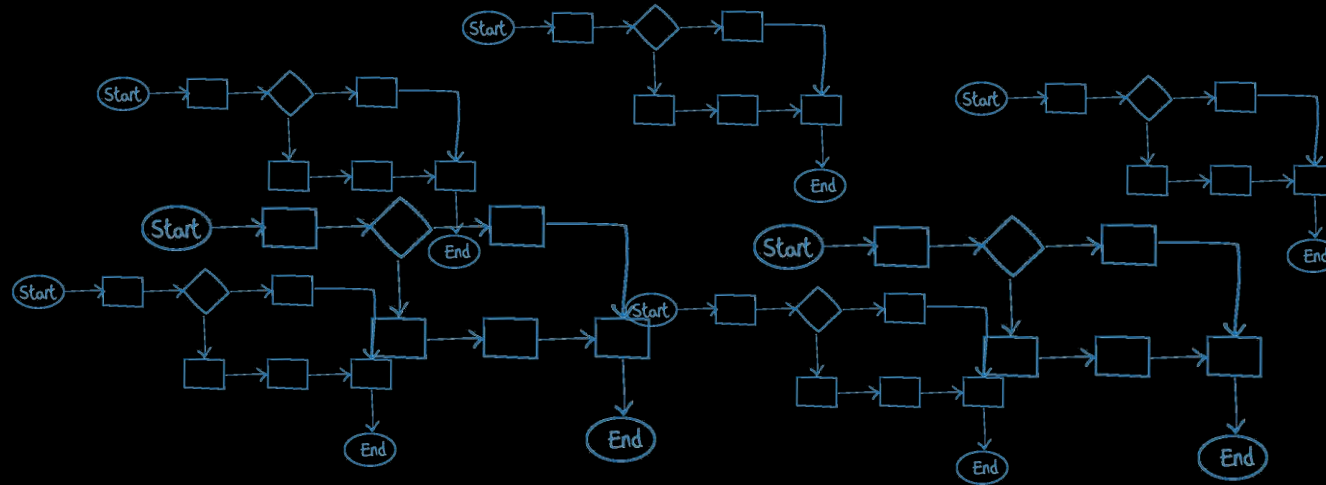


IT / Software
Development

The Gap



Business



IT System

Self-Service



Middleware (system integration processes)

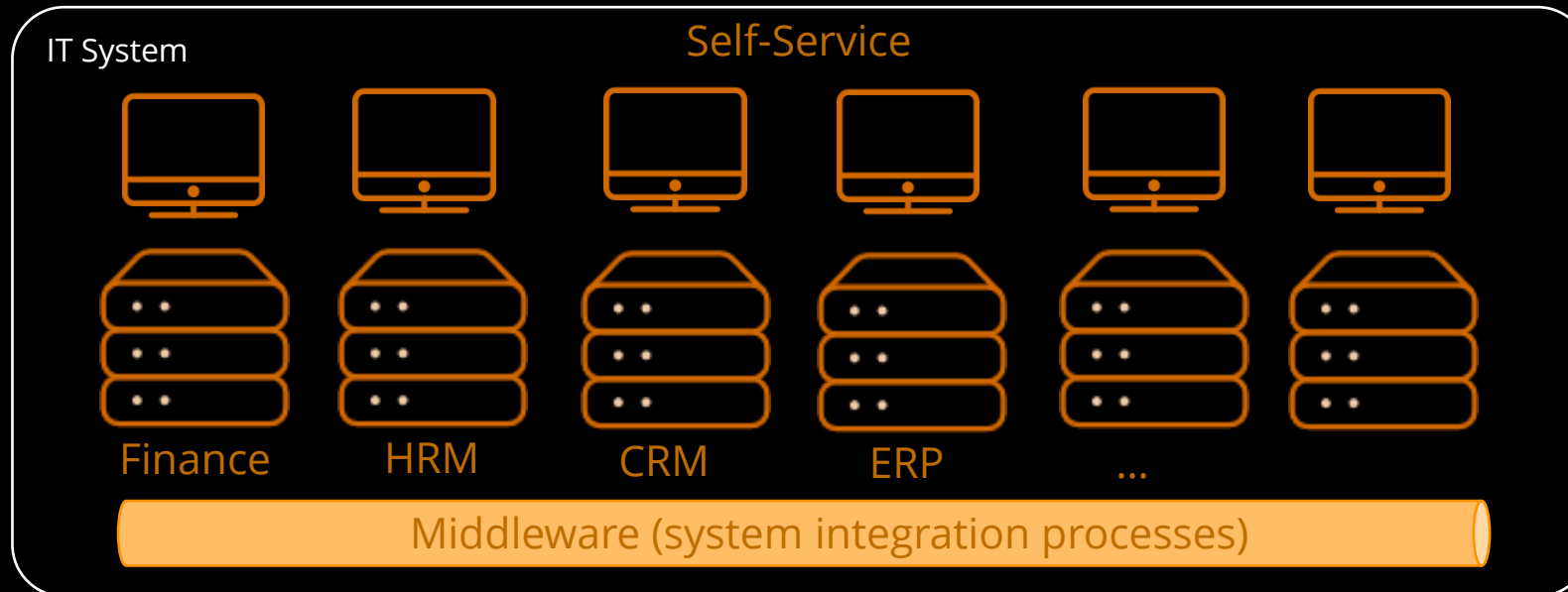
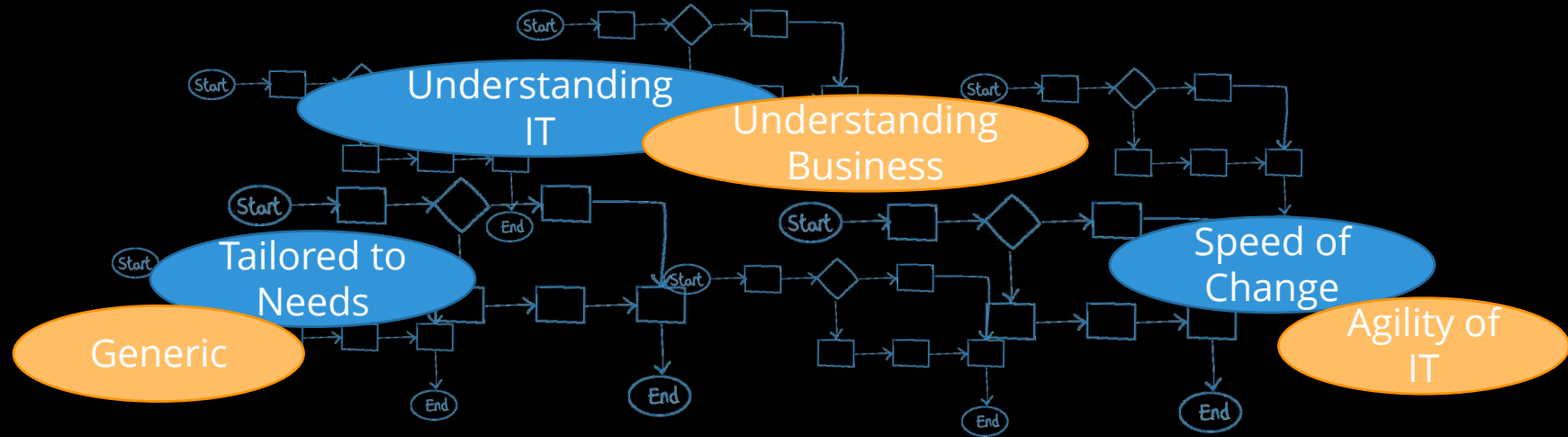


IT / Software
Development

The Gap

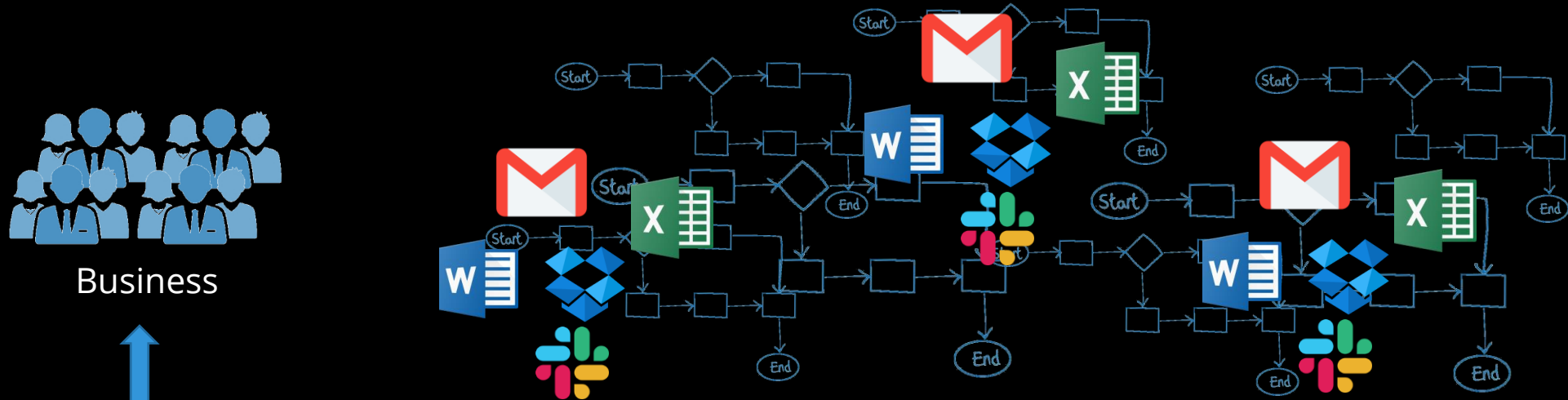


Business



IT / Software
Development

The Business Solution: Avoid IT Systems



IT System



Finance



HRM



CRM



ERP



...



Middleware (system integration processes)



IT / Software
Development

Bridge the Gap: A Software Printer?

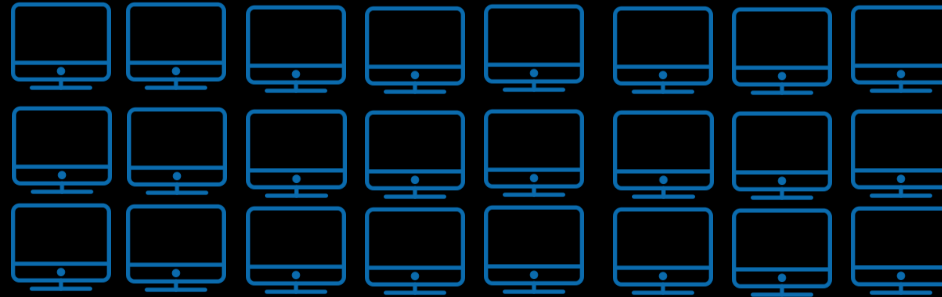


Business

Business Applications



Software Printer



IT System



Finance



HRM



CRM



ERP



...



Middleware (system integration processes)



IT / Software
Development

What is Low-Code?

What is Low Code?

Model Driven
Development

Visual Programming

Rapid Application
Development

What is Low Code?

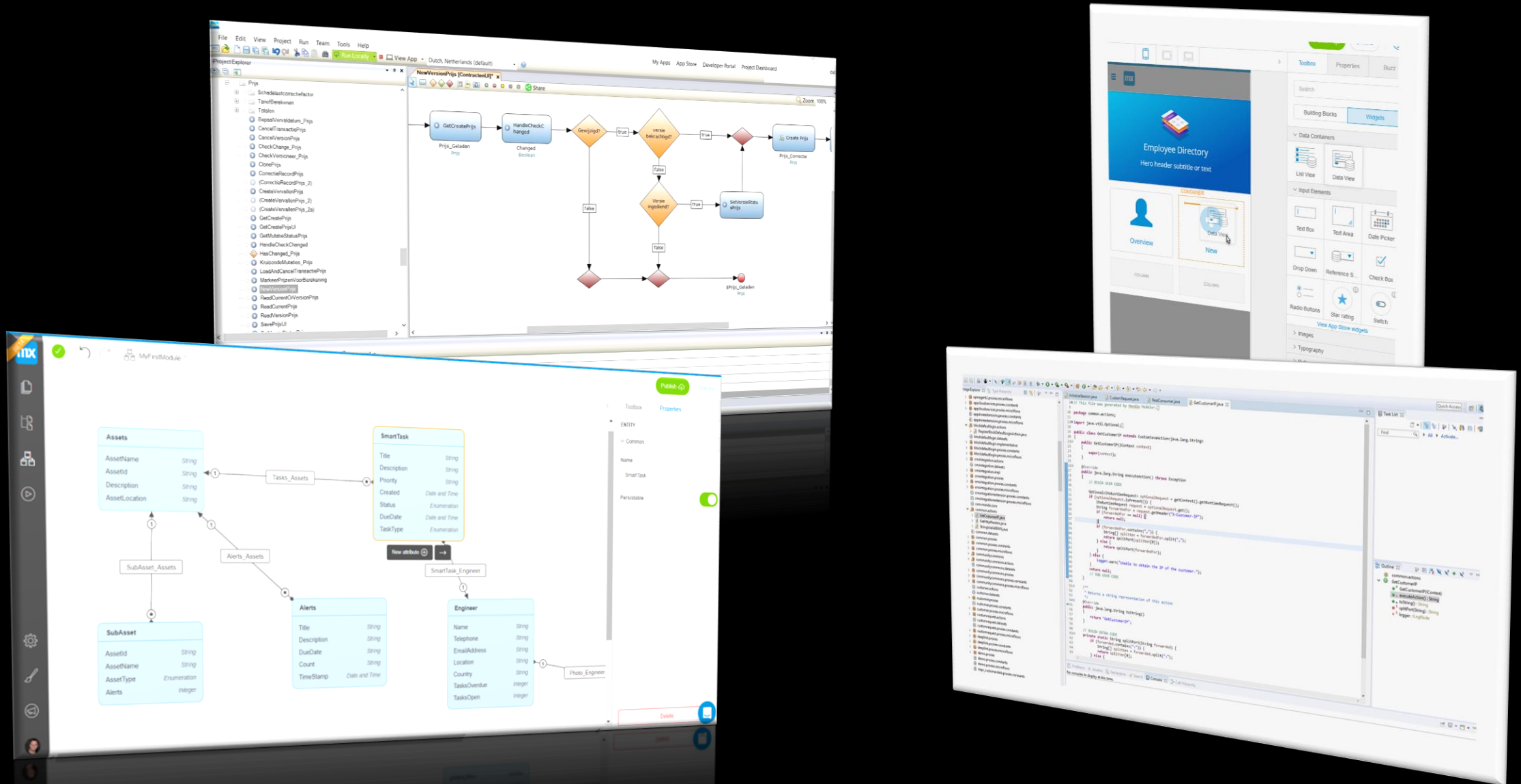
Model Driven
Development

Visual Programming

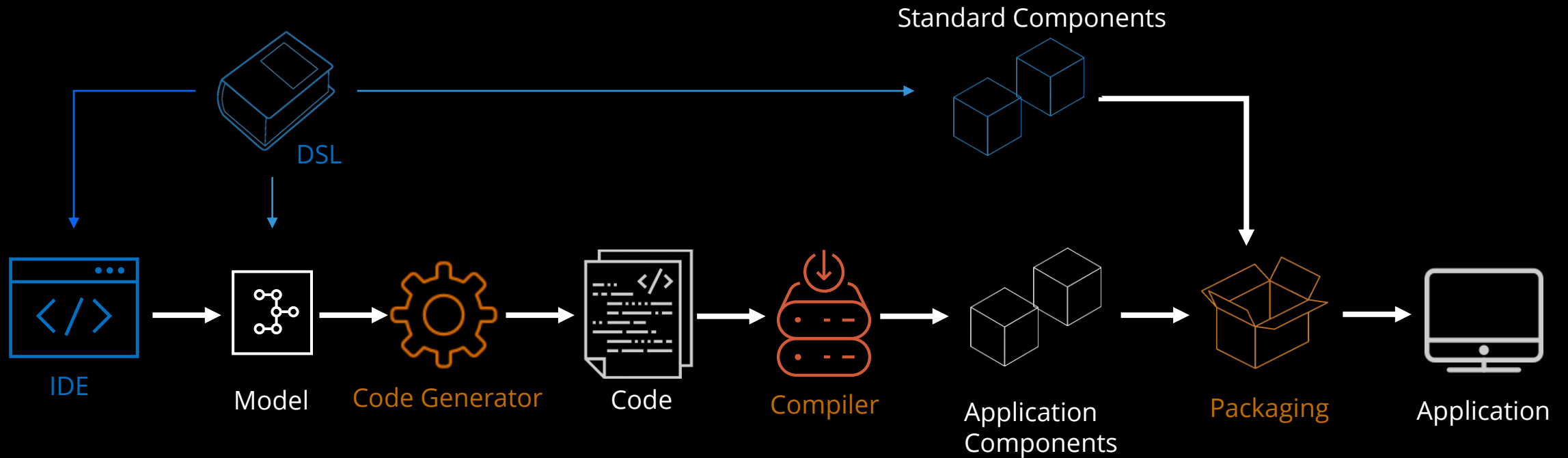
Rapid Application
Development

A Bit of Code-full

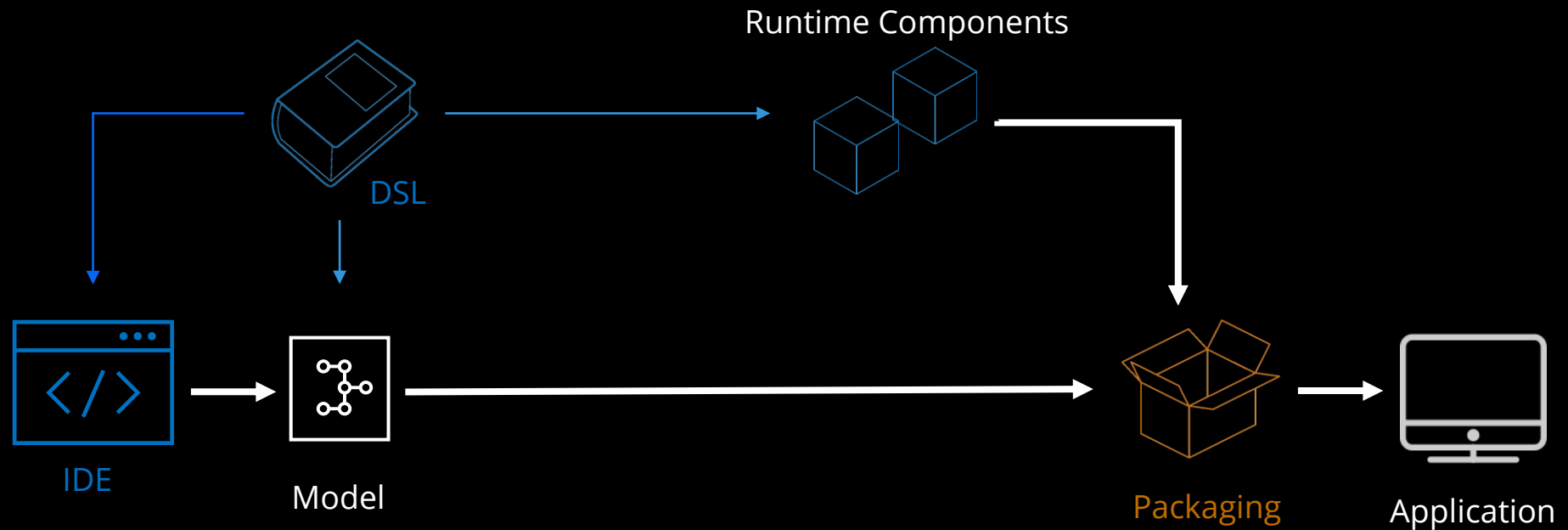
Integrated Development Environment



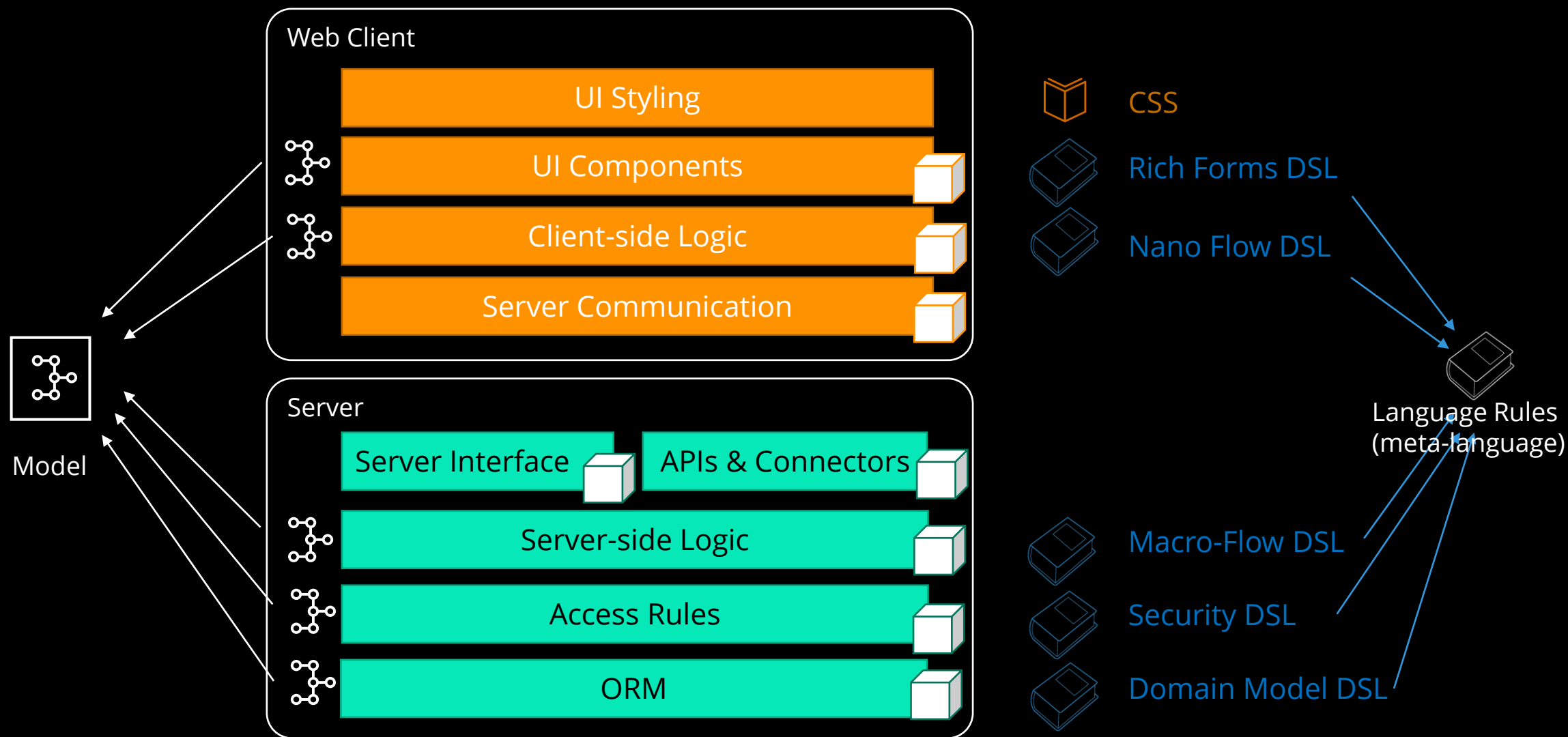
Approach 1 - Generation



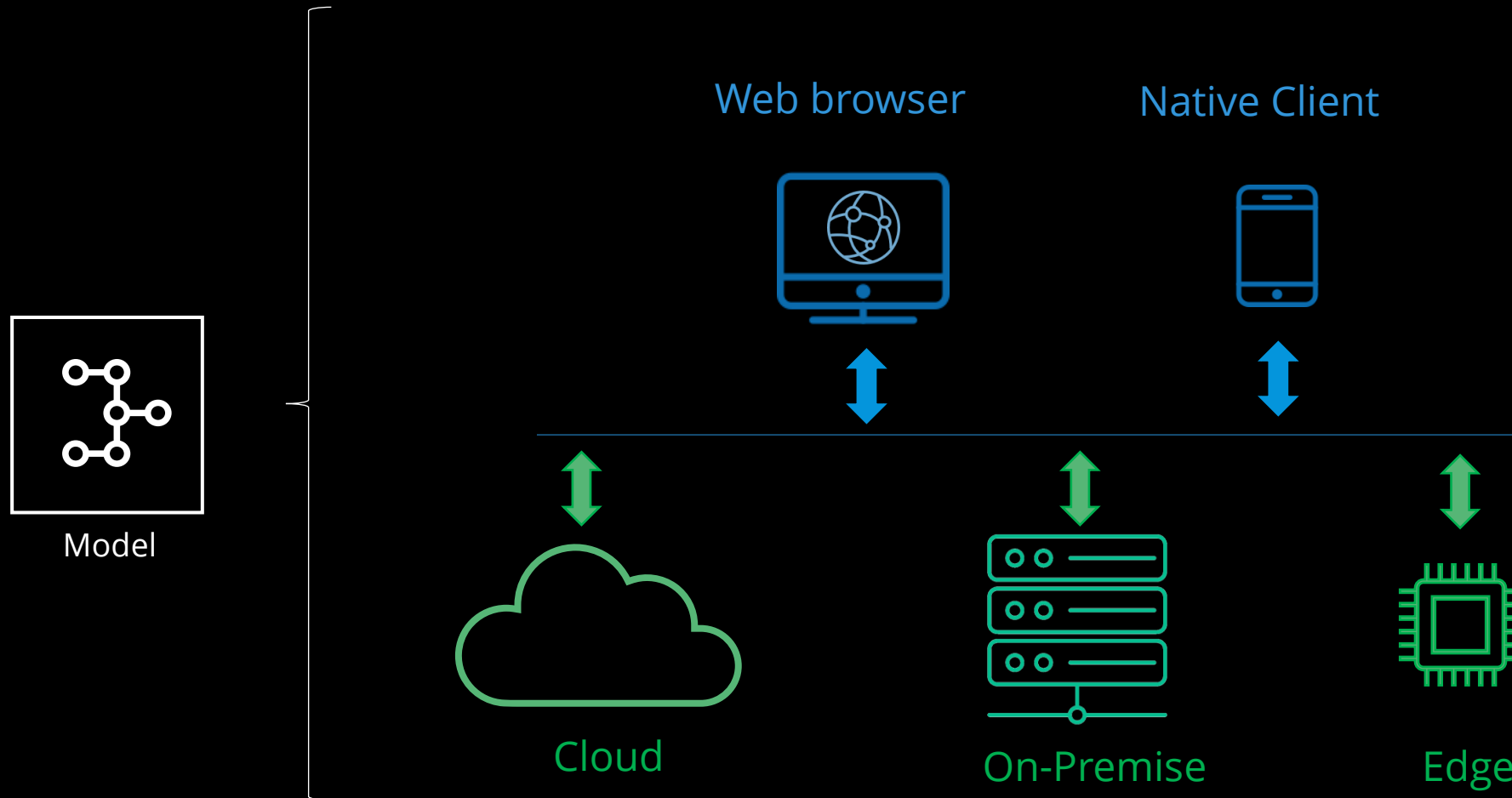
Approach 2 - Interpretation



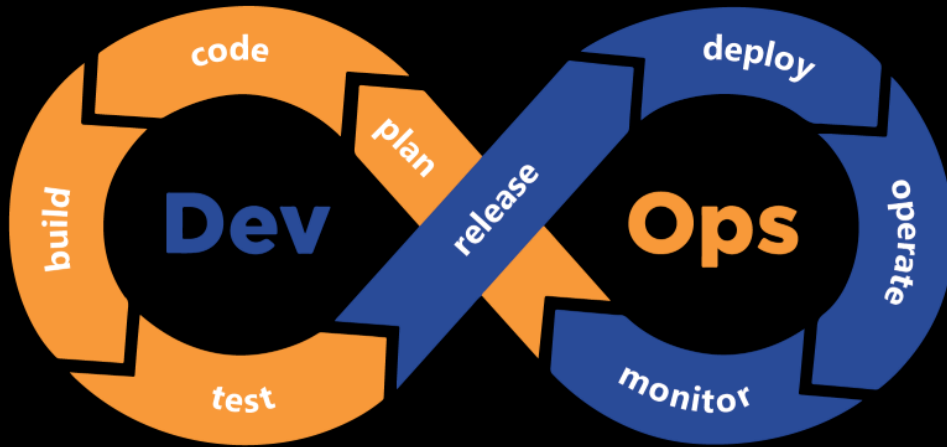
Runtime Model Interpretation



One Model, Multi-Device, Multi-Platform

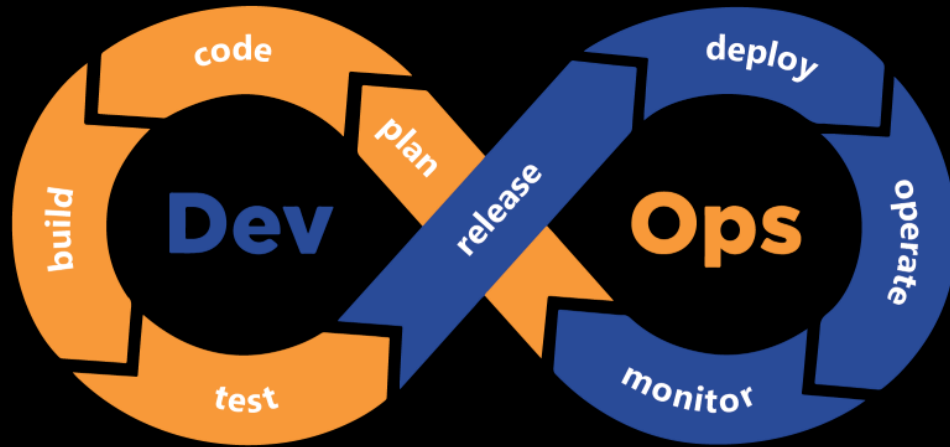


Low Code is more than App development

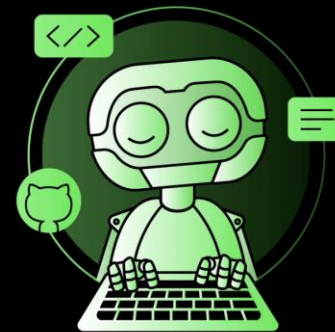


Project management
Model Validation & Testing
Hybrid deployment models
Resource provisioning
Operational Management
User Feedback

Low Code is more than App development



Project management
Model Validation & Testing
Hybrid deployment models
Resource provisioning
Operational Management
User Feedback



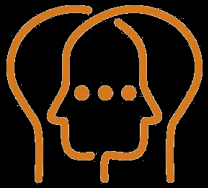
Pair Programmer Bot



Performance Bot

AI assisted development
Model generation
Recommendations
Error detection

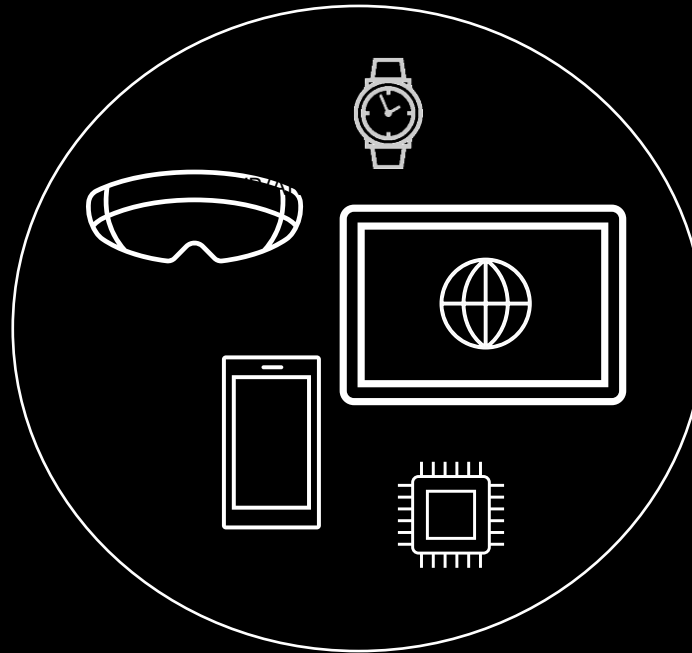
Smart Apps



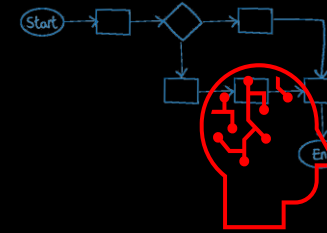
Digital Twin
Virtual / Augmented Reality



Speech-to-Text-to-Speech
Image / video recognition
Gesture



AI Assisted



Virtual assistant
Decision automation



Autonomous
Disconnected

All-in-One Low-Code Platform



Low-coding all

Radical **abstraction** and **automation** makes software development faster, higher quality, and accessible to a larger audience of developers.

Going beyond developing apps towards intelligent process automation, data integration, intelligent automation, multi-experience and AI.

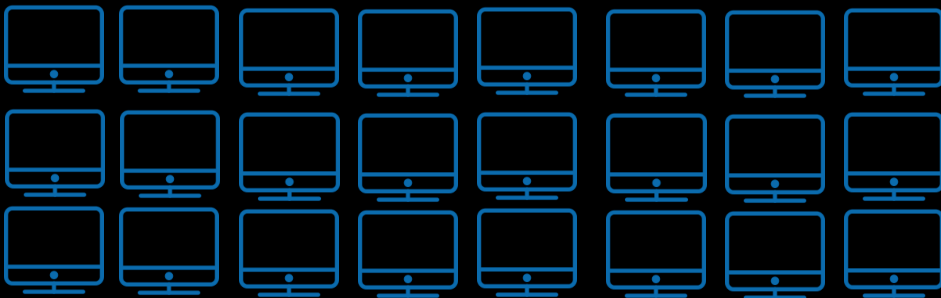
The Gap

Bridge the Gap : ~~A Software Printer?~~



Business

Business Applications



IT System



Finance

HRM

CRM

ERP

...

Middleware (system integration processes)



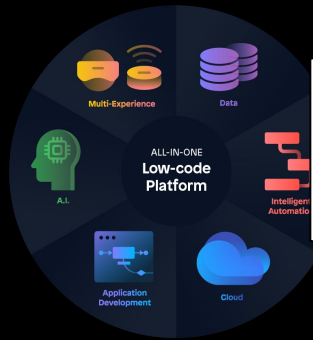
IT / Software
Development

Bridge the Gap: Everyone is a Maker



Business

Business Applications



Low Code



IT System



Finance



HRM



CRM



ERP



...



Middleware (system integration processes)



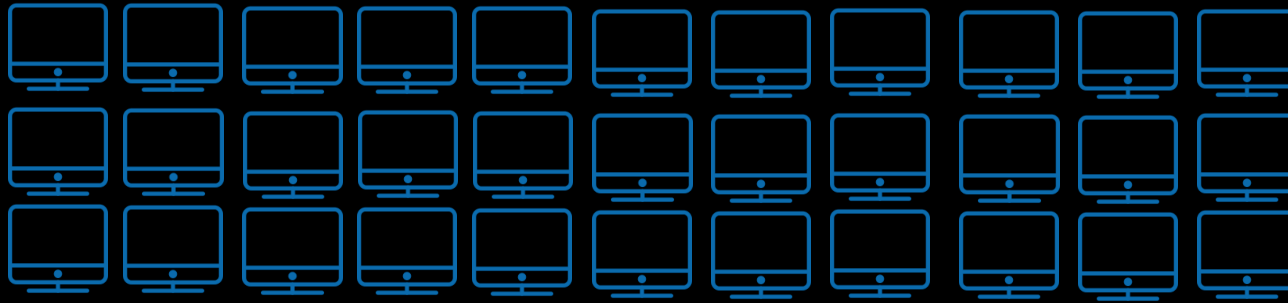
IT / Software
Development

Interoperability

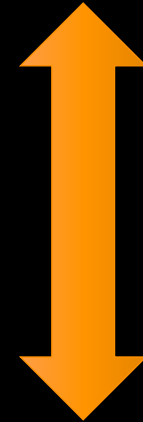
Interoperability



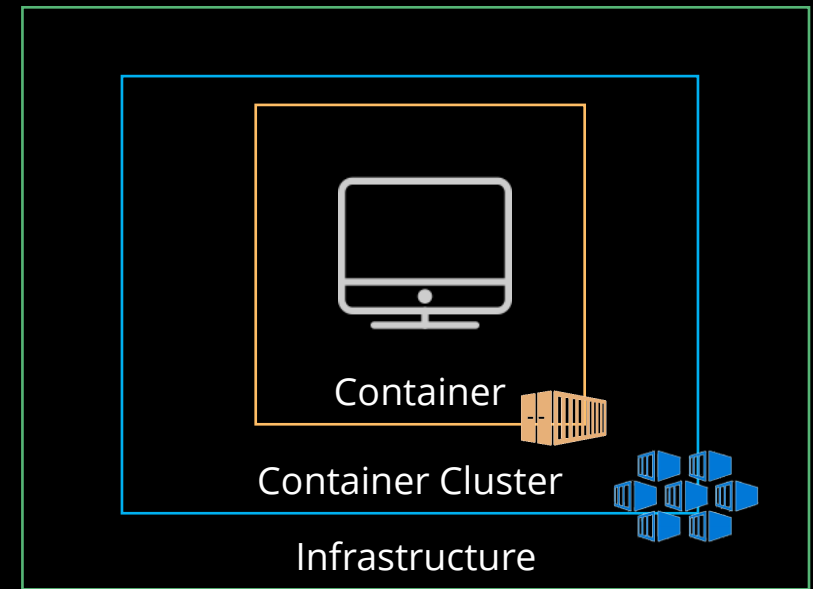
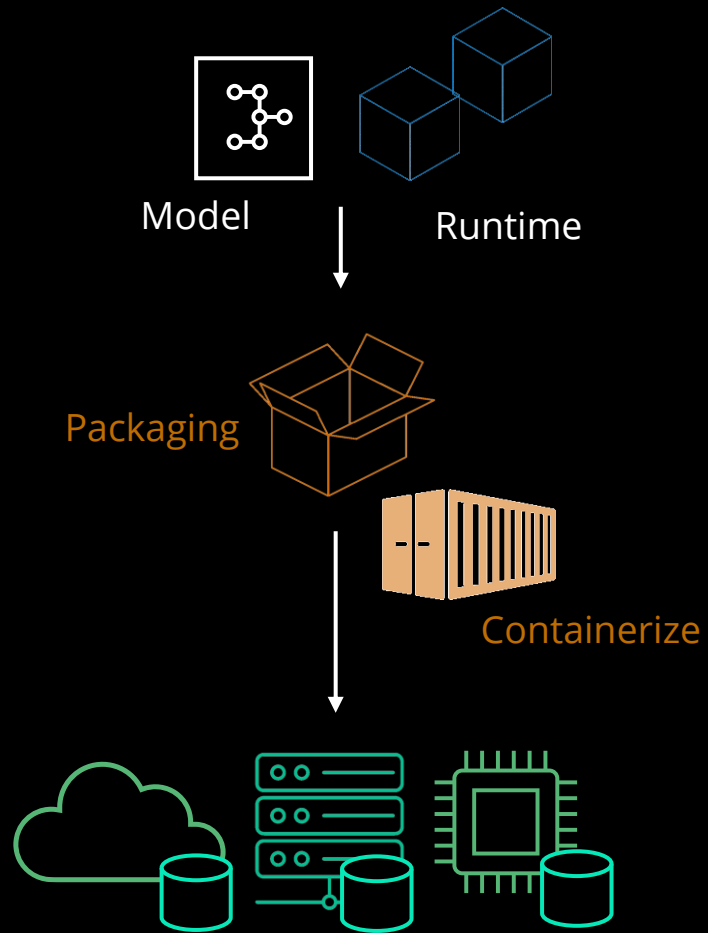
Business Applications



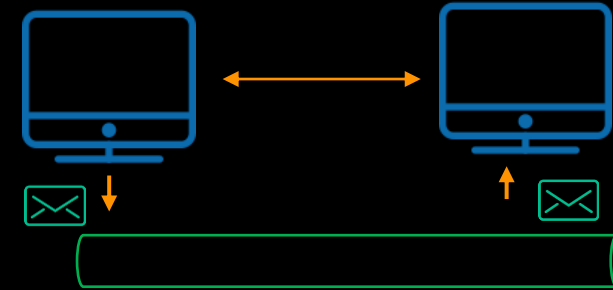
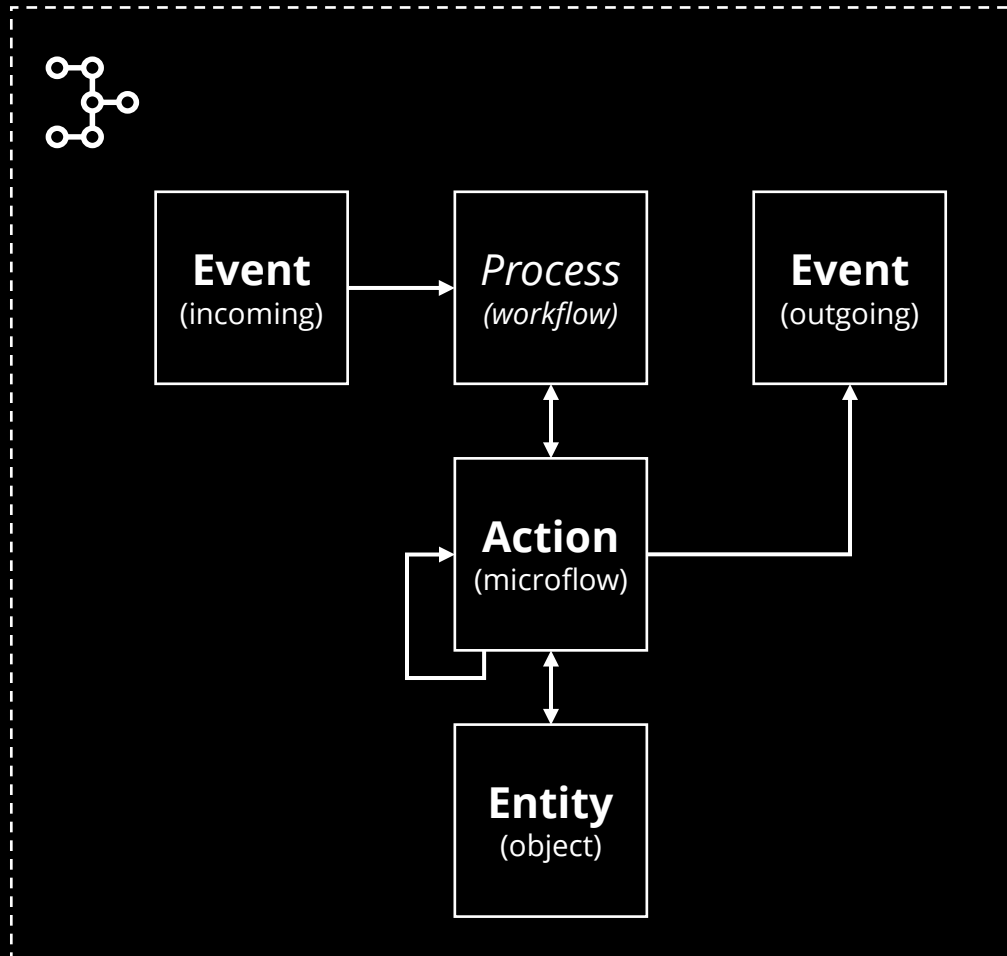
IT System



Interoperability - Infrastructure



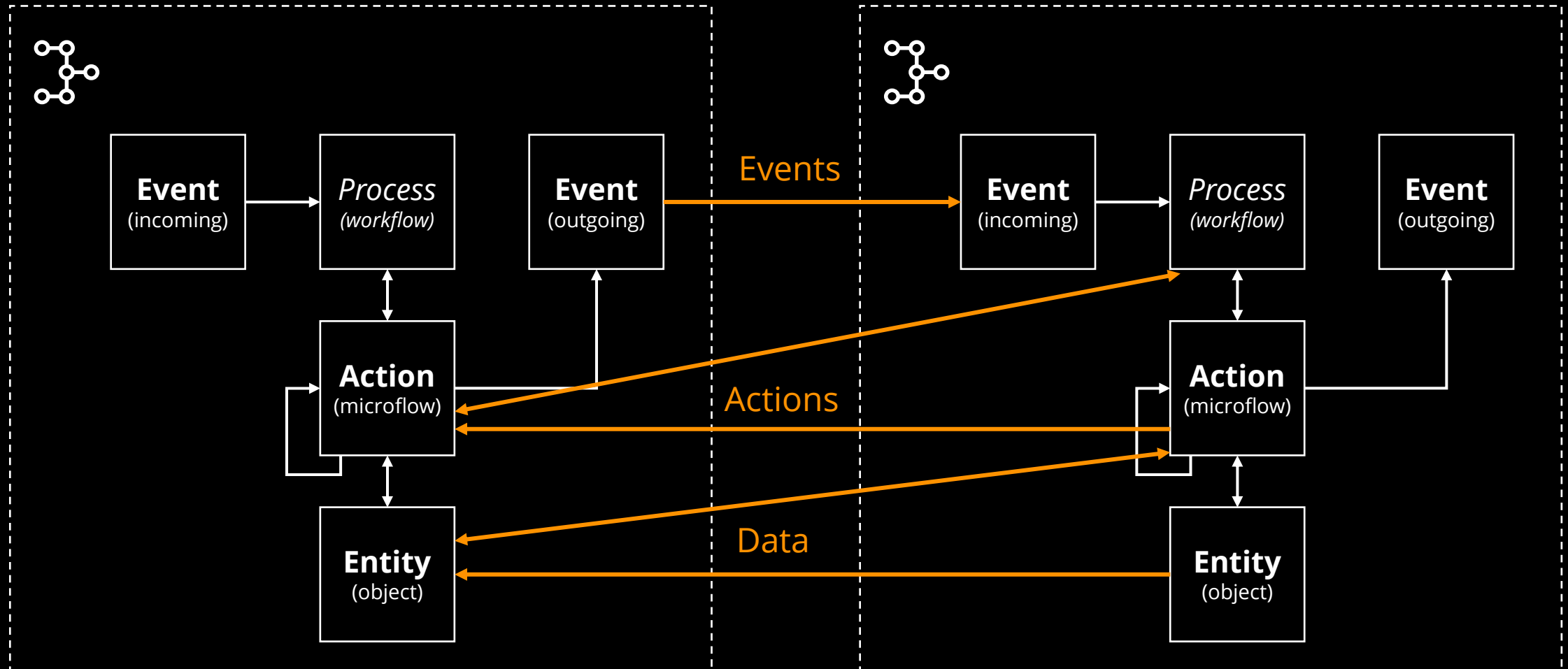
Interoperability and Modeling



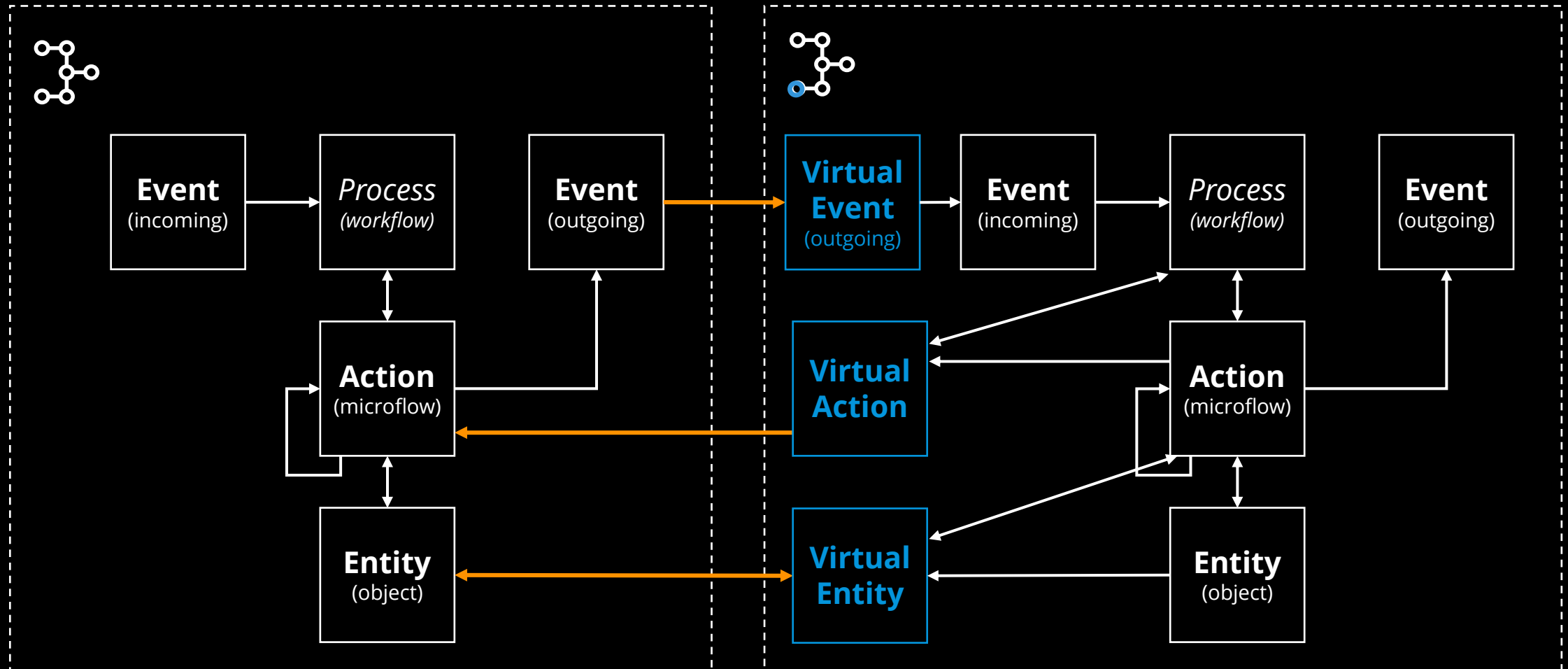
Interfaces (APIs)

- CRUD Entity
- Action
- Event (message broker)

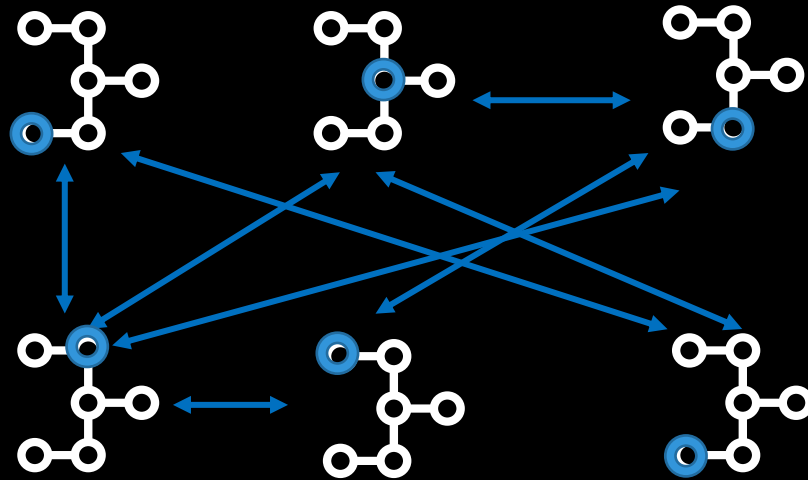
Interoperability – Model Dependencies



Interoperability – Model Dependencies



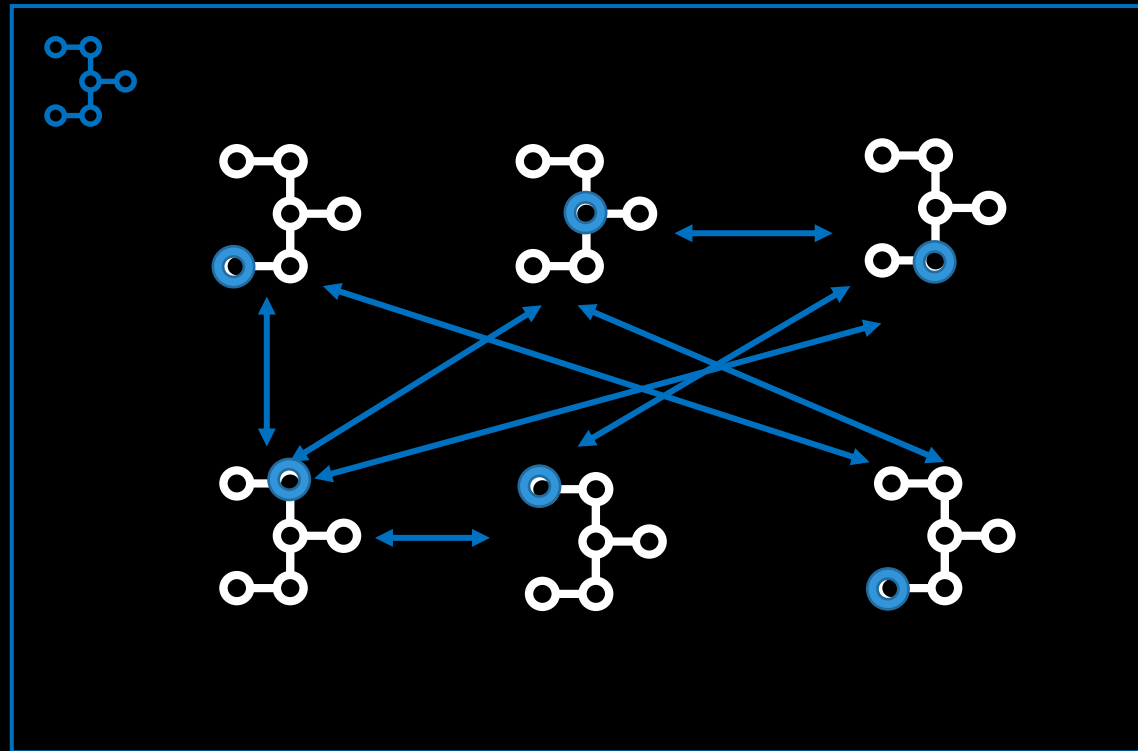
Modeling a Low Code System



Modeling a Low Code System

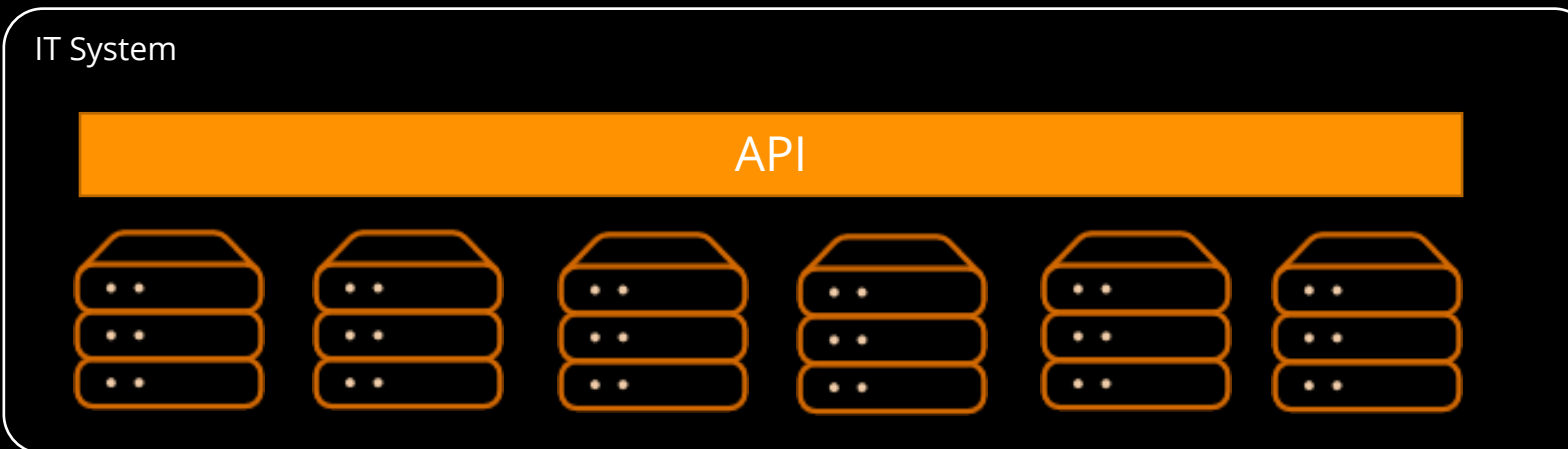
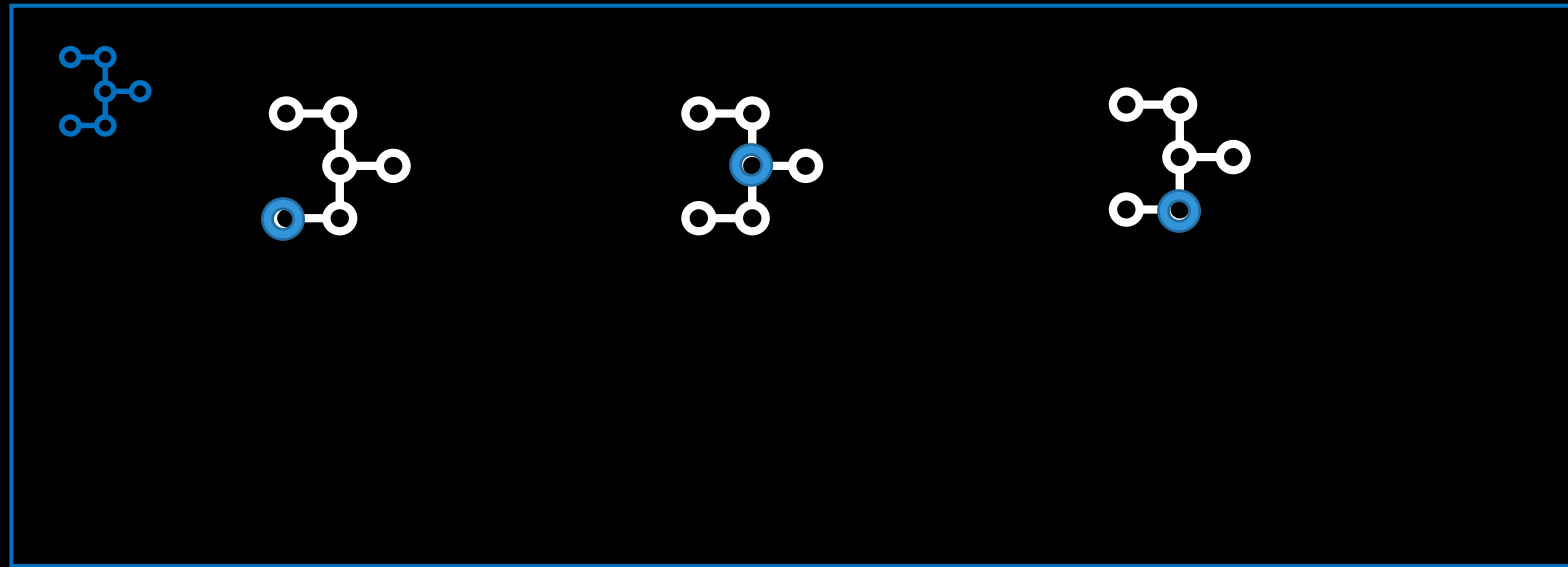
Ontology

Semantic Model
of the Low code
Application
Landscape



System DSL

Interoperability – Low code & Code-full

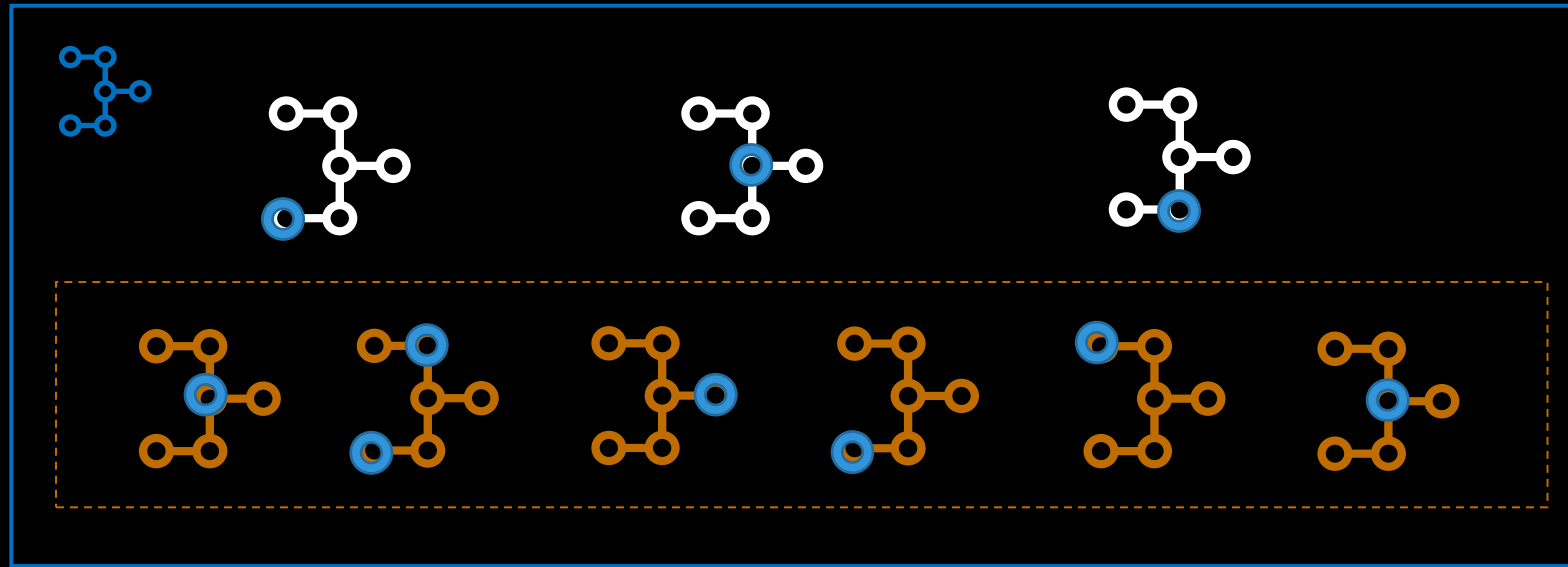


Modeling a Low Code System & Semantics

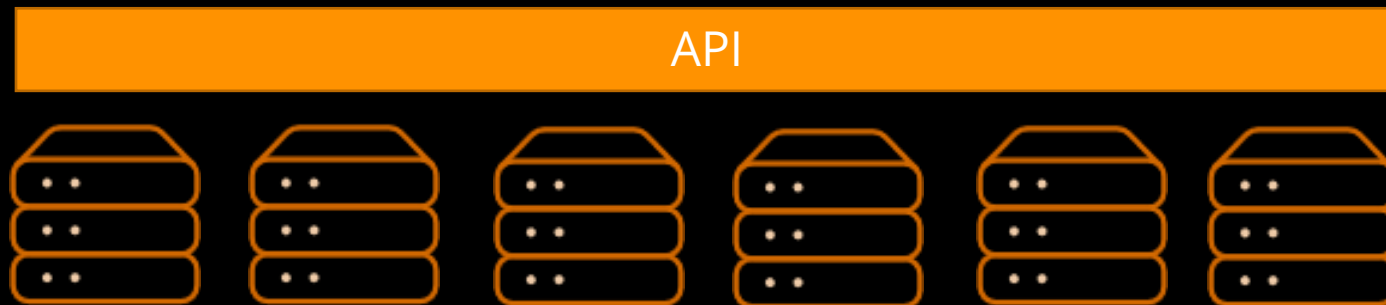
Ontology

Semantic Model
of the Low code
Application
Landscape

Including a
Semantic model of
the IT system.



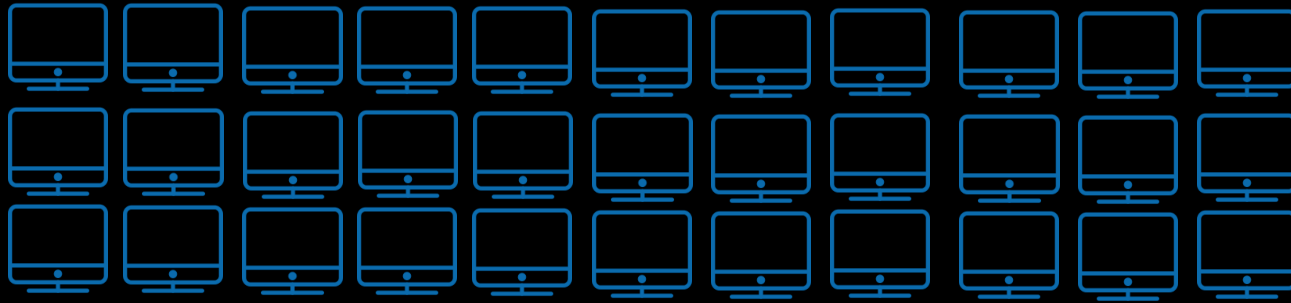
IT System



Governance

Governance

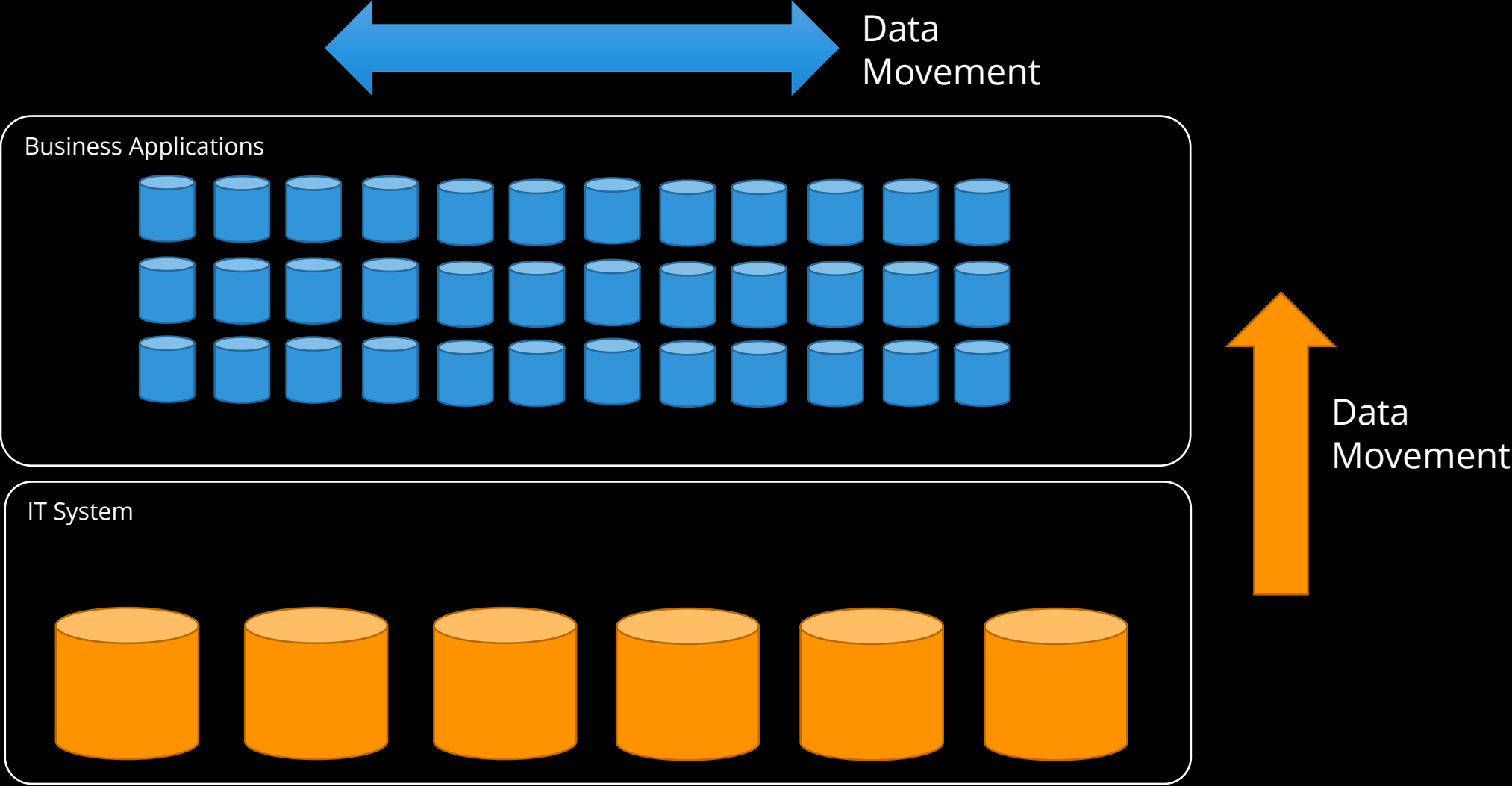
Business Applications



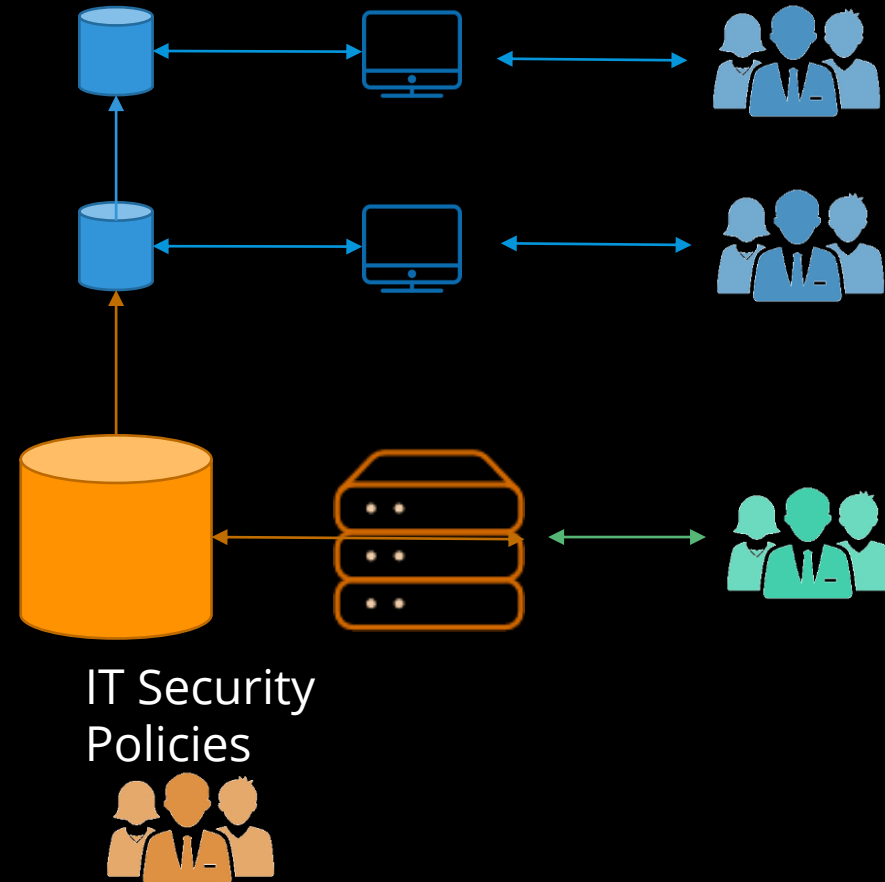
IT System



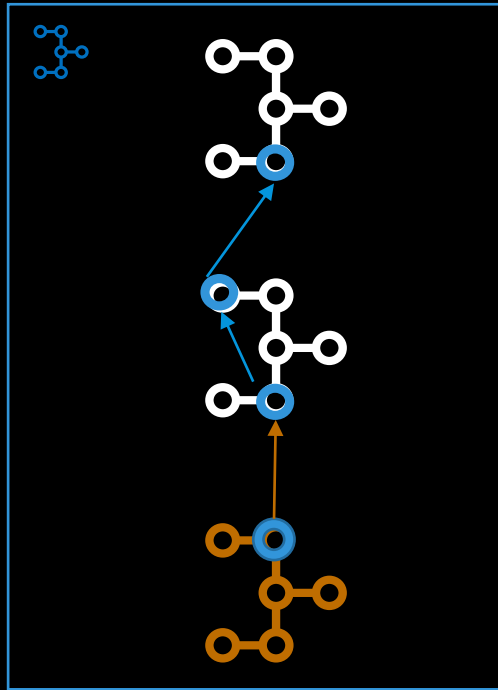
Governance



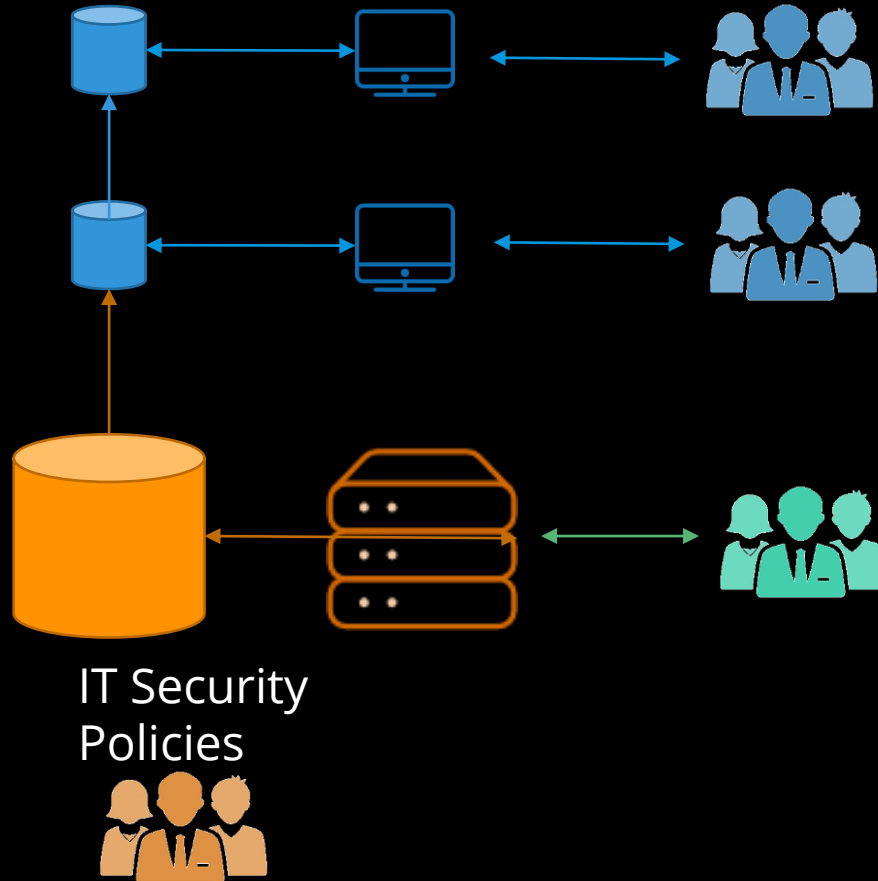
Governance – Security & Compliance



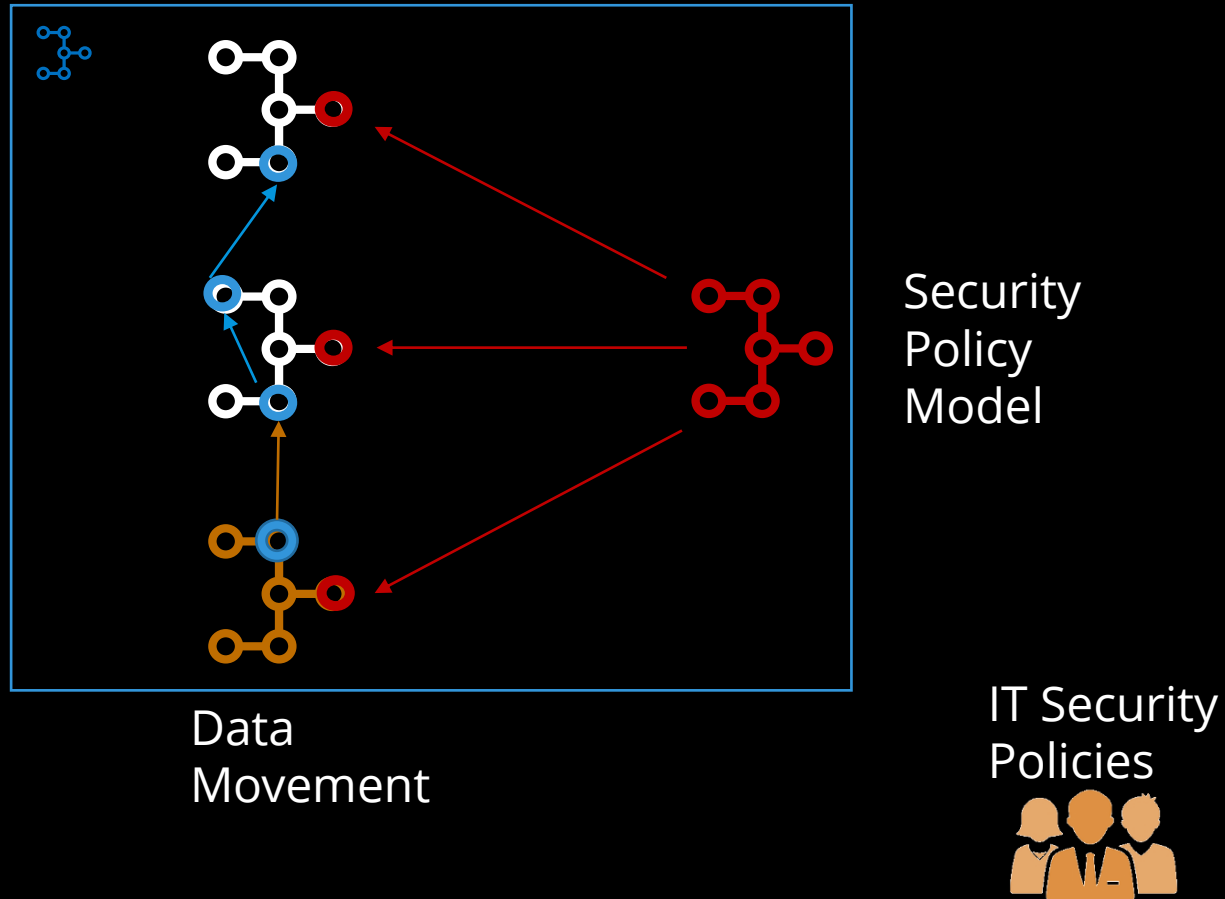
Governance – Security & Compliance



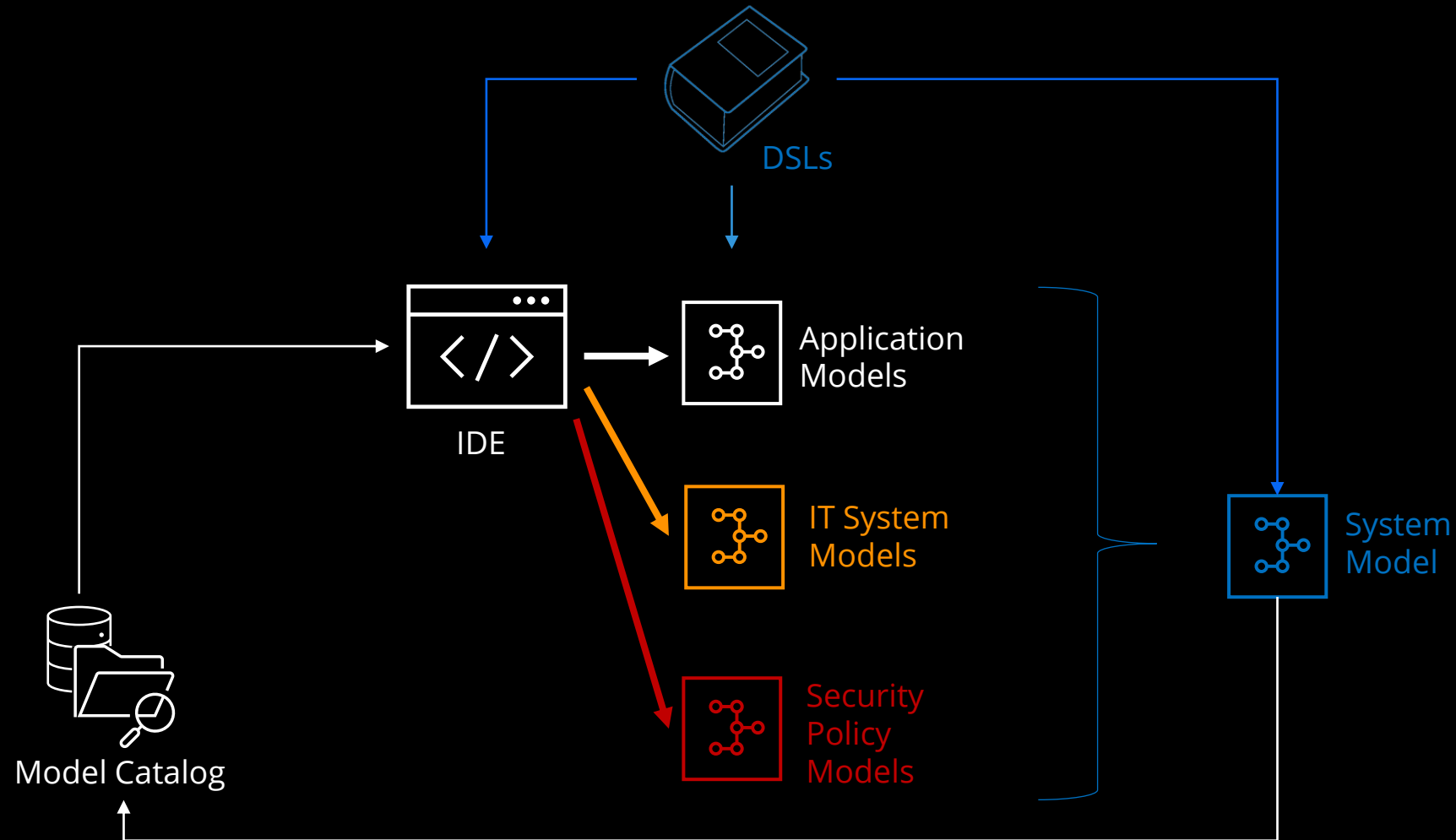
Data
Movement



Governance – Security & Compliance

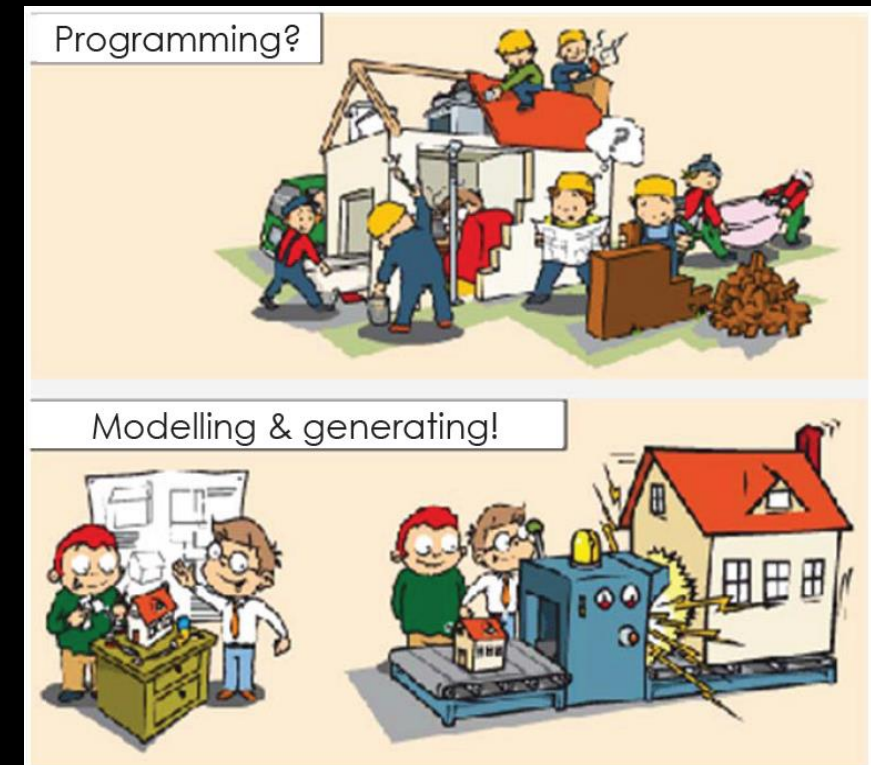
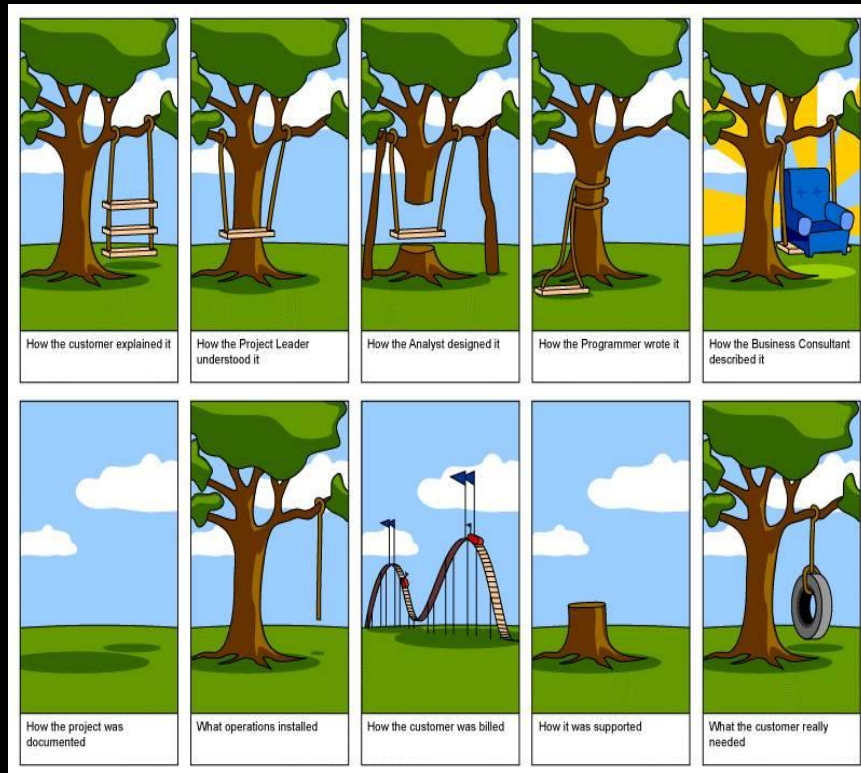


Governance – Ontology & Semantic Models



Democratizing of Software Development

The gap between business and IT

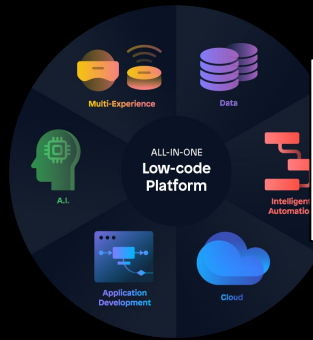


Bridge Gap: Everyone is a Maker



Business

Business Applications



Low Code



IT System



Finance



HRM



CRM



ERP



...

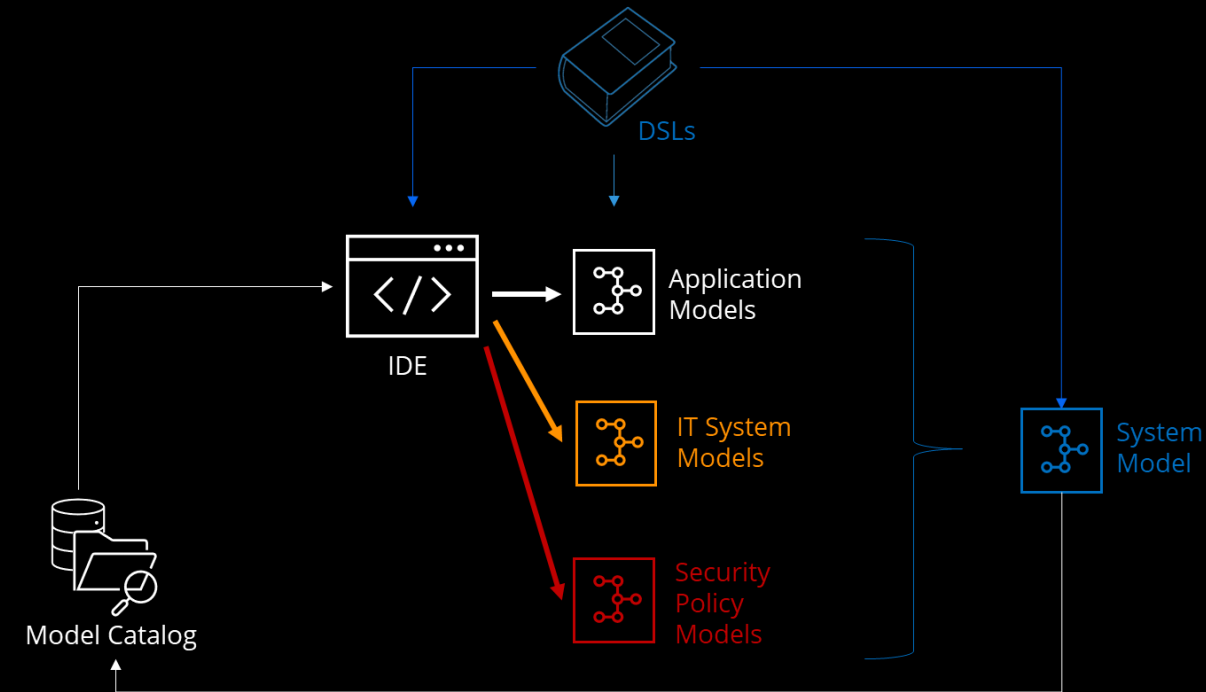
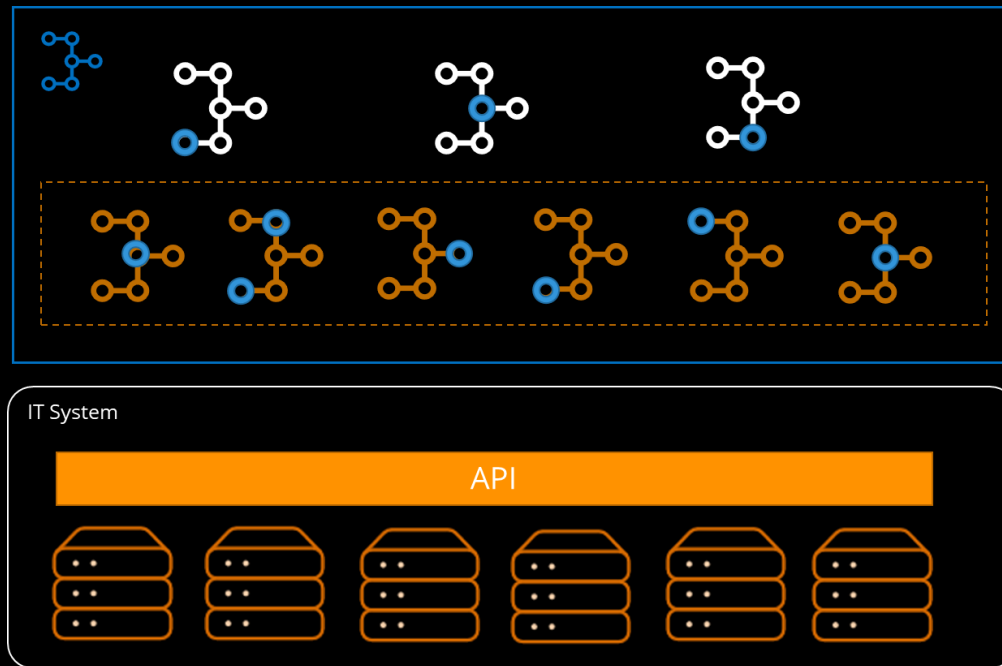


Middleware (system integration processes)



IT / Software
Development

Challenges: Interoperability & Governance



Ontology and Semantic Models

Thank You

Toine Hurkmans

Chief Architect, Mendix

toine.hurkmans@mendix.com