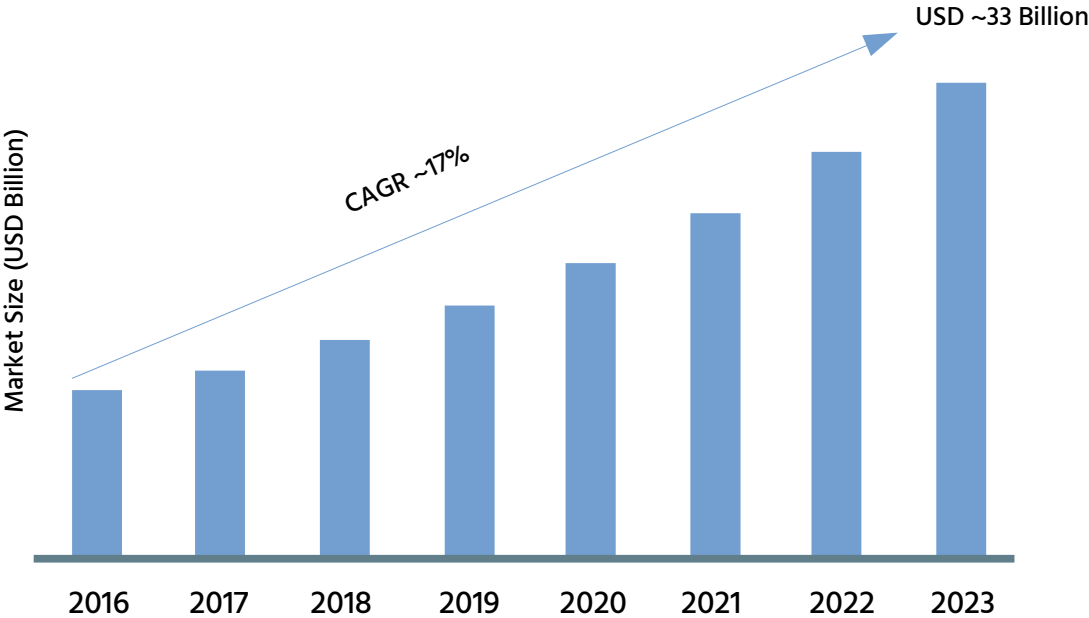


Preparing For a Future Microservices Journey Using Wardley Maps DDD &

Susanne Kaiser
Independent Tech Consultant
[@suksr](#)

Microservices Architecture Market



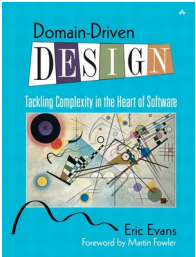
Key Trends



Loose Coupling



Deployment

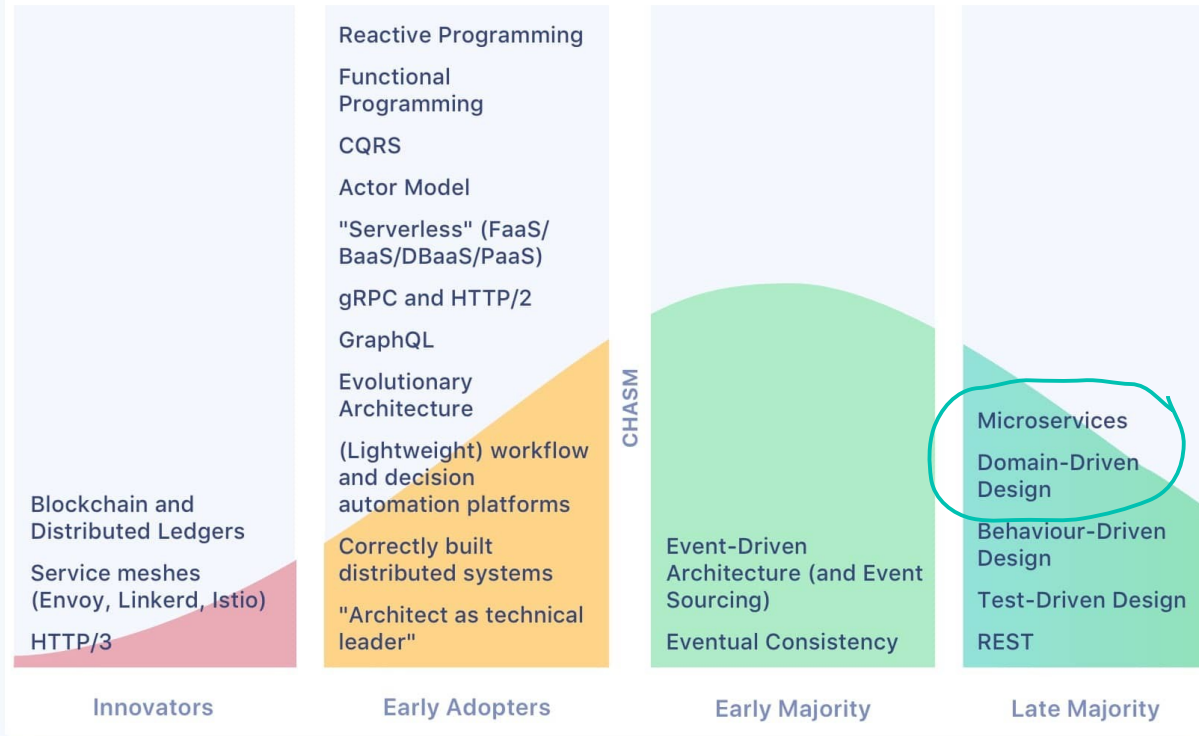


Domain Driven Design

Software Development Architecture and Design 2019 Q1 Graph



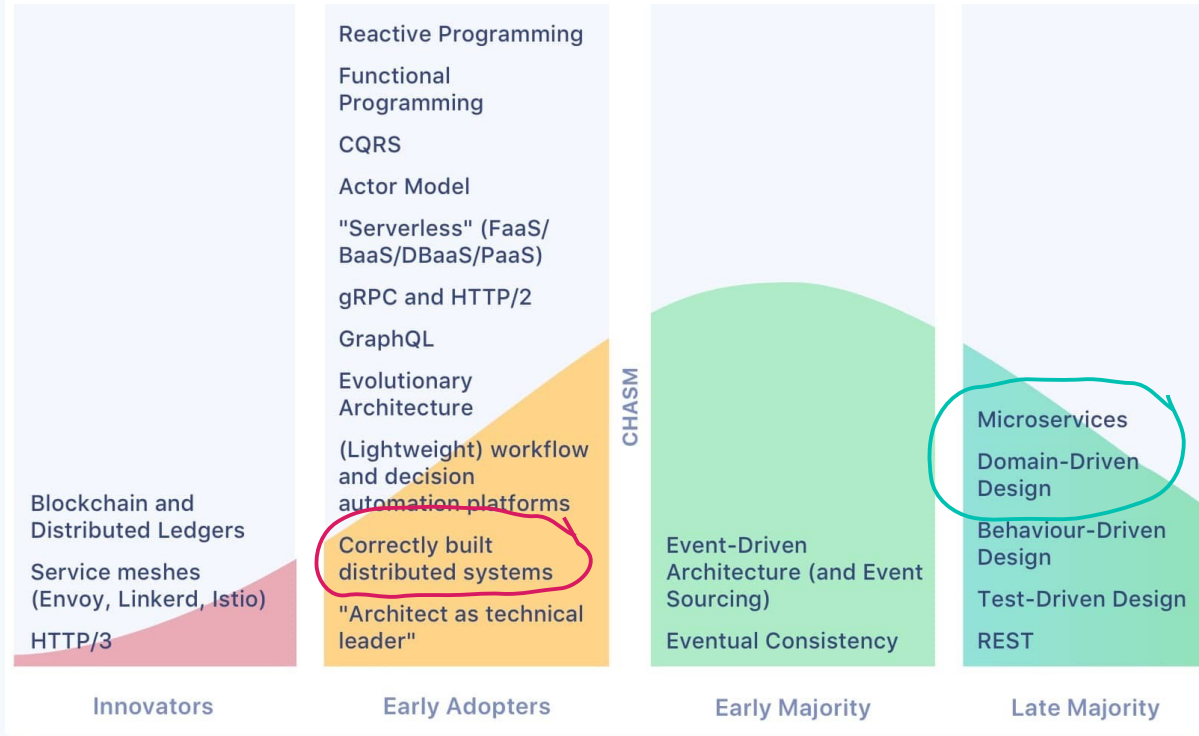
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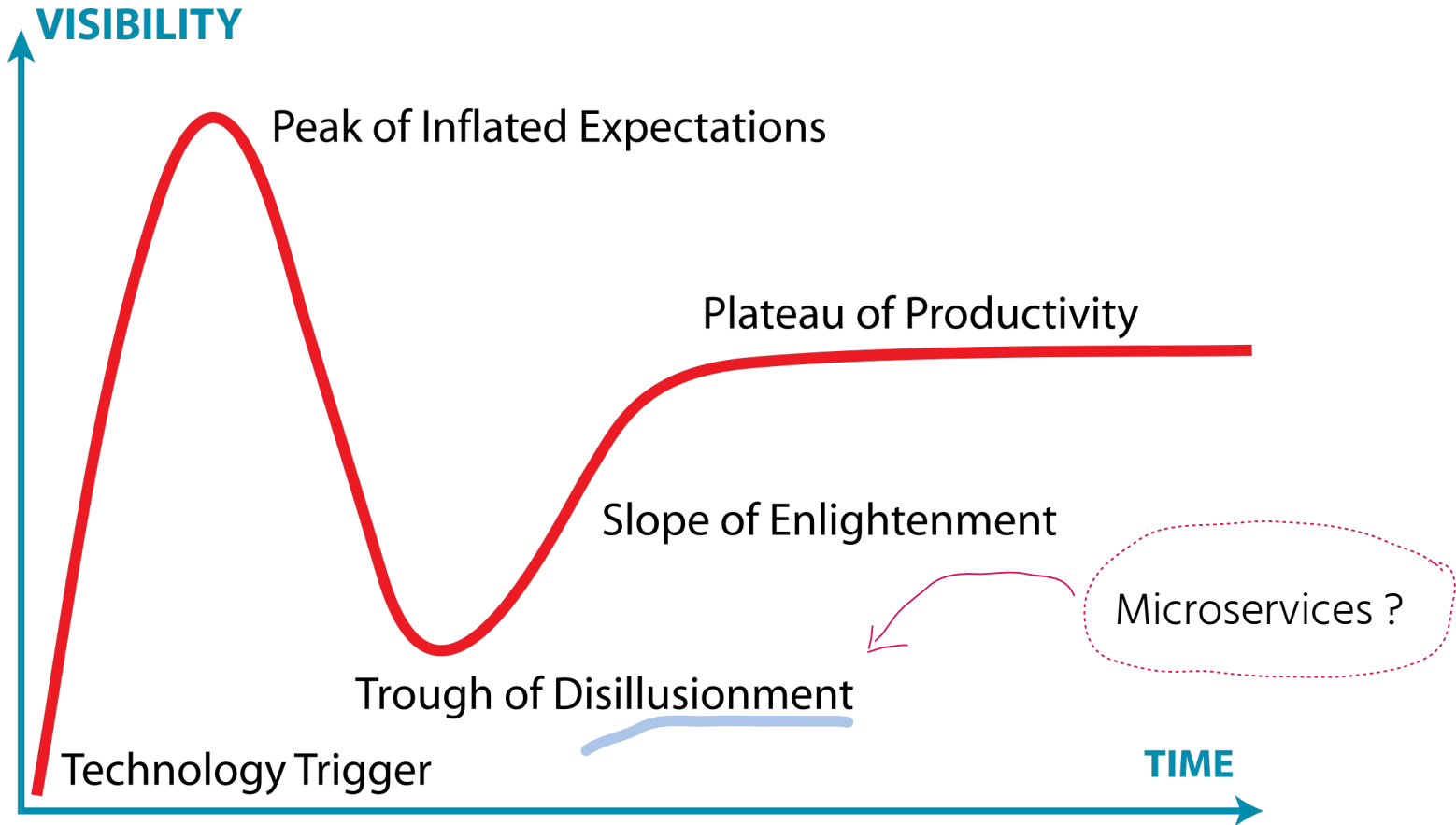
Software Development Architecture and Design 2019 Q1 Graph

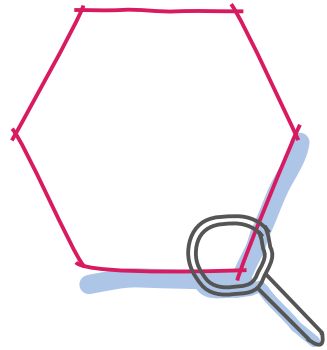


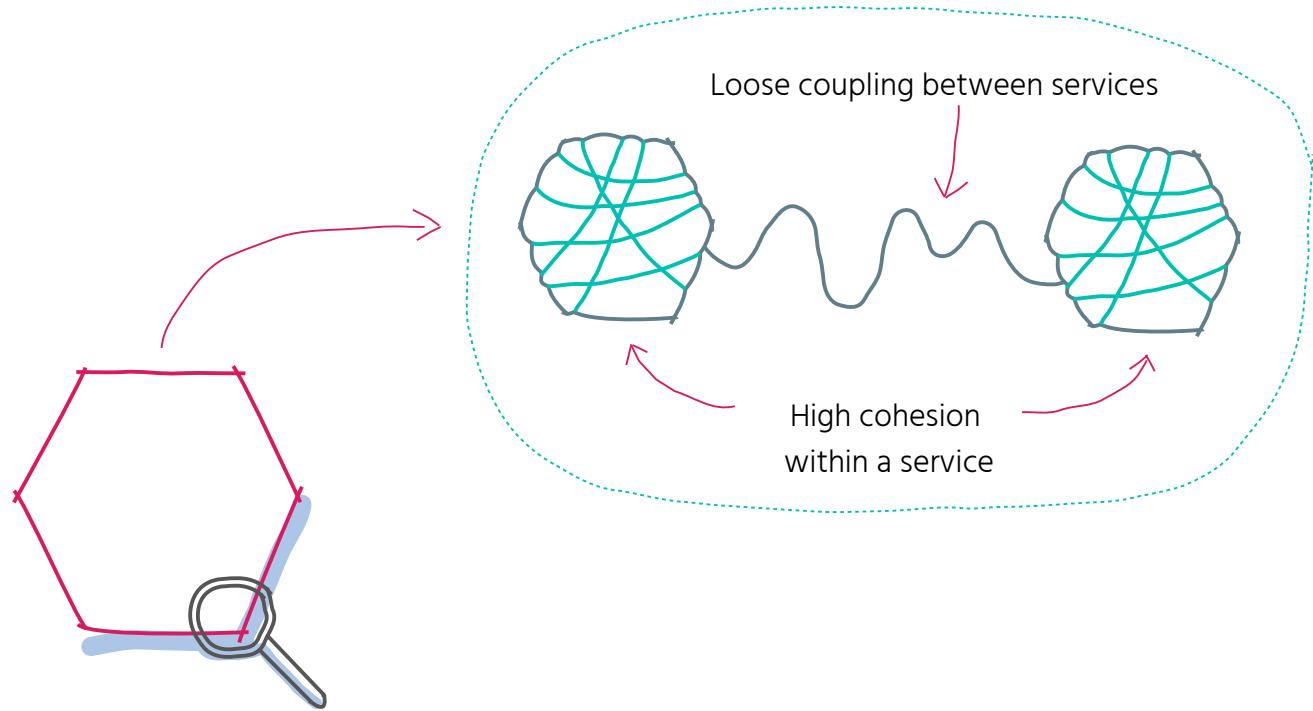
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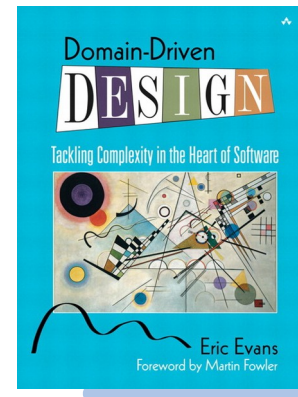
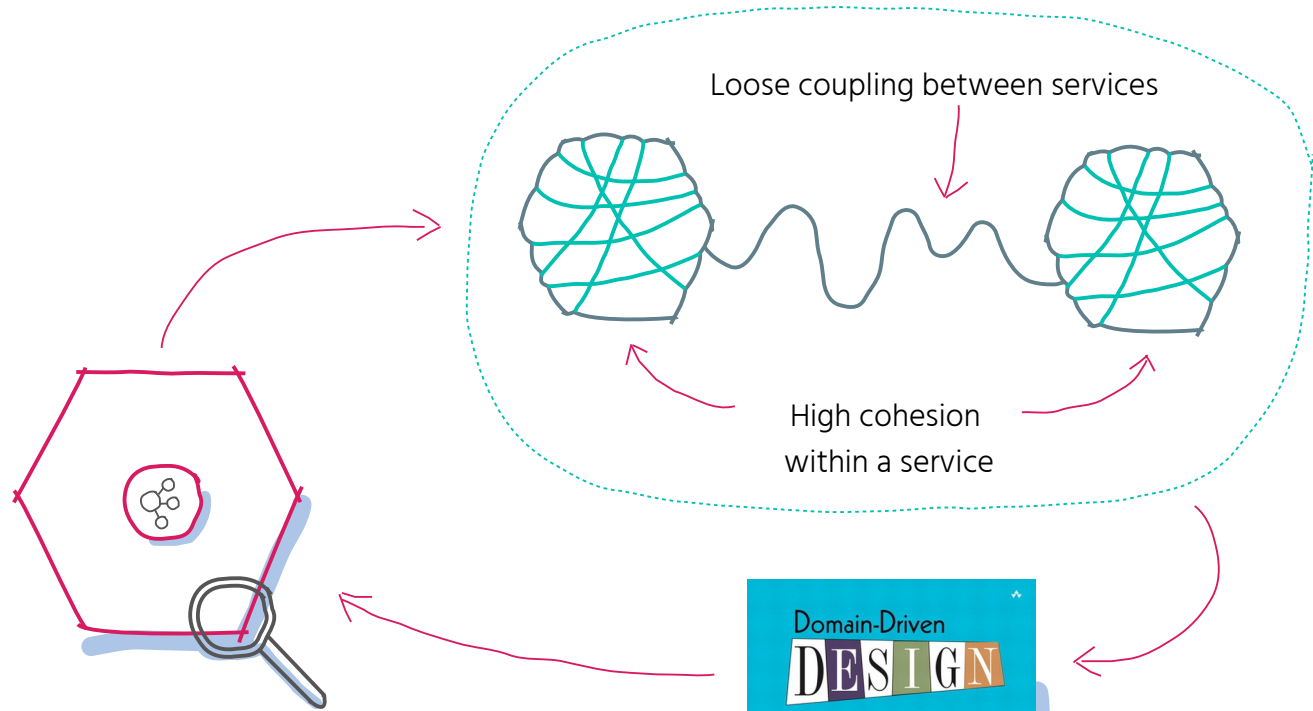


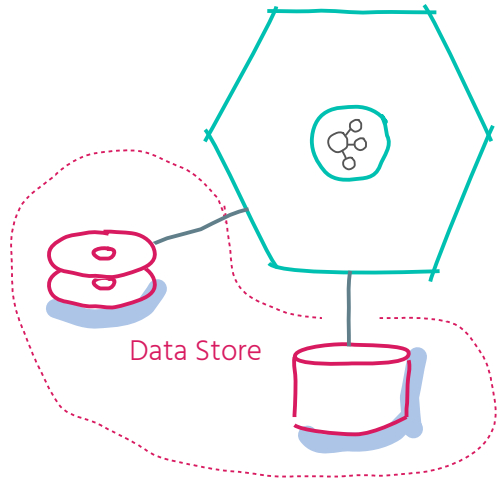
Gartner Hype Cycle

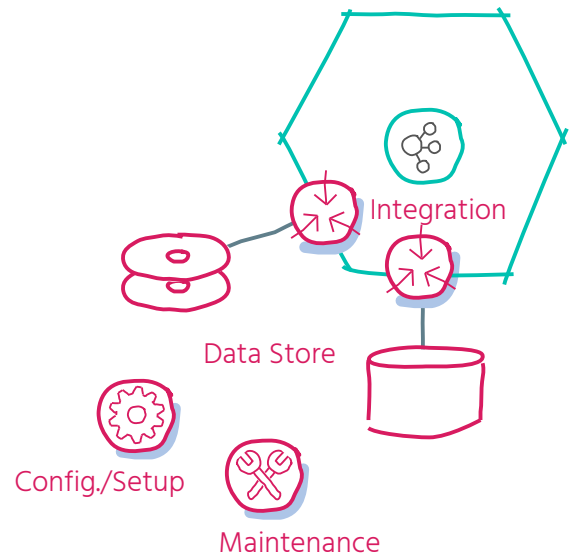














Runtime



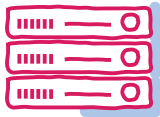
Container



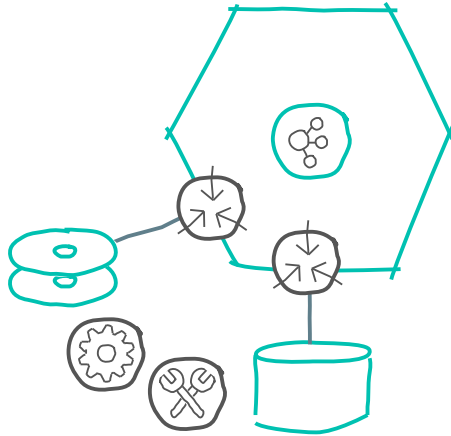
O/S



Virtualization



Hardware





Runtime



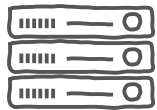
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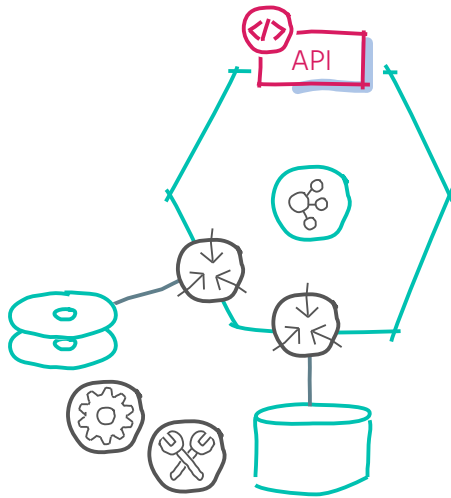
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Virtualization



Hardware





Runtime



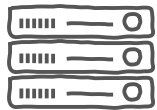
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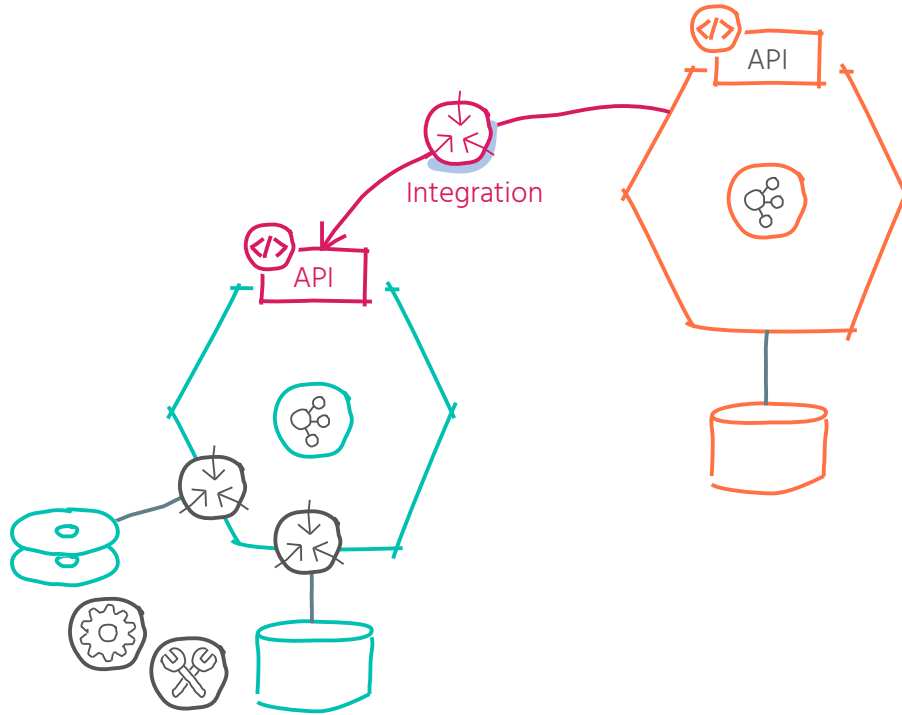
O/S



Virtualization



Hardware





Runtime



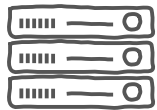
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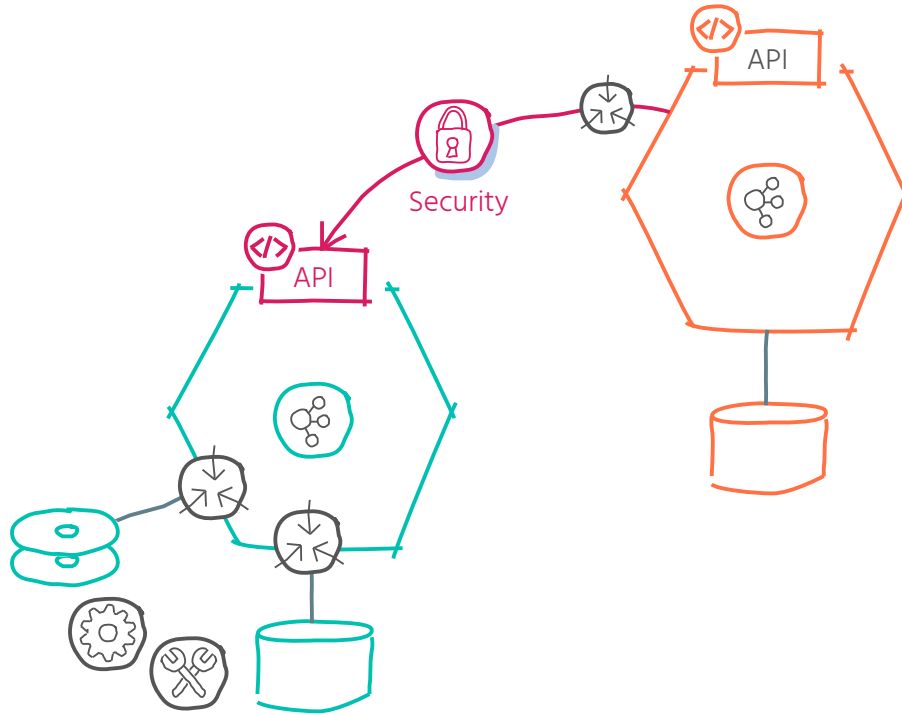
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Virtualization



Hardware





Runtime



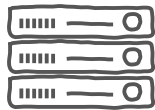
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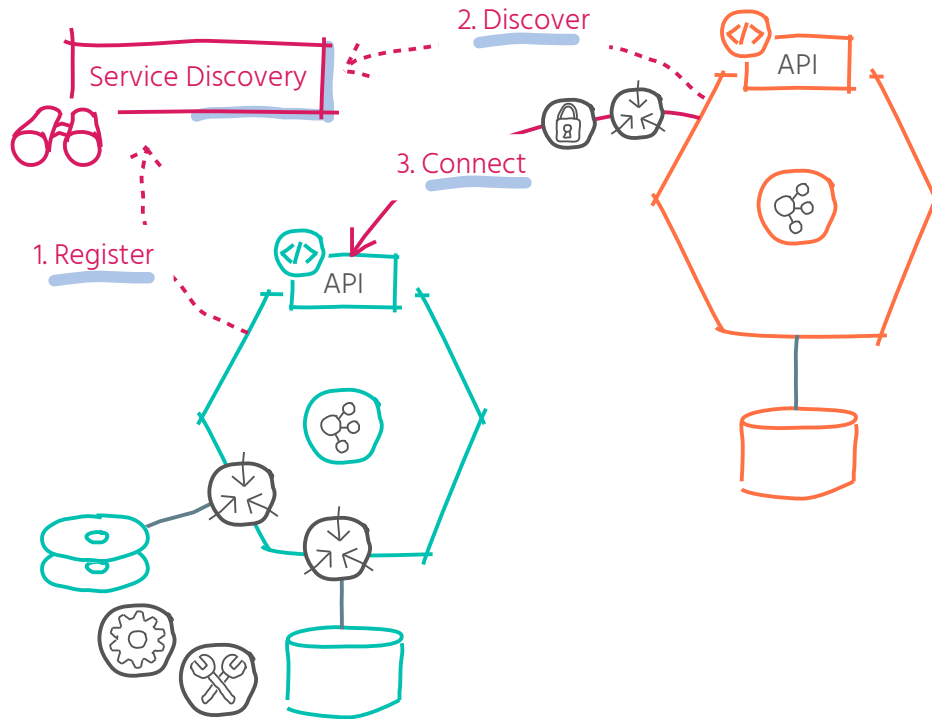
O/S



Virtualization



Hardware





Runtime



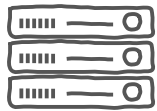
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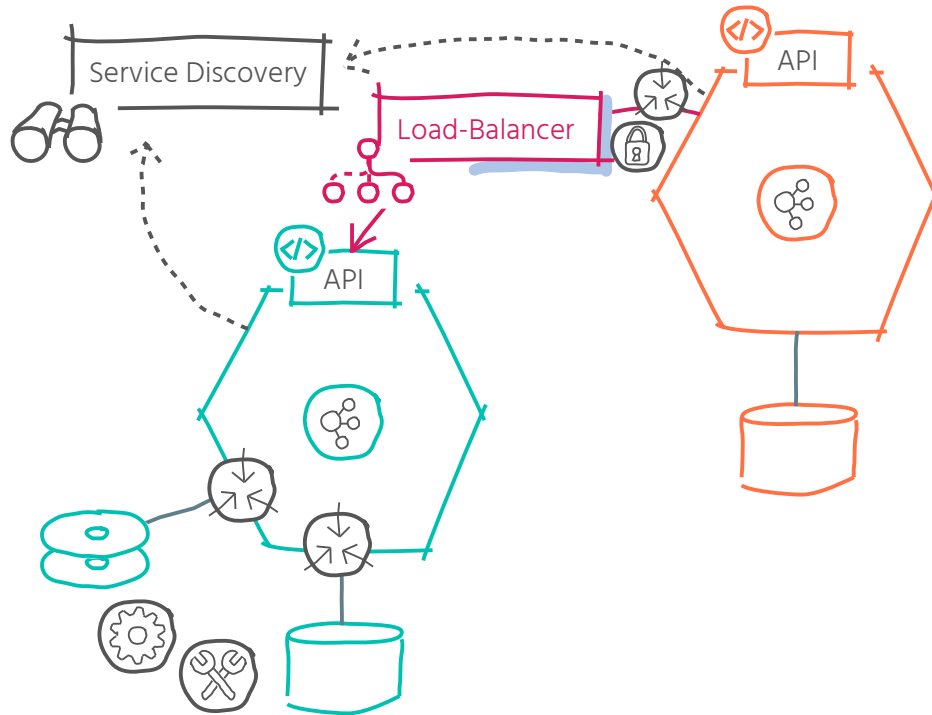
O/S



Virtualization



Hardware





Runtime



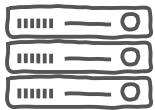
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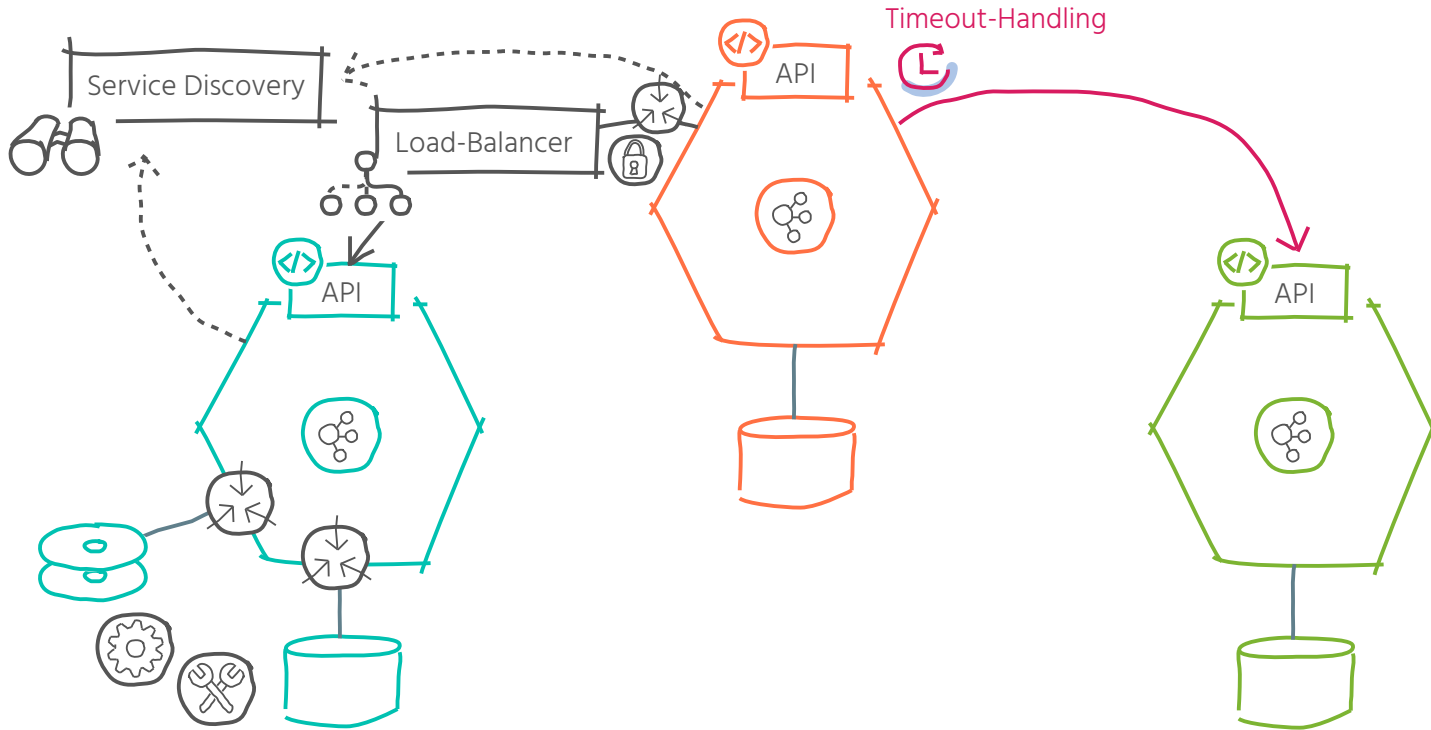
O/S



Virtualization



Hardware





Runtime



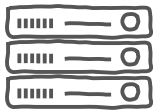
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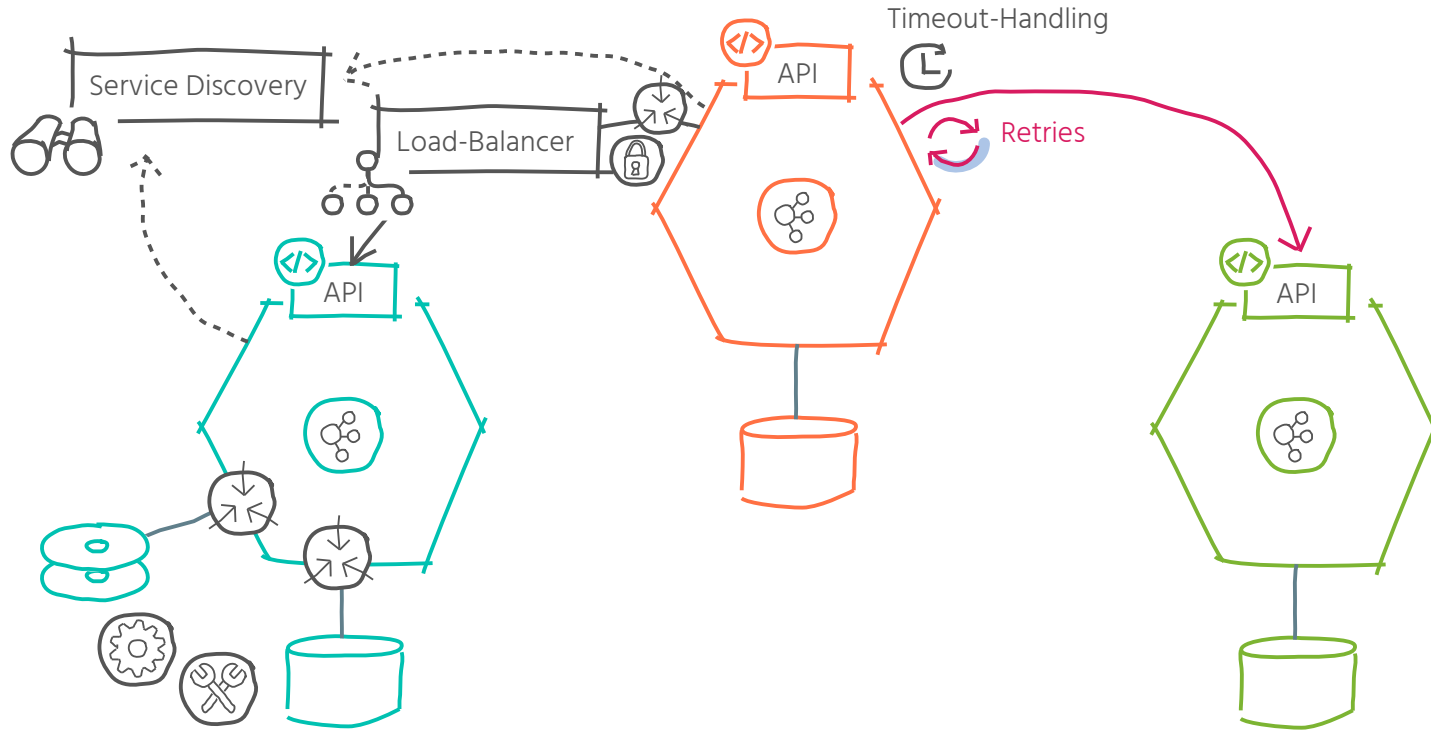
O/S




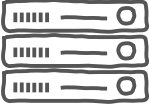


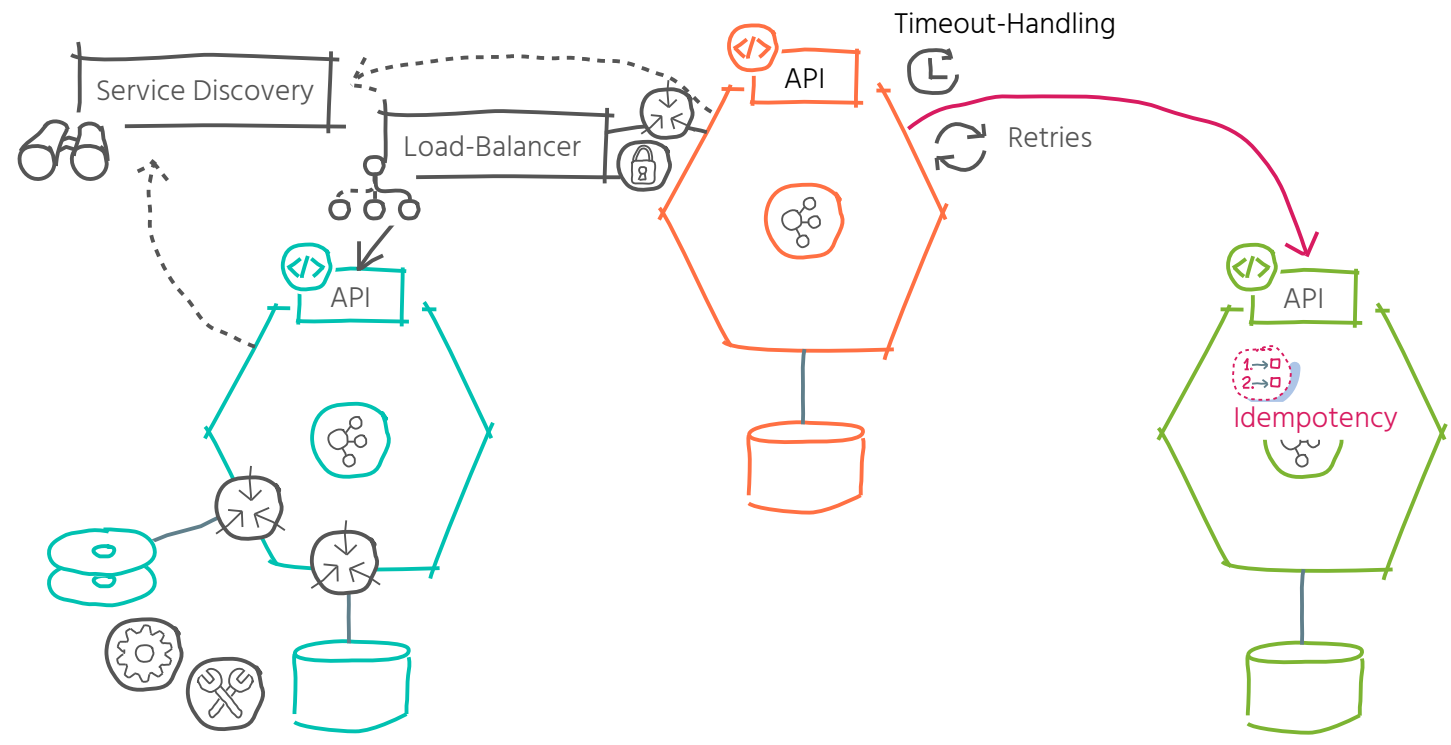
Virtualization





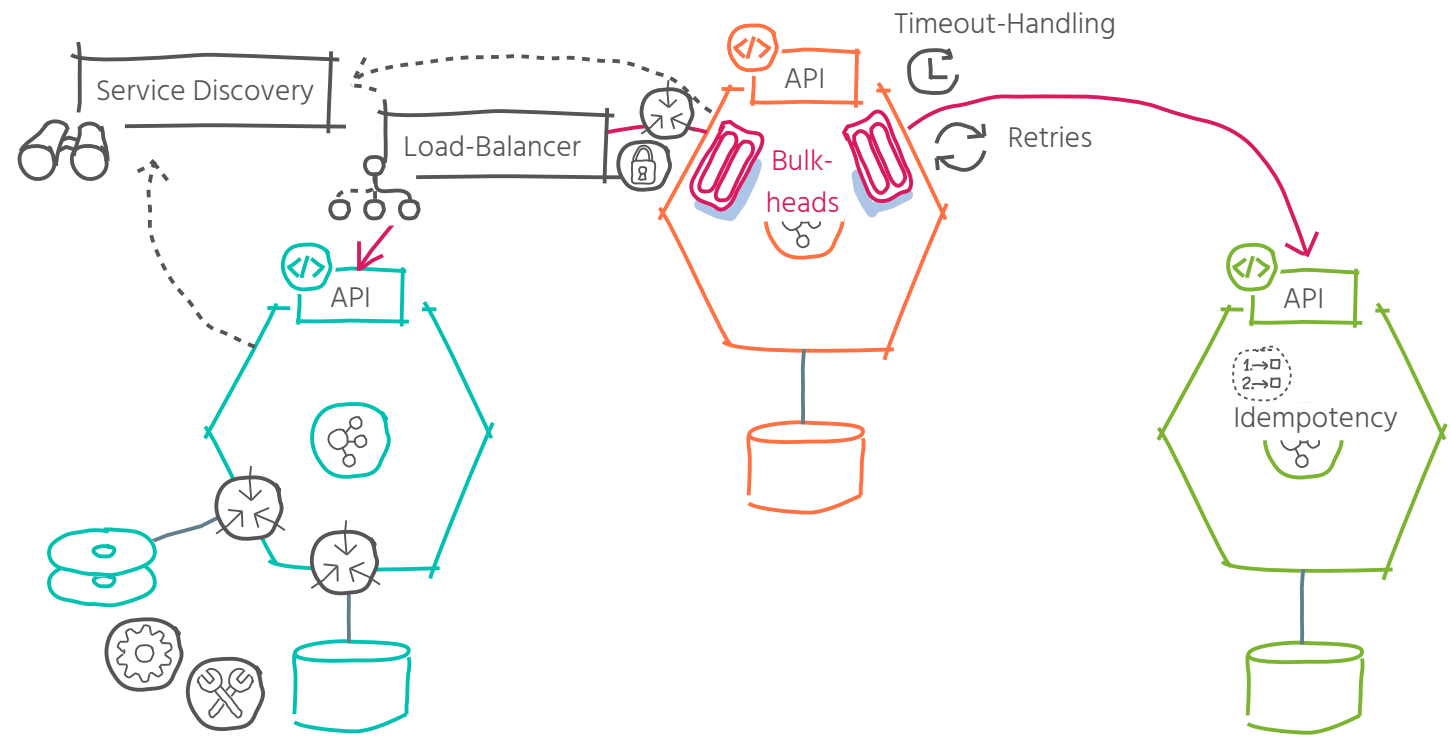
Hardware







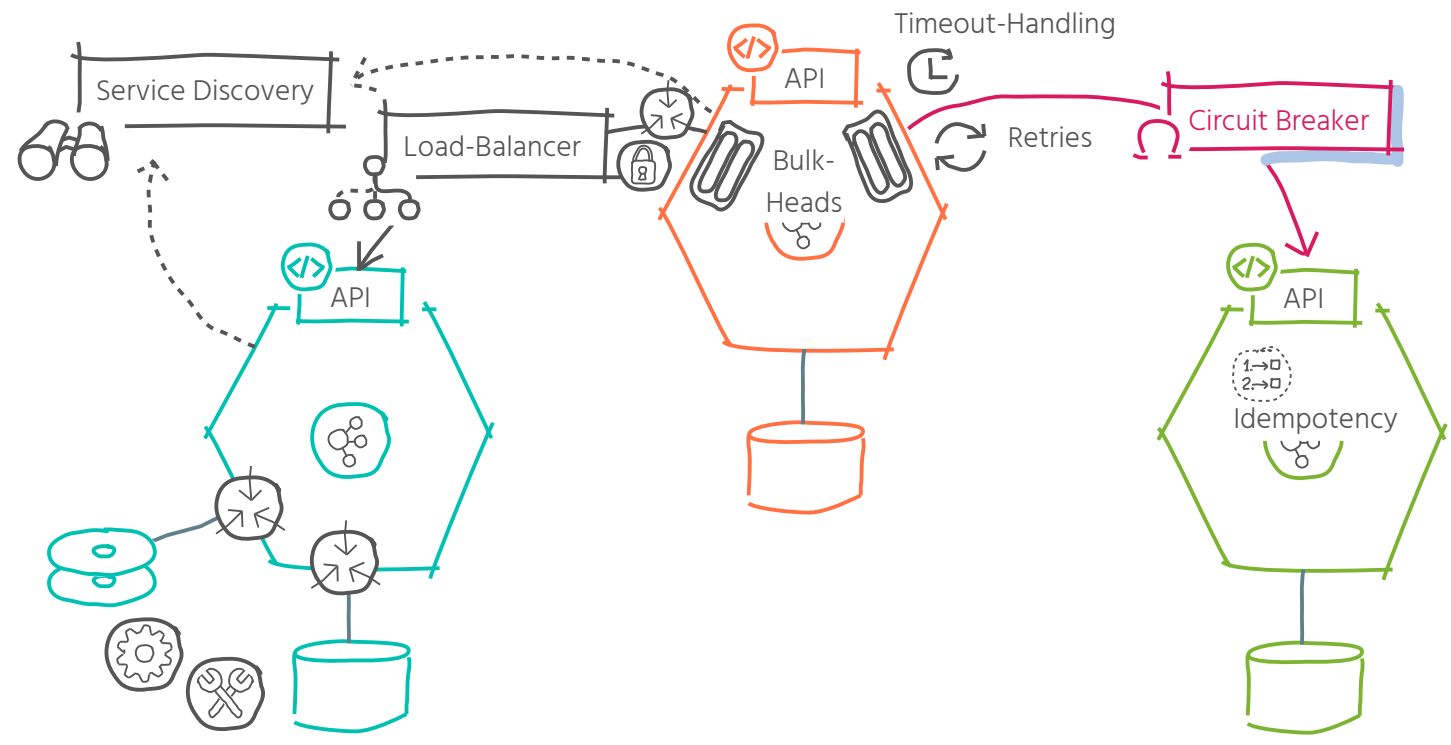
-  Runtime
-  Container
-  O/S
-  Virtualization
-  Hardware





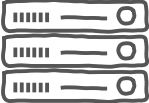


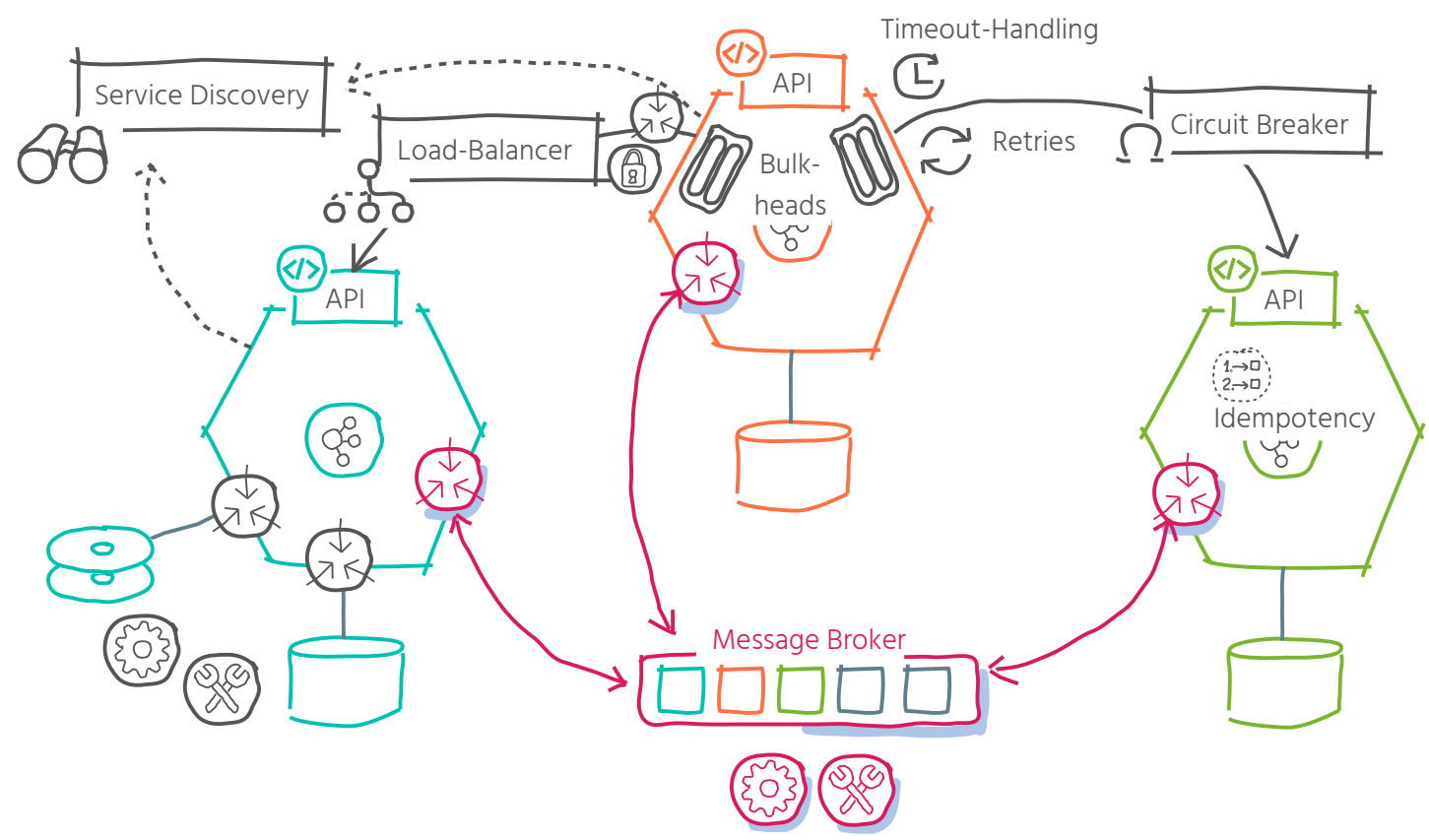
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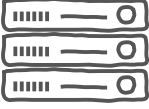


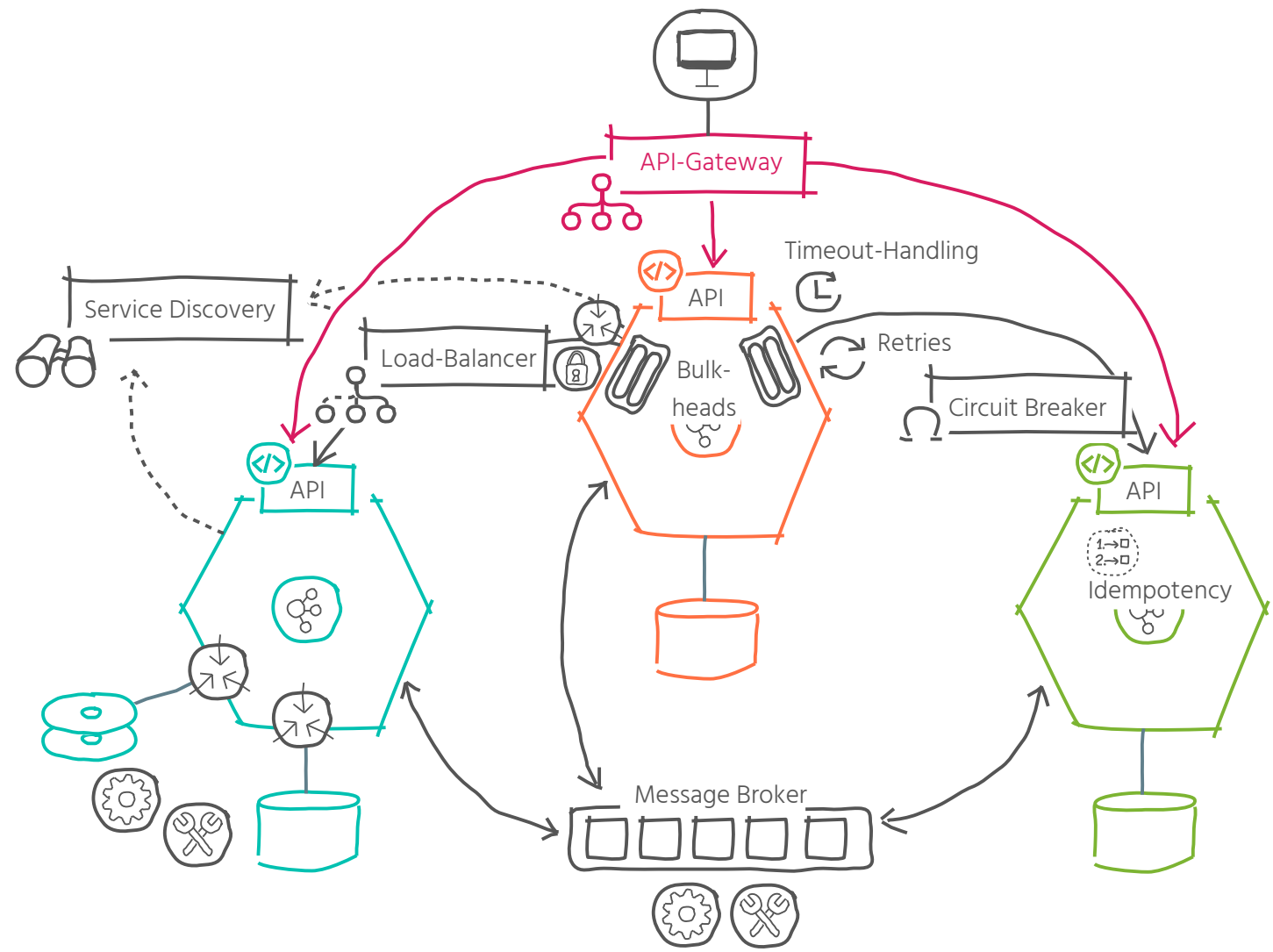
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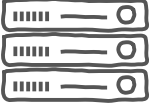


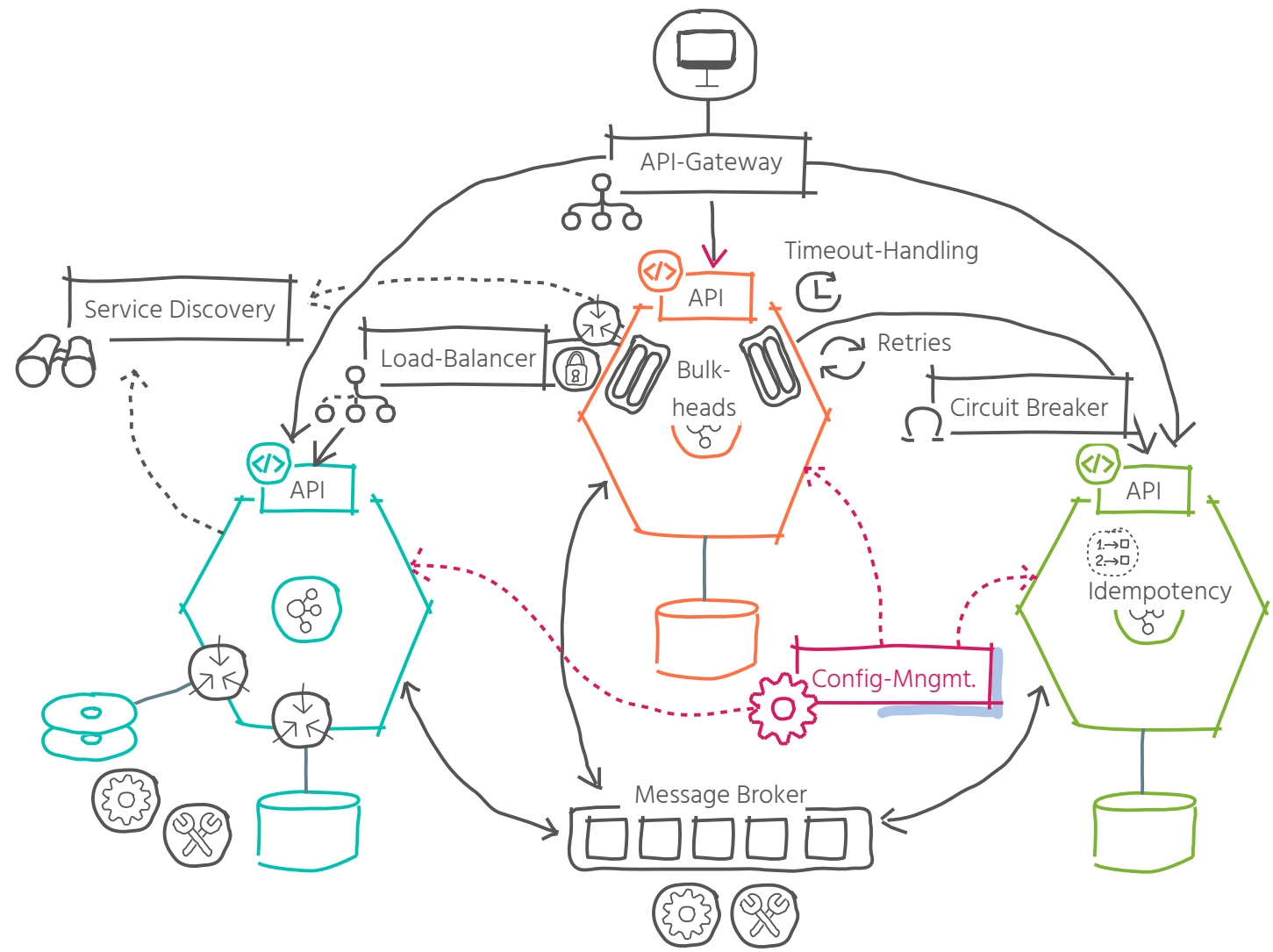
-  Runtime
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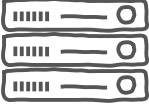


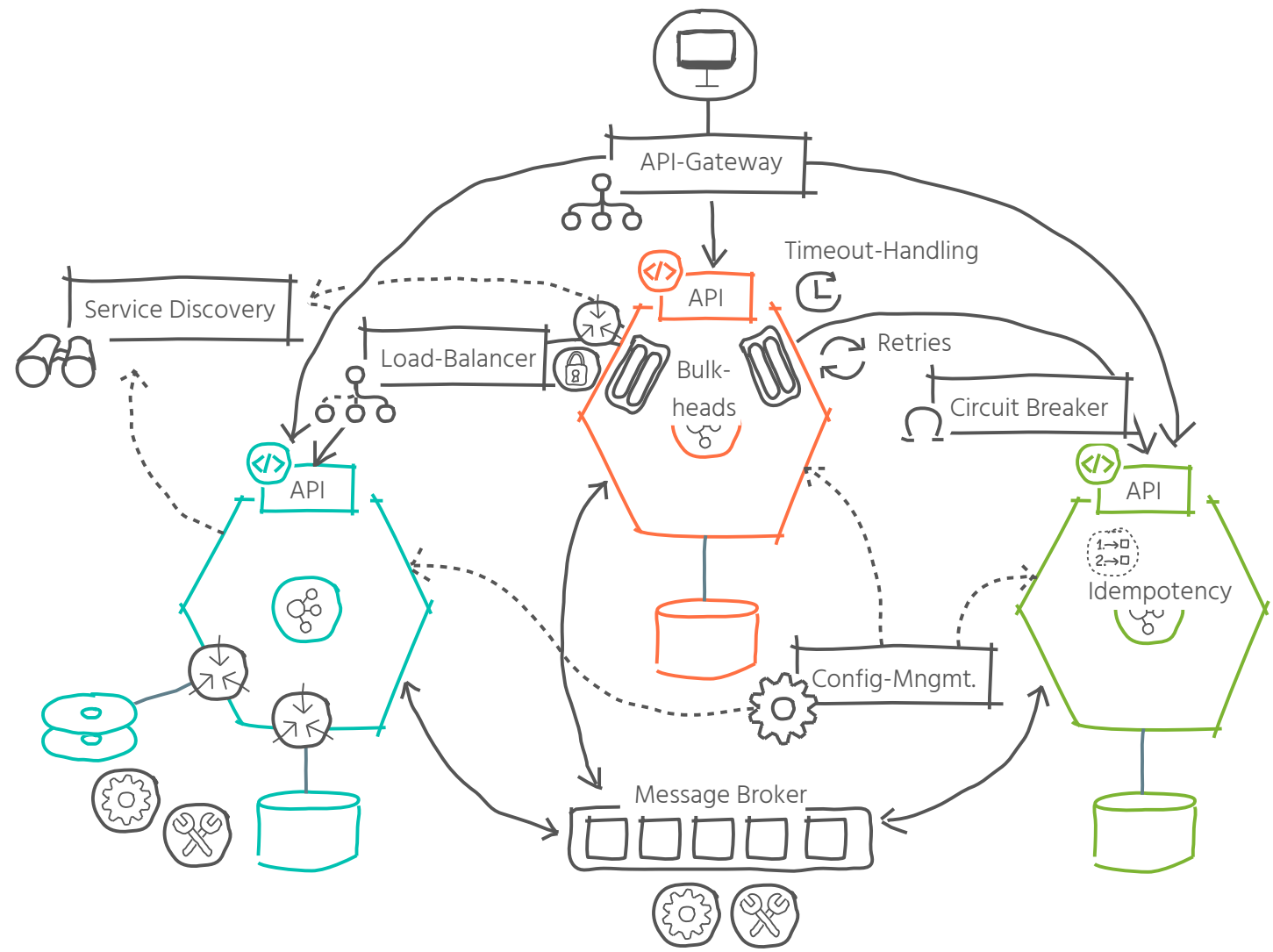
-  Runtime
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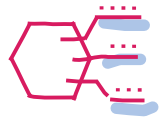


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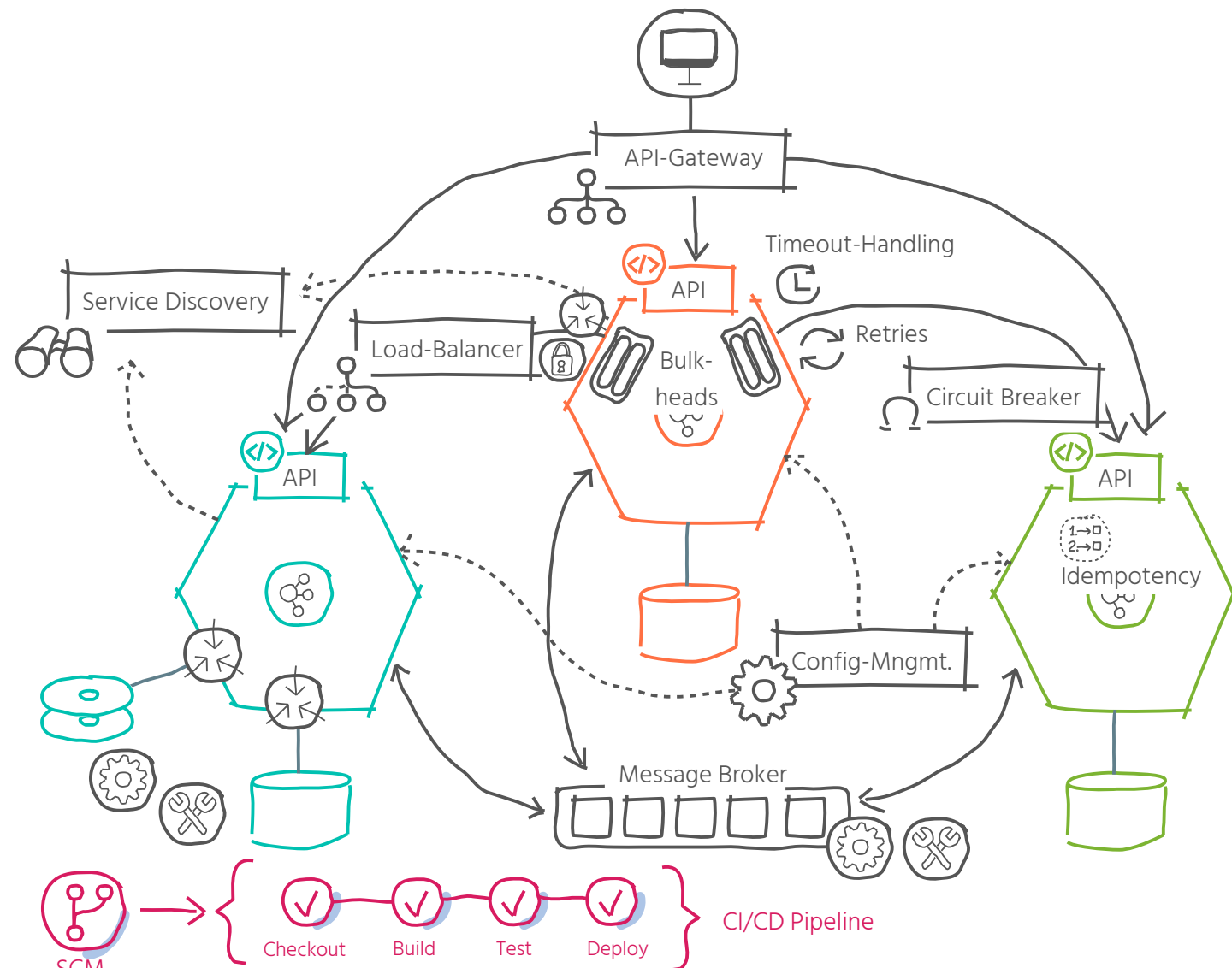


-  Runtime
-  Container
-  O/S
-  Virtualization
-  Hardware



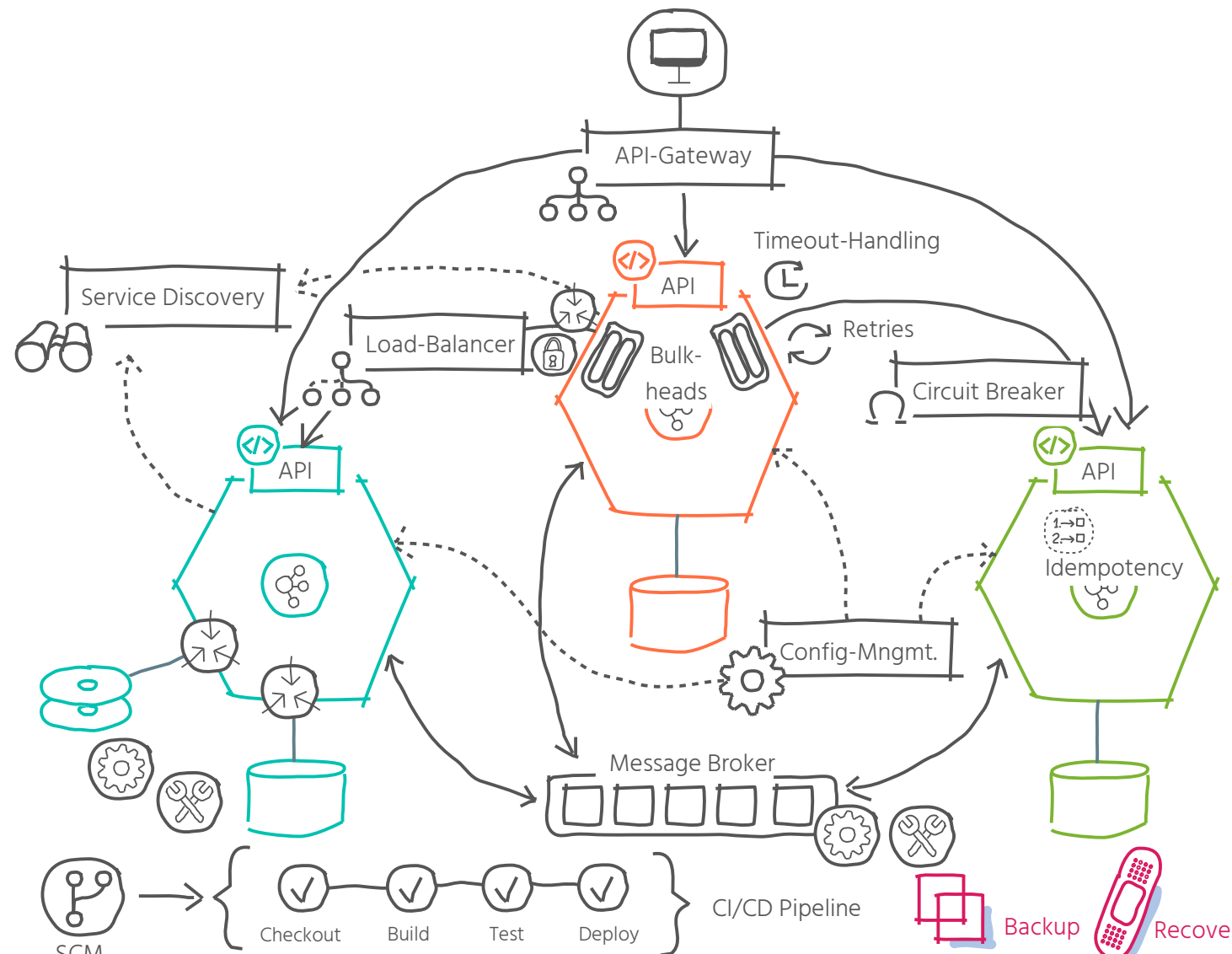
-  Monitoring
-  Log Aggregation
-  Metrics
-  Distributed Tracing
-  Health Checks

- Runtime
- Container
- O/S
- Virtualization
- Hardware



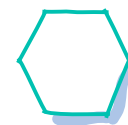
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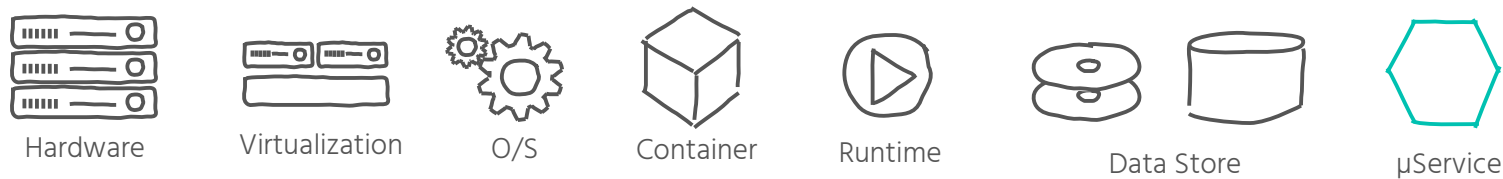


- Monitoring
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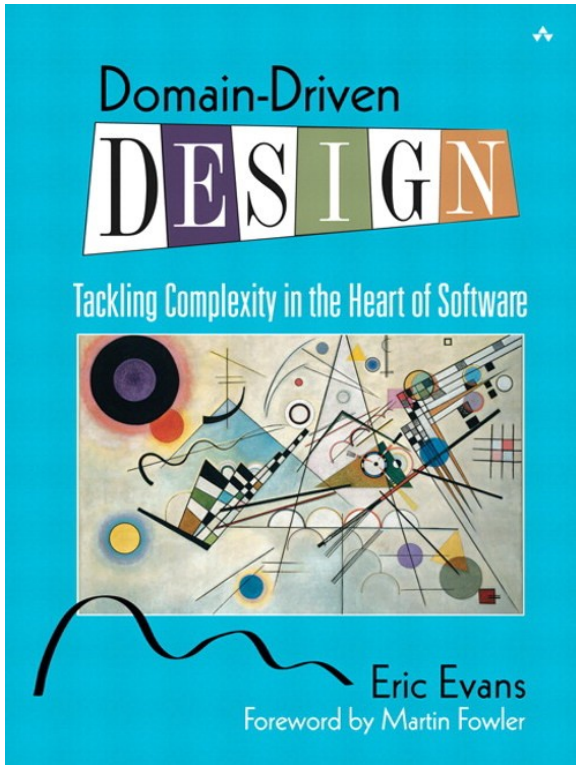




μService



Domain Driven Design (DDD) – Terminology



Strategic Design
Tactical Design

Core Subdomain
Supporting Subdomain
Generic Subdomain

Context Maps
Anti-Corruption Layer
Shared Kernel
Open Host Service
Separate Ways
Partnership
Customer-Supplier
Conformist

Problem Space
Solution Space

Bounded Context
Ubiquitous Language

Domain Model
Entity
Value Object
Aggregate
Repository
Factory
Application Service
Domain Service
Domain Event

Strategic Design
Tactical Design

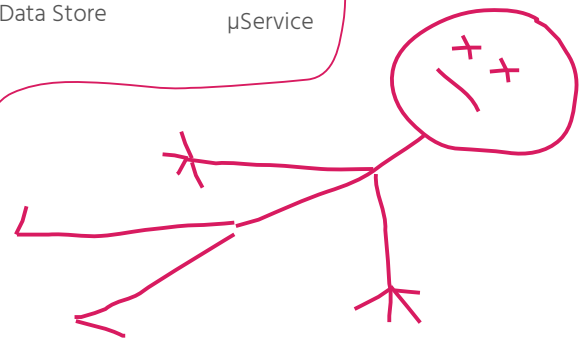
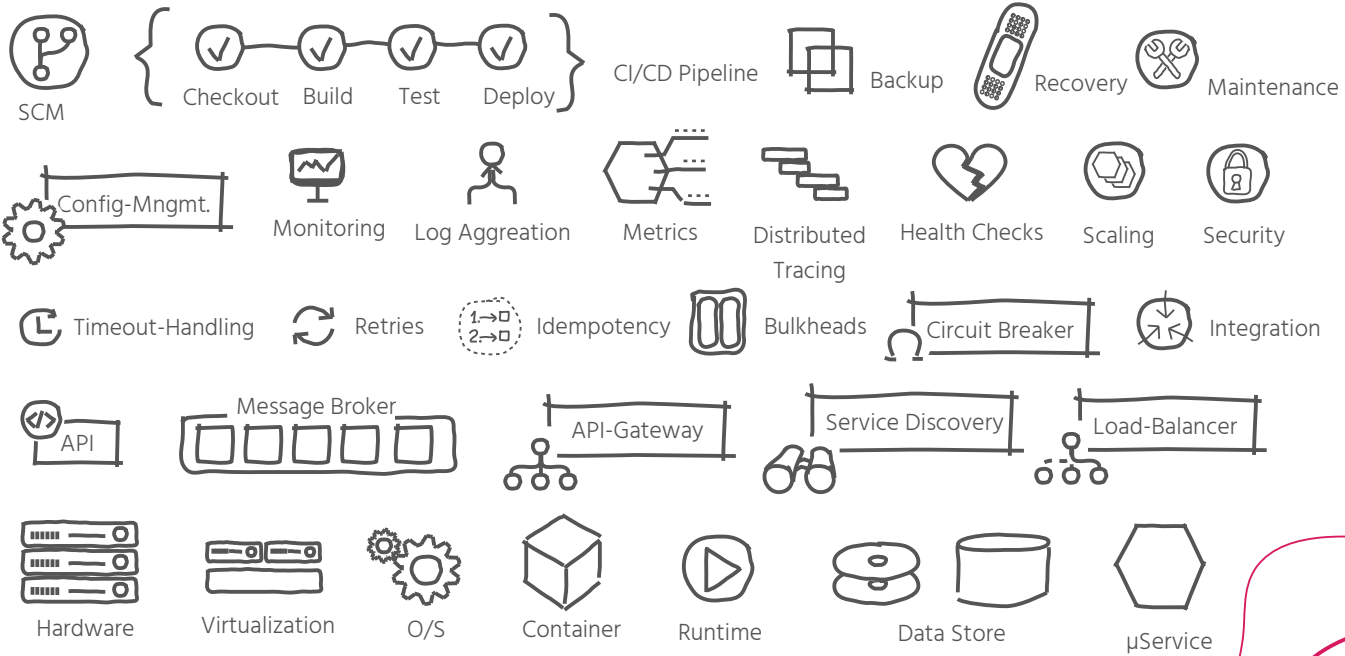
Problem Space
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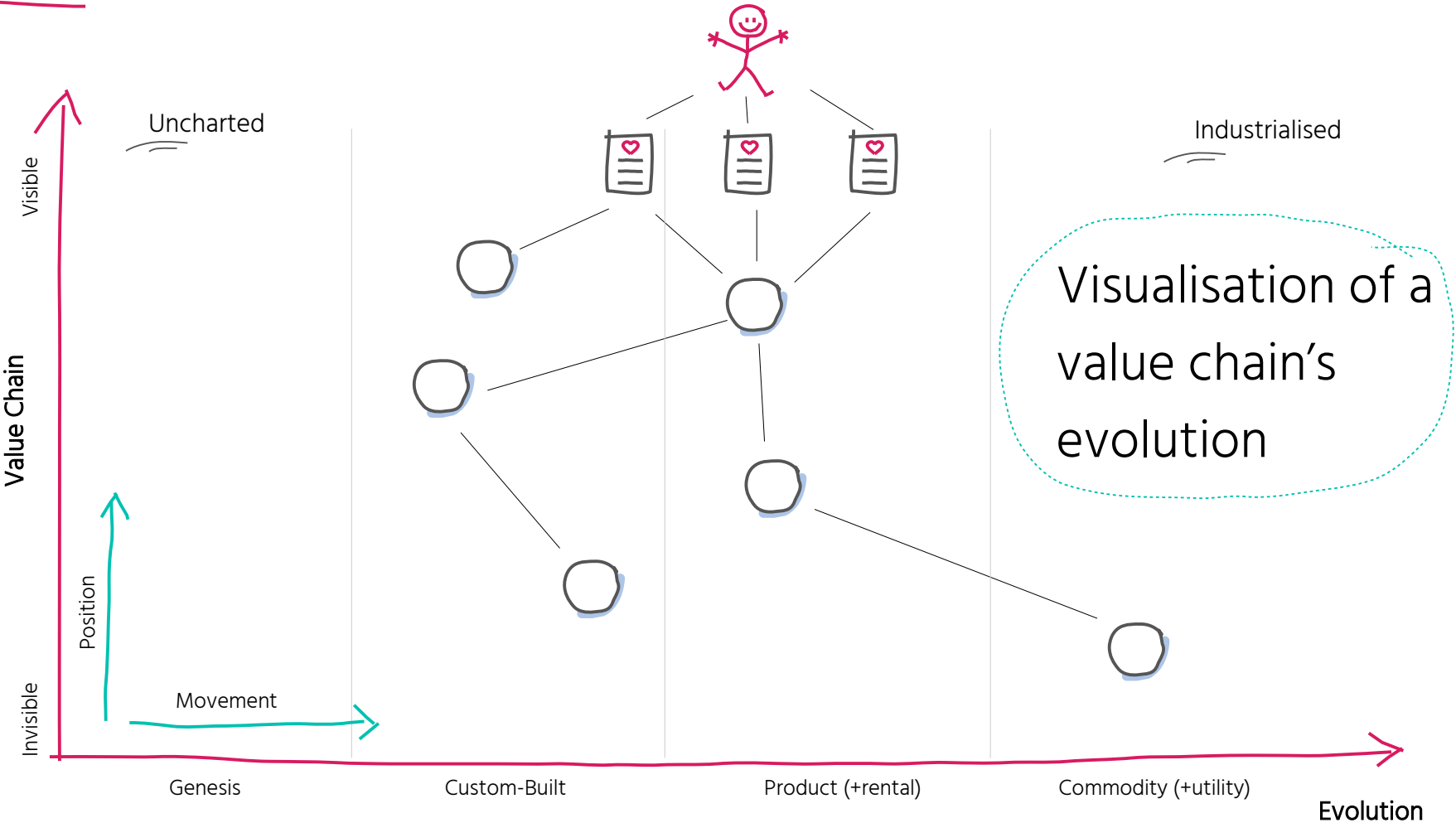
Context Maps
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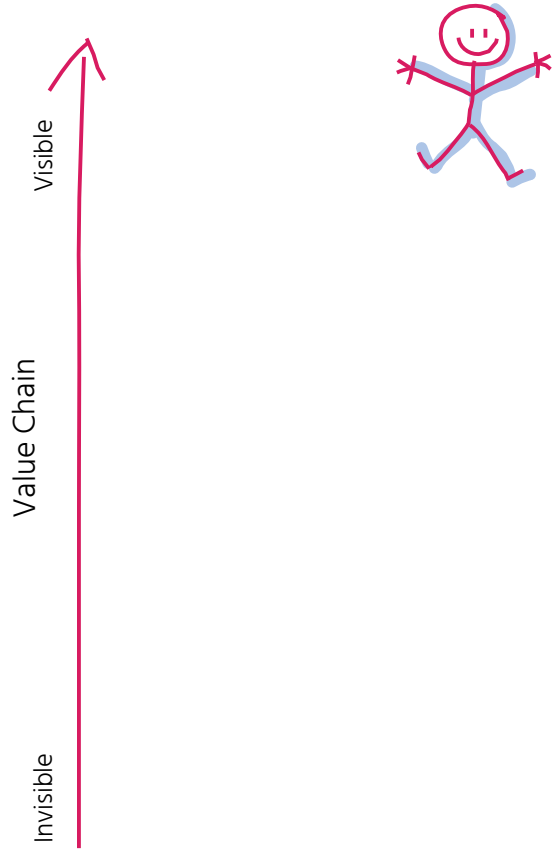
Domain Model
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Wardley Maps BY SIMON WARDLEY

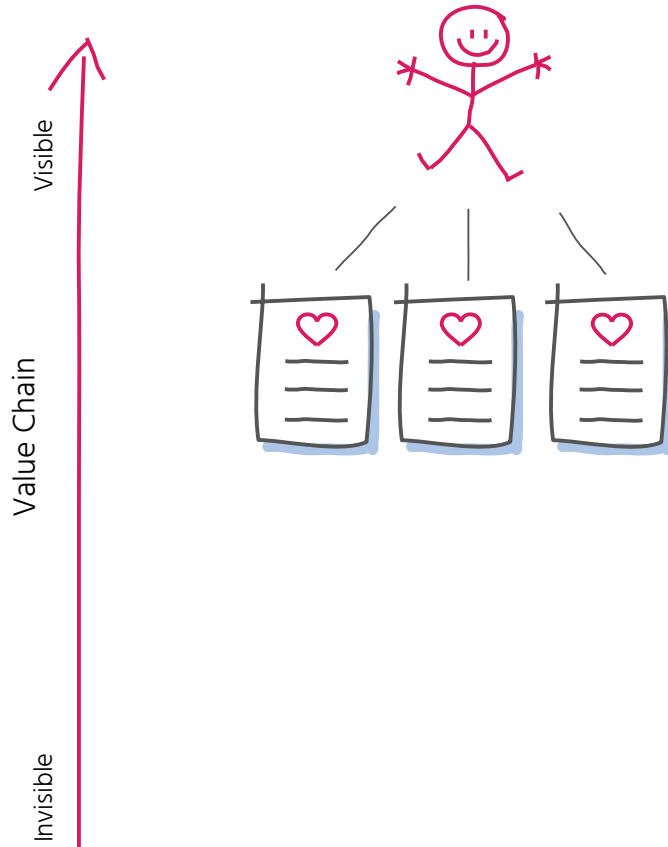


Wardley Maps – VALUE CHAIN



Who are your users?

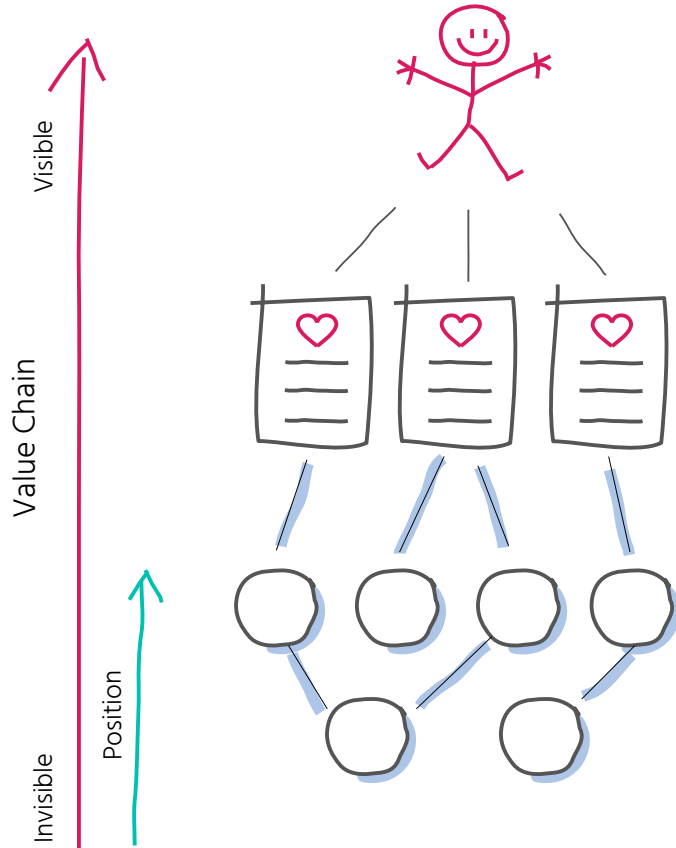
Wardley Maps – VALUE CHAIN



Who are your users?

What are your users' needs?

Wardley Maps – VALUE CHAIN

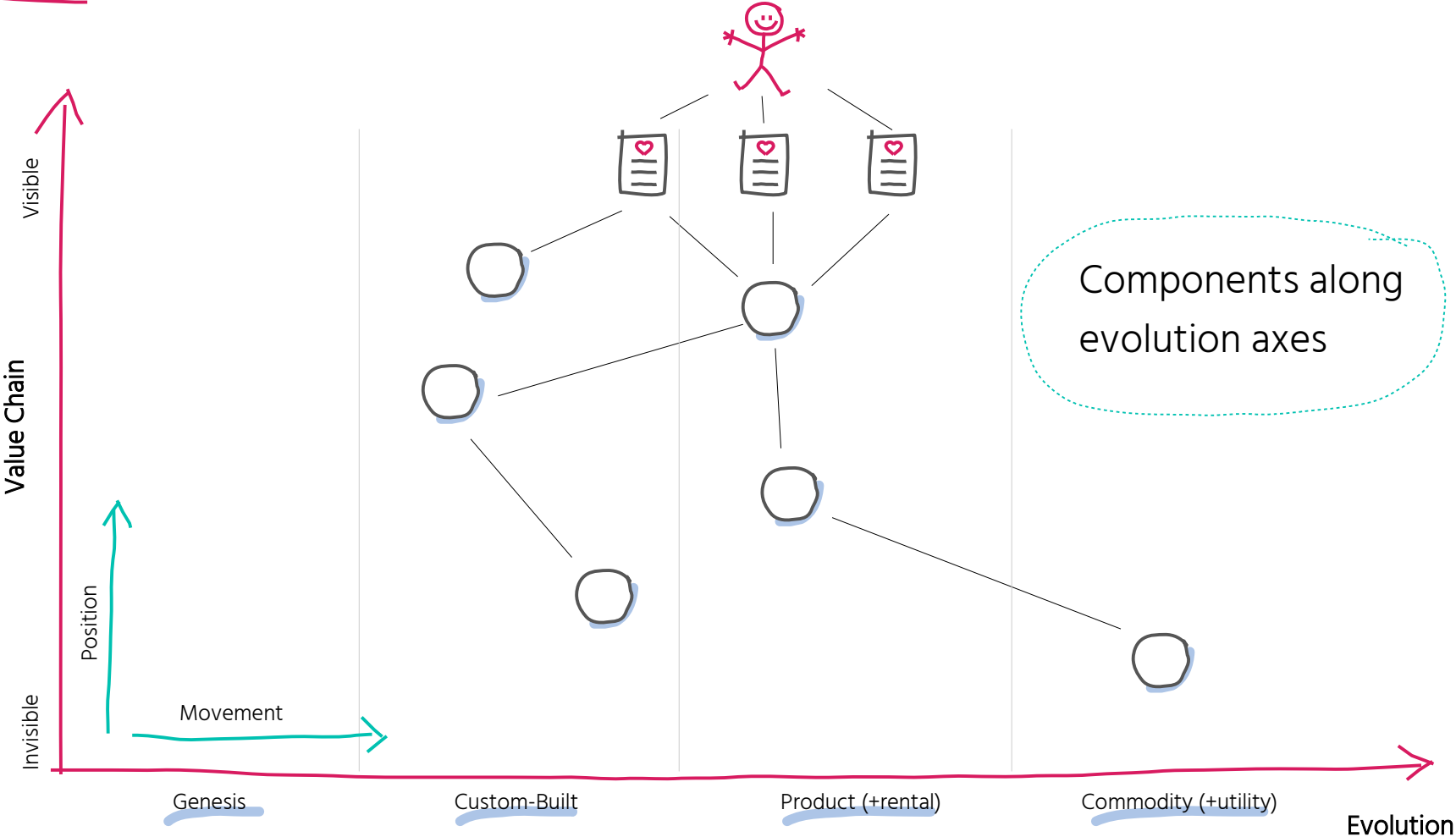


Who are your users?

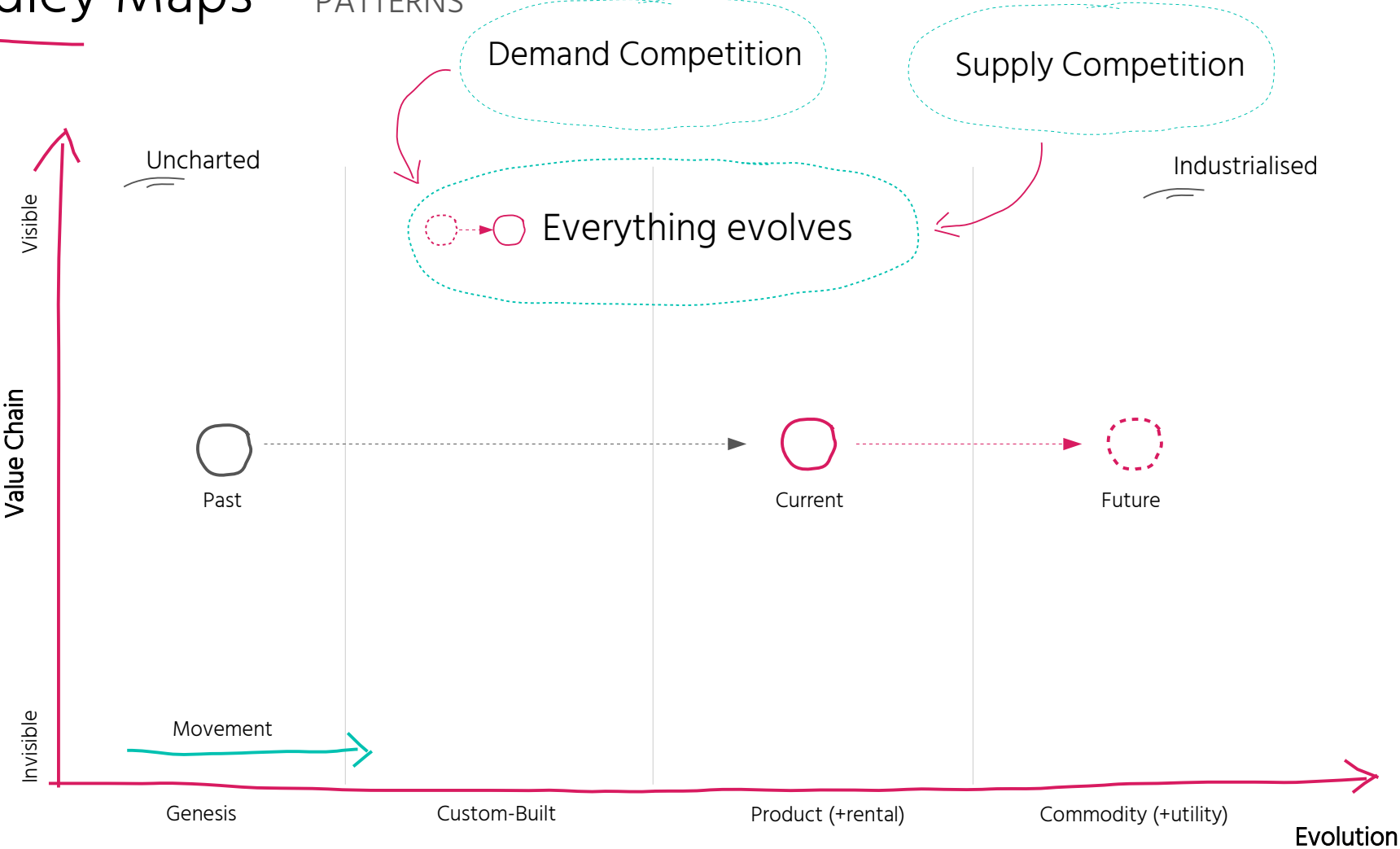
What are your users' needs?

What are the components/activities to fulfill your users' needs incl. dependencies?

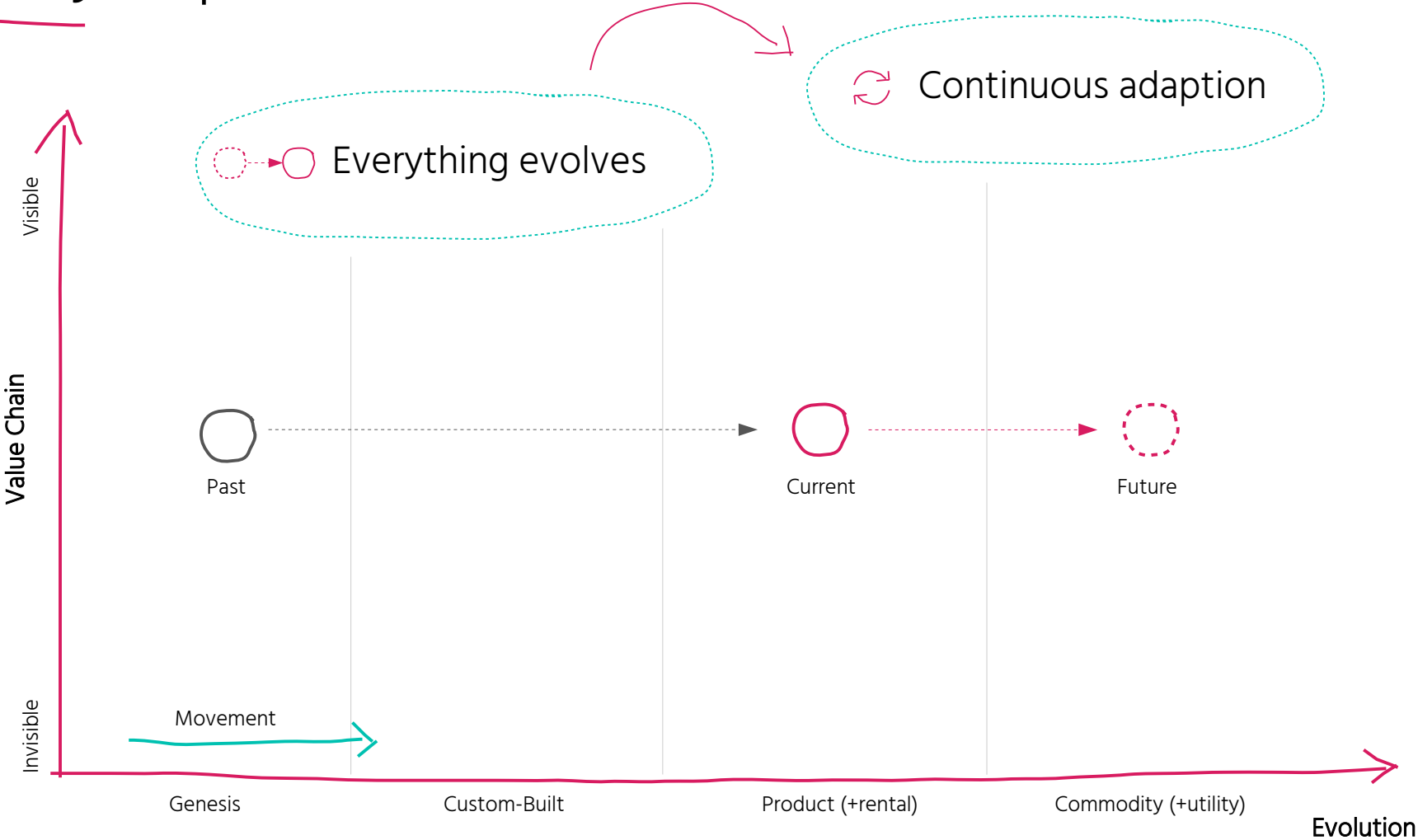
Wardley Maps – LANDSCAPE



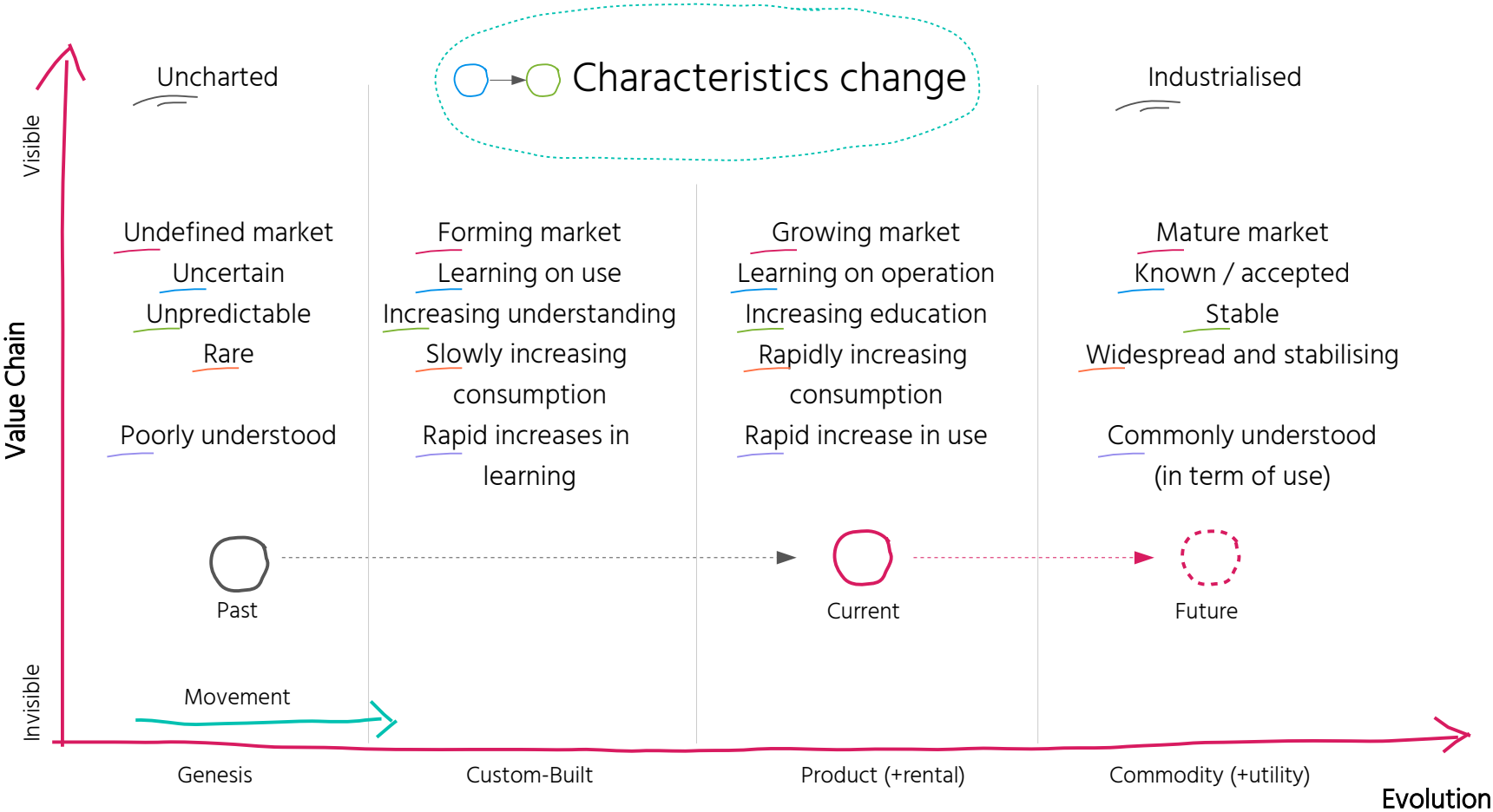
Wardley Maps – PATTERNS



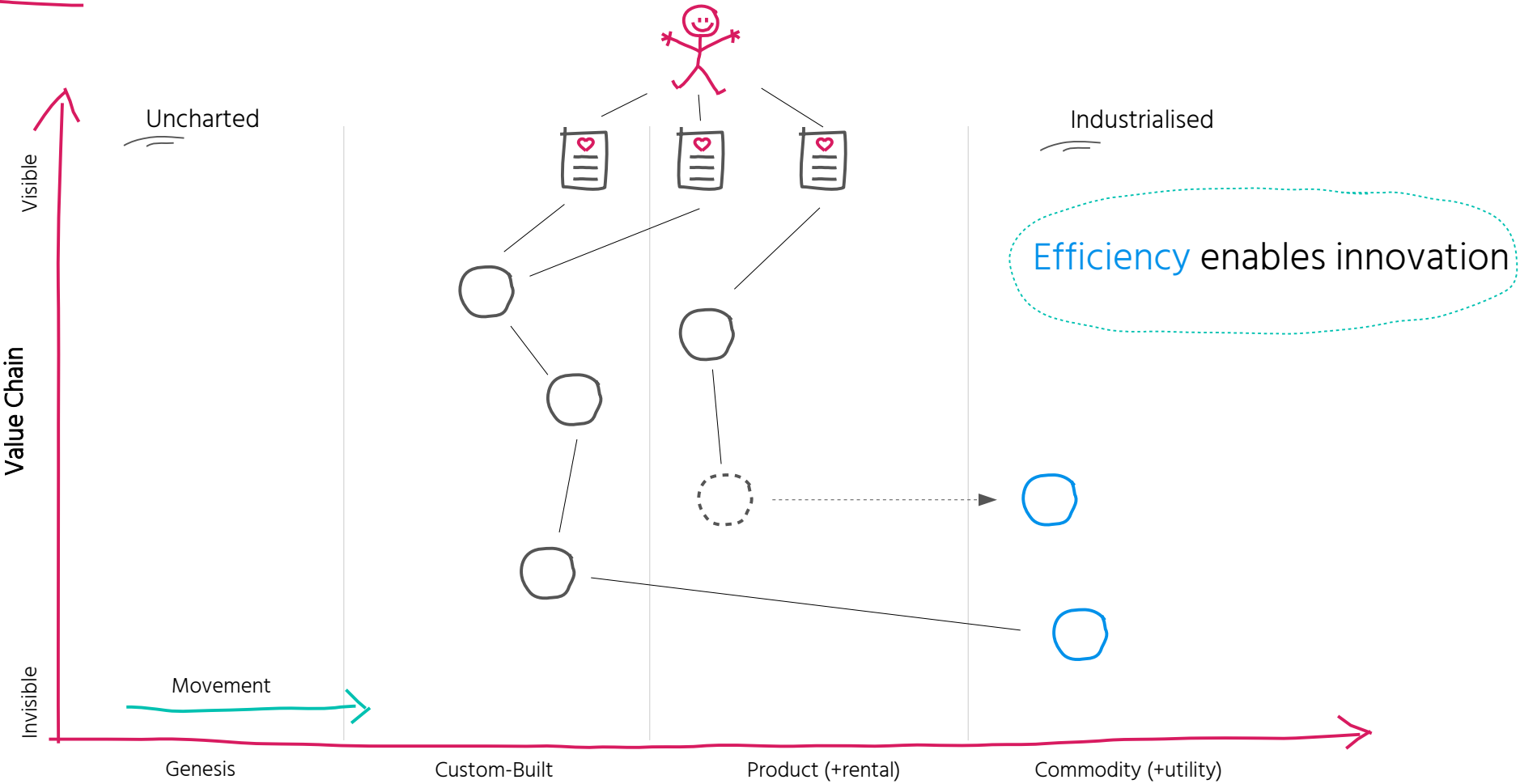
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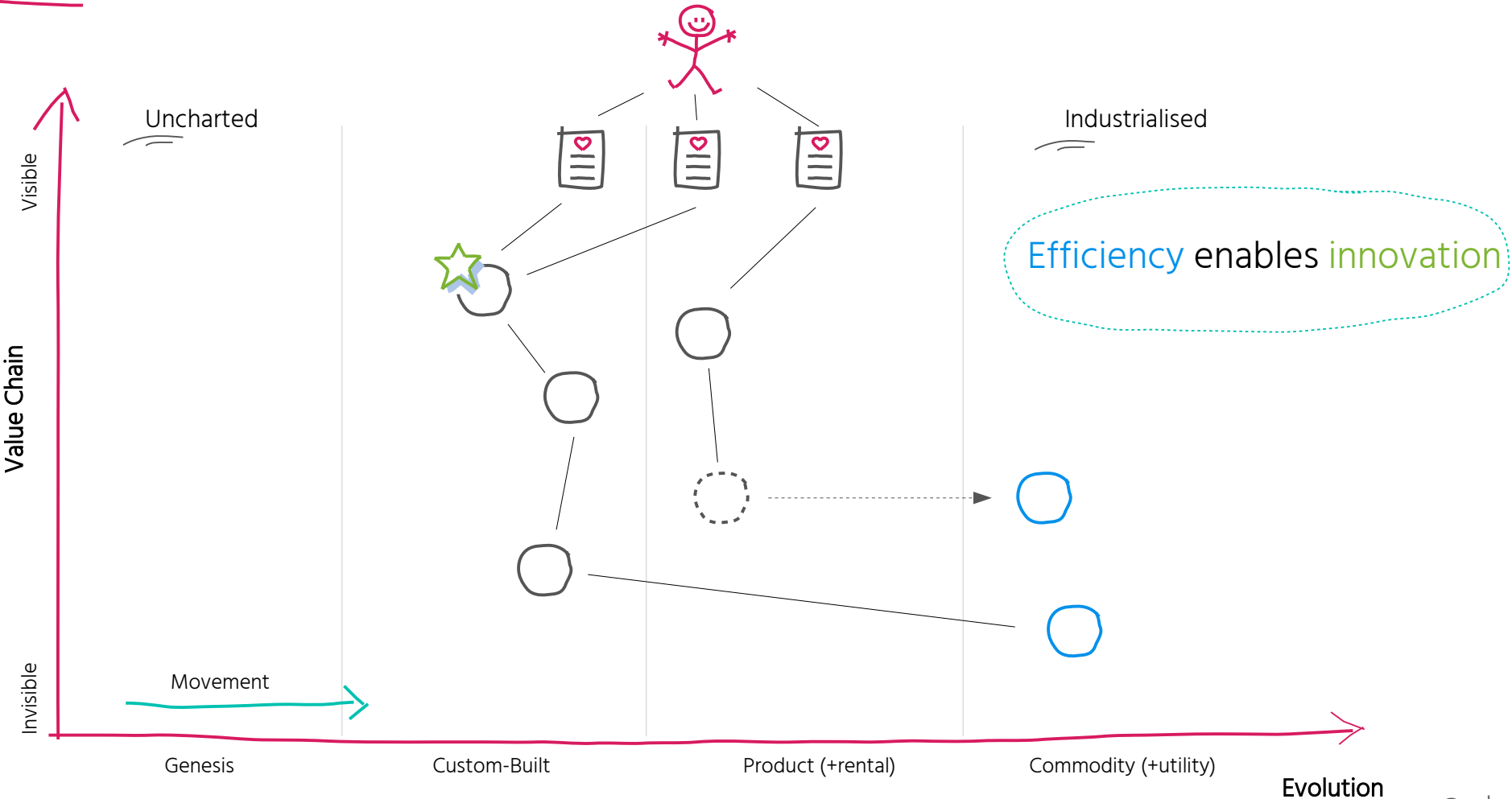
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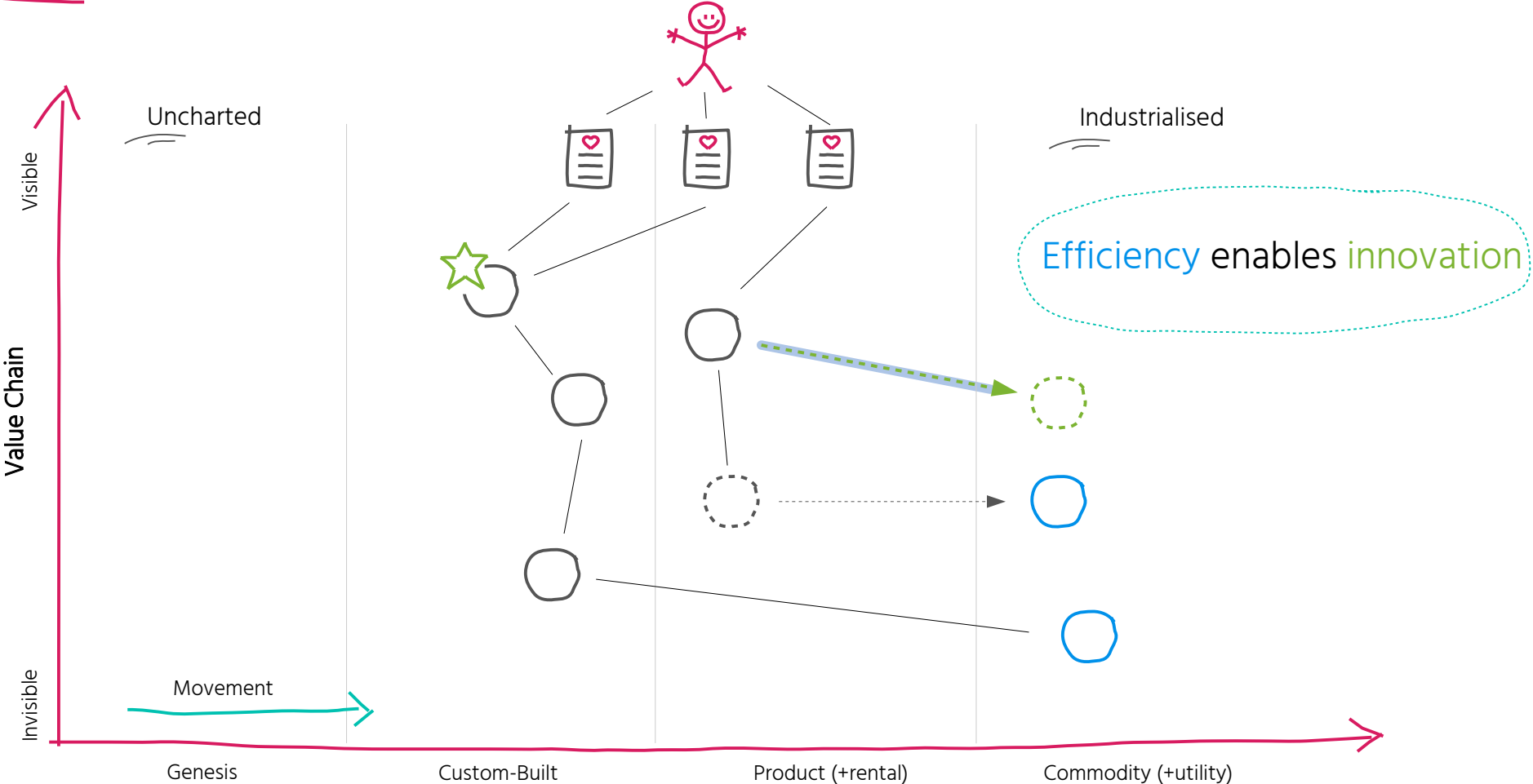
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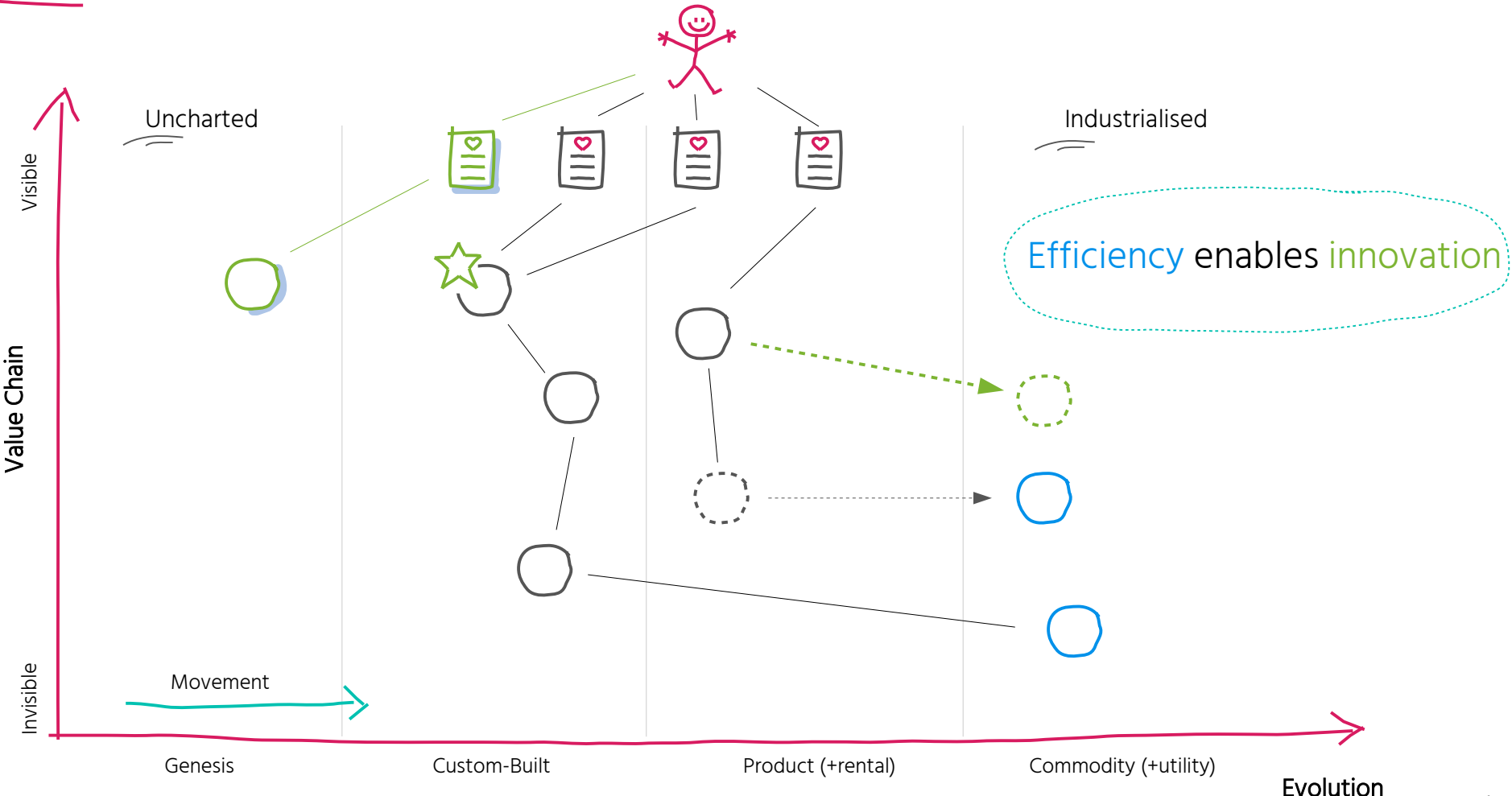
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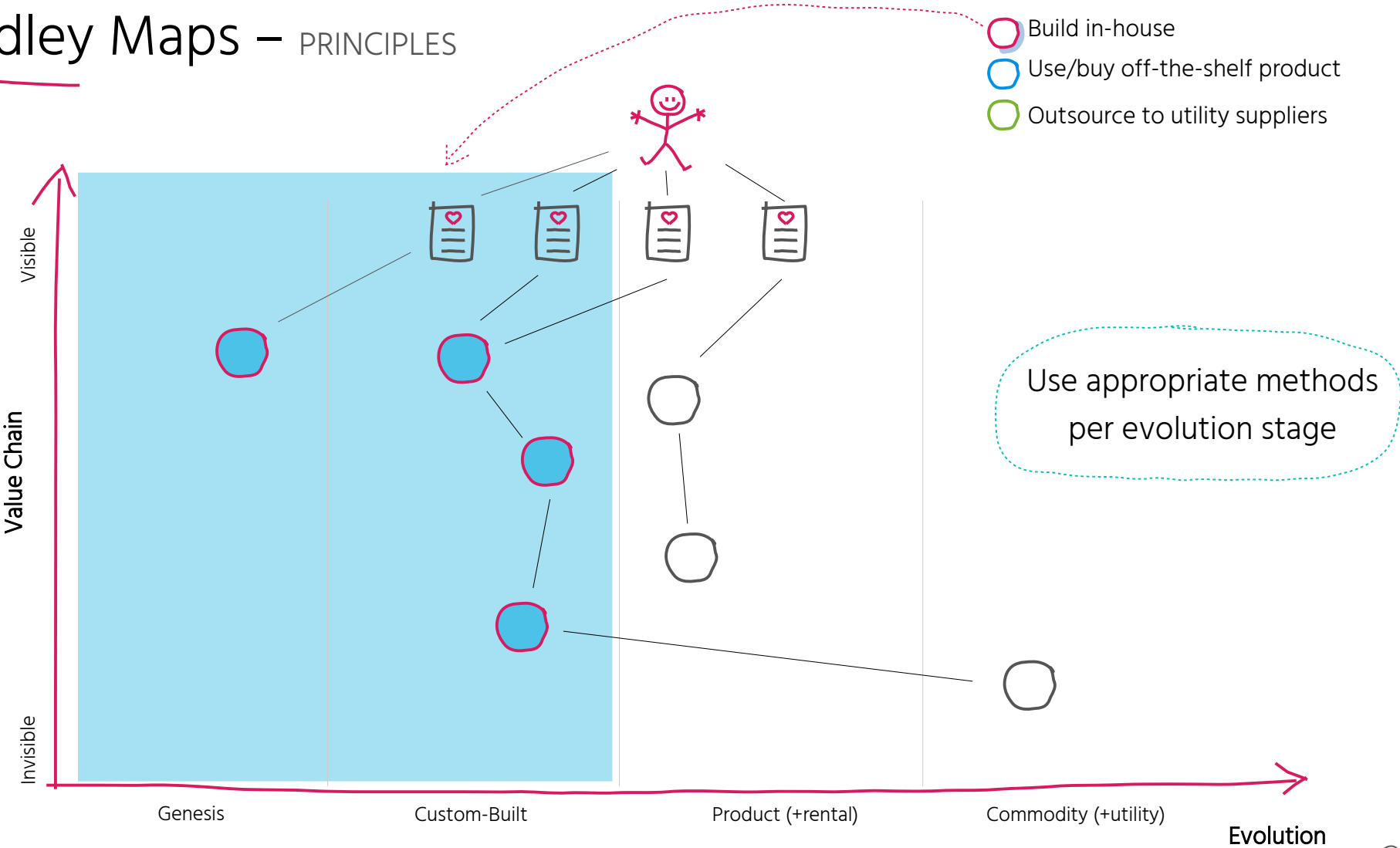
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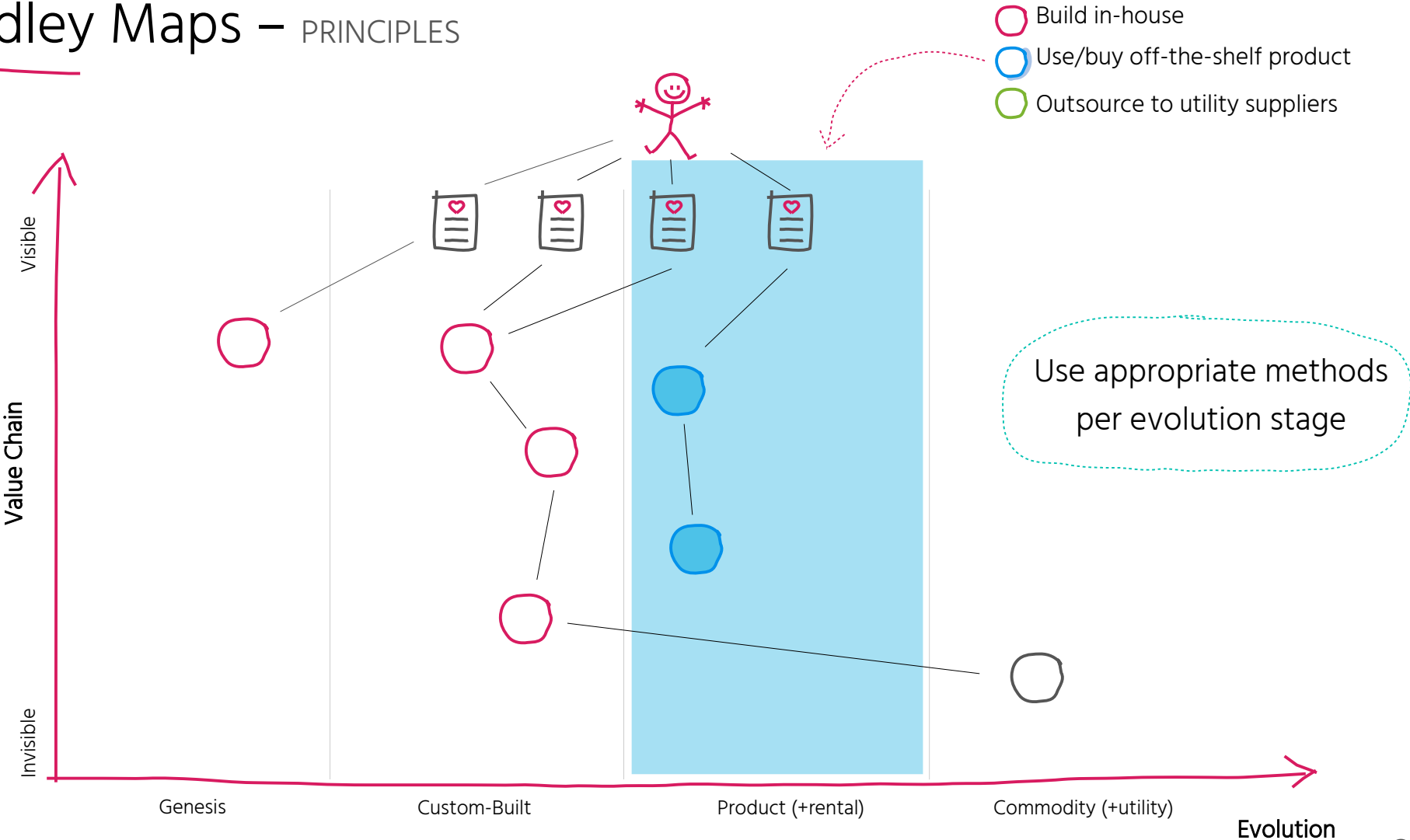
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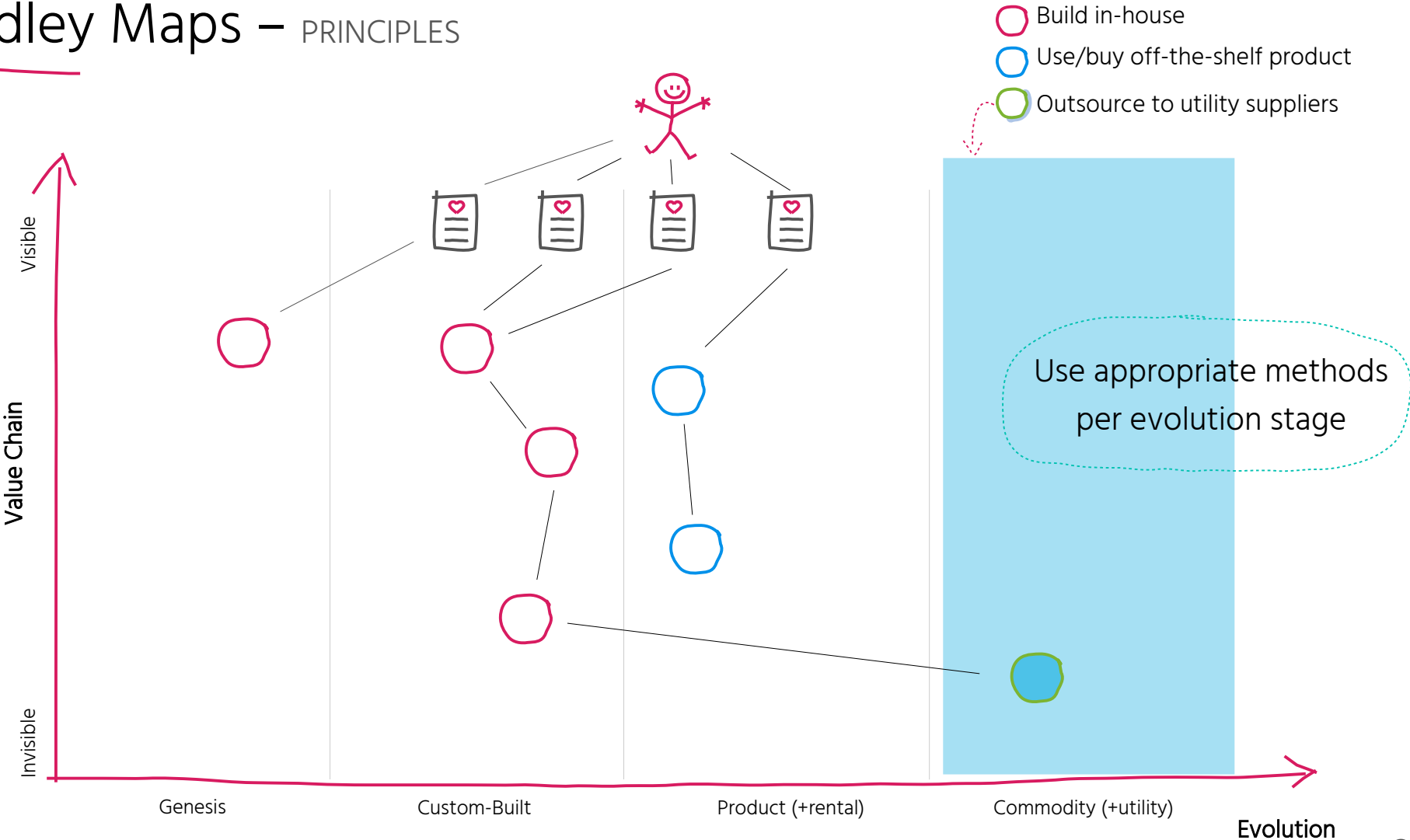
Wardley Maps – PRINCIPLES



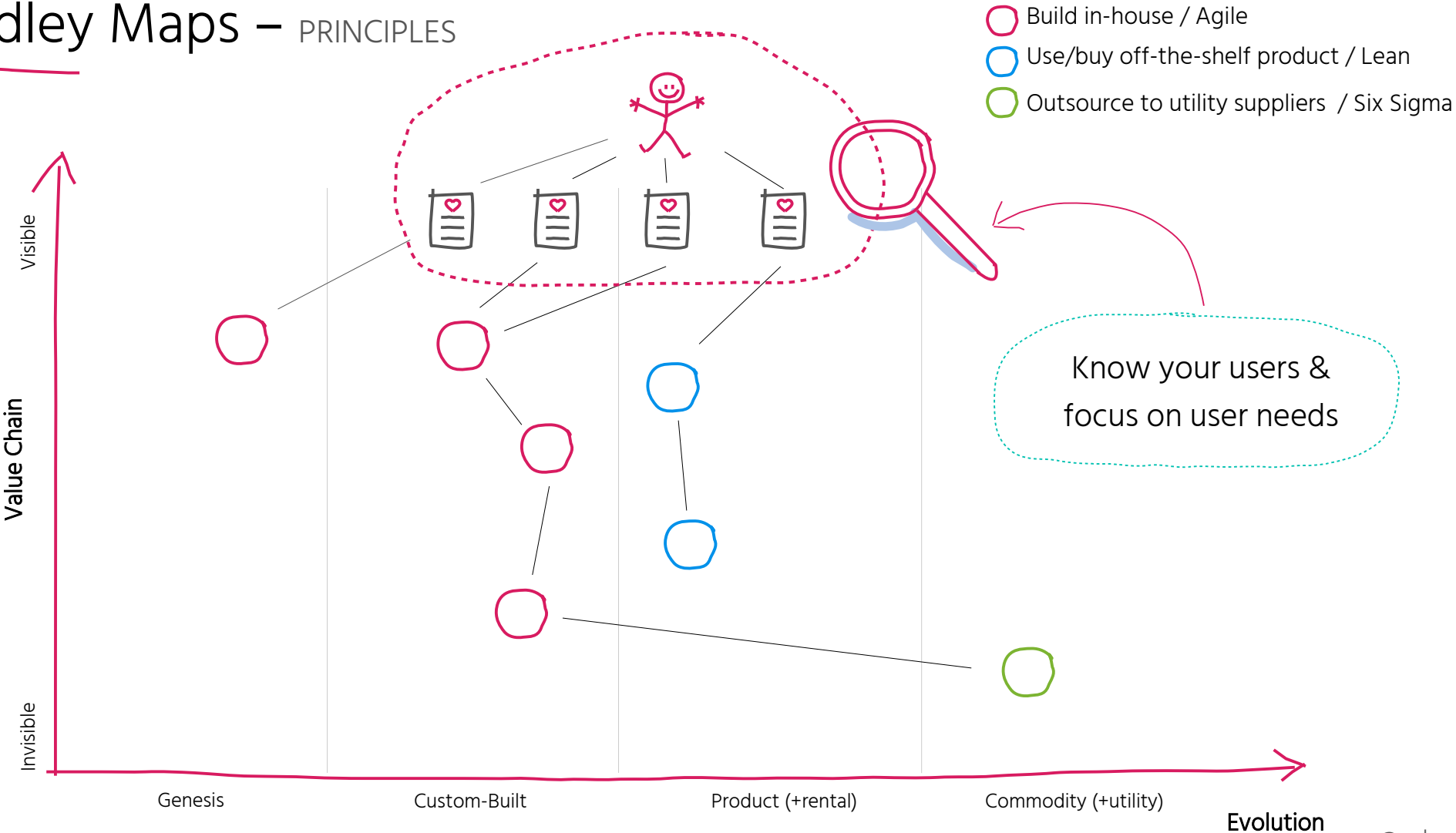
Wardley Maps – PRINCIPLES



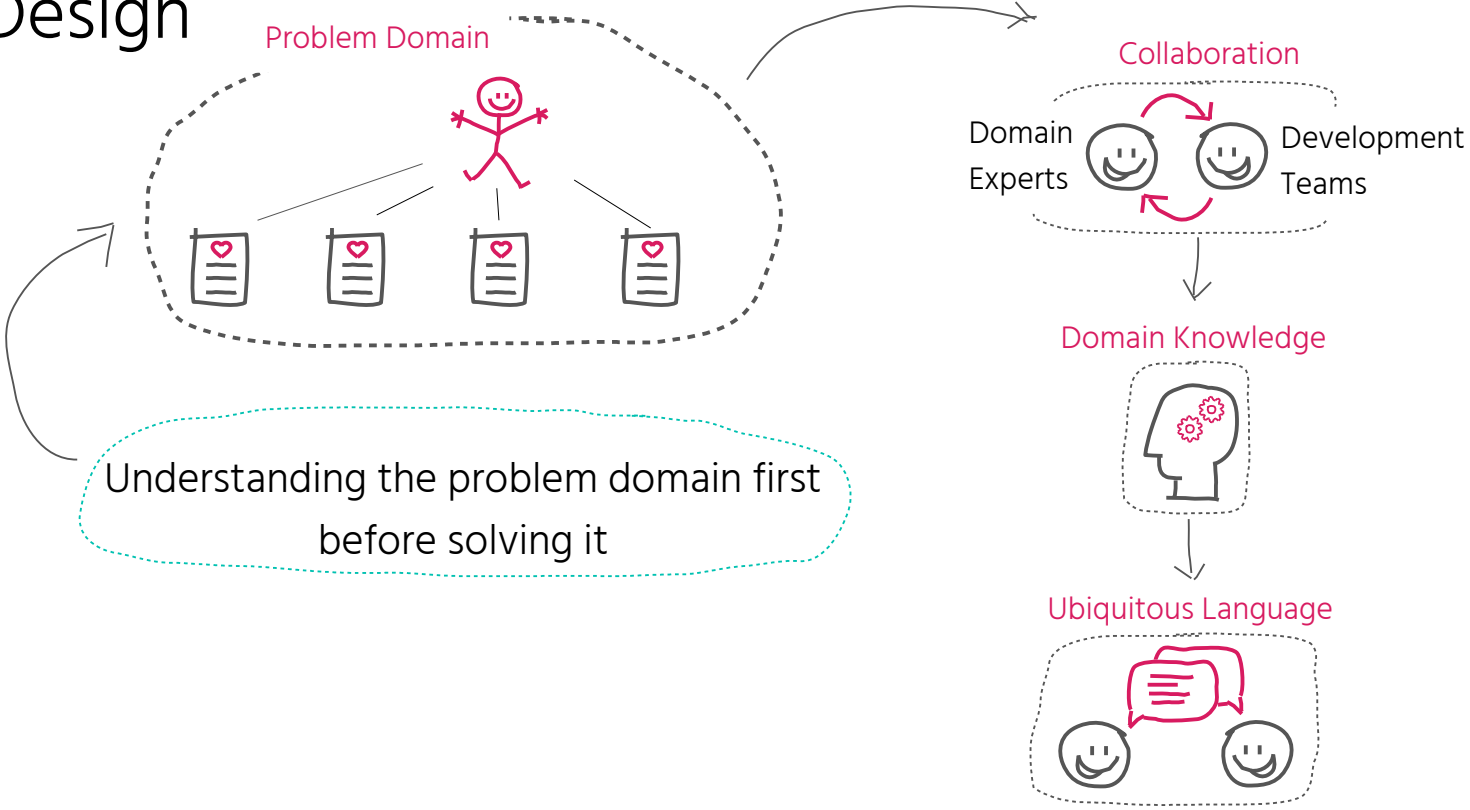
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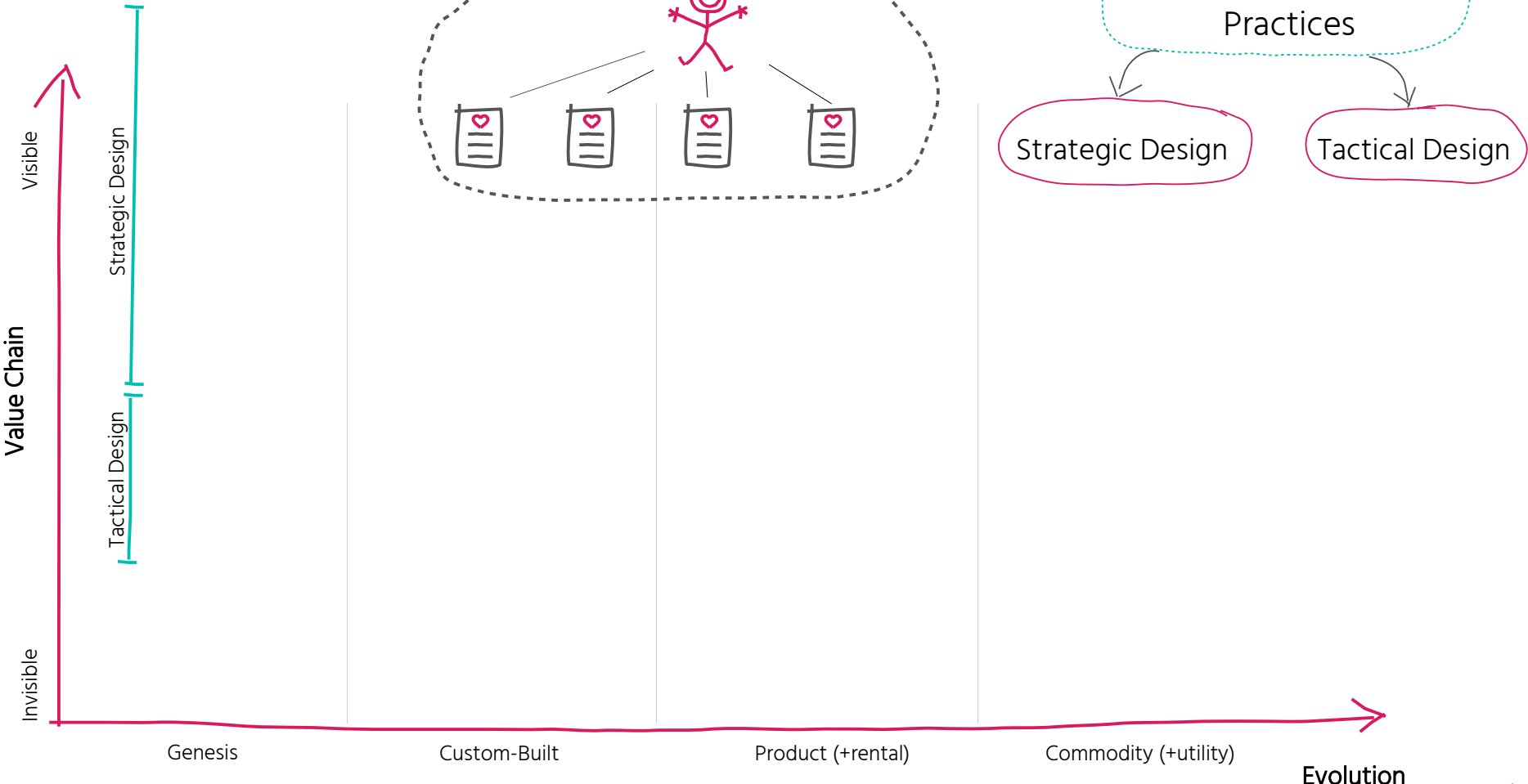
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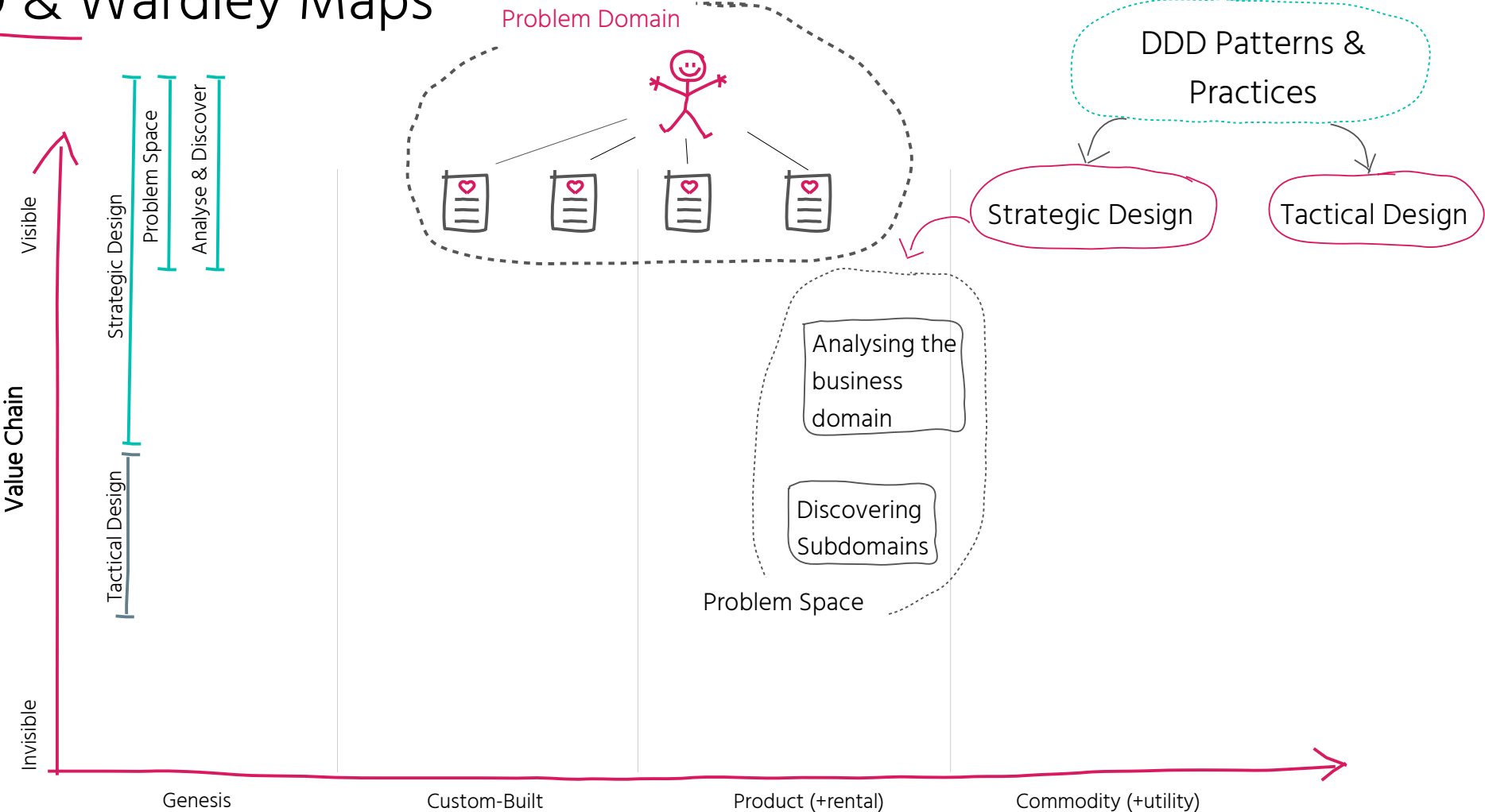
Domain Driven Design



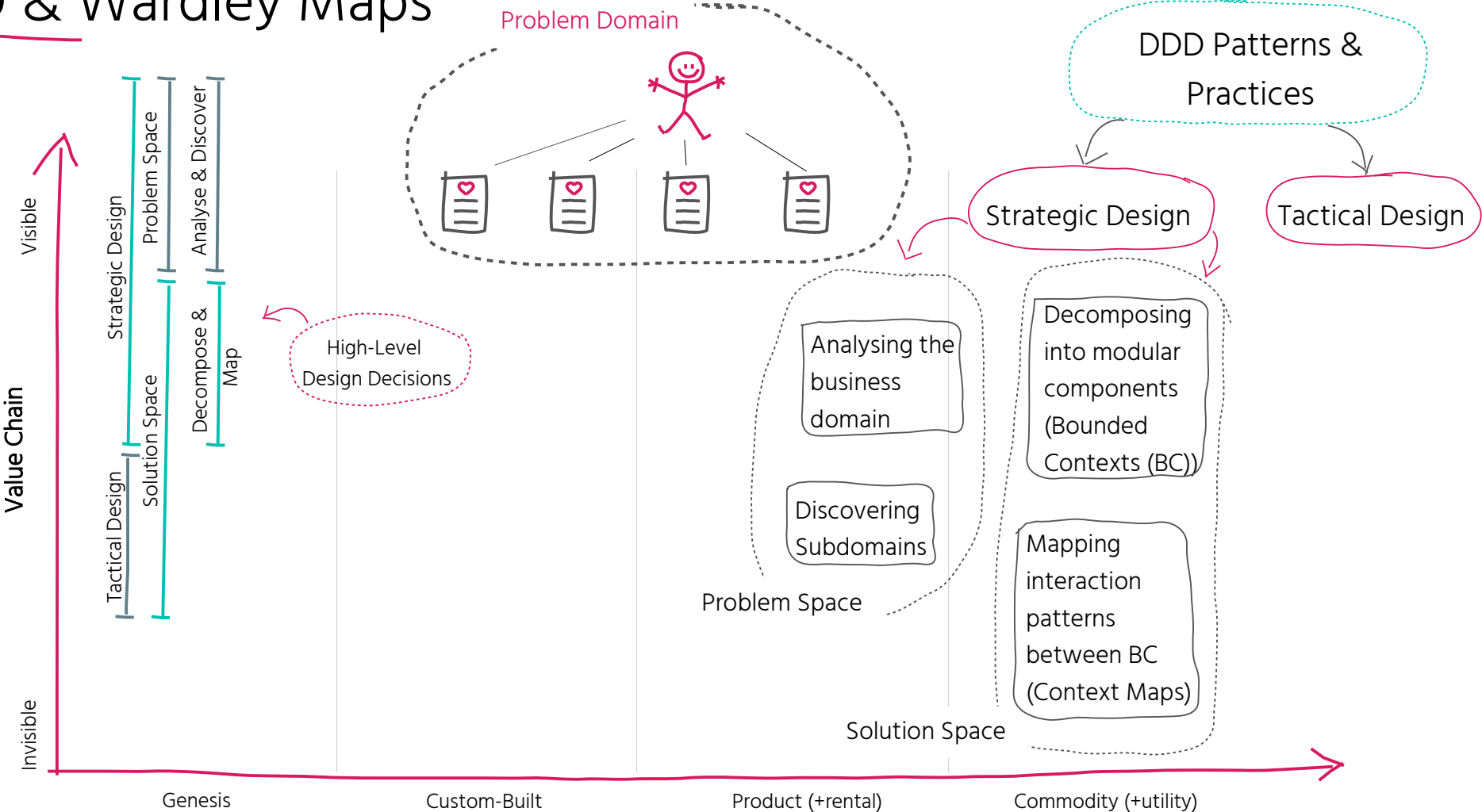
DDD & Wardley Maps



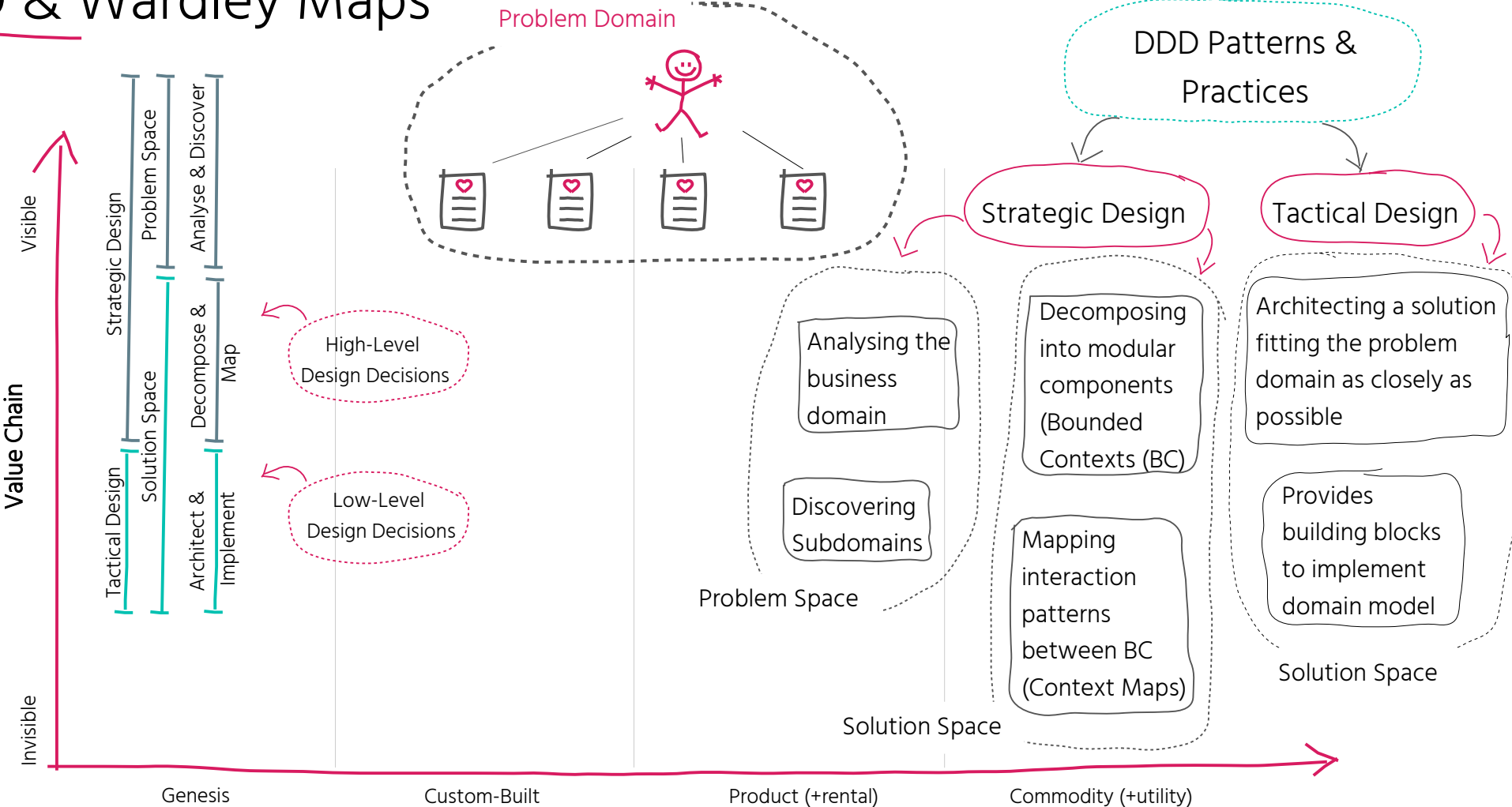
DDD & Wardley Maps



DDD & Wardley Maps

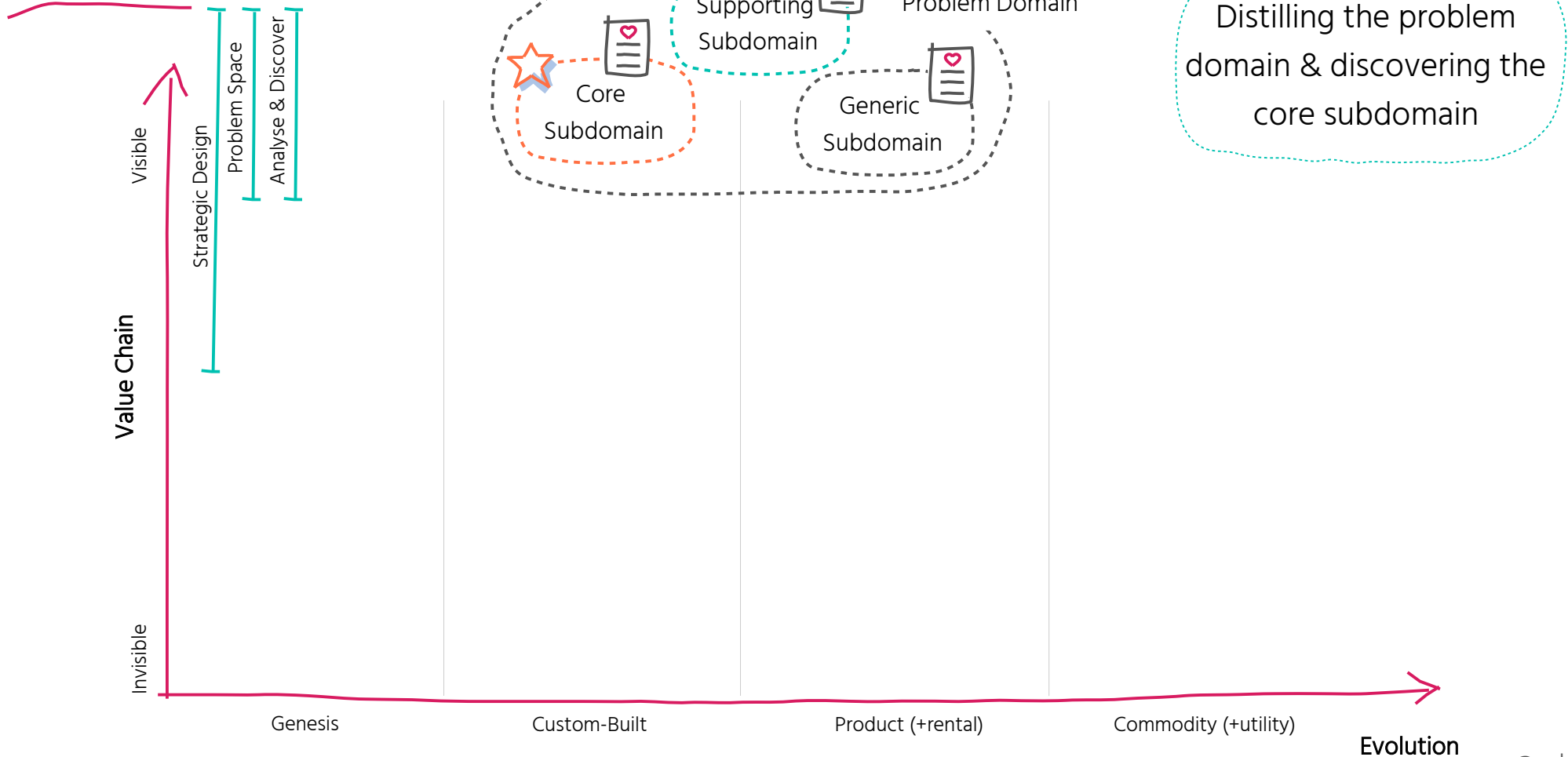


DDD & Wardley Maps



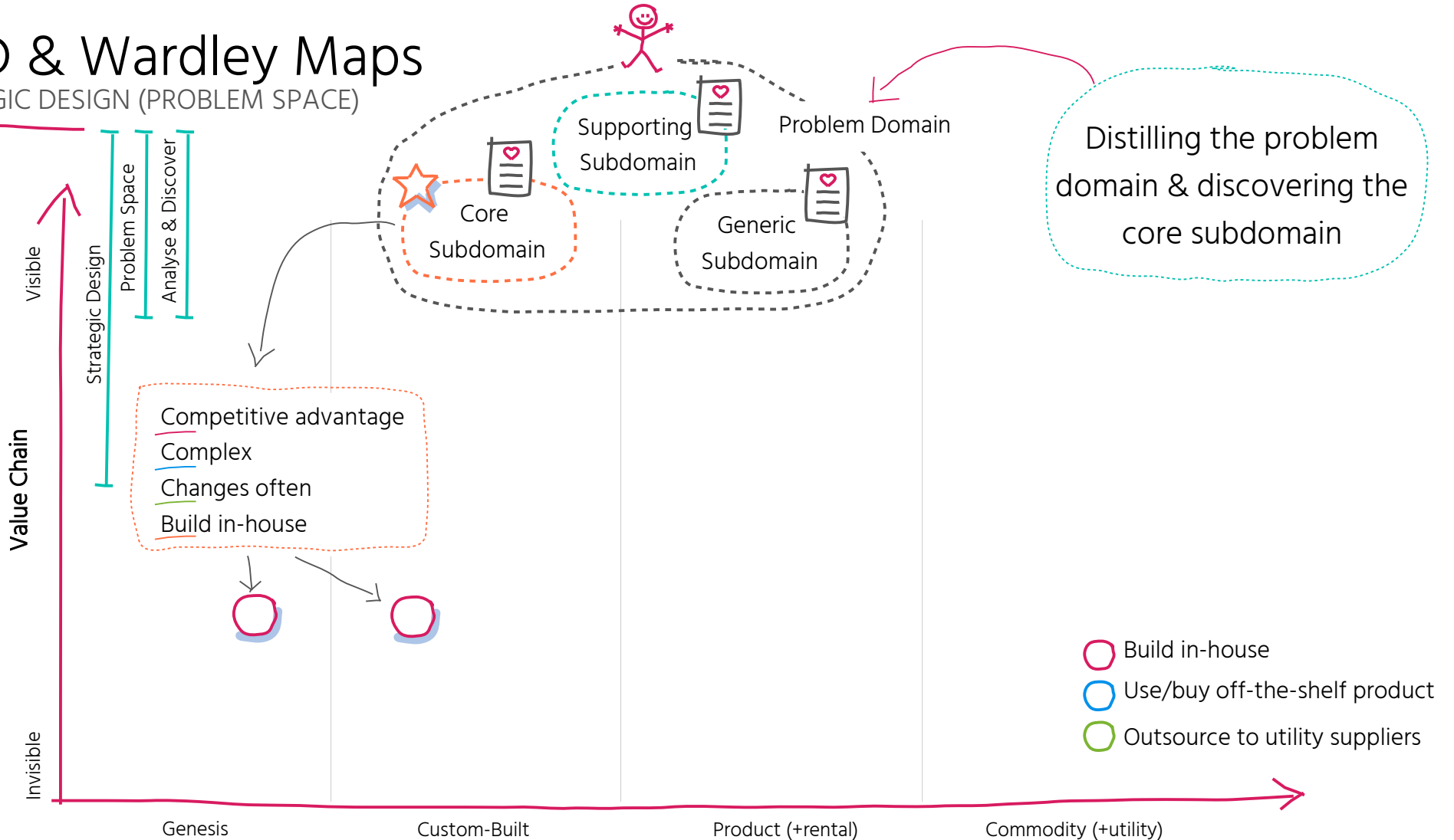
DDD & Wardley Maps

STRATEGIC DESIGN (PROBLEM SPACE)



DDD & Wardley Maps

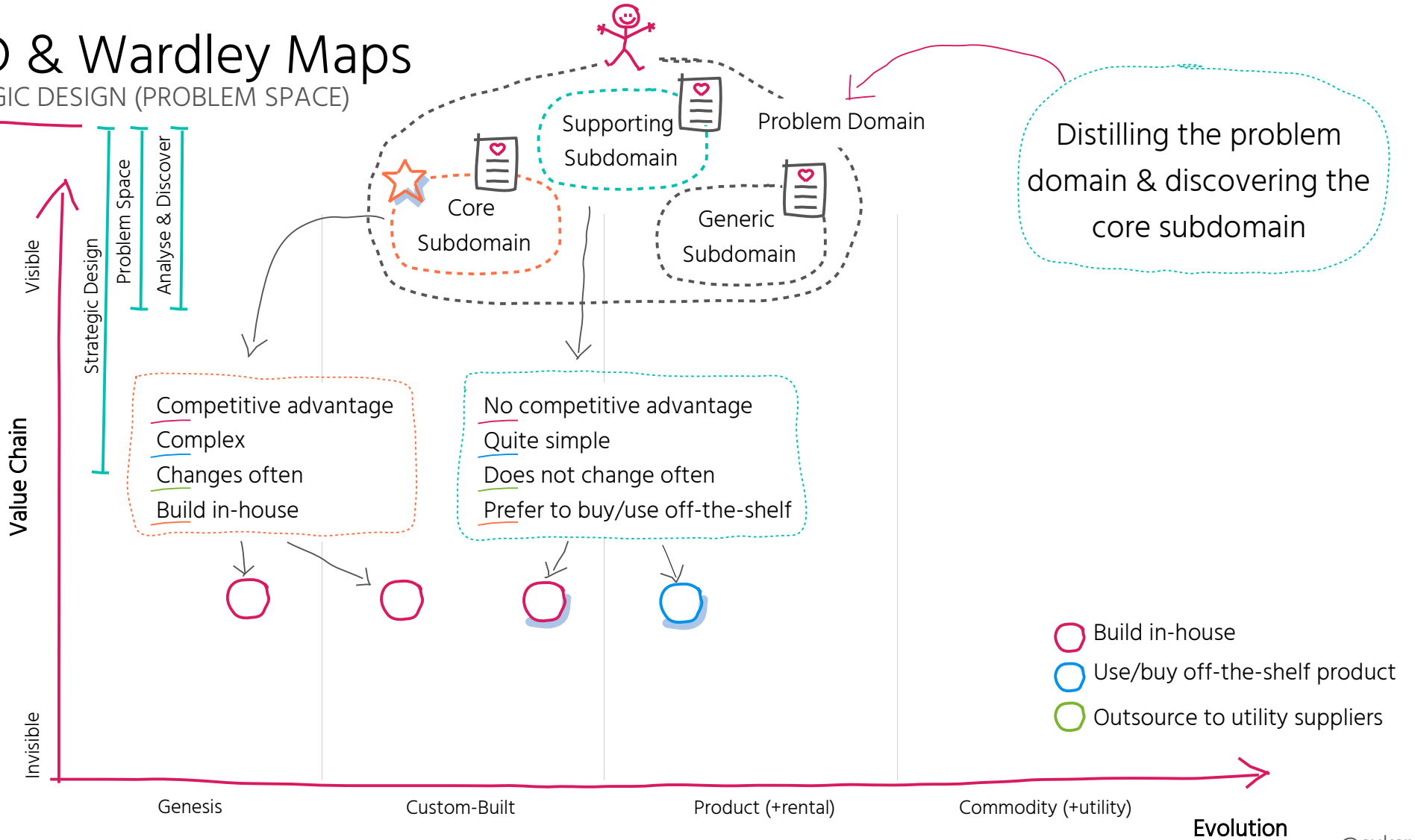
STRATEGIC DESIGN (PROBLEM SPACE)



Evolution

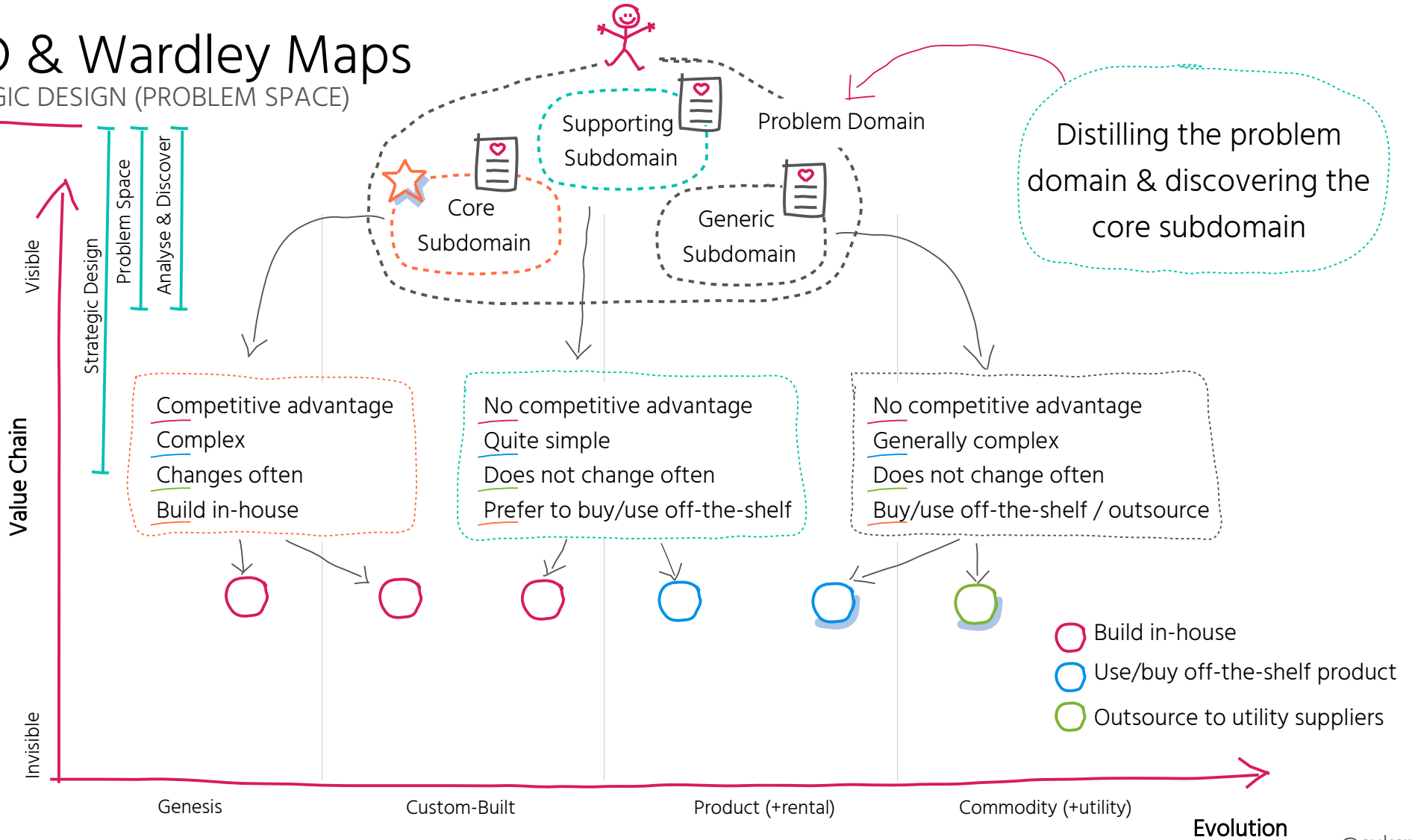
DDD & Wardley Maps

STRATEGIC DESIGN (PROBLEM SPACE)



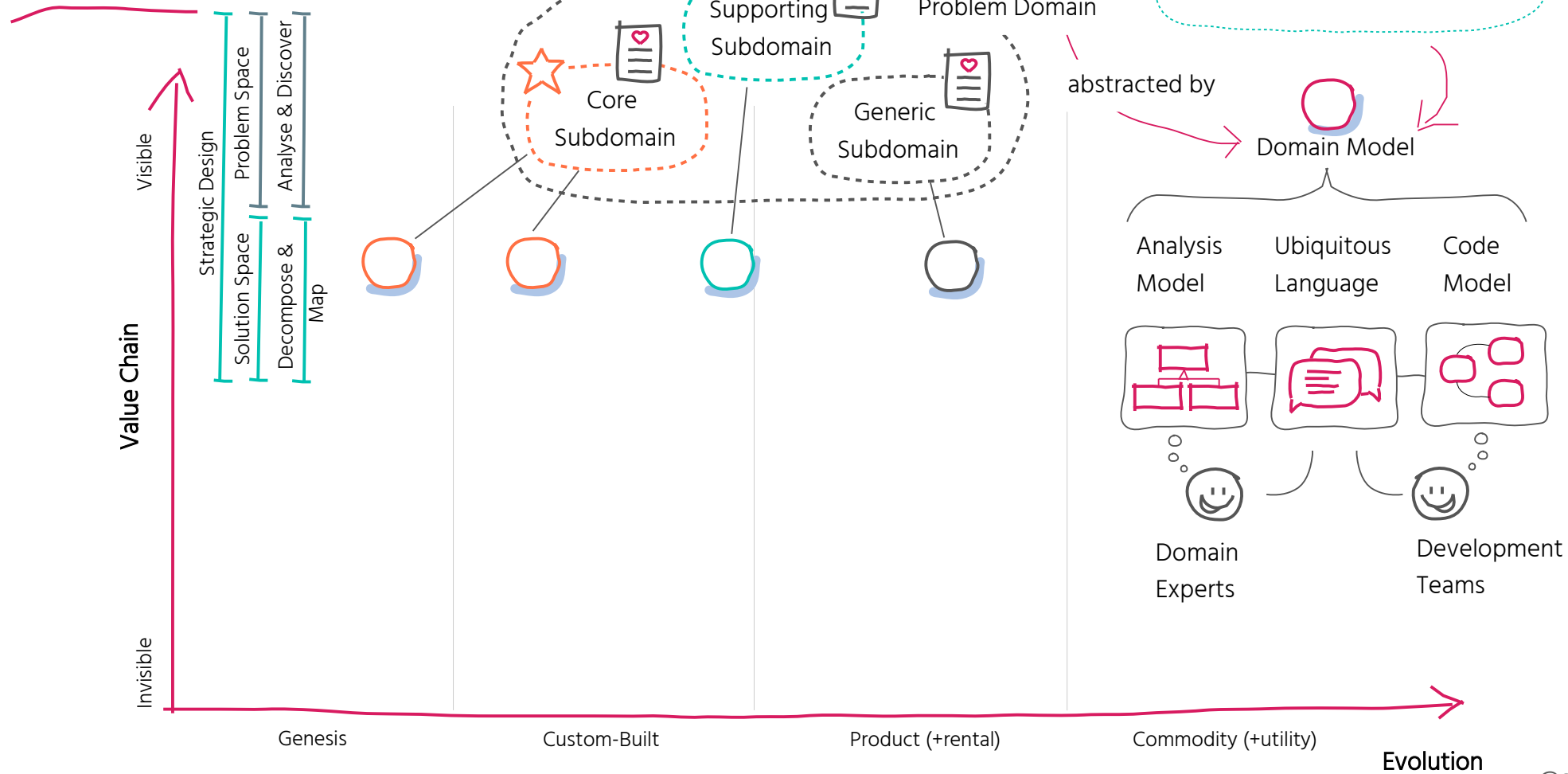
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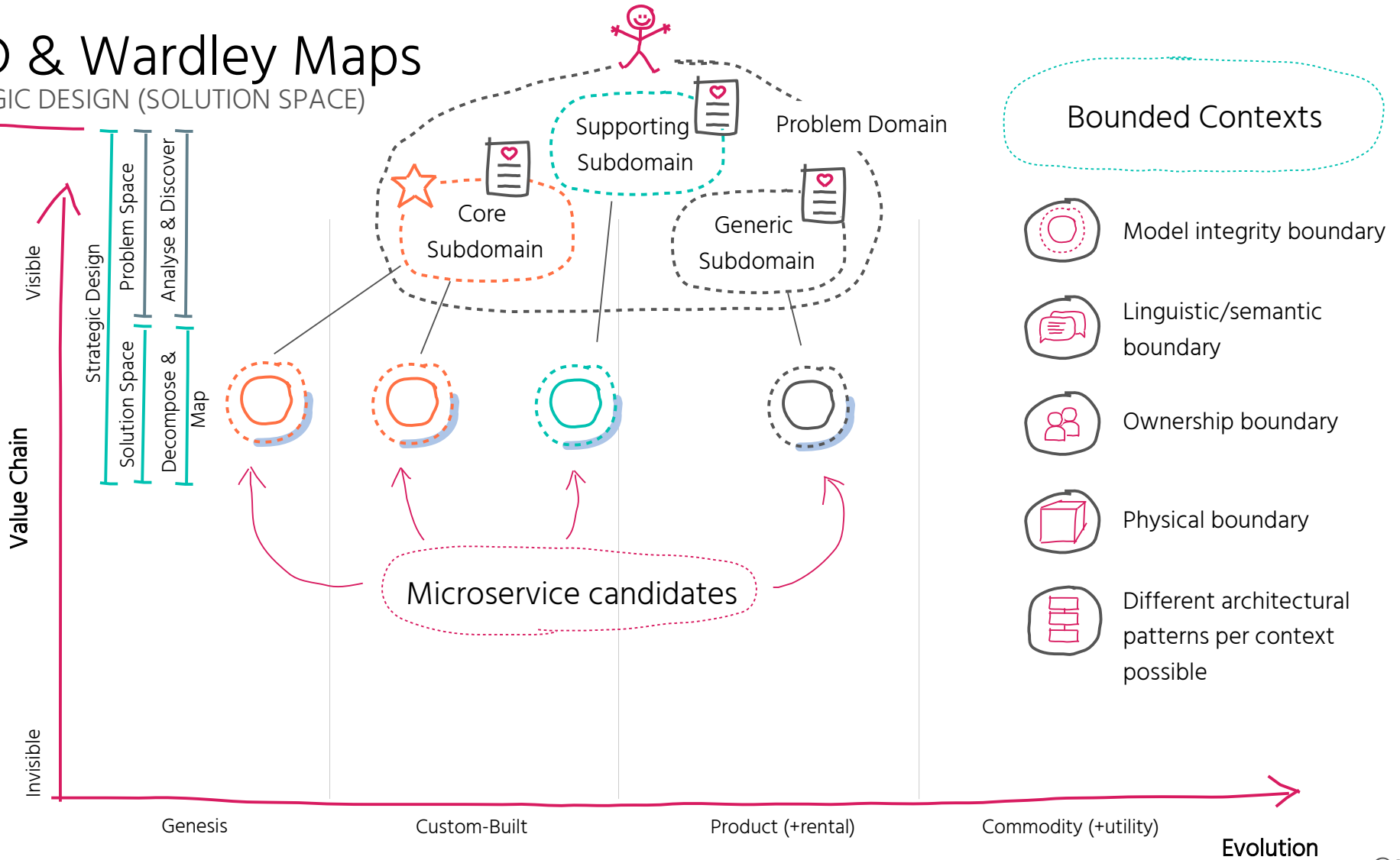
DDD & Wardley Maps

STRATEGIC DESIGN (SOLUTION SPACE)








DDD & Wardley Maps

STRATEGIC DESIGN (SOLUTION SPACE)

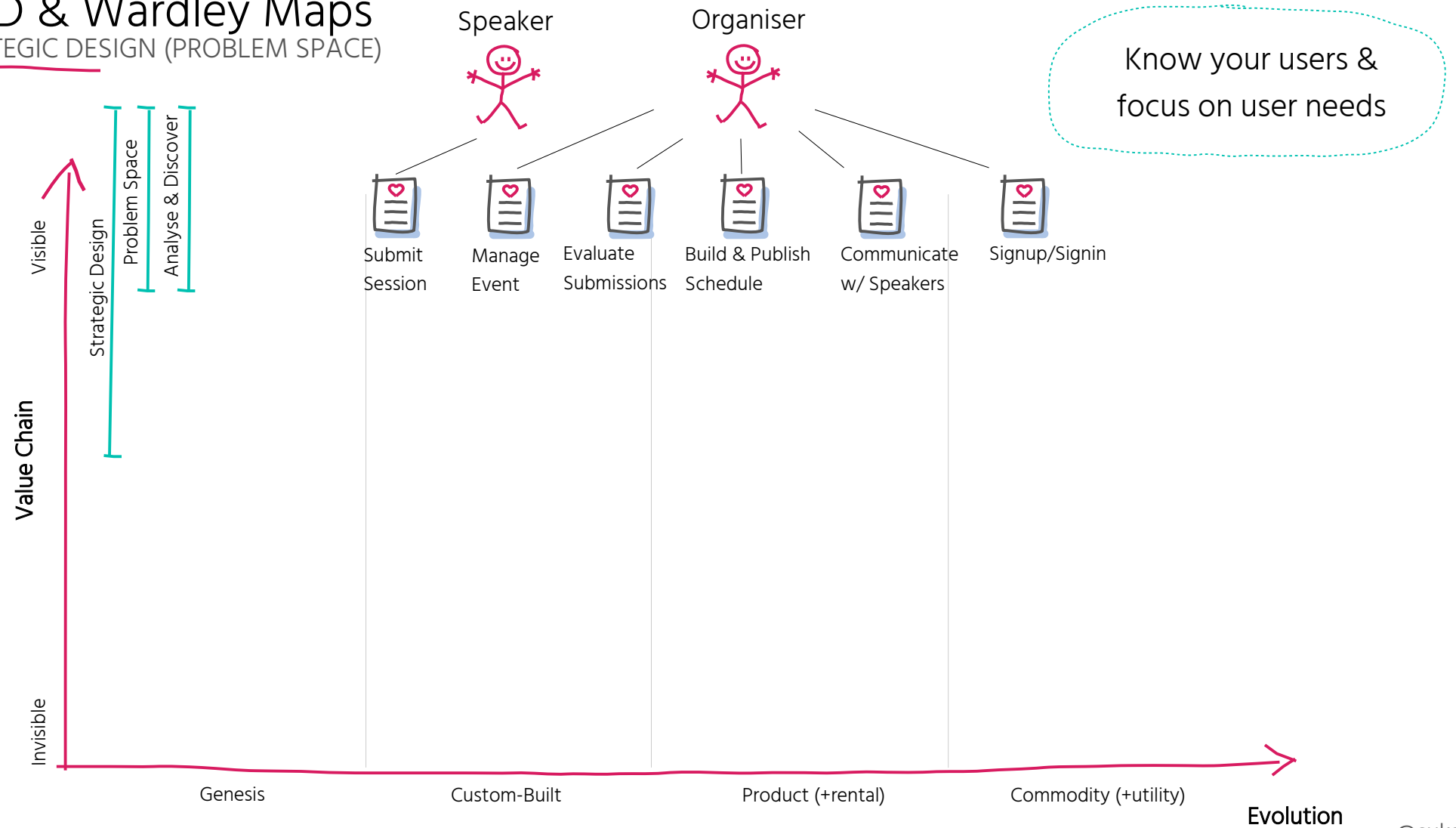


Bounded Contexts

-  Model integrity boundary
-  Linguistic/semantic boundary
-  Ownership boundary
-  Physical boundary
-  Different architectural patterns per context possible

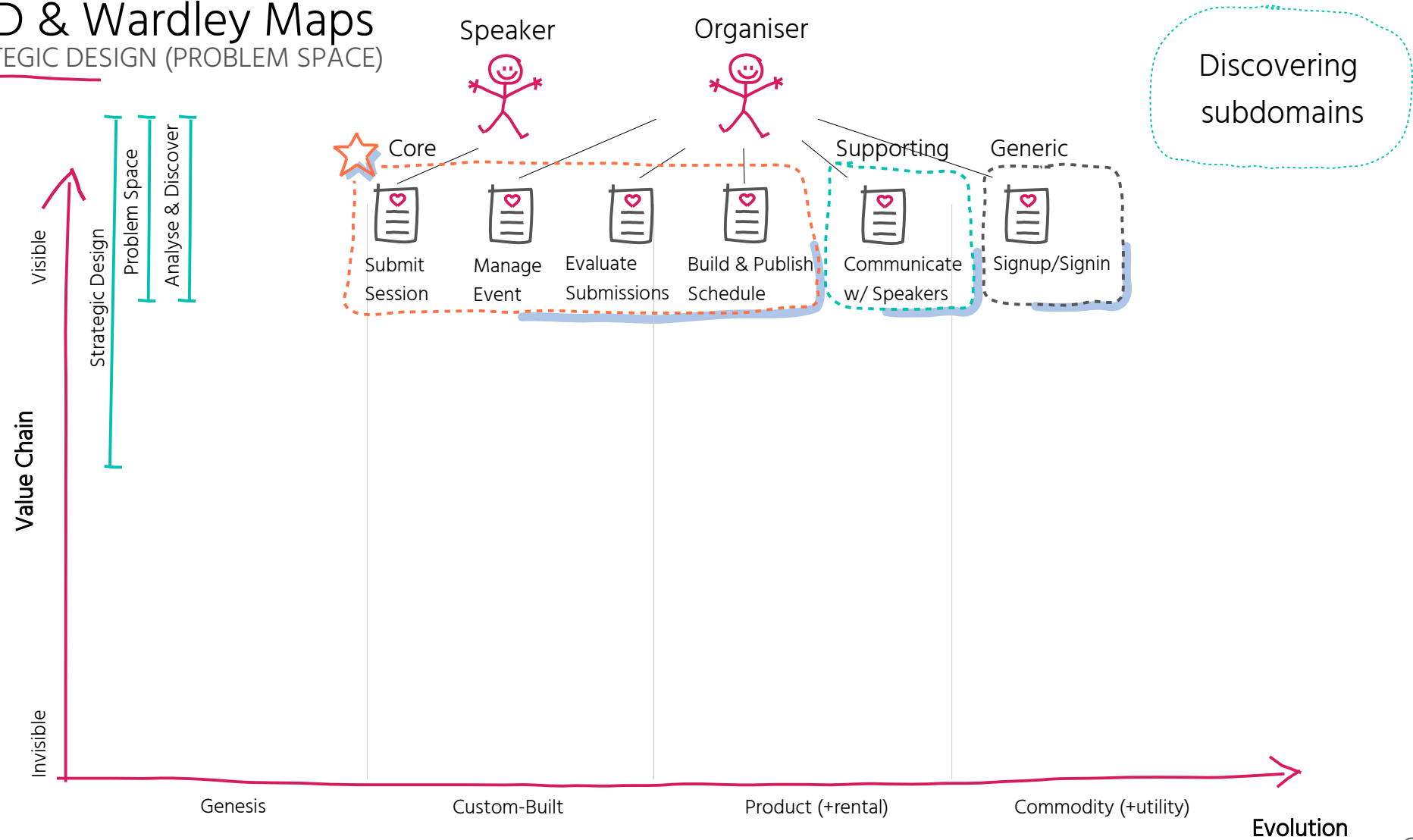
DDD & Wardley Maps

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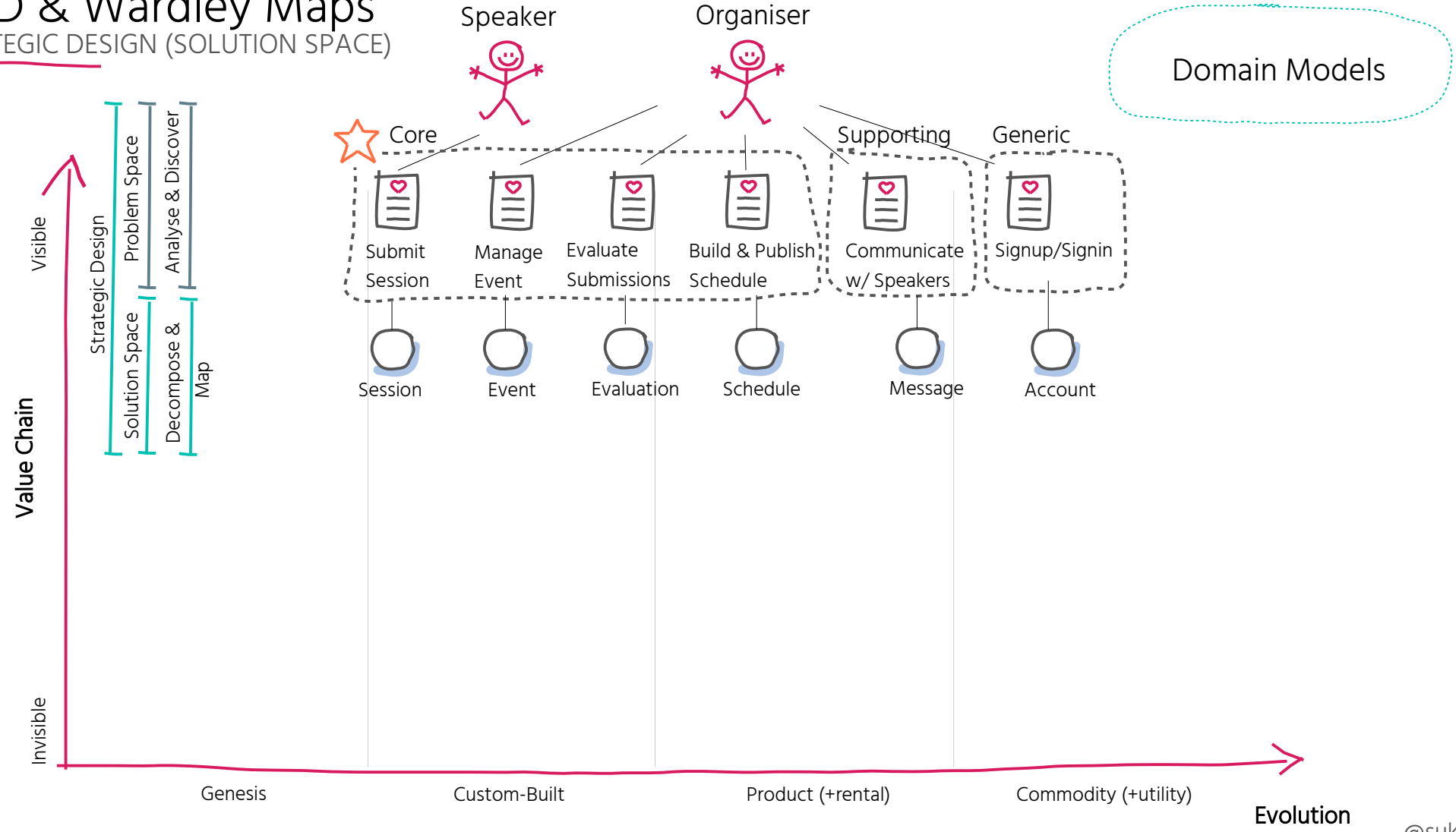
DDD & Wardley Maps

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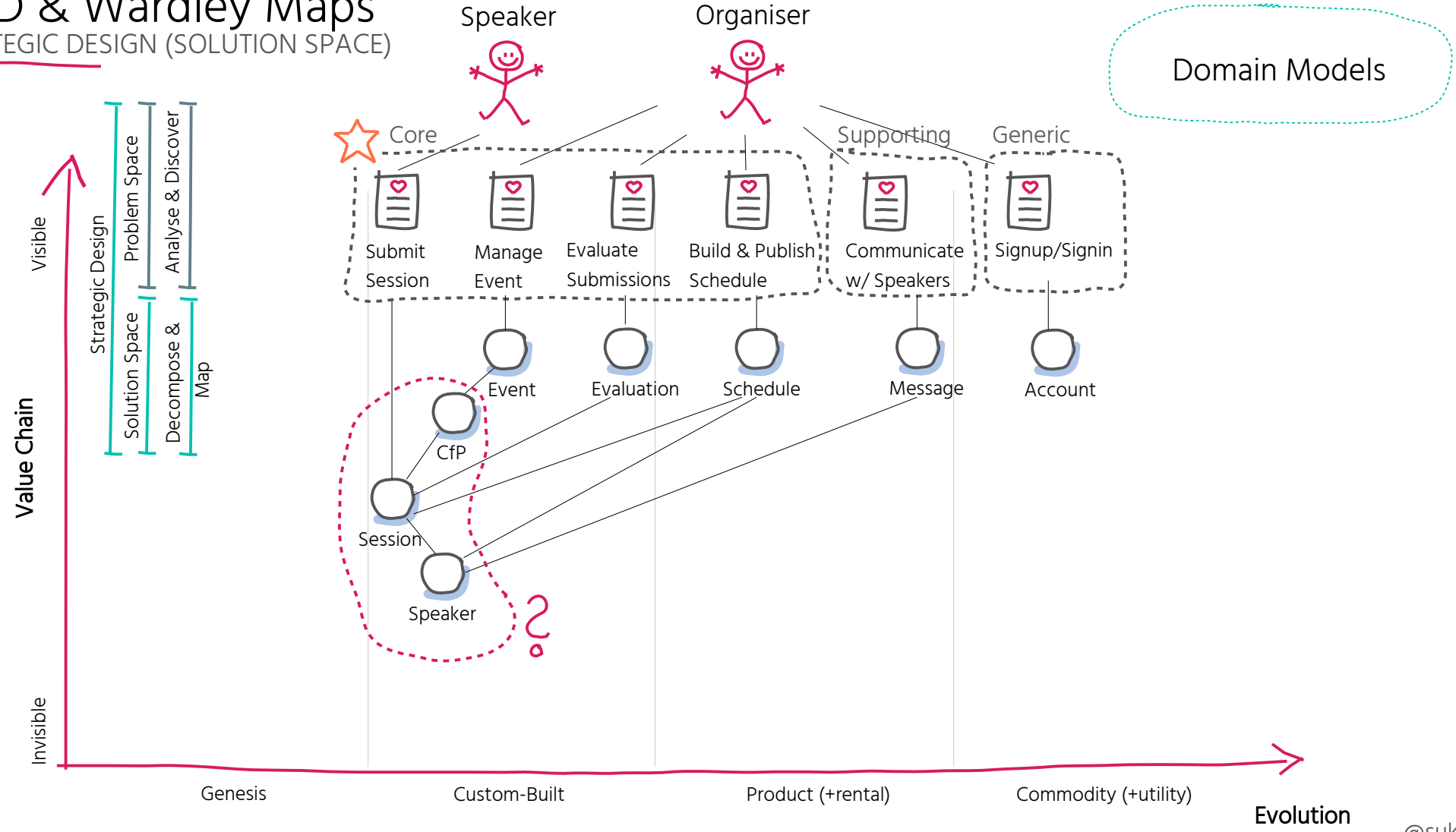
DDD & Wardley Maps

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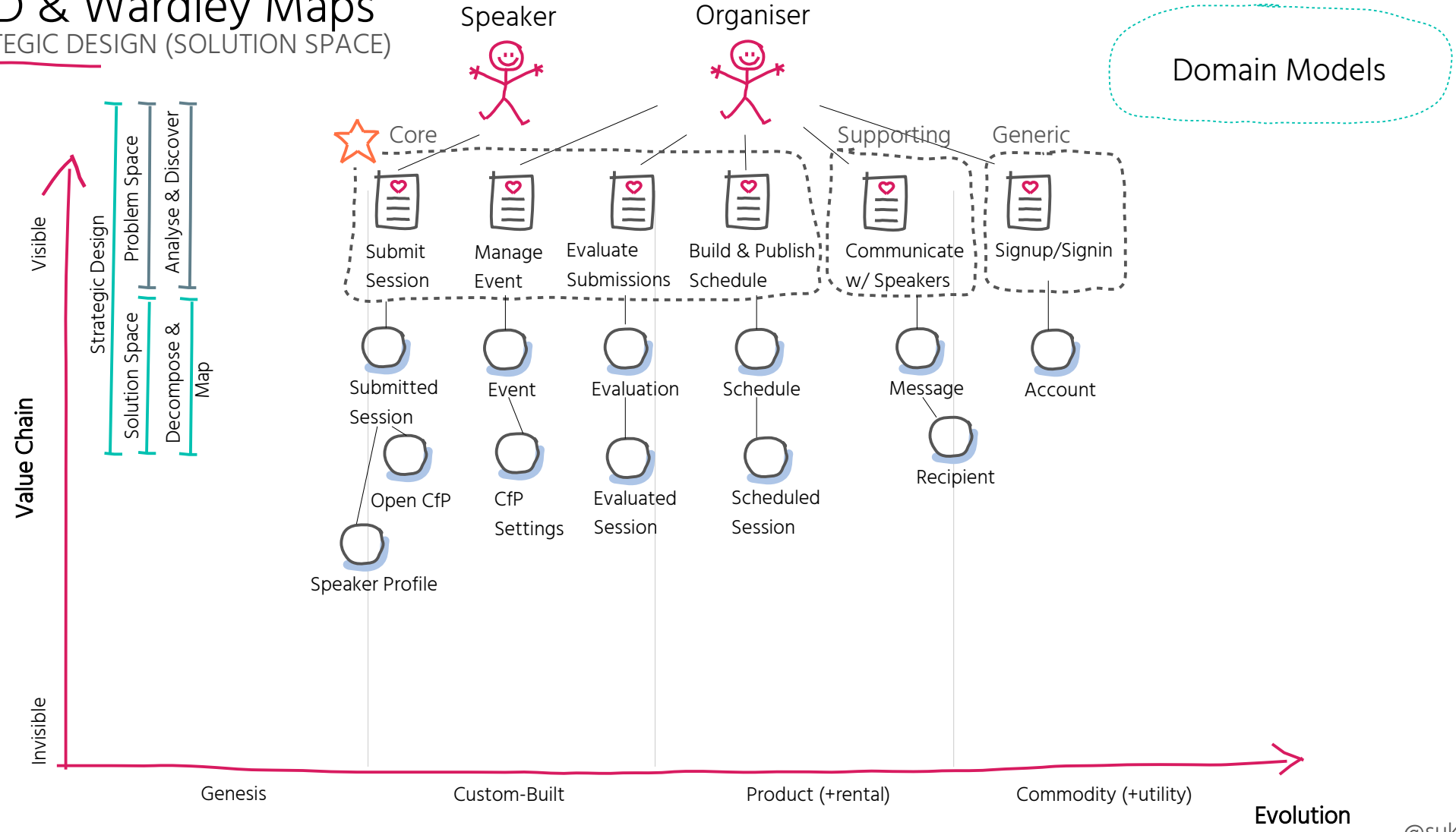
DDD & Wardley Maps

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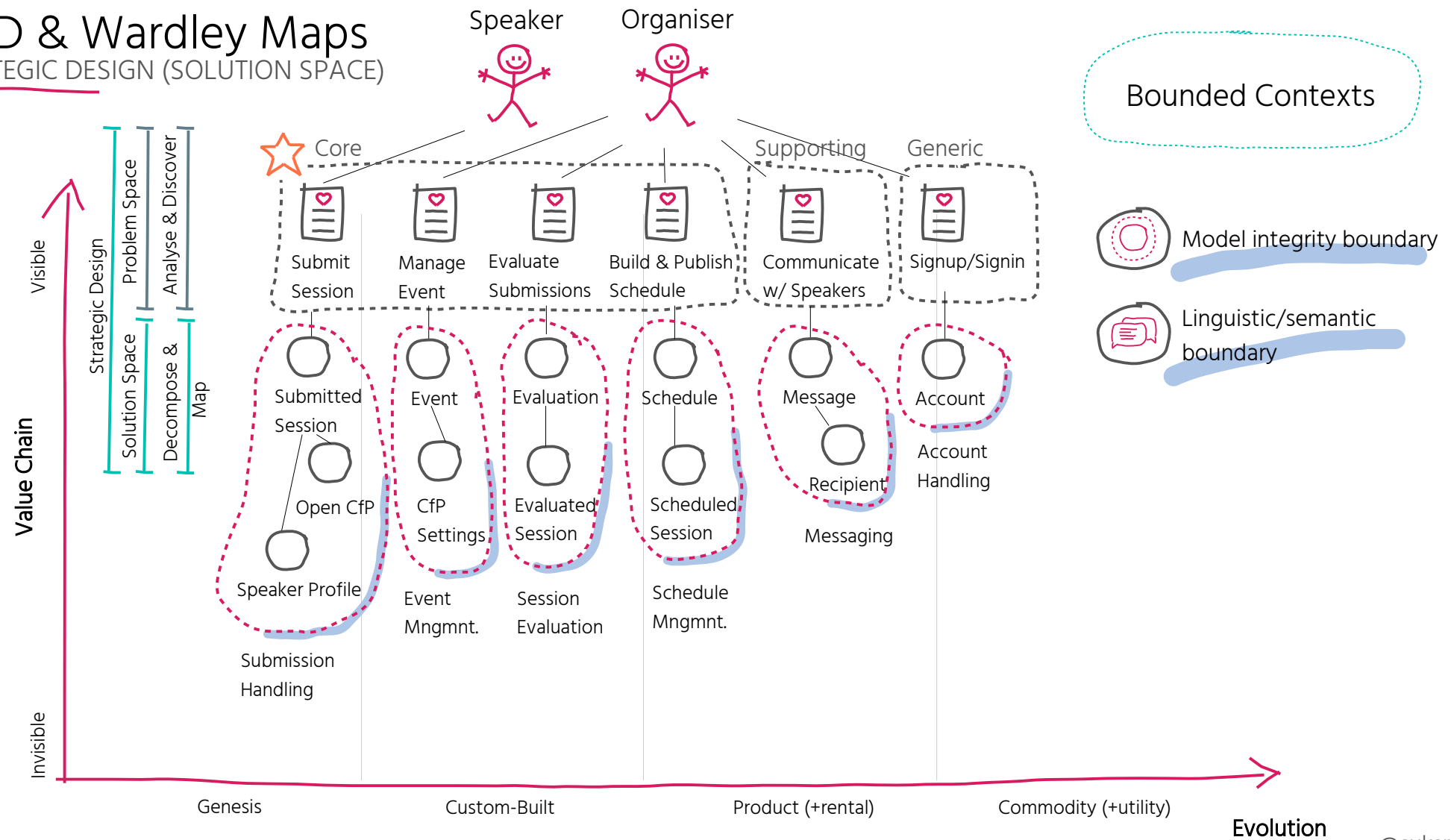
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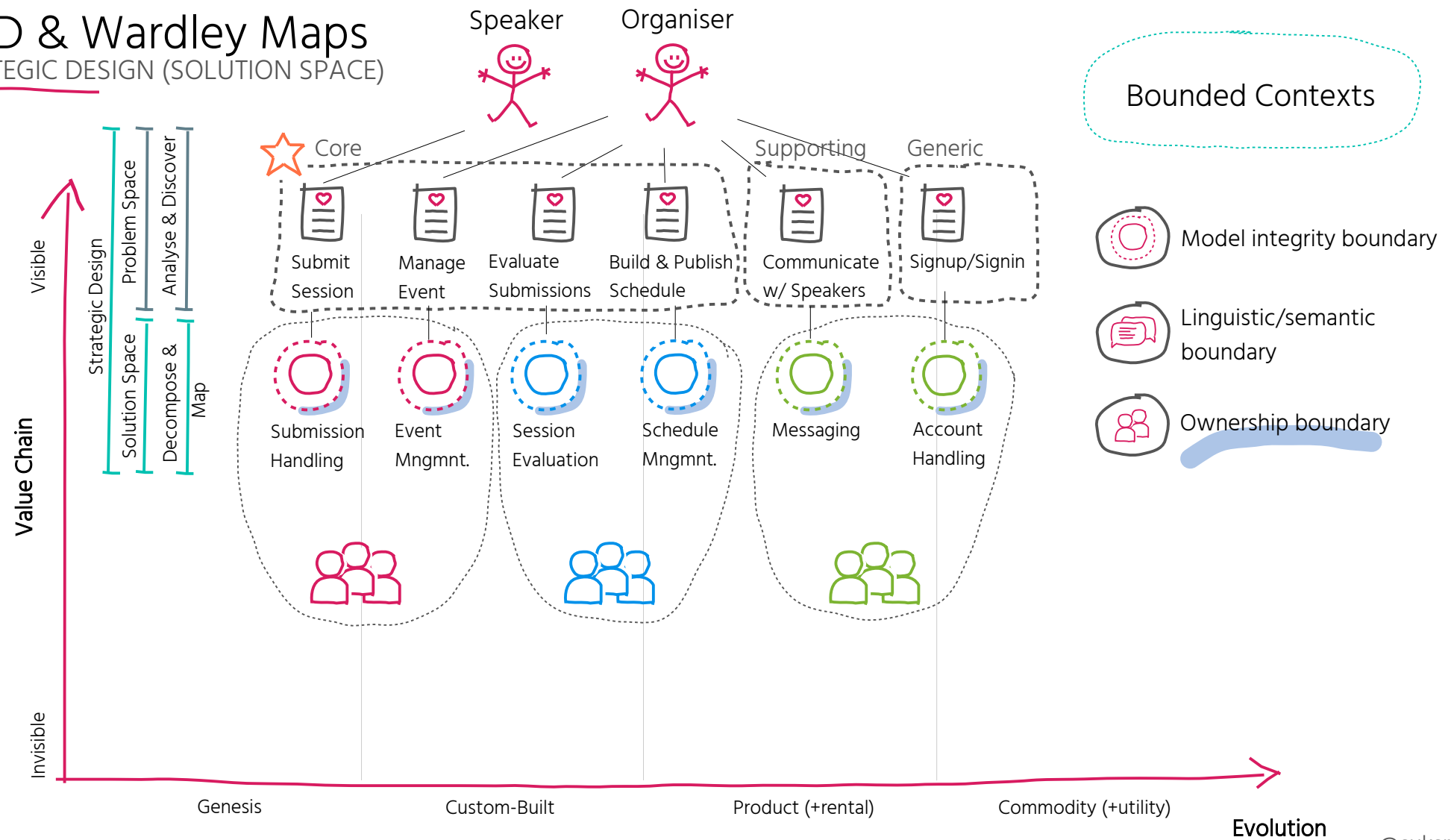
DDD & Wardley Maps

STRATEGIC DESIGN (SOLUTION SPACE)



DDD & Wardley Maps

STRATEGIC DESIGN (SOLUTION SPACE)

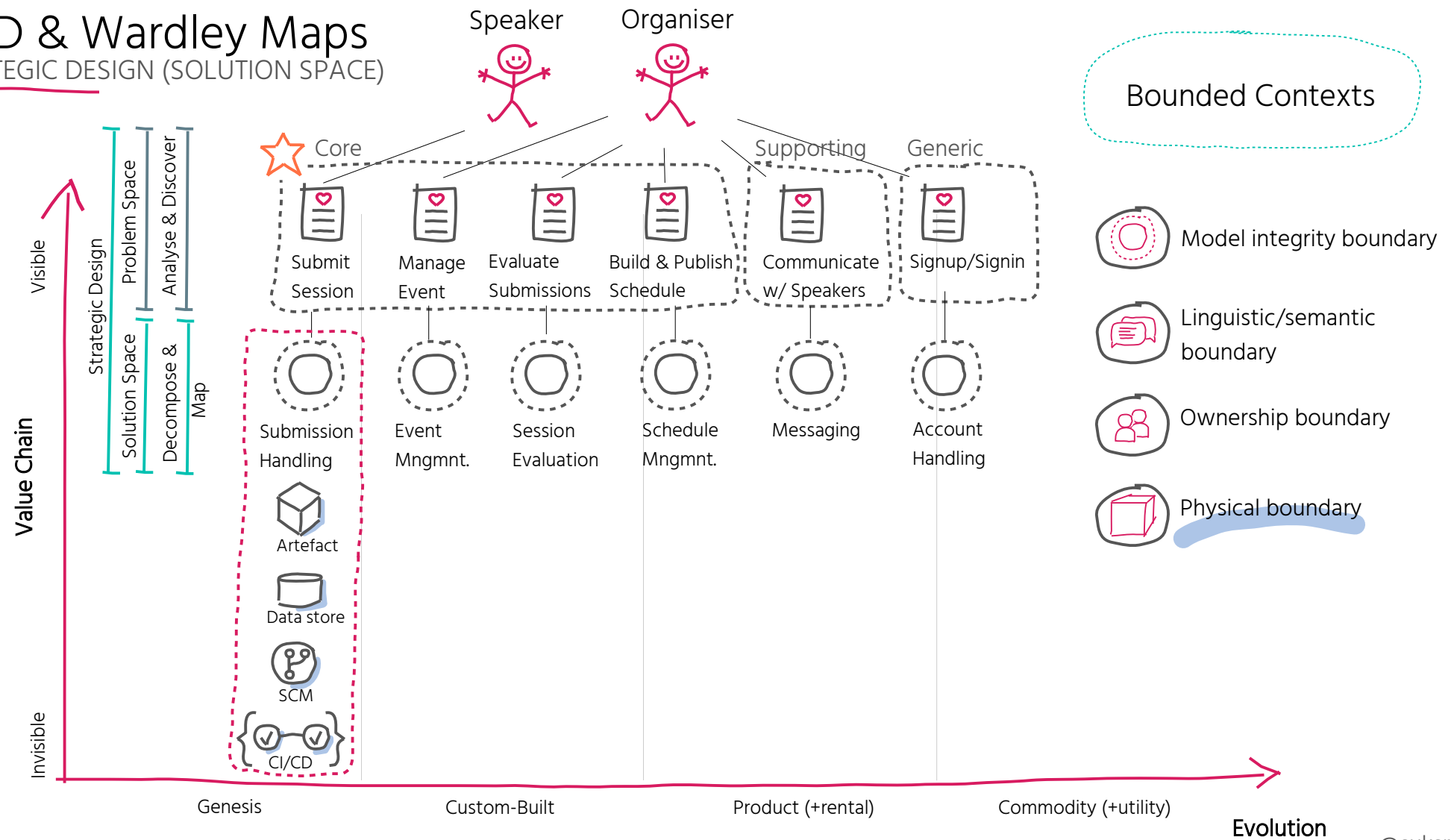


Bounded Contexts

- Model integrity boundary
- Linguistic/semantic boundary
- Ownership boundary

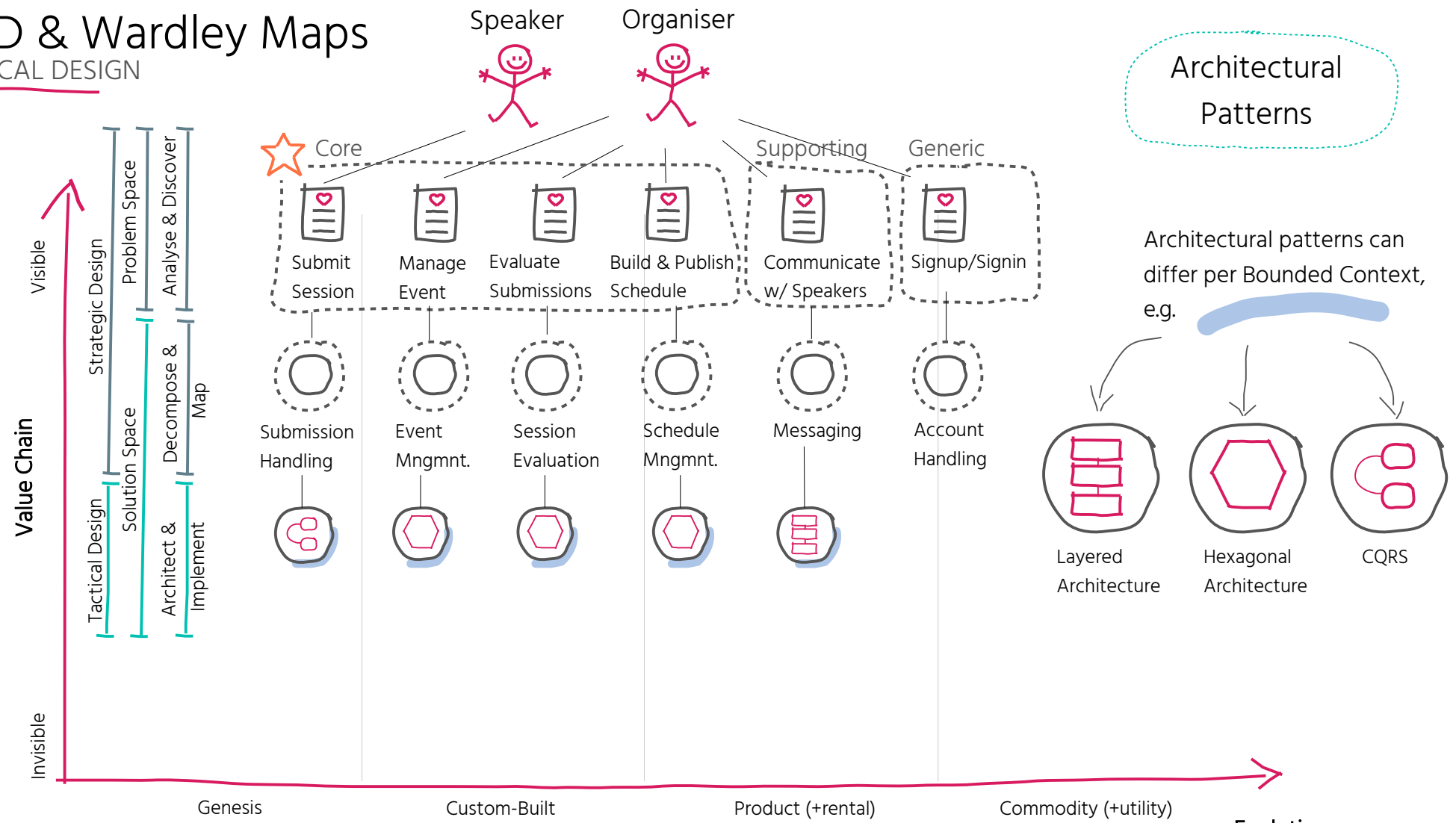
DDD & Wardley Maps

STRATEGIC DESIGN (SOLUTION SPACE)



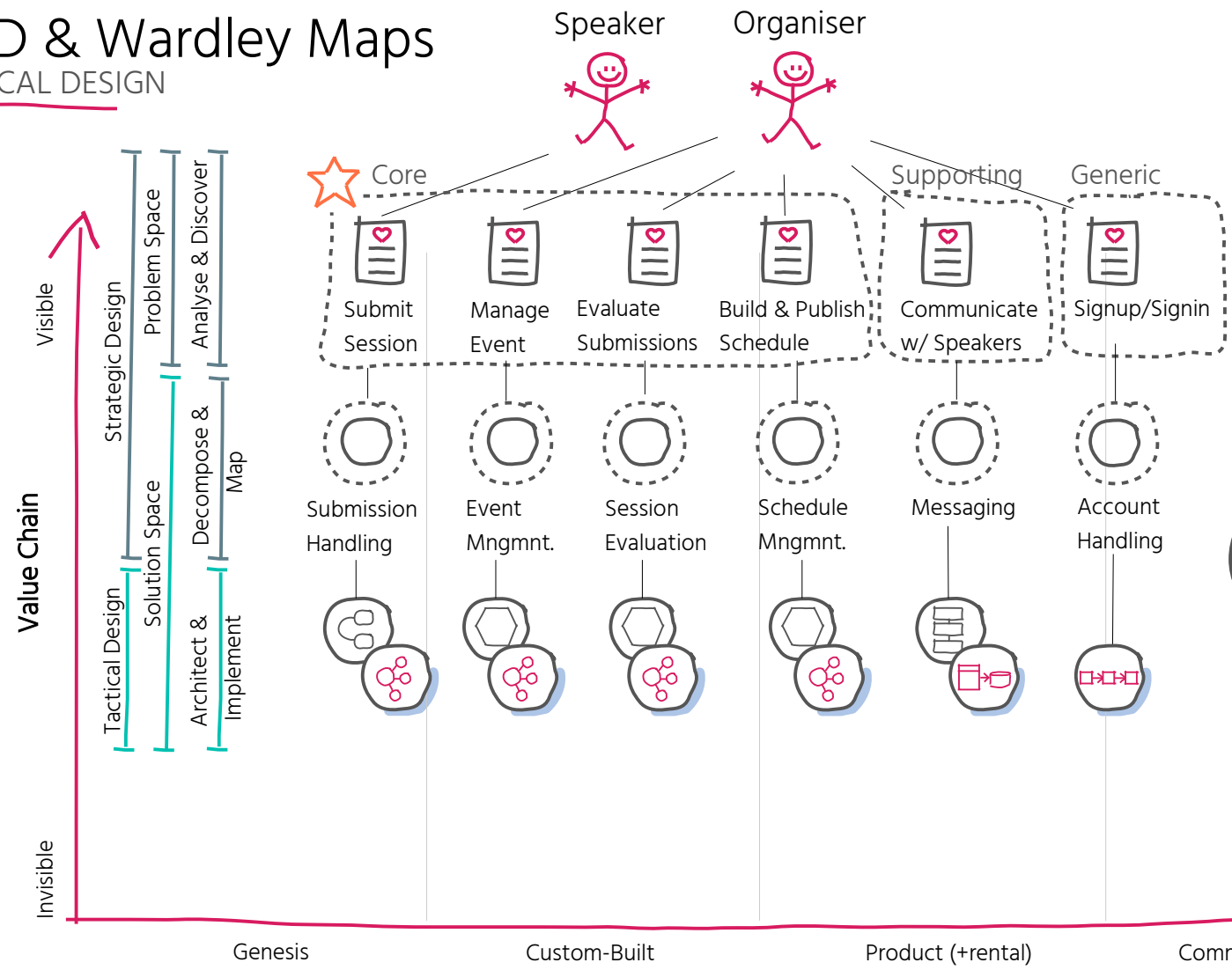
DDD & Wardley Maps

TACTICAL DESIGN



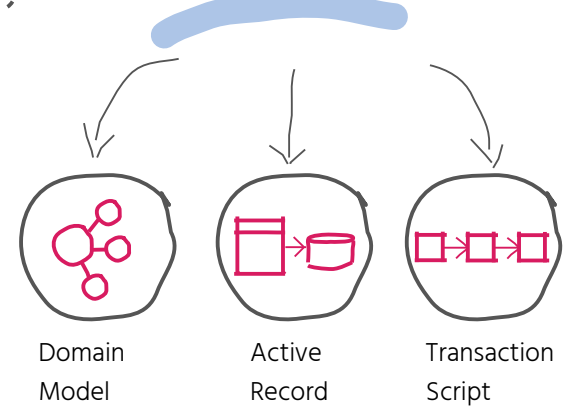
DDD & Wardley Maps

TACTICAL DESIGN



Business Logic Implementation Patterns

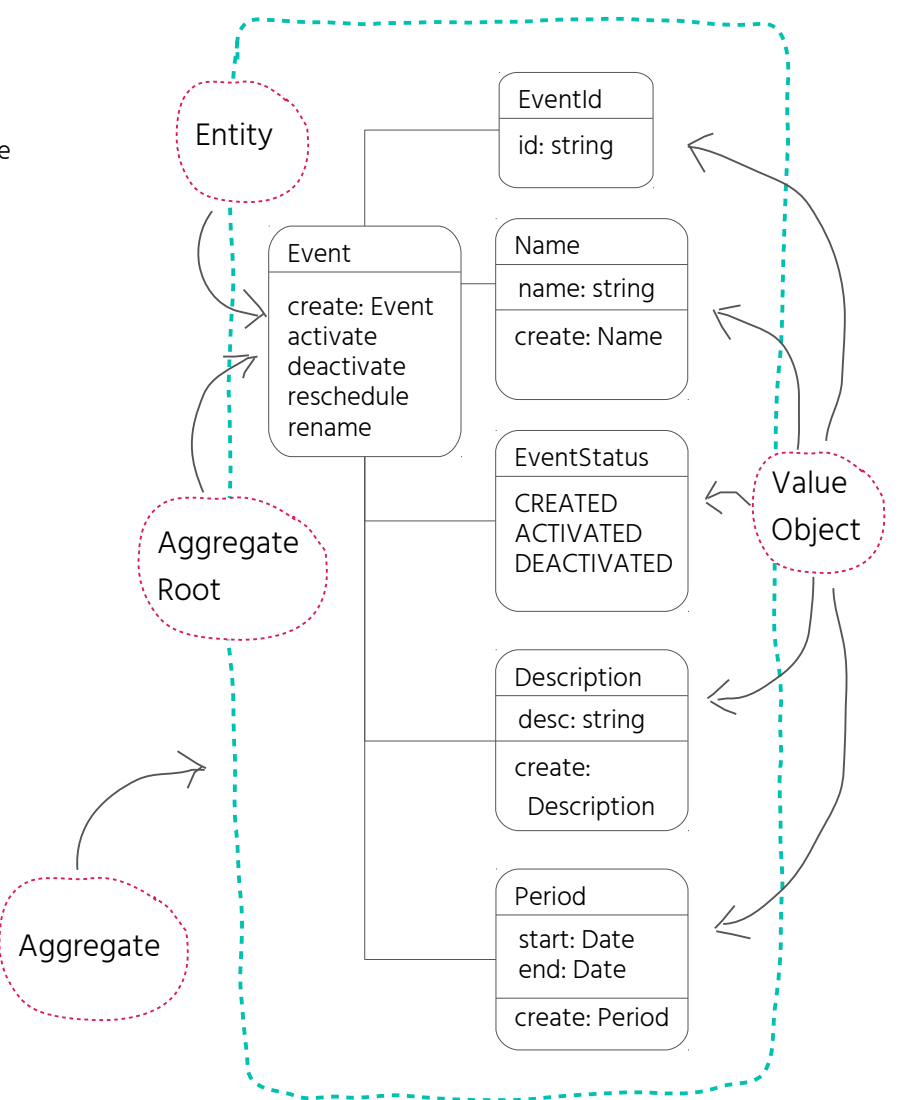
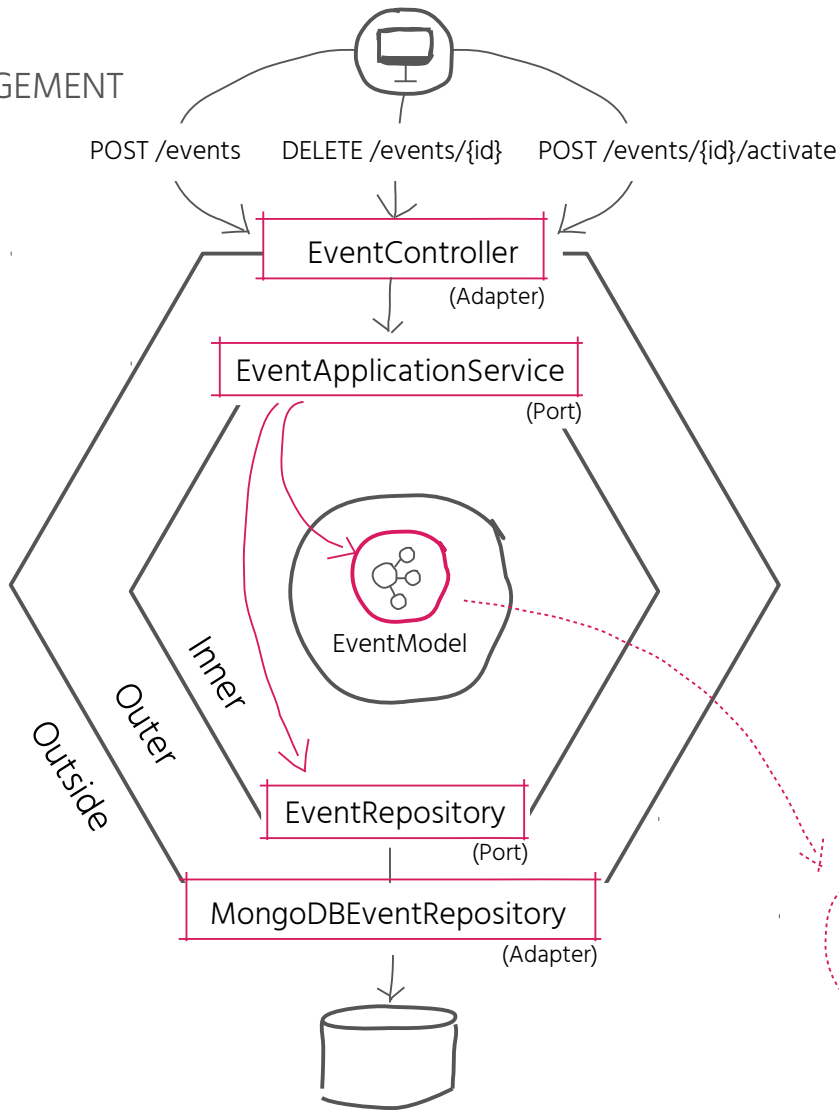
Business logic implementation patterns can differ per Bounded Context, e.g.



Evolution

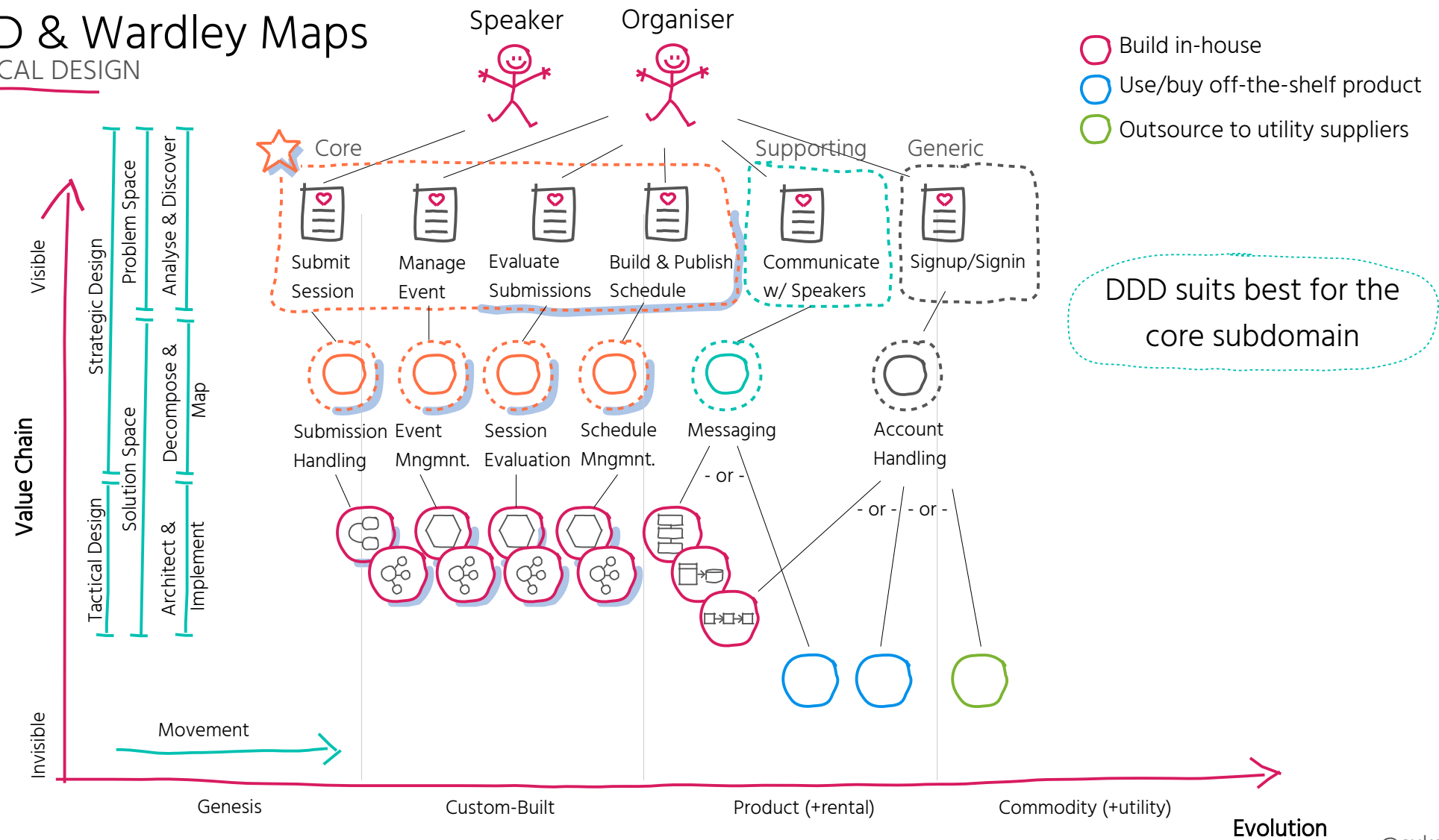
Example

BC: EVENT MANAGEMENT



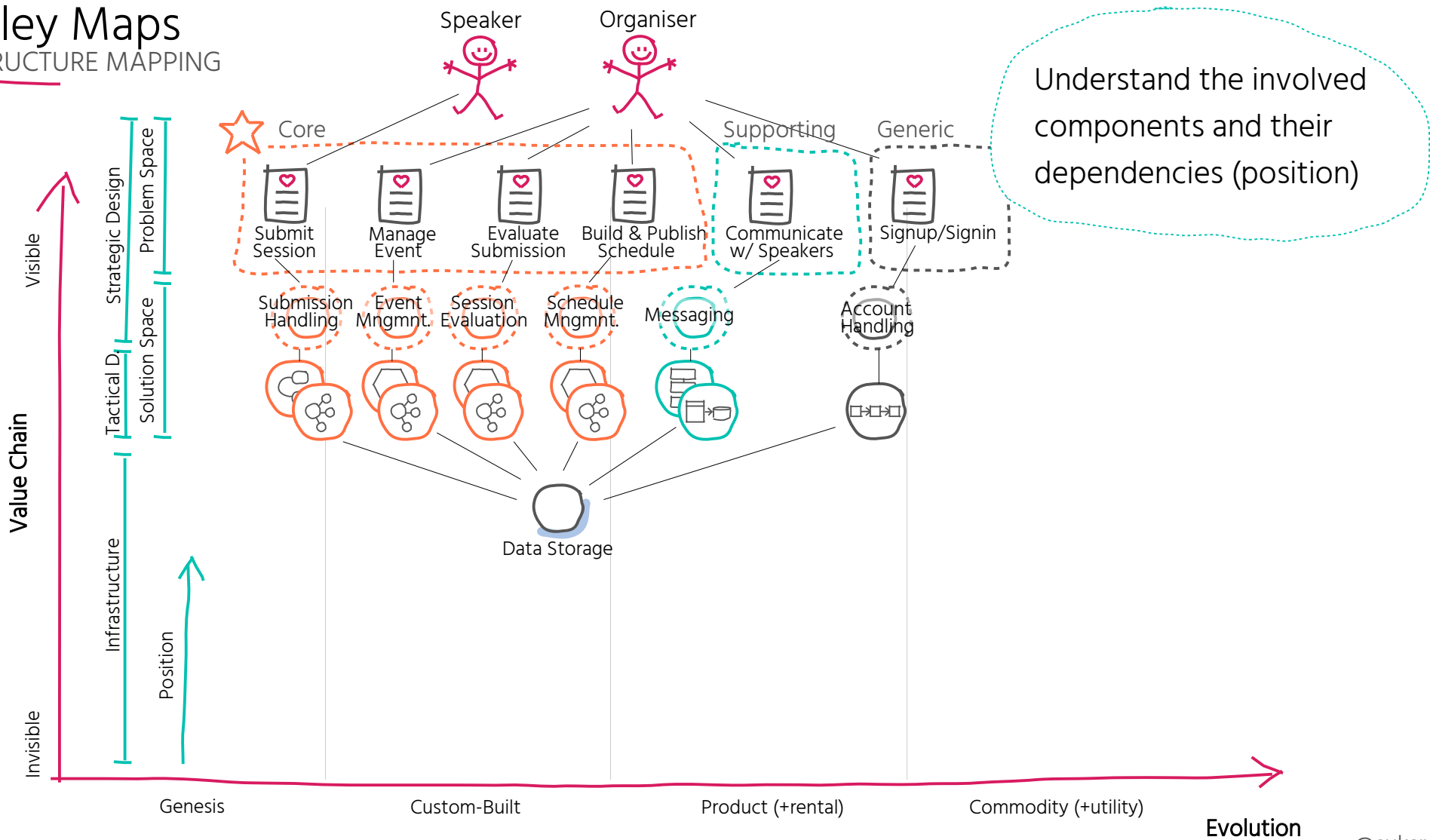
DDD & Wardley Maps

TACTICAL DESIGN



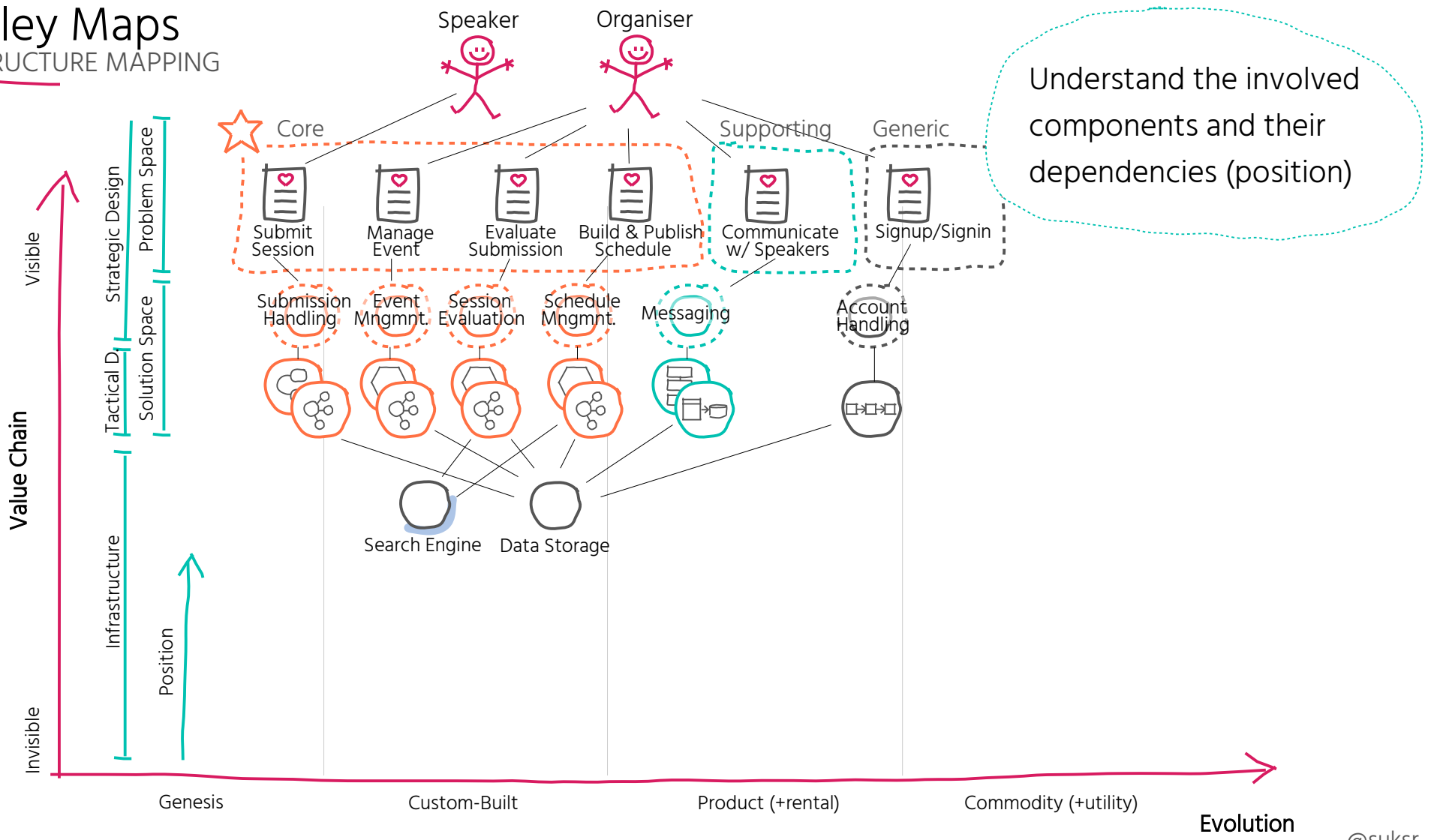
Wardley Maps

INFRASTRUCTURE MAPPING



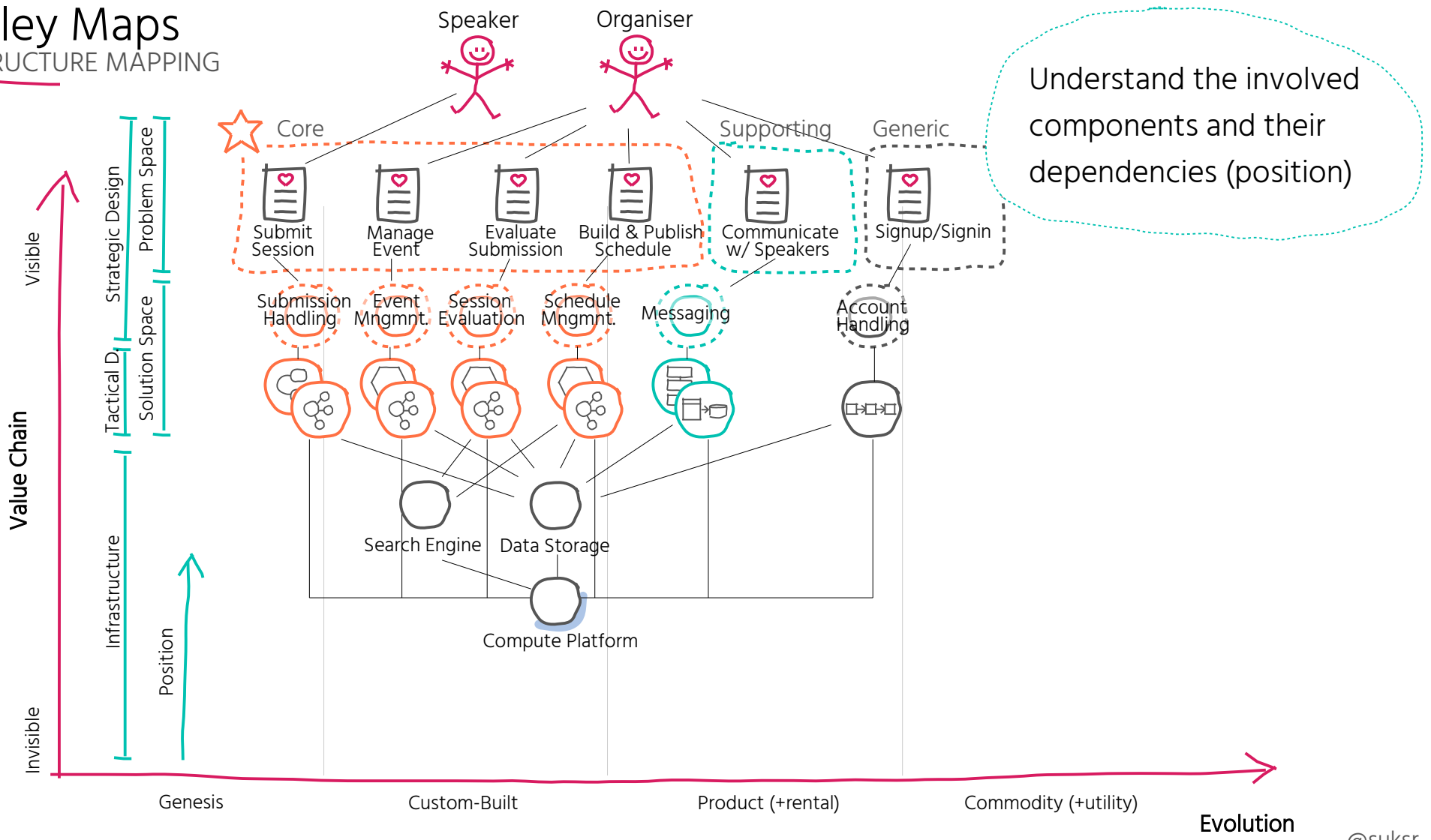
Wardley Maps

INFRASTRUCTURE MAPPING



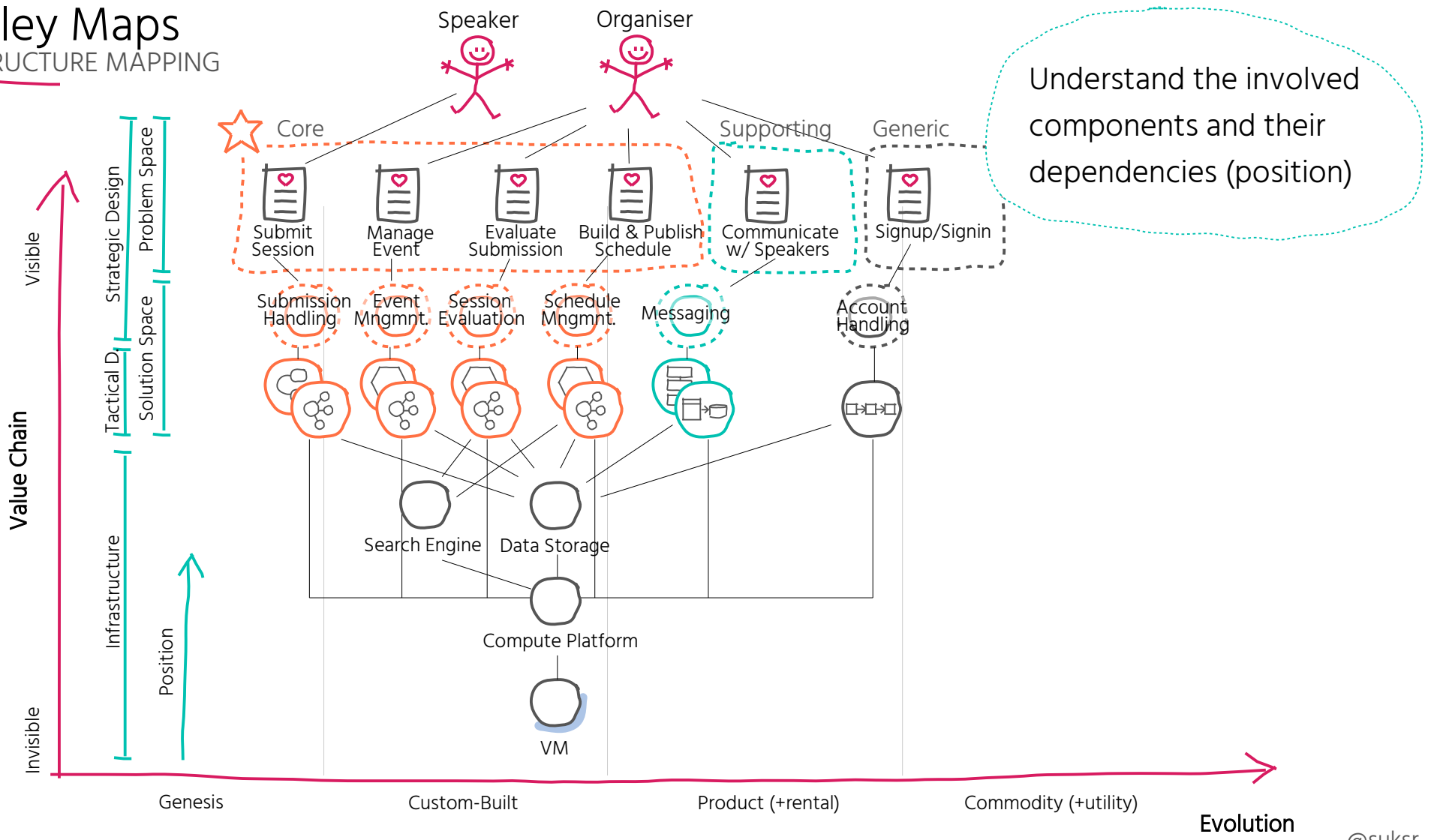
Wardley Maps

INFRASTRUCTURE MAPPING



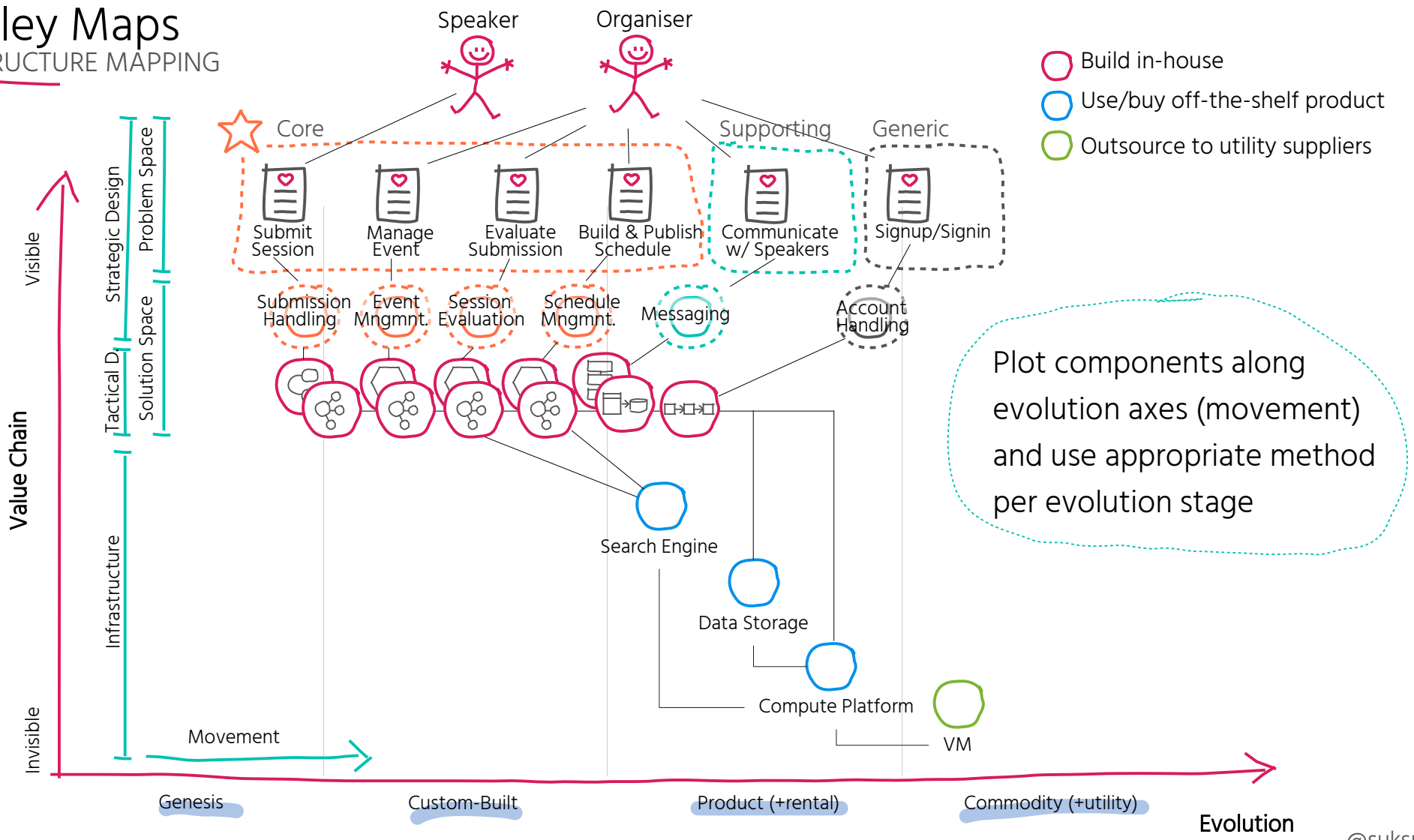
Wardley Maps

INFRASTRUCTURE MAPPING



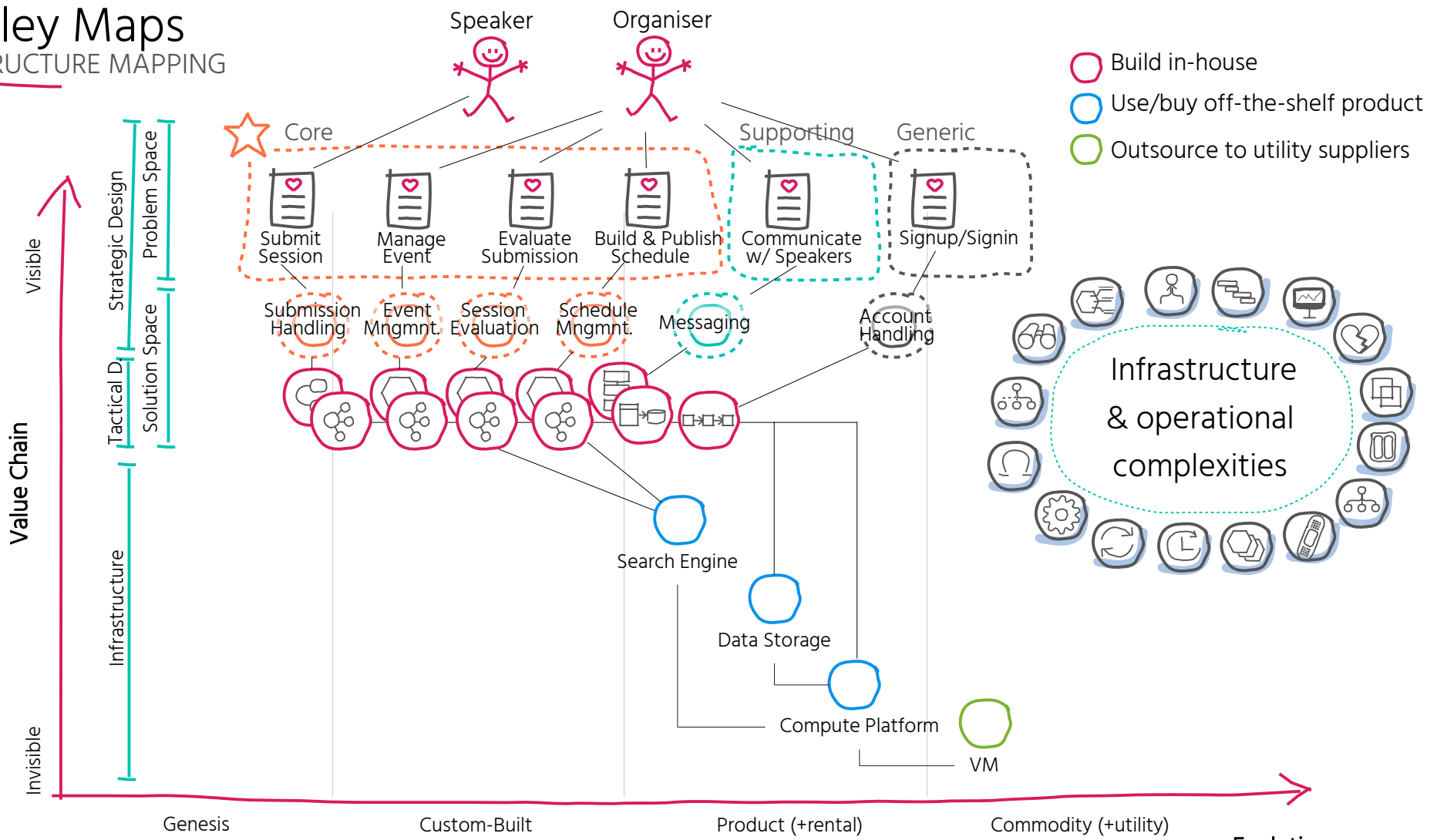
Wardley Maps

INFRASTRUCTURE MAPPING



Wardley Maps

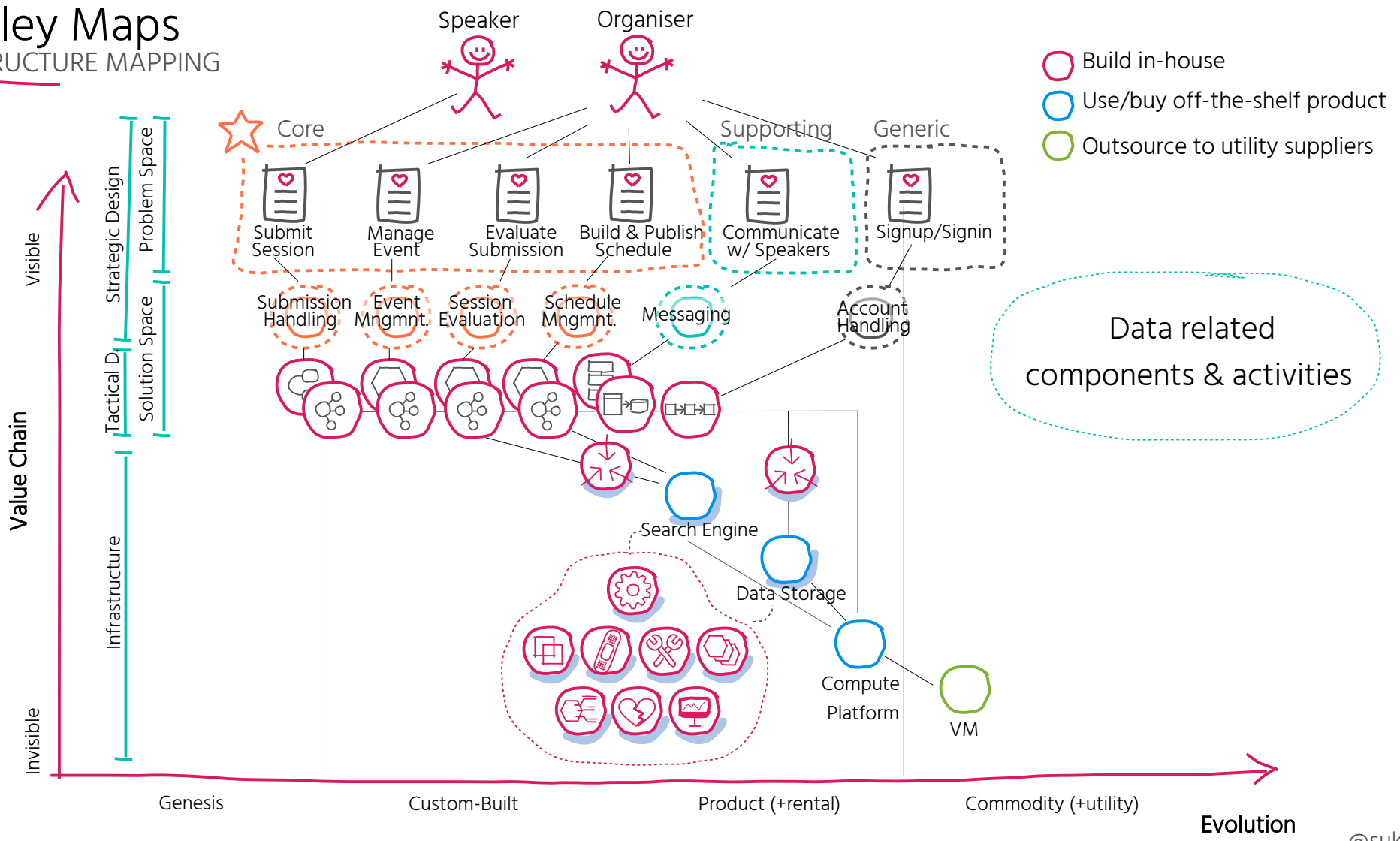
INFRASTRUCTURE MAPPING



Evolution

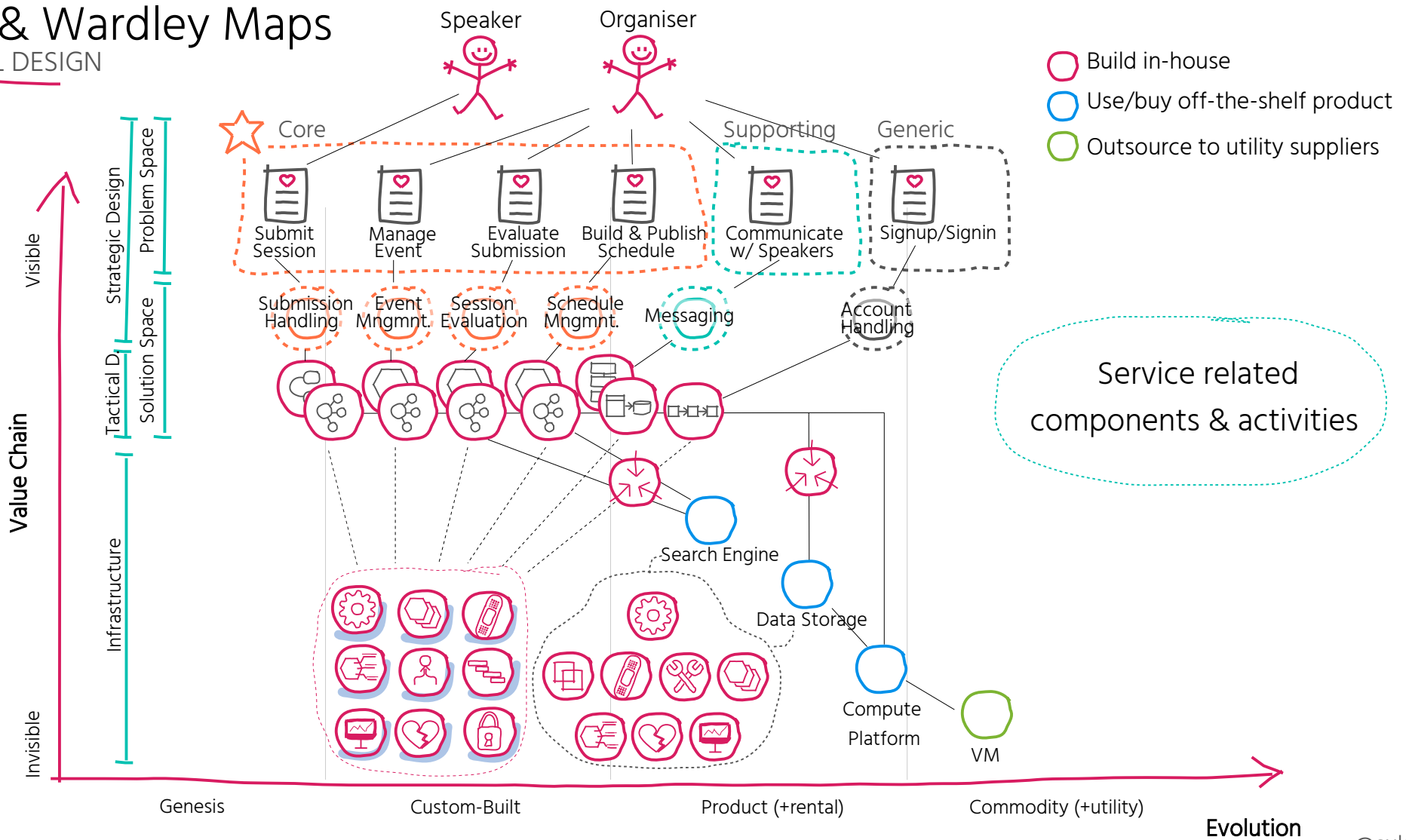
Wardley Maps

INFRASTRUCTURE MAPPING



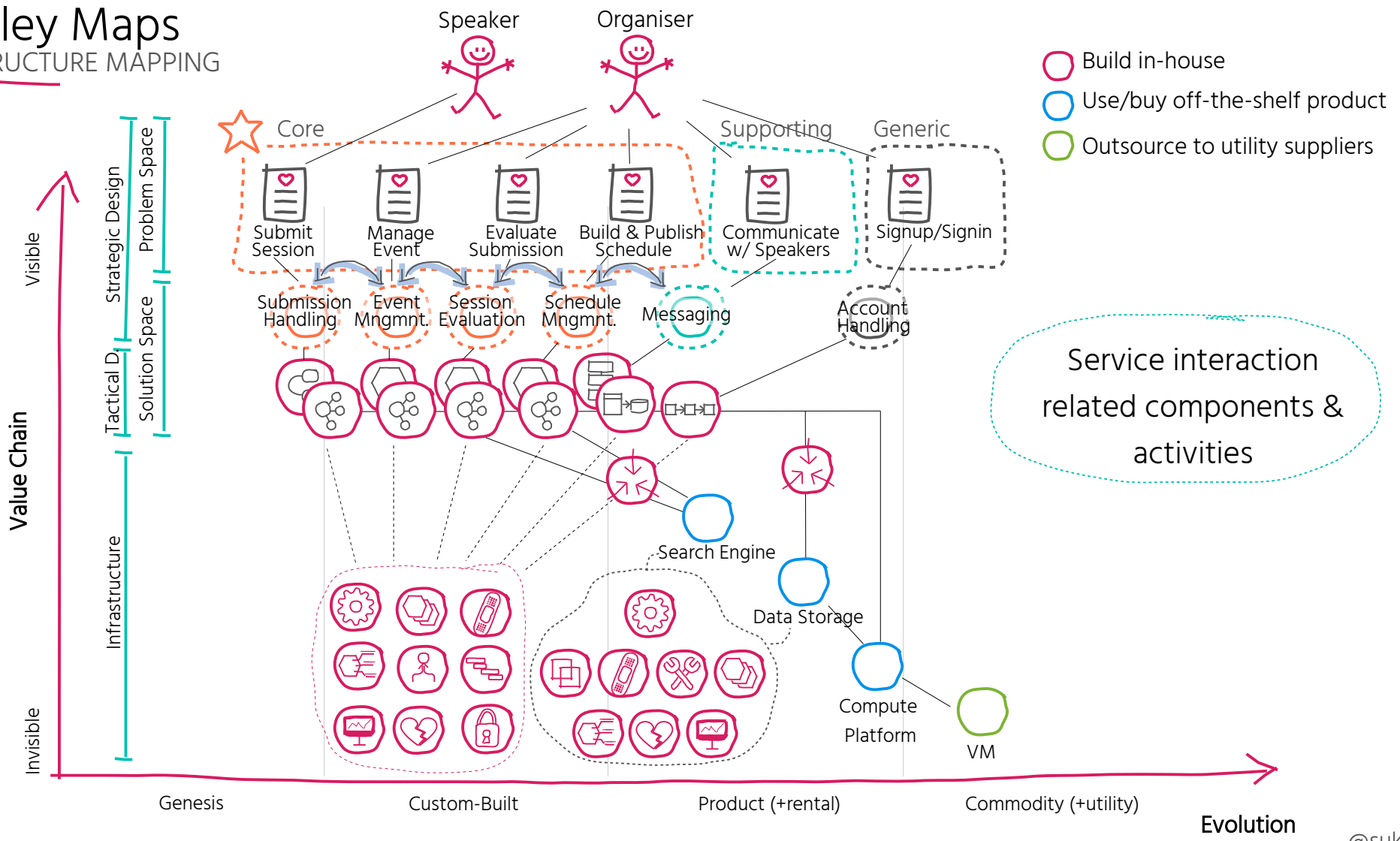
DDD & Wardley Maps

TACTICAL DESIGN

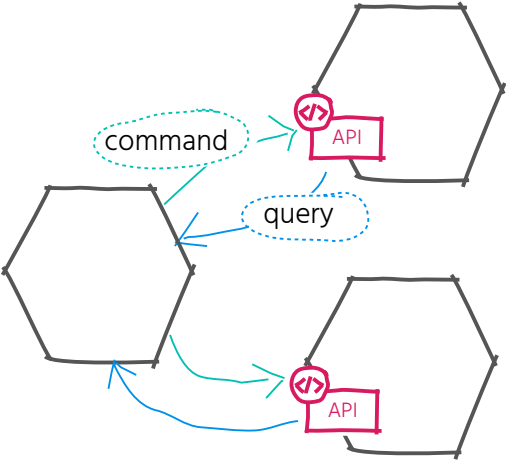


Wardley Maps

INFRASTRUCTURE MAPPING

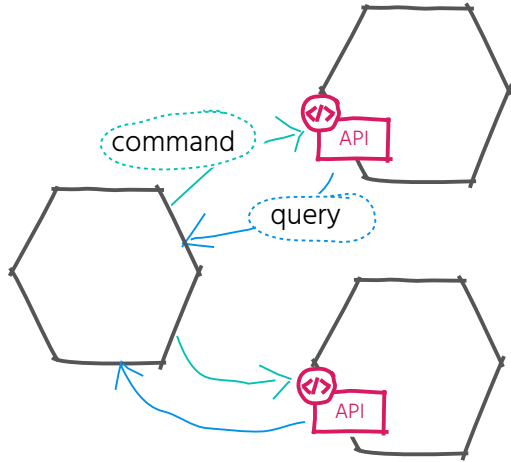


Service Interactions

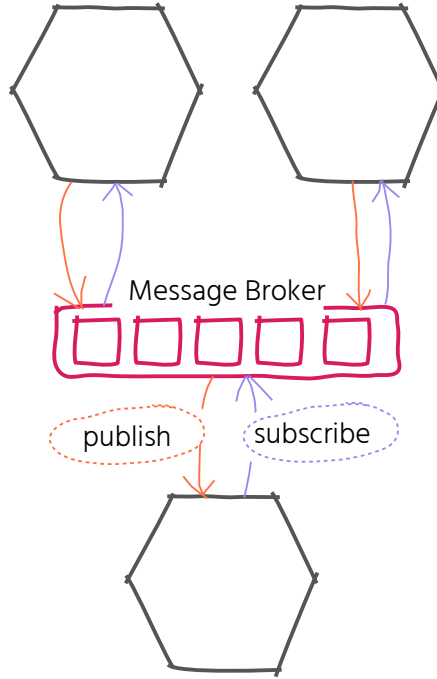


Request-Driven

Service Interactions

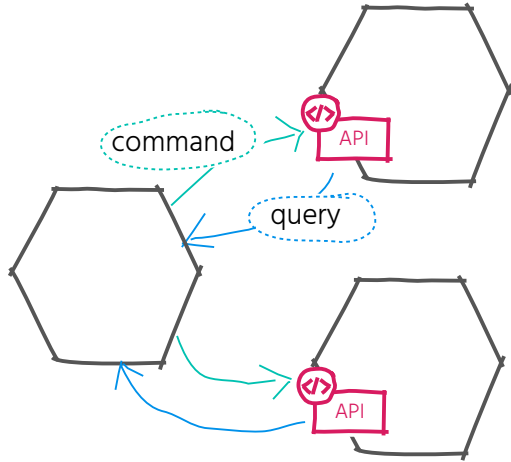


Request-Driven

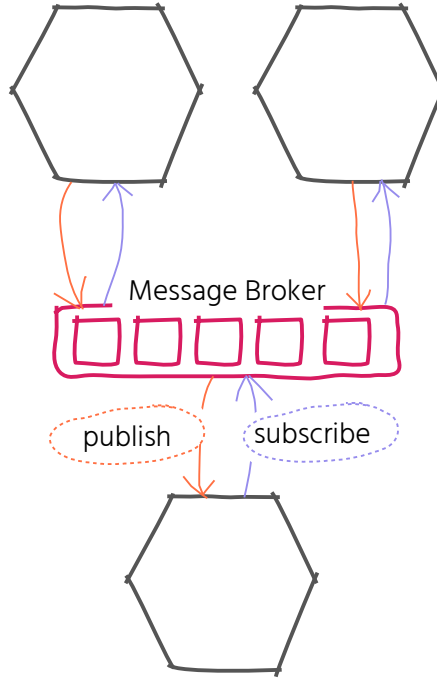


Event-Driven

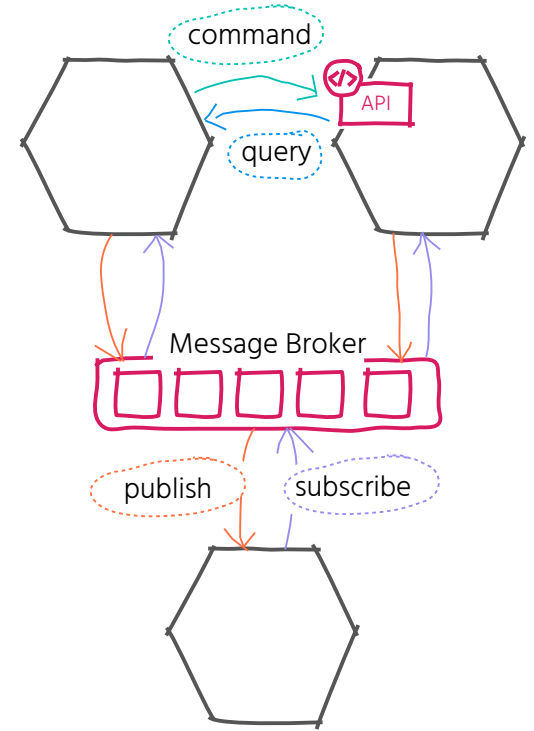
Service Interactions



Request-Driven



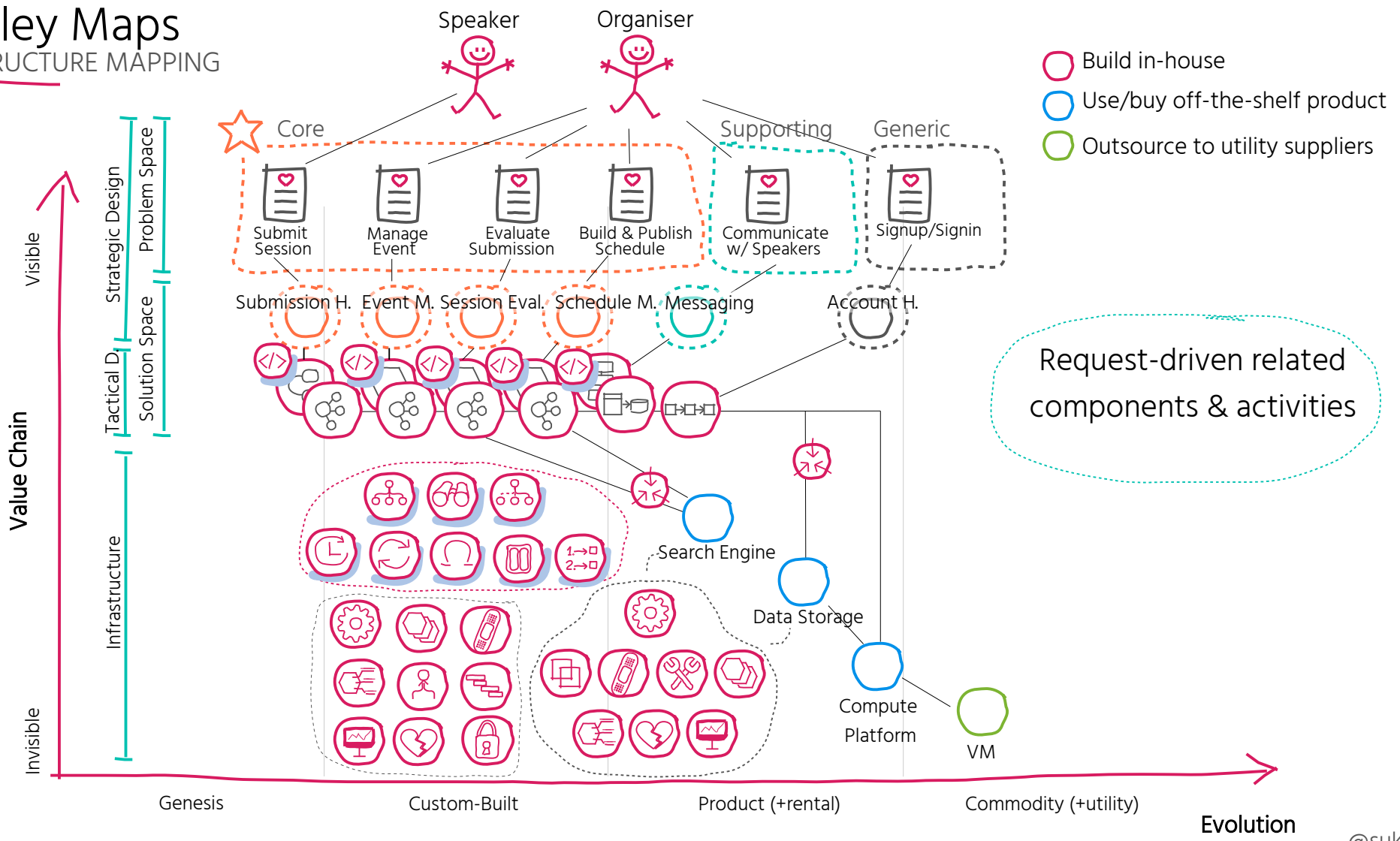
Event-Driven



Hybrid

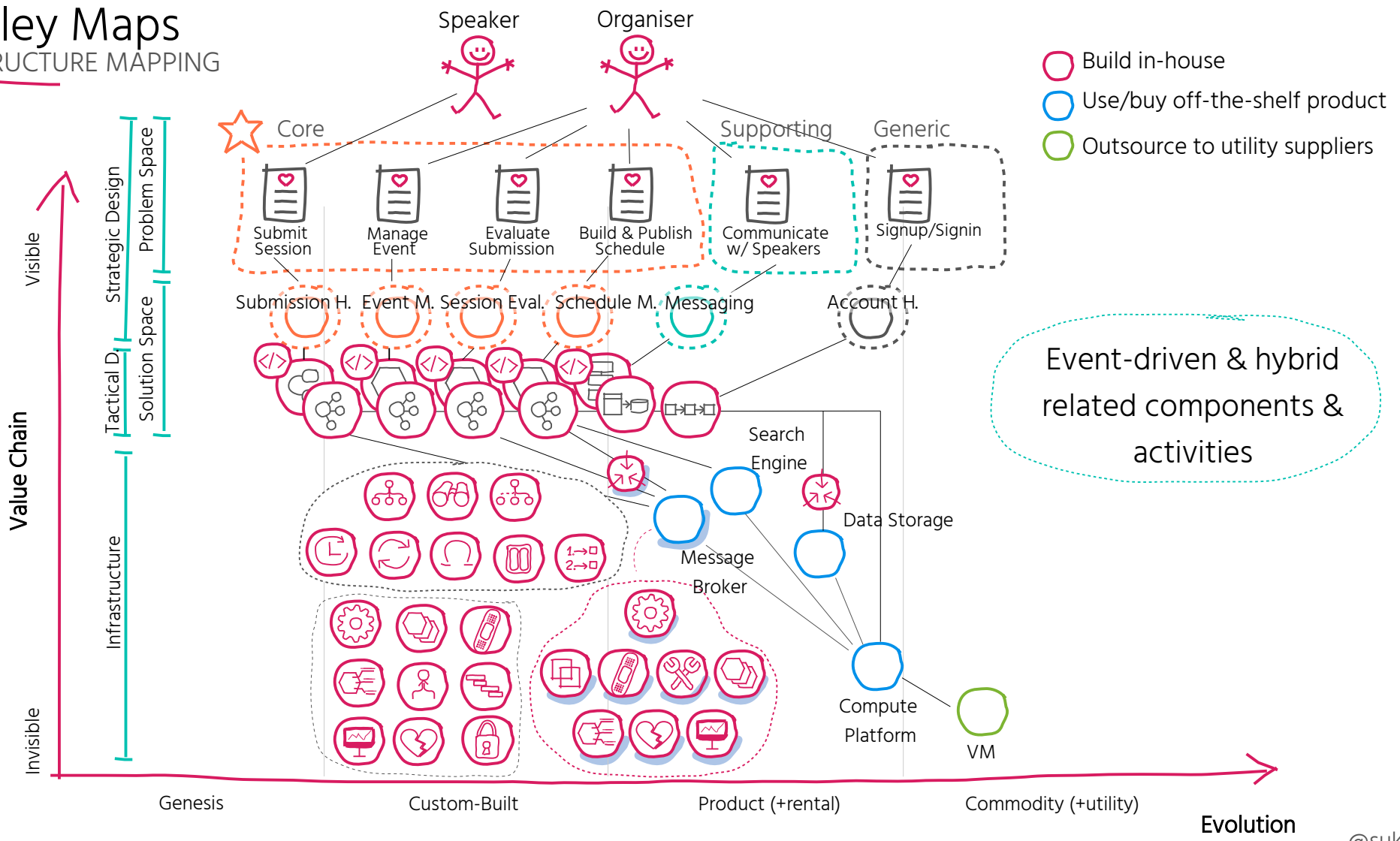
Wardley Maps

INFRASTRUCTURE MAPPING



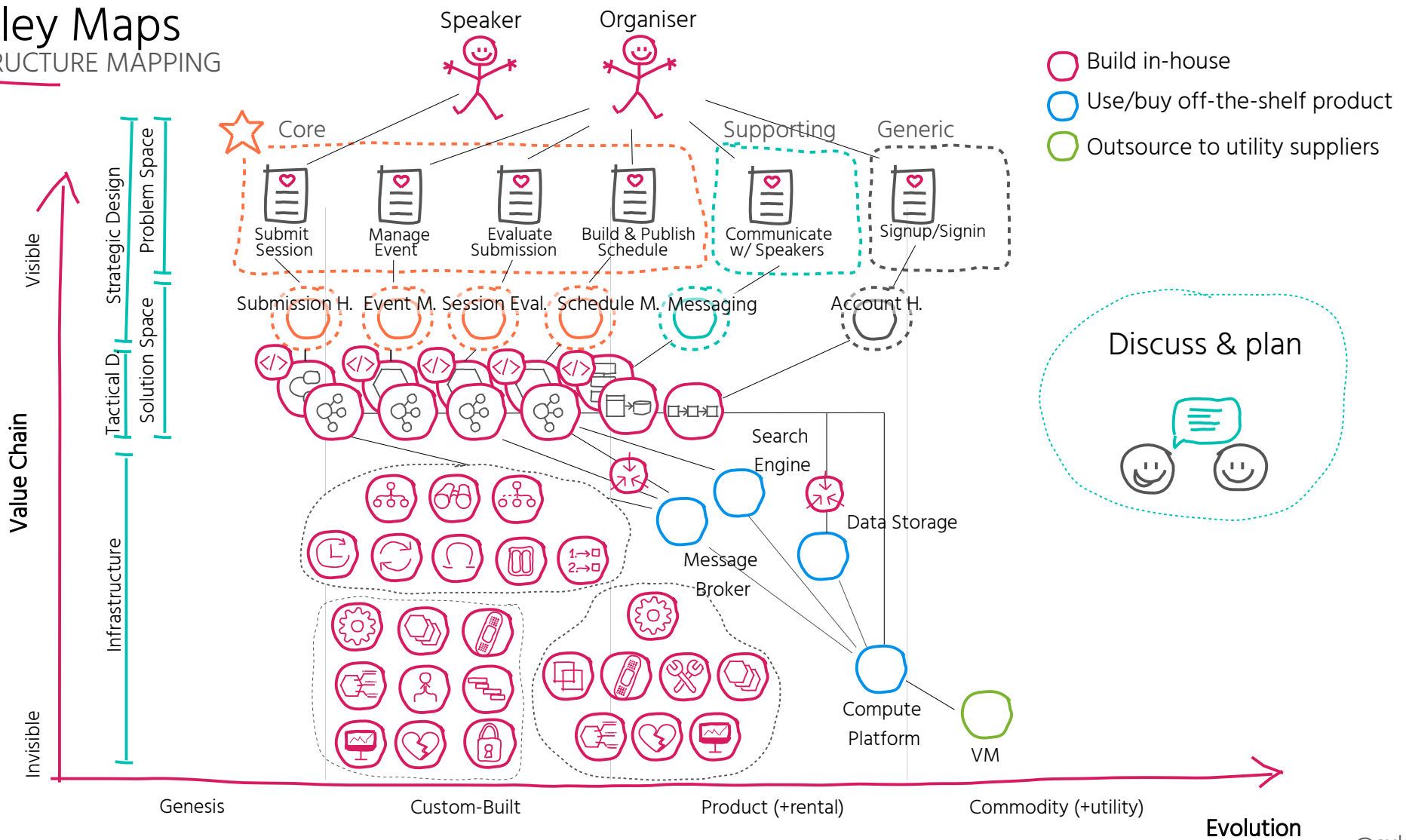
Wardley Maps

INFRASTRUCTURE MAPPING



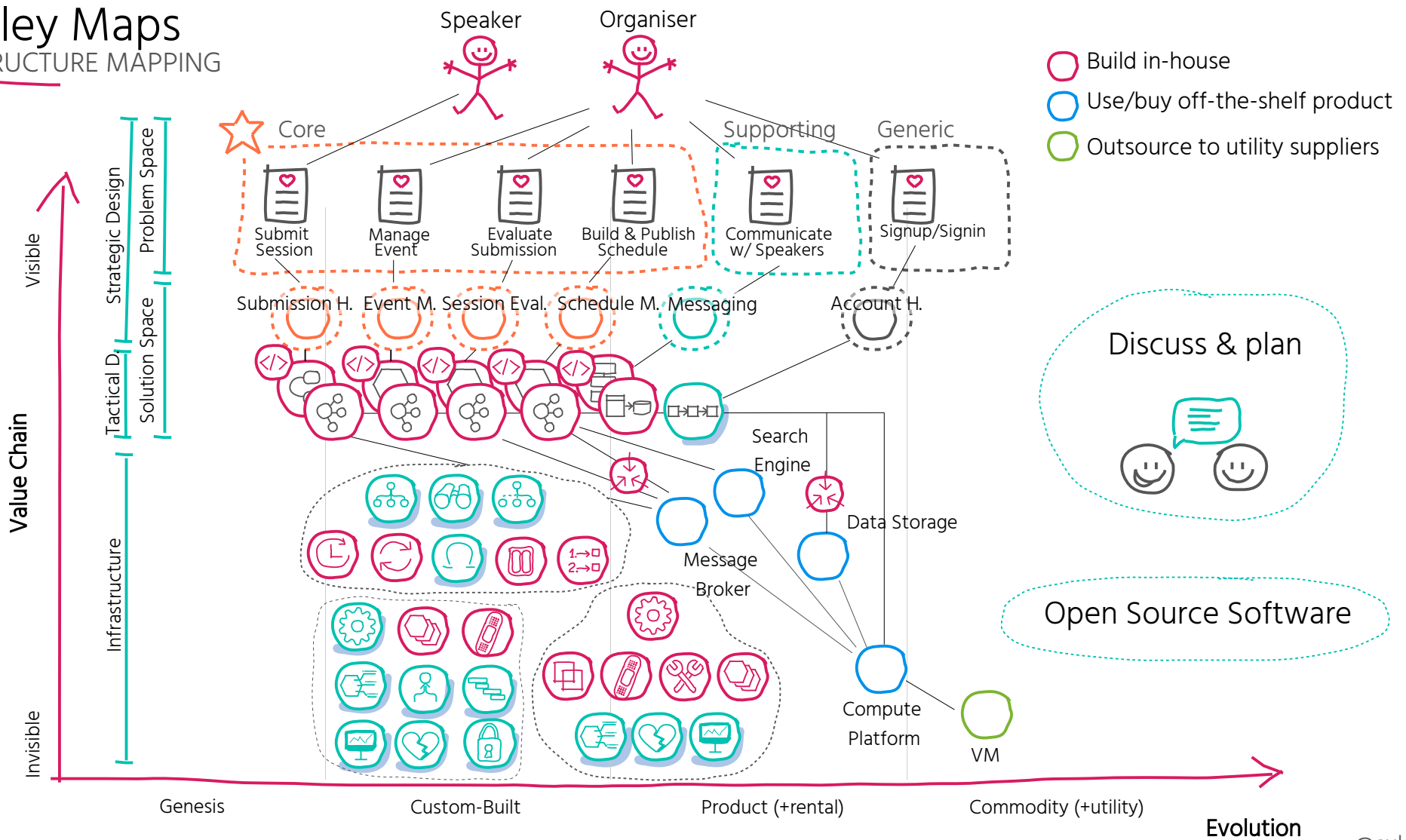
Wardley Maps

INFRASTRUCTURE MAPPING



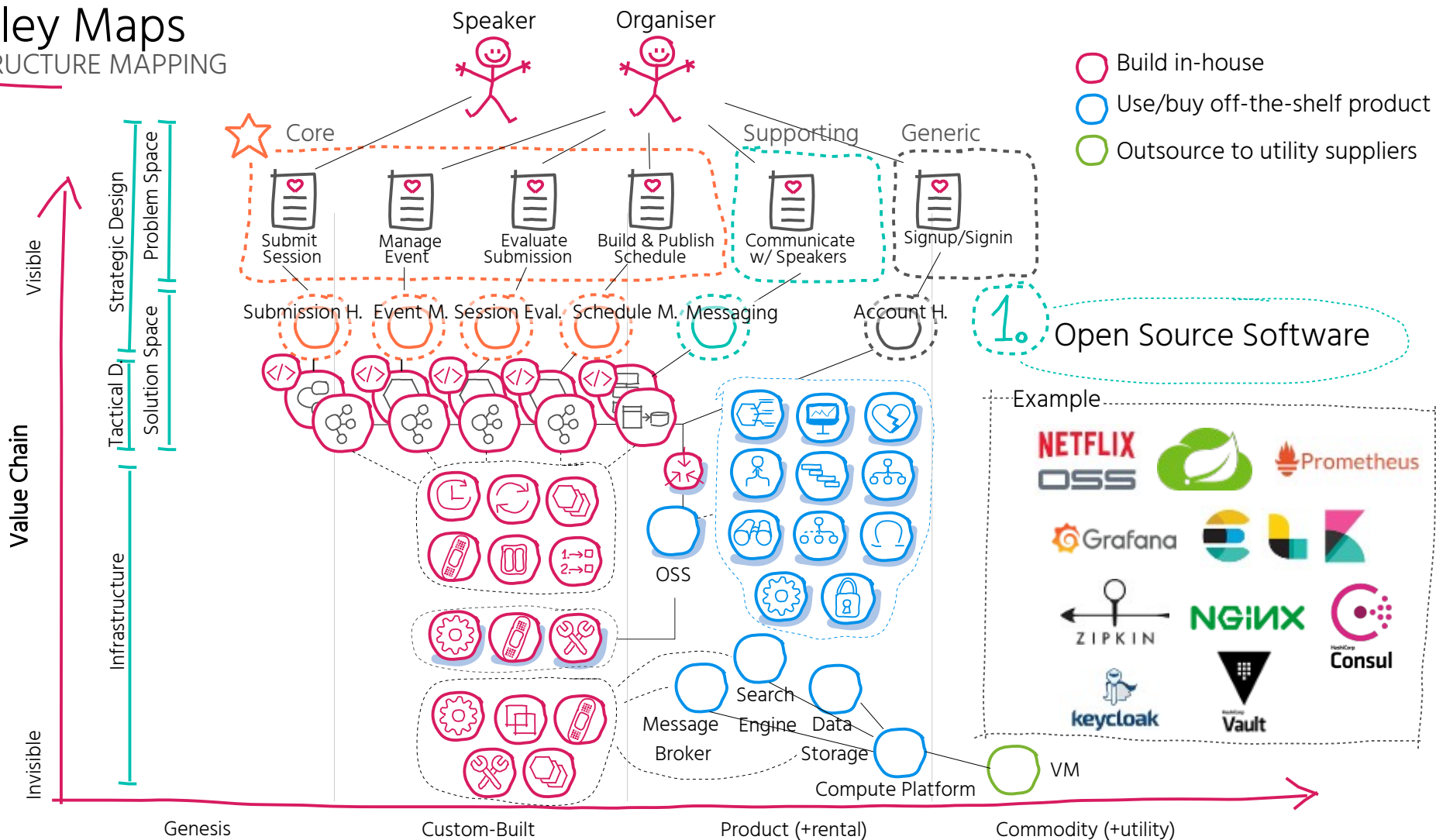
Wardley Maps

INFRASTRUCTURE MAPPING



Wardley Maps

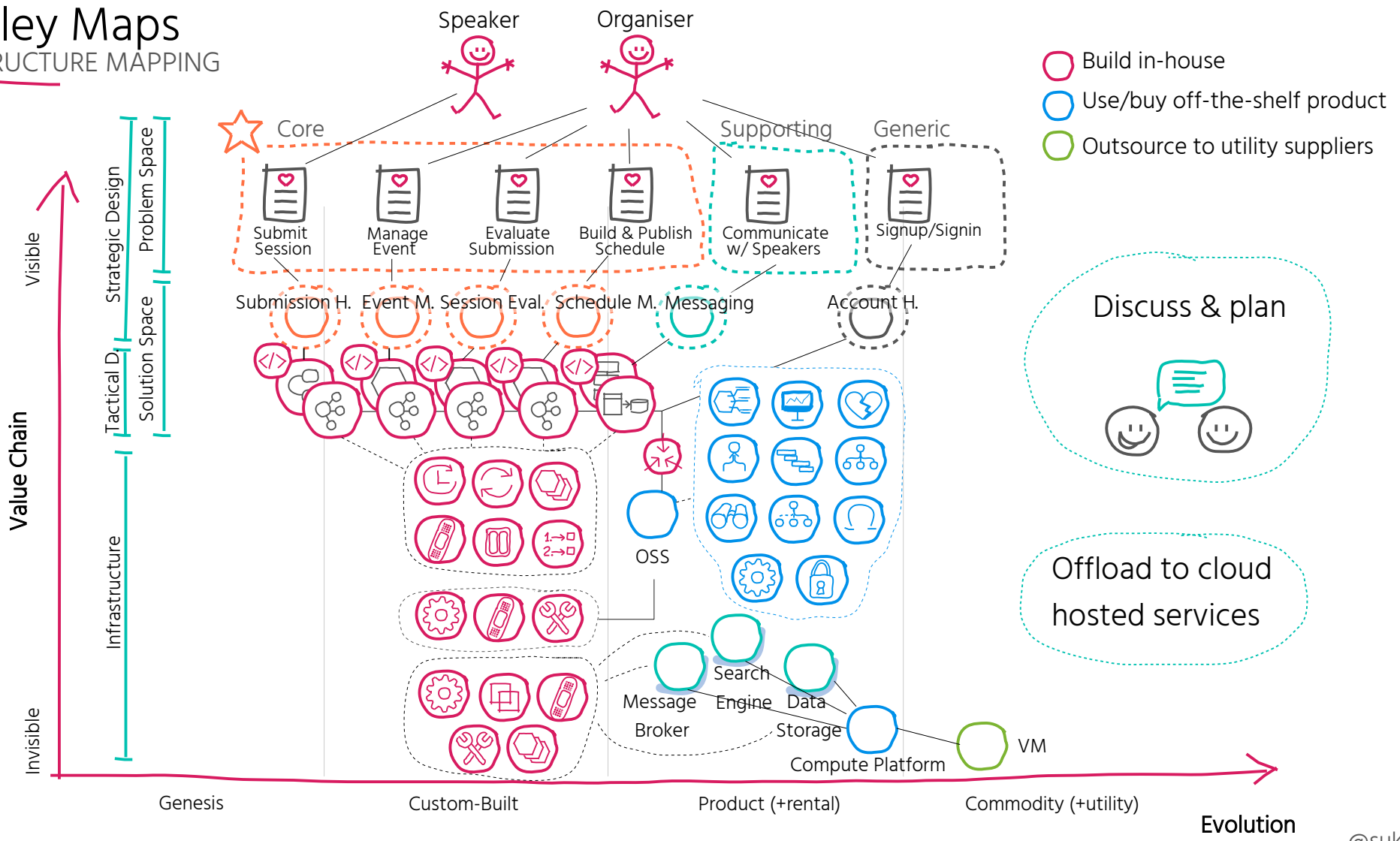
INFRASTRUCTURE MAPPING



Evolution

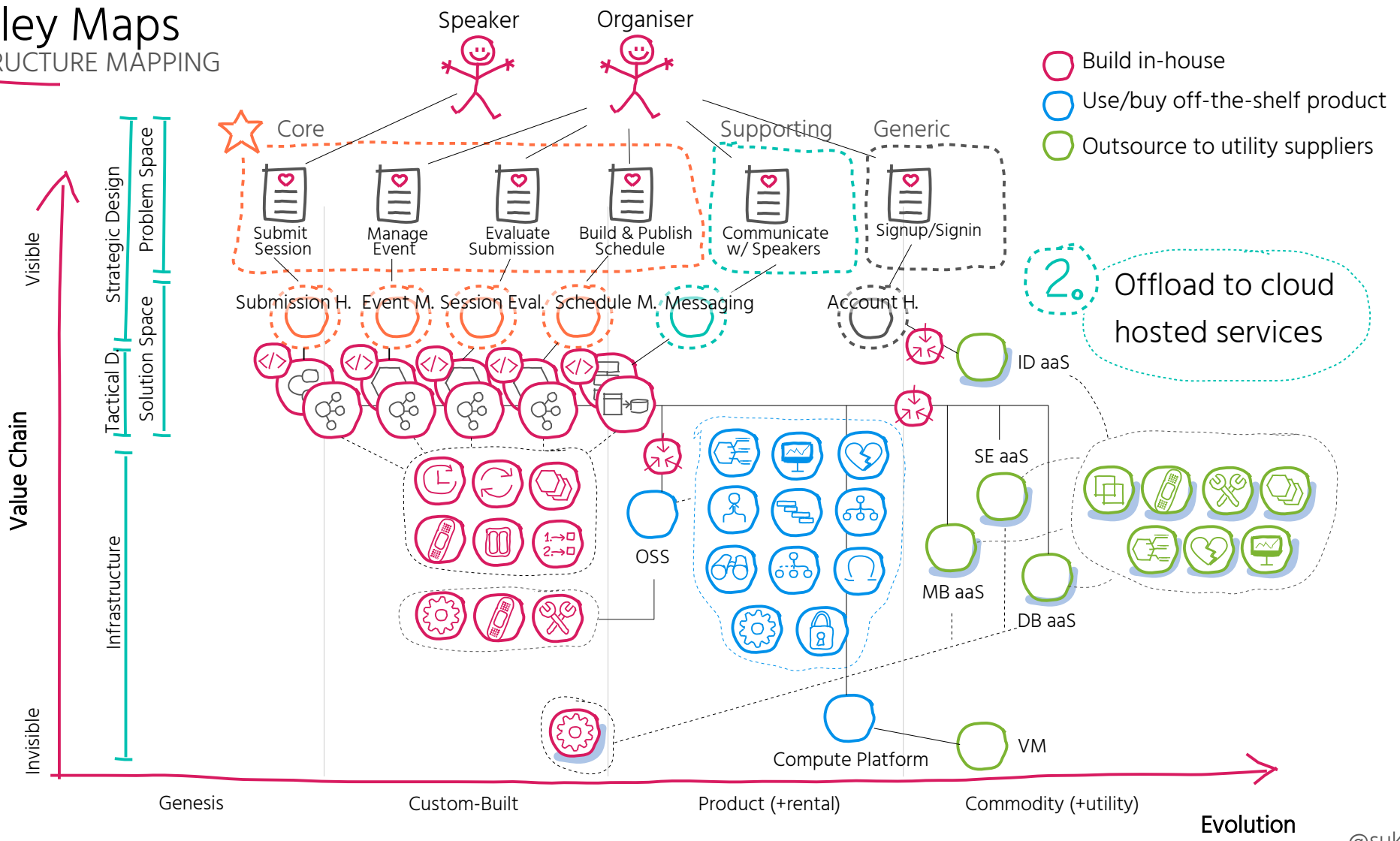
Wardley Maps

INFRASTRUCTURE MAPPING



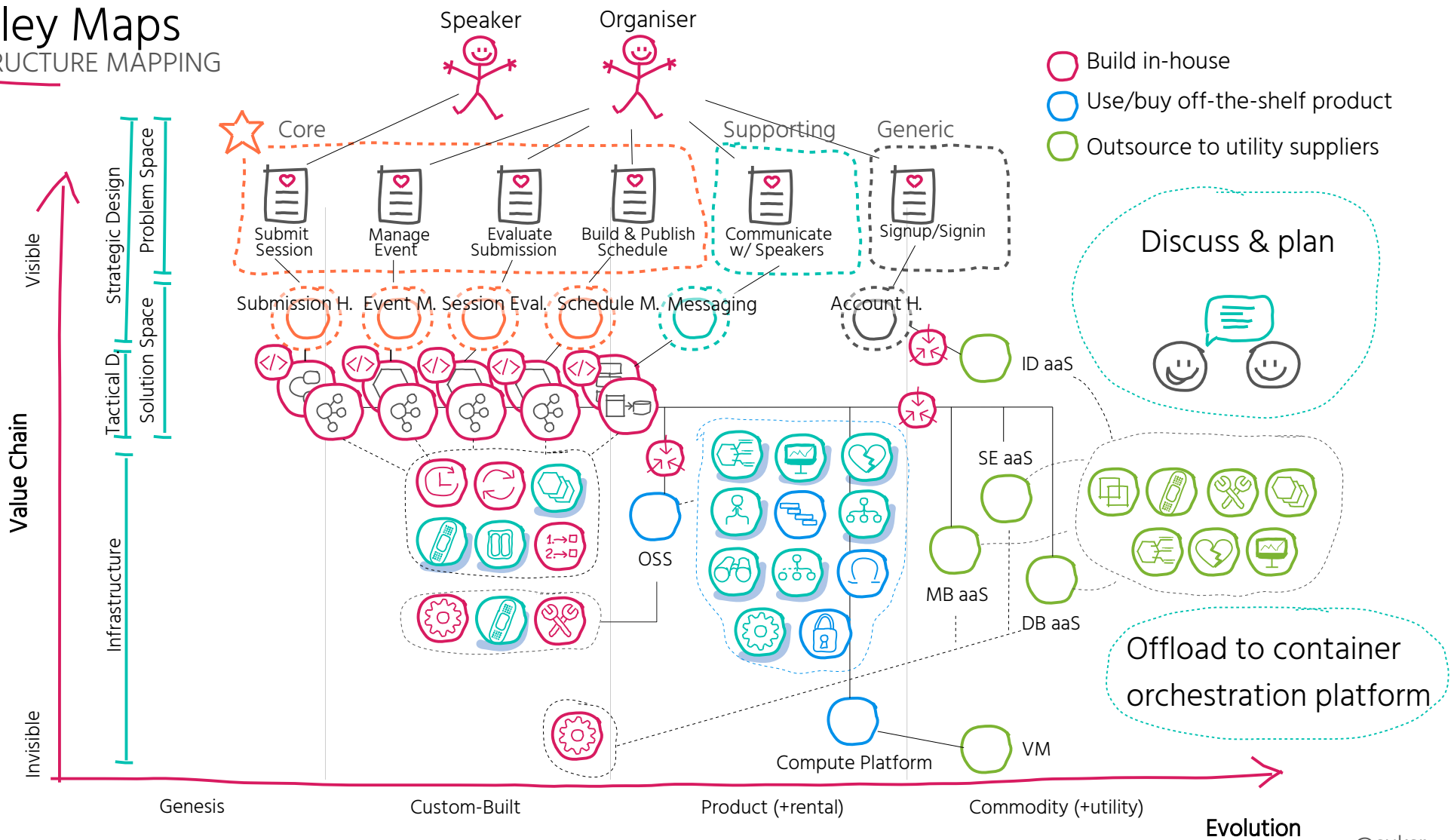
Wardley Maps

INFRASTRUCTURE MAPPING

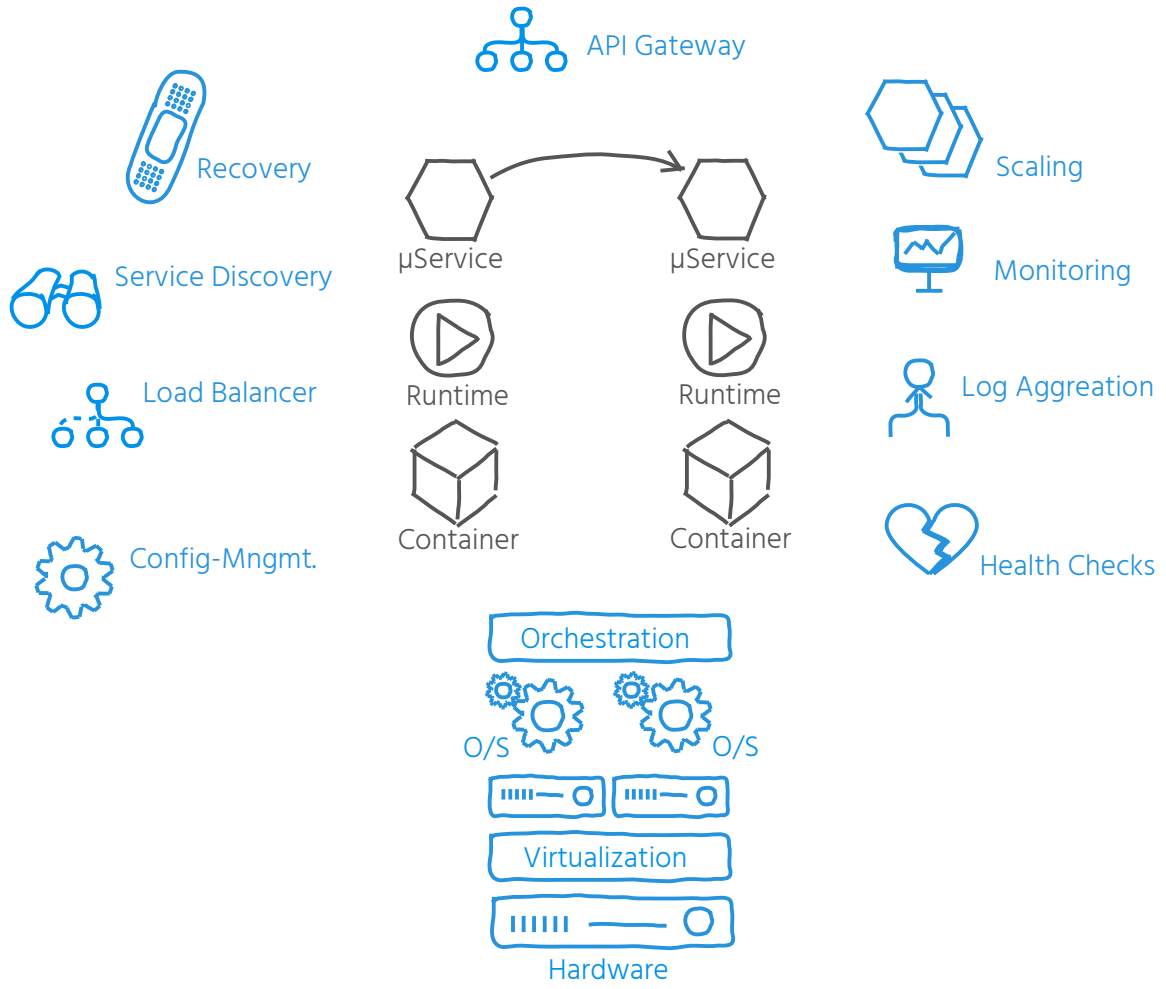


Wardley Maps

INFRASTRUCTURE MAPPING

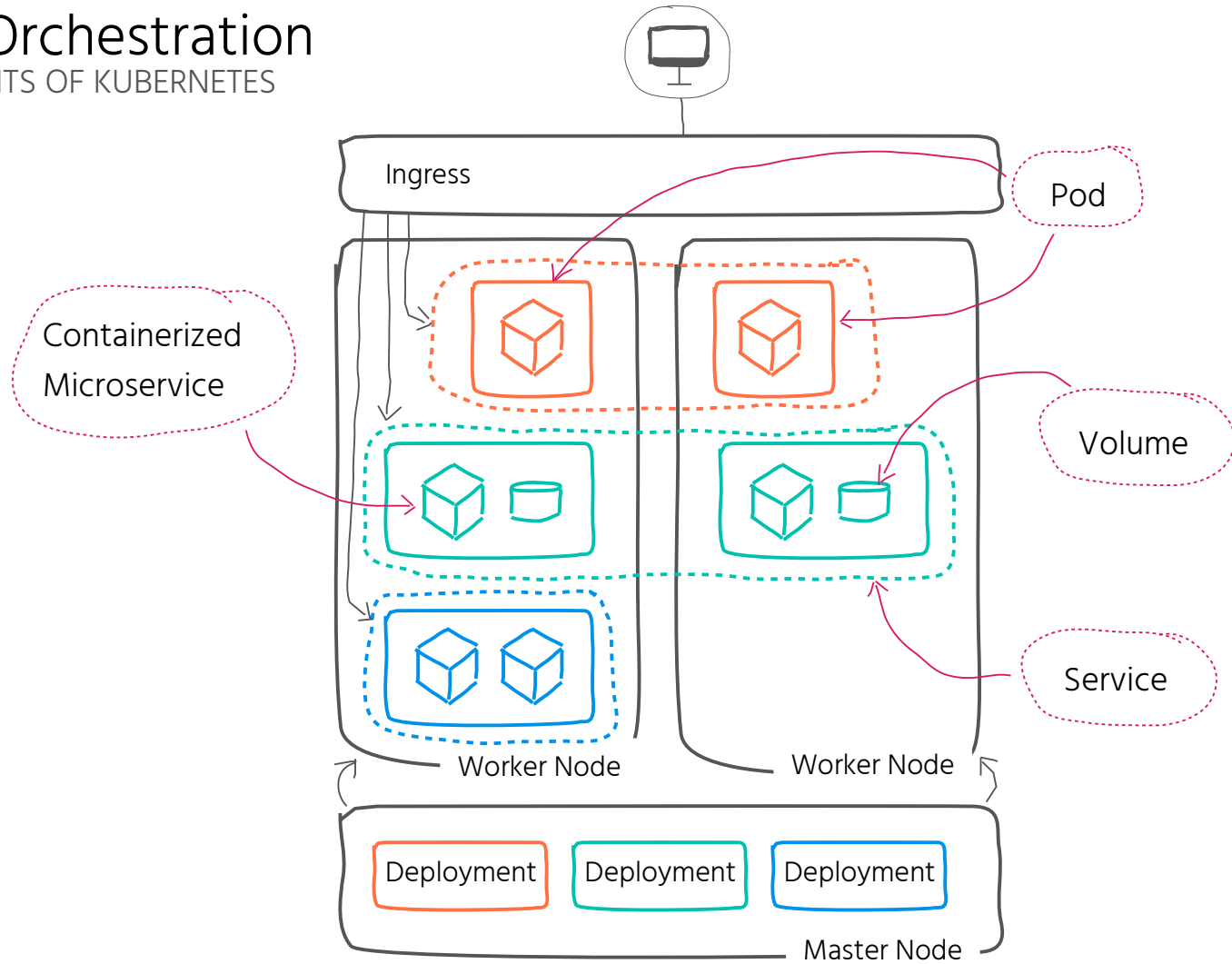


Container Orchestration



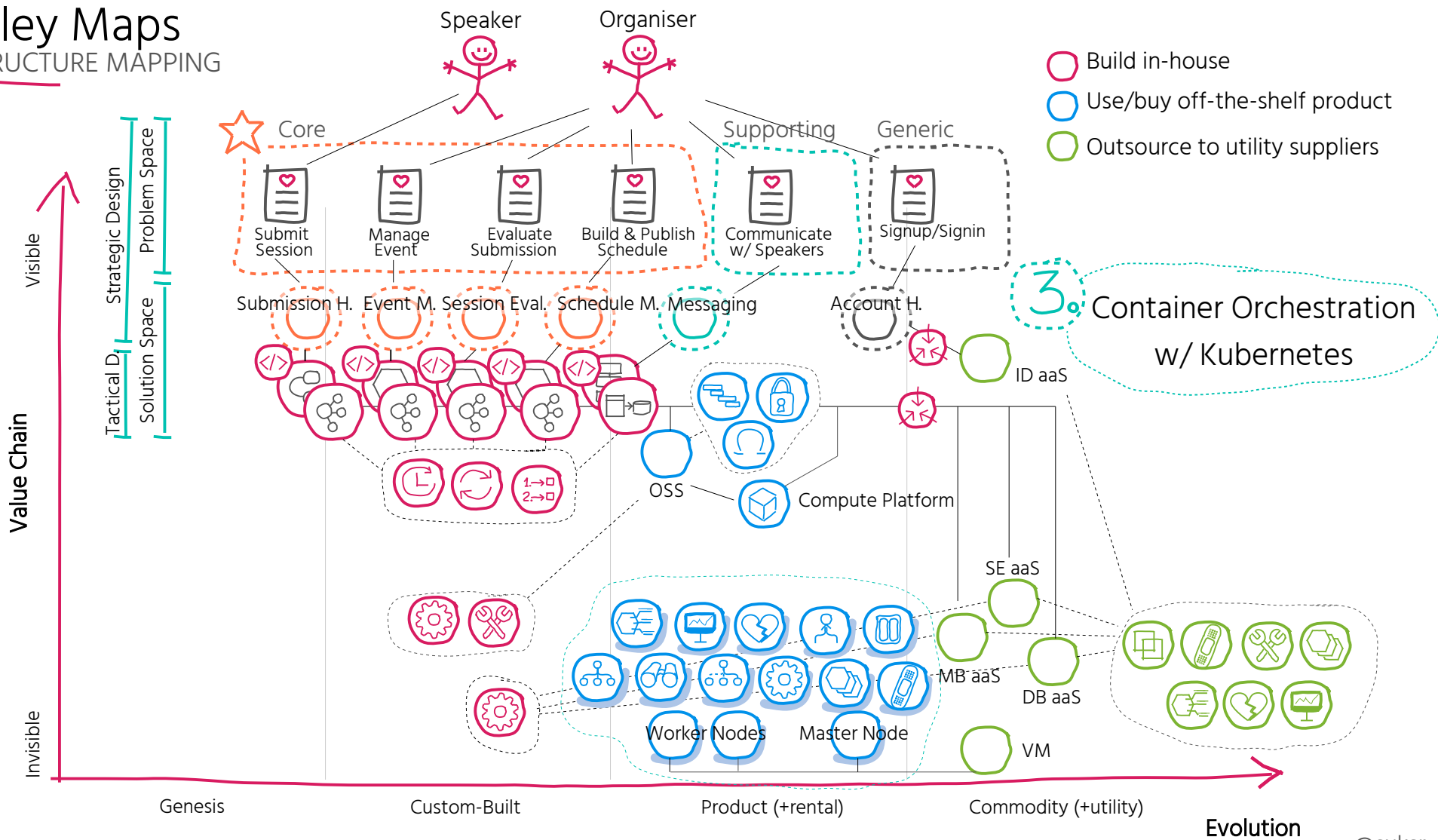
Container Orchestration

BASIC COMPONENTS OF KUBERNETES



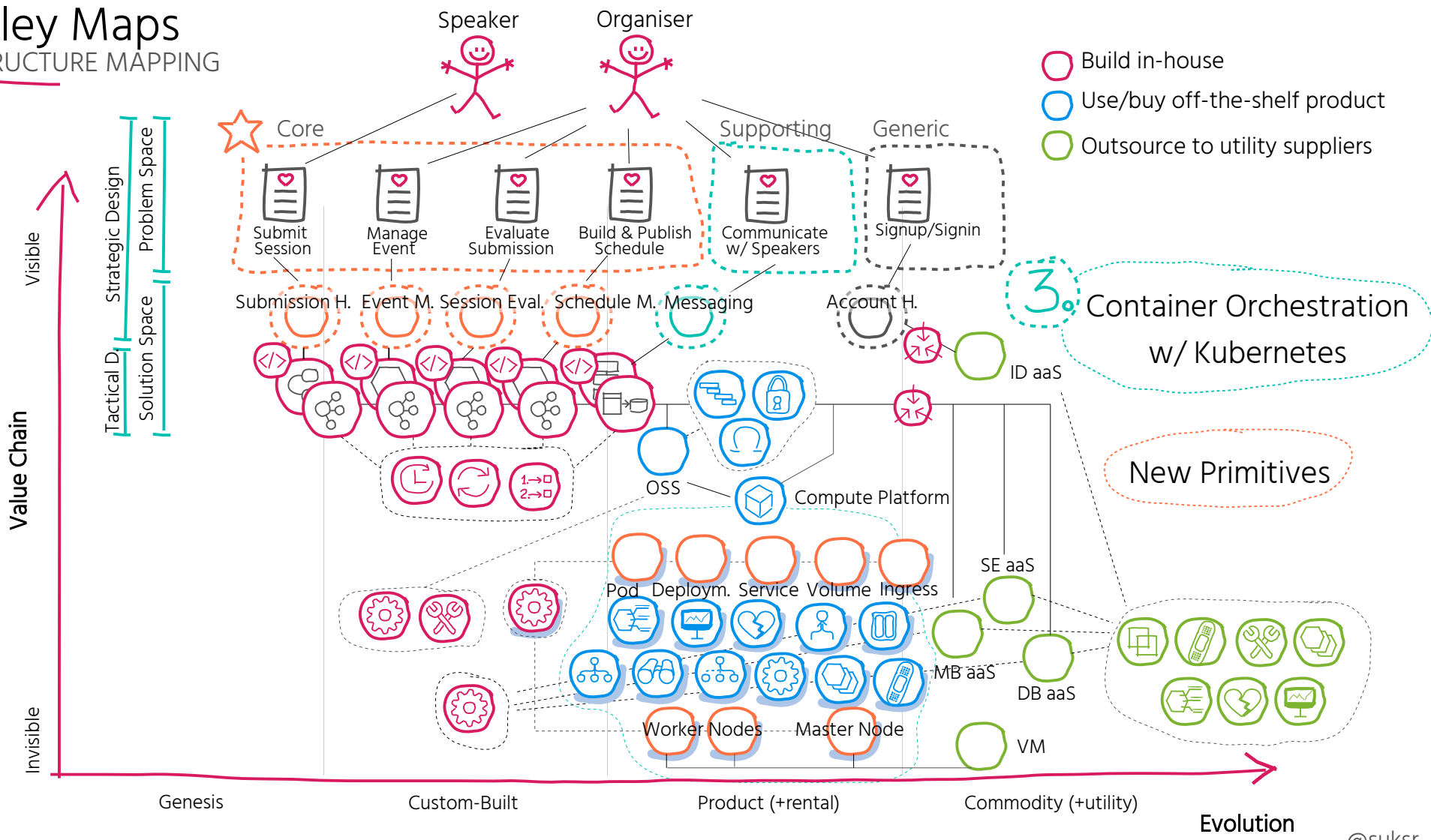
Wardley Maps

INFRASTRUCTURE MAPPING



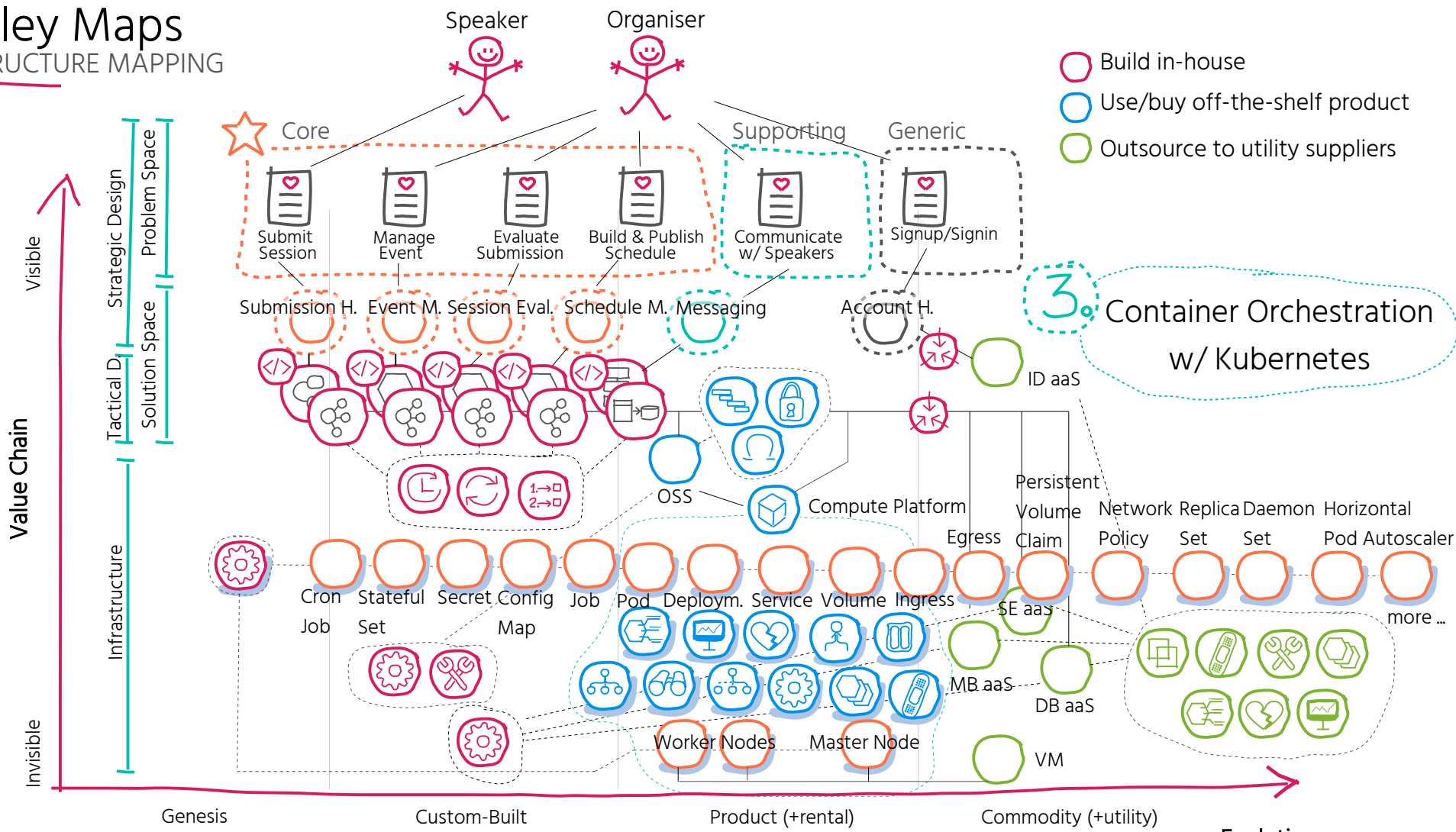
Wardley Maps

INFRASTRUCTURE MAPPING



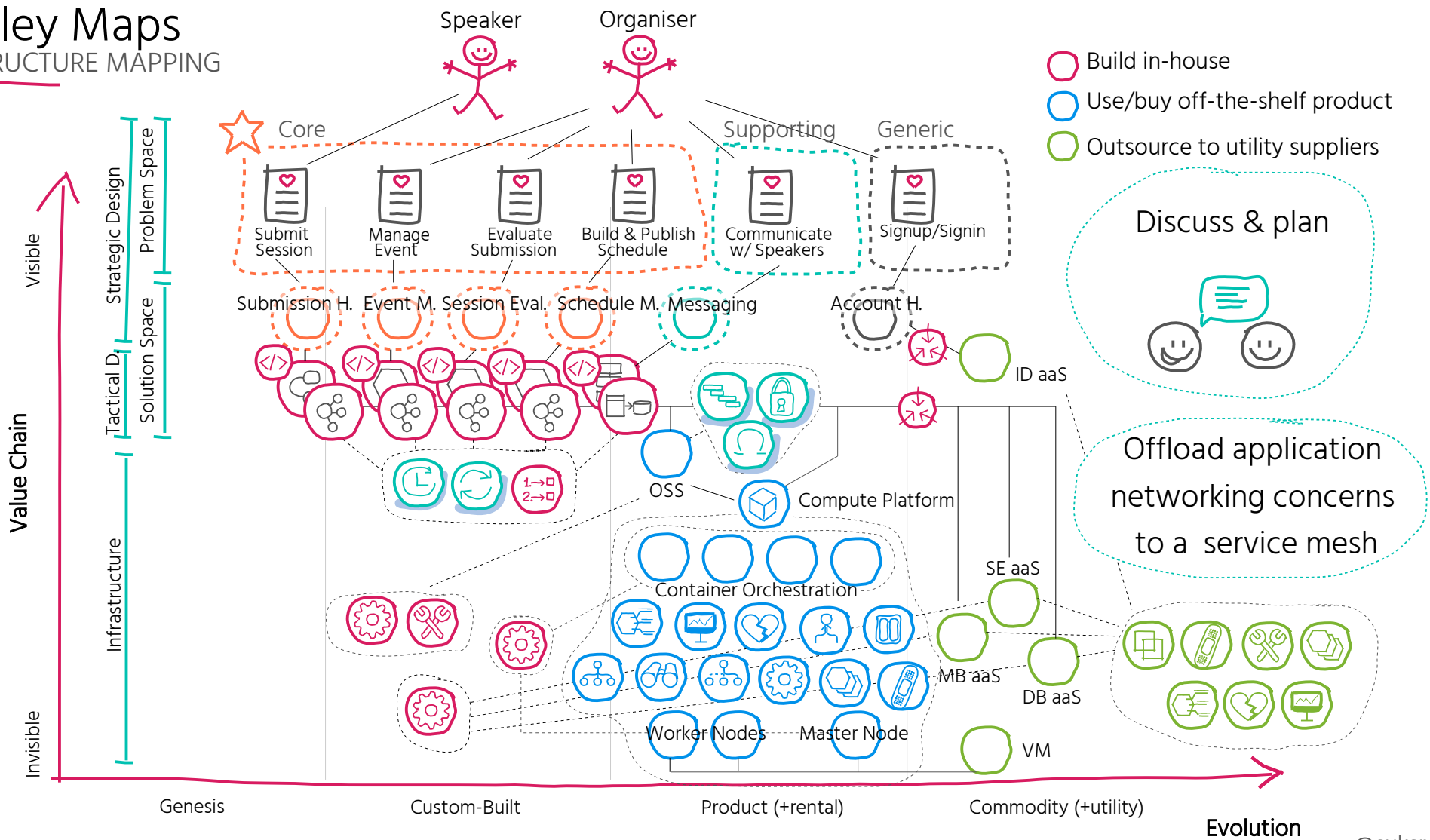
Wardley Maps

INFRASTRUCTURE MAPPING



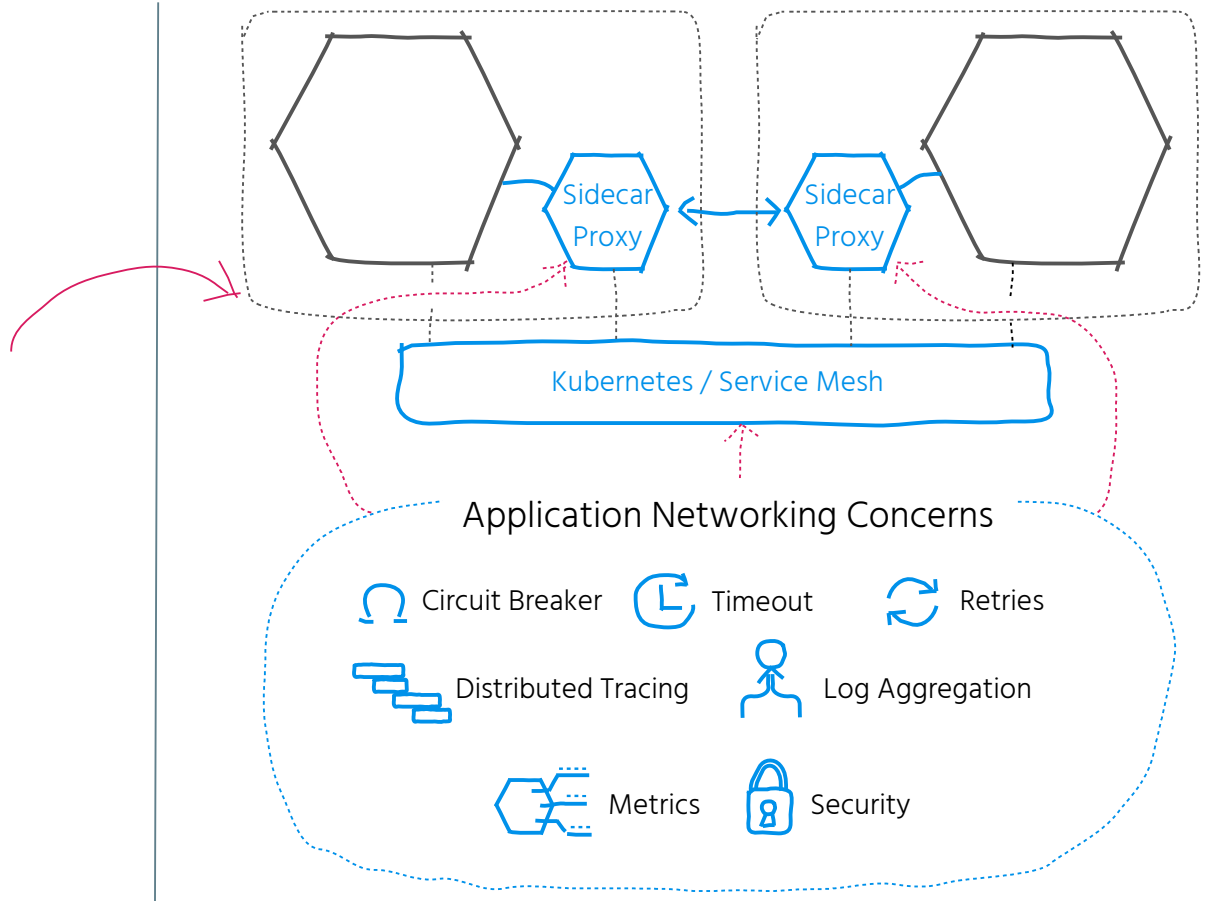
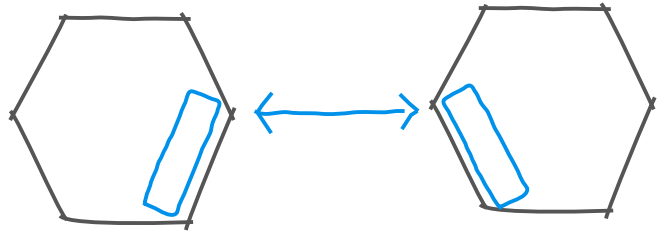
Wardley Maps

INFRASTRUCTURE MAPPING



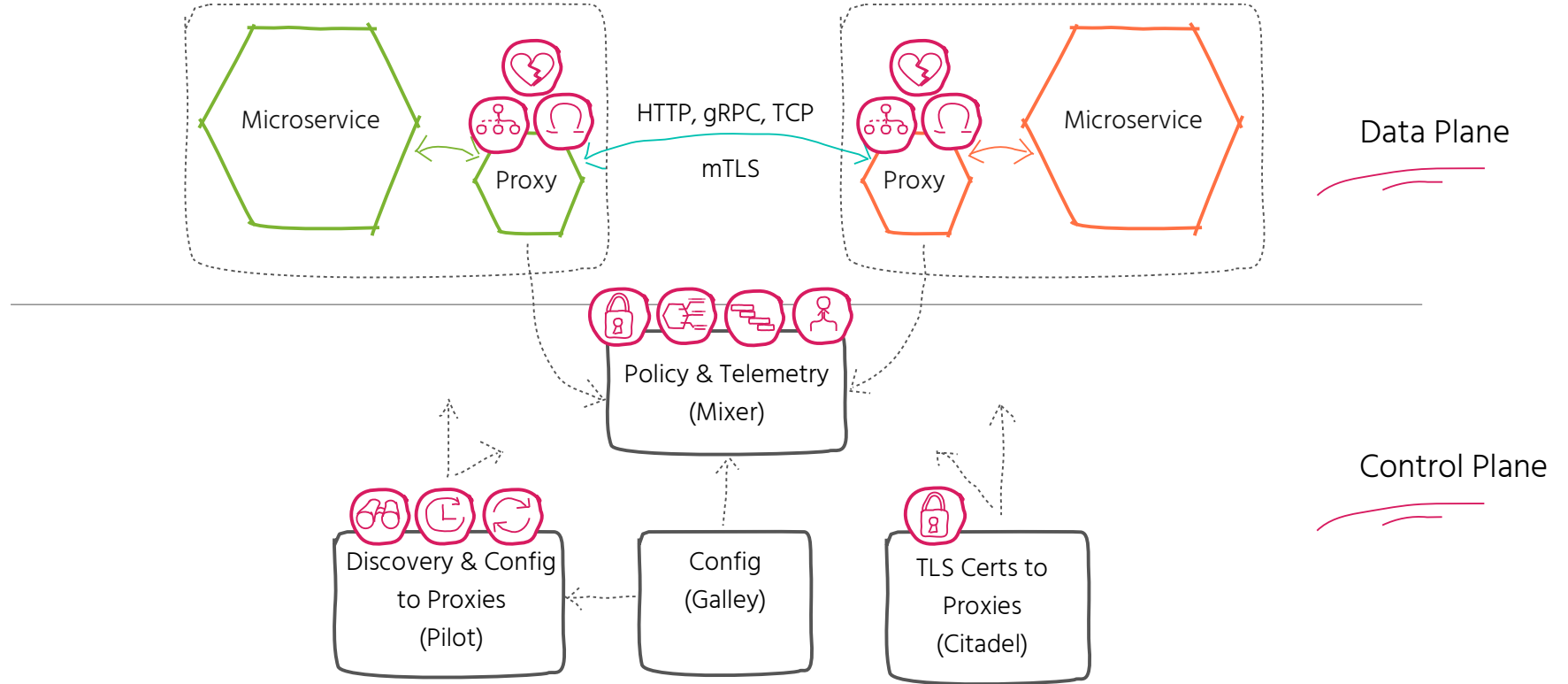
Separation Of Concerns

SERVICE MESH



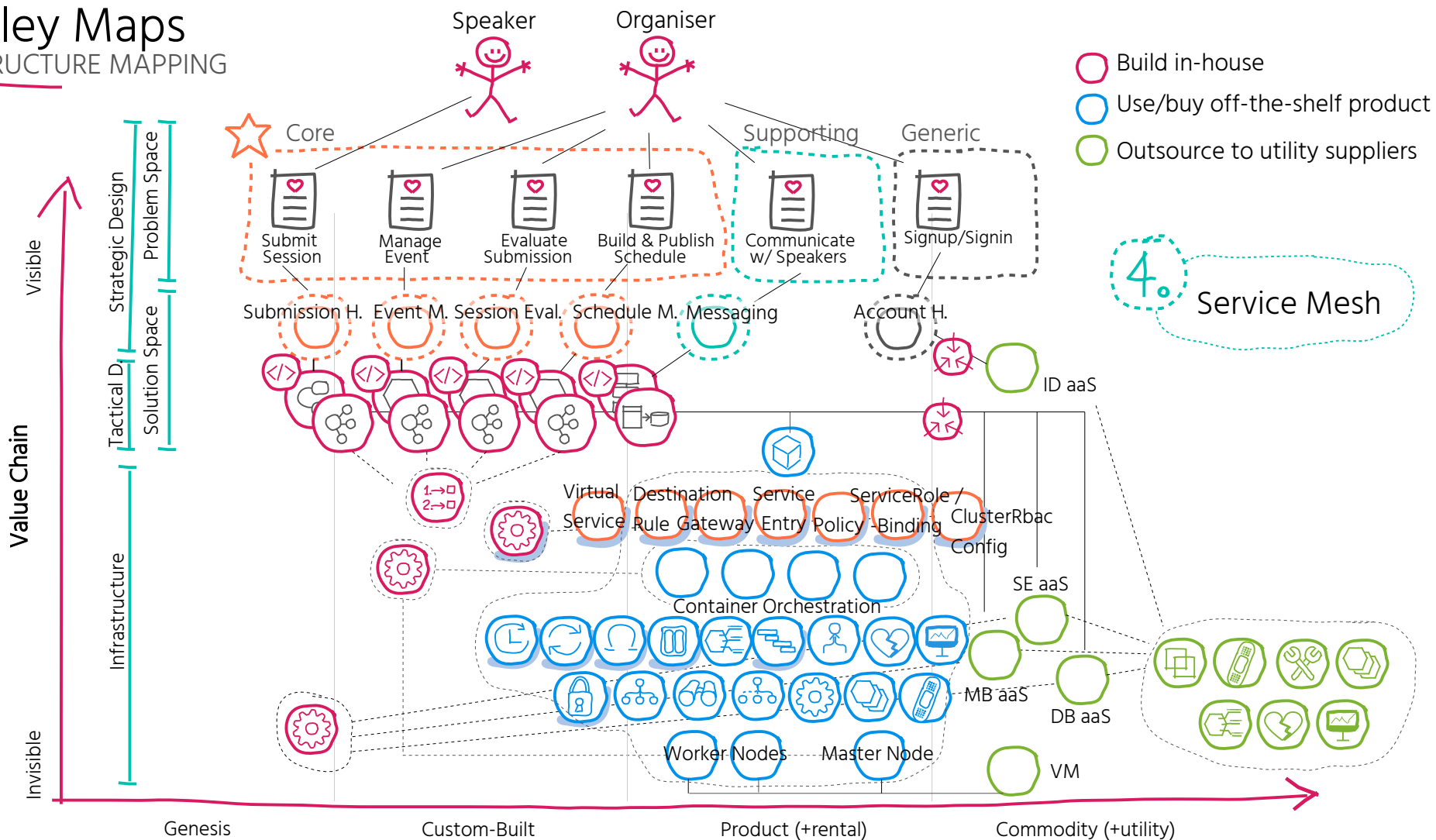
Service Mesh

COMPONENTS OF ISTIO



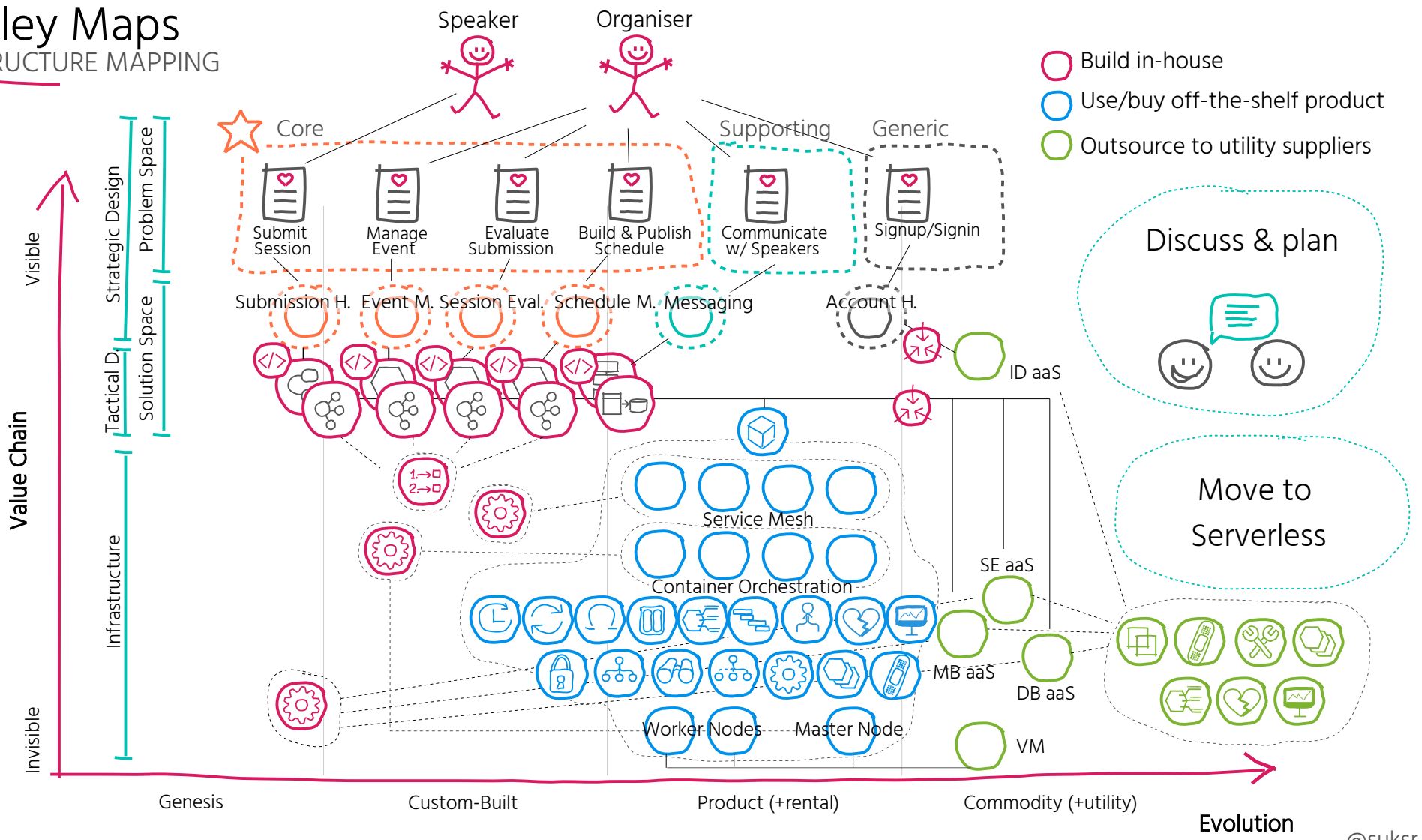
Wardley Maps

INFRASTRUCTURE MAPPING



Wardley Maps

INFRASTRUCTURE MAPPING



Serverless w/ FaaS

CHARACTERISTICS

Event-Driven Workflow

Ephemeral Function



triggers

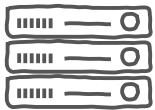


Auto-Scaling



Pay-per-Execution

Fully Managed By Third Party



Hardware



Virtualization



O/S



Container



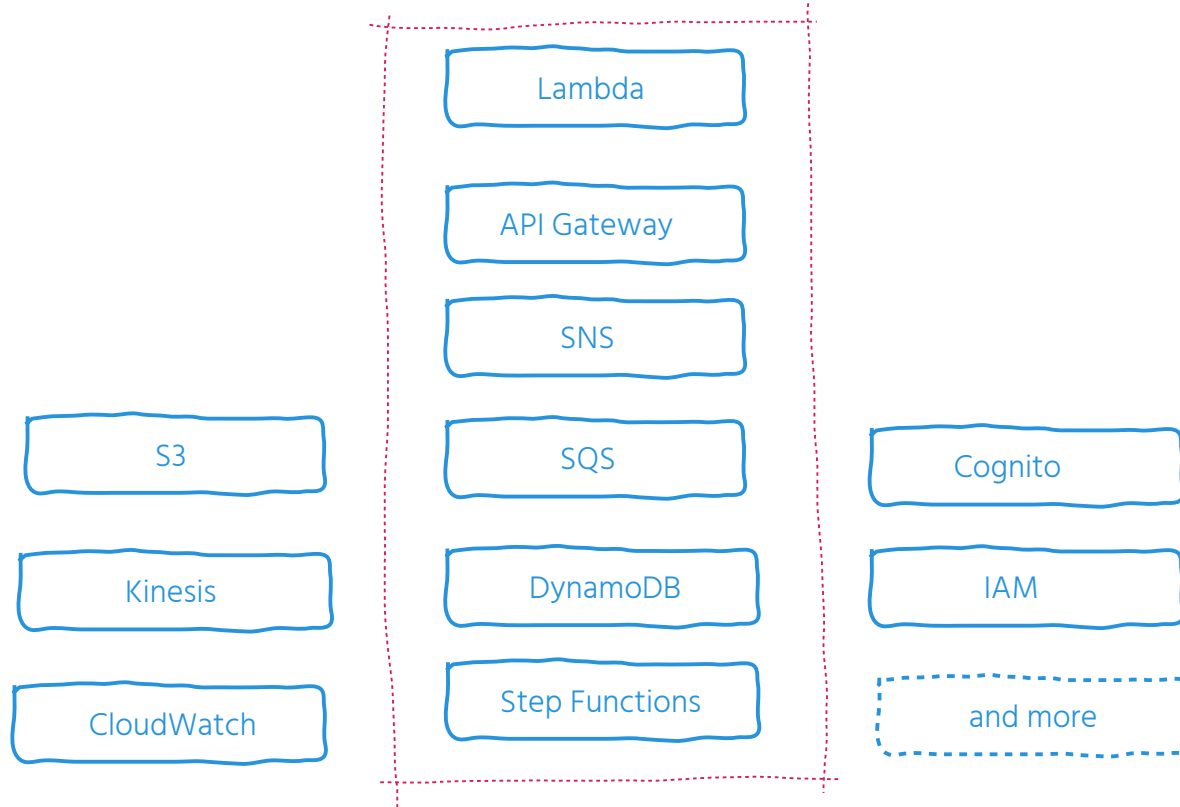
Runtime



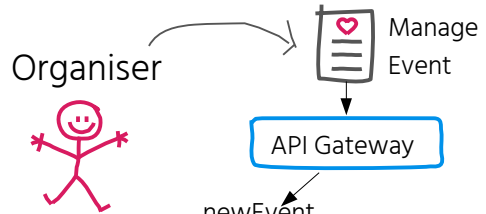
Data Store

Serverless

AWS BUILDING BLOCKS



Core AWS Serverless Building Blocks



API Gateway

newEvent



ApiGatewayAdapter

EventApplicationService

EventModel

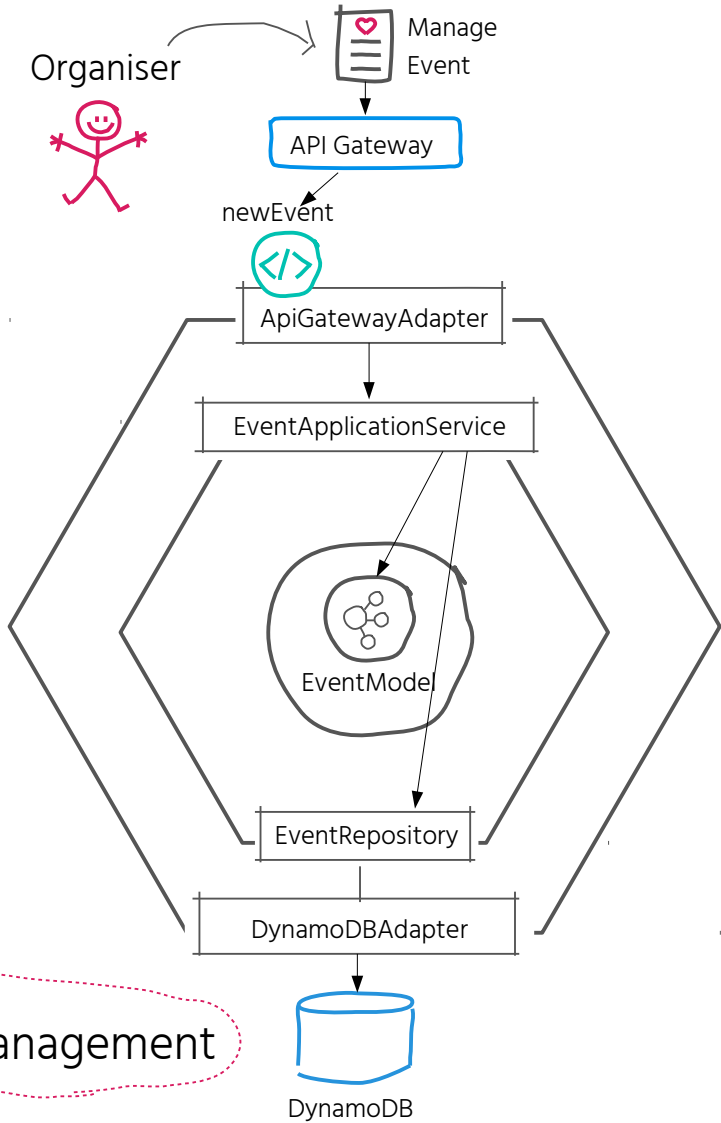
EventRepository

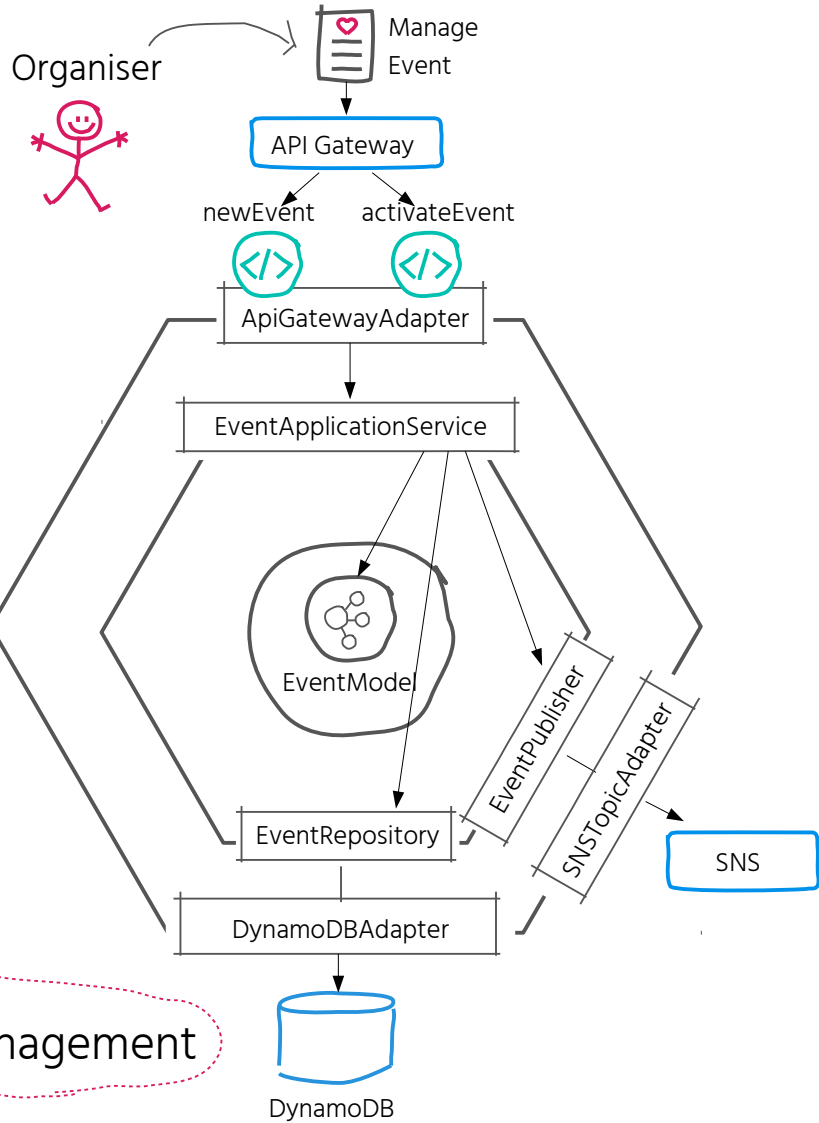
DynamoDBAdapter



DynamoDB

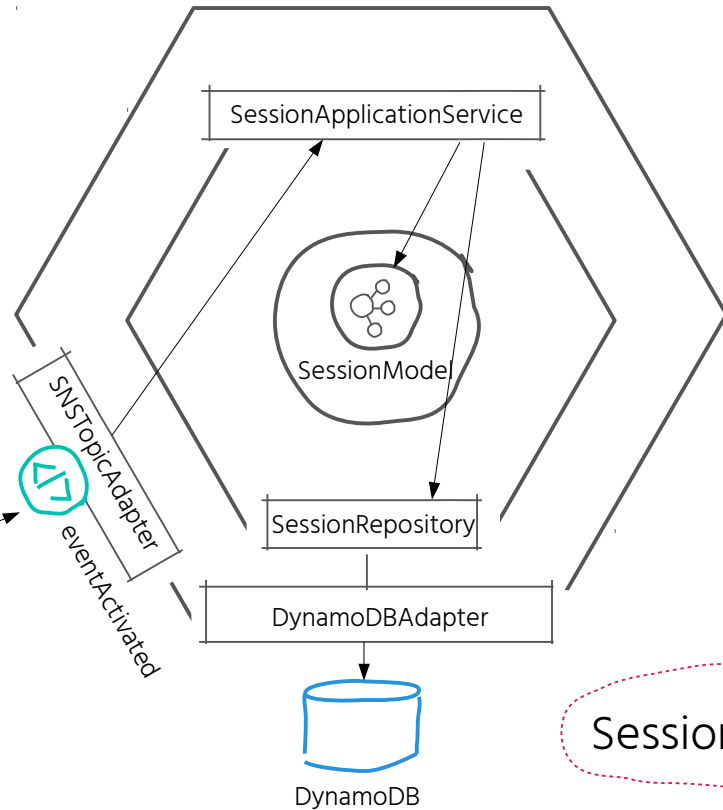
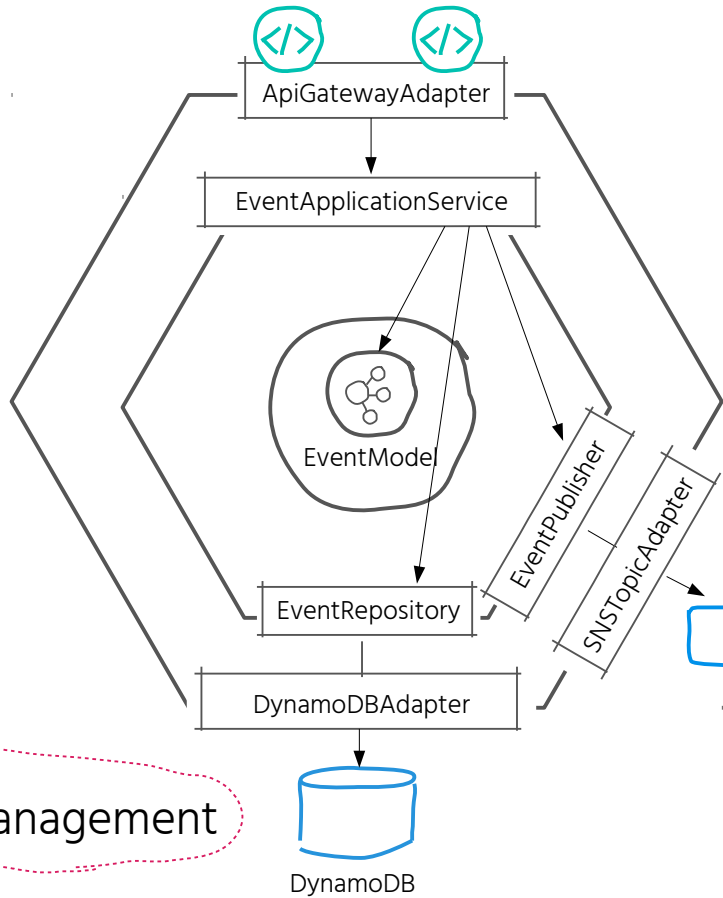
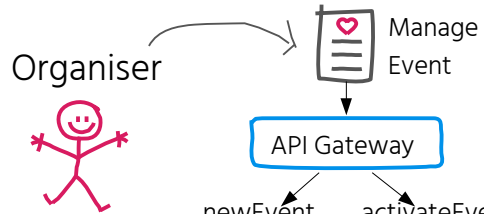
Event Management

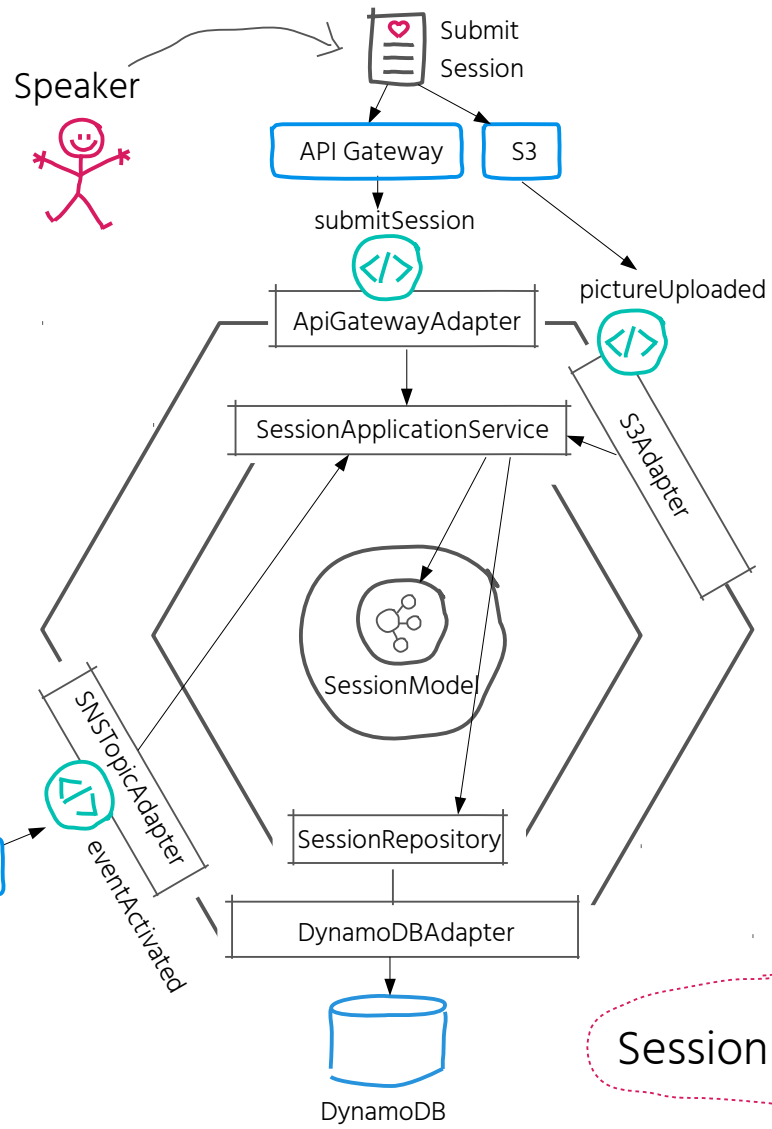
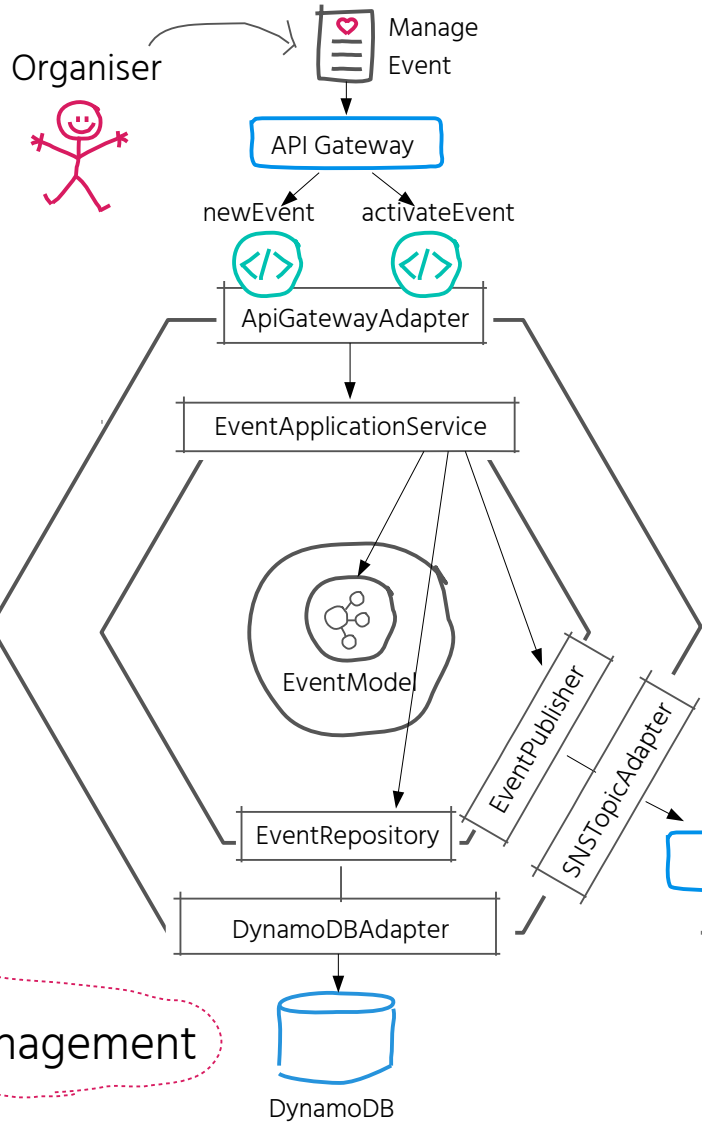




Event Management

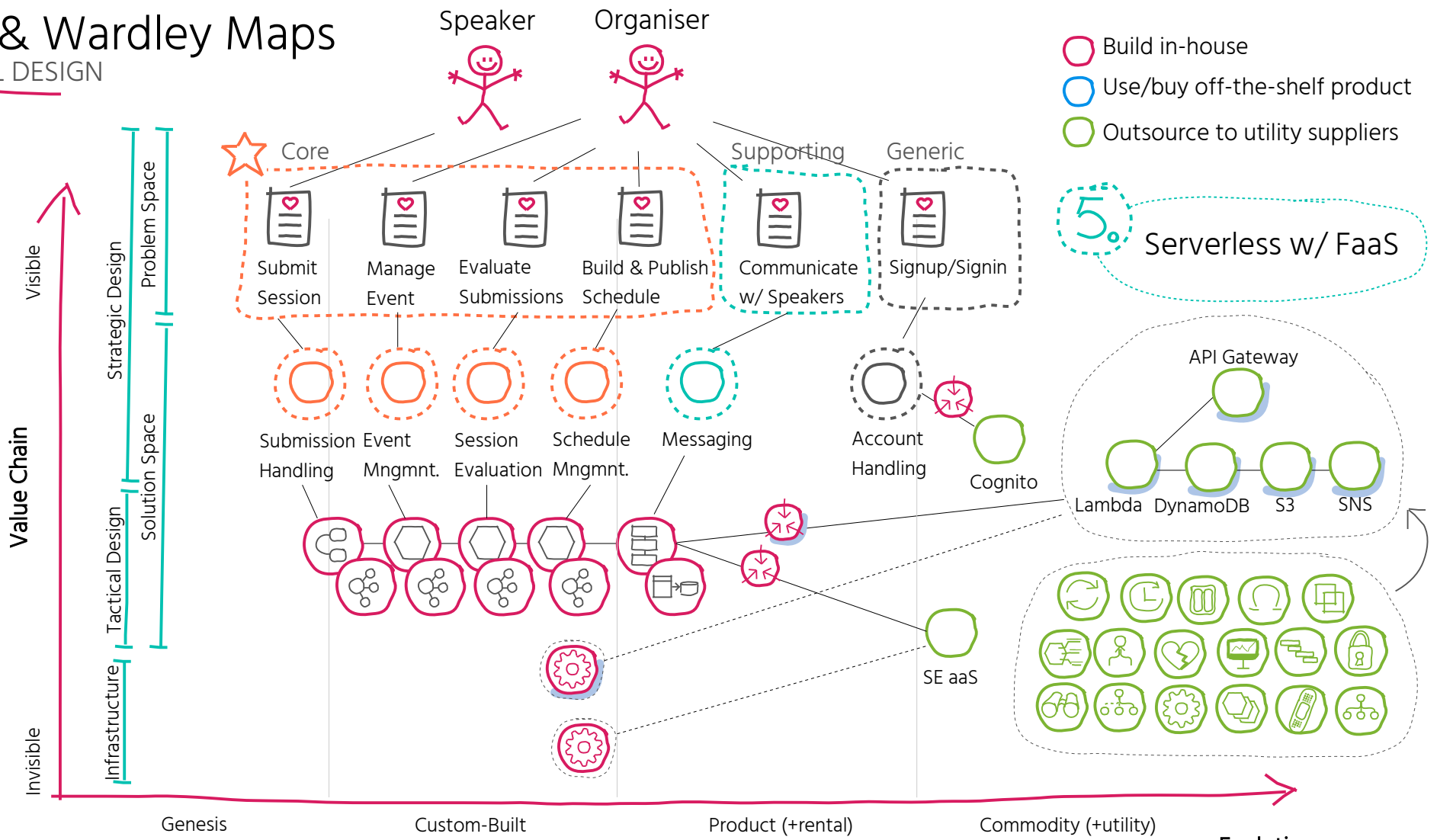
DynamoDB





DDD & Wardley Maps

TACTICAL DESIGN



Serverless Infrastructure Providers



Google Cloud Platform



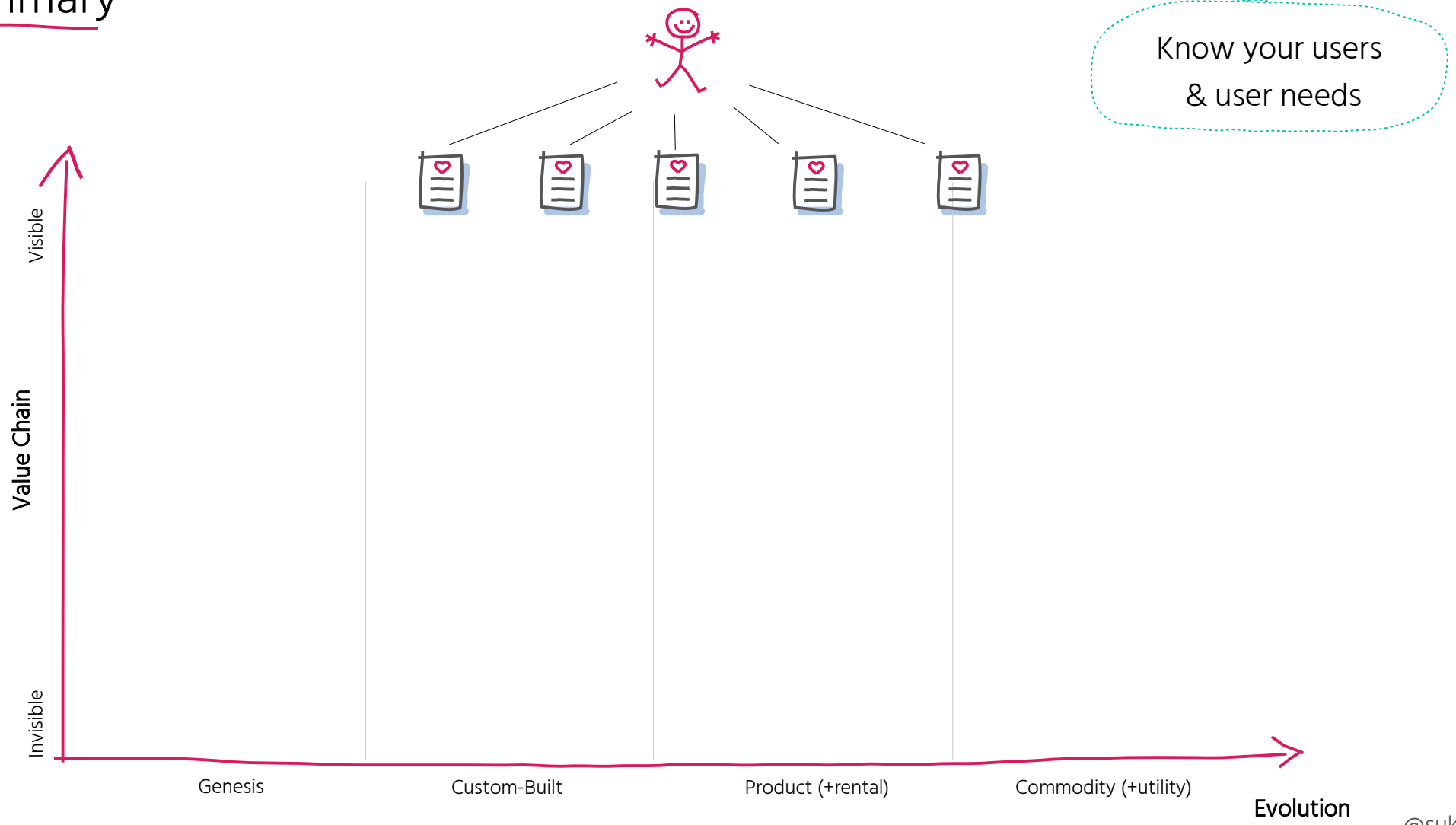
Alibaba Cloud



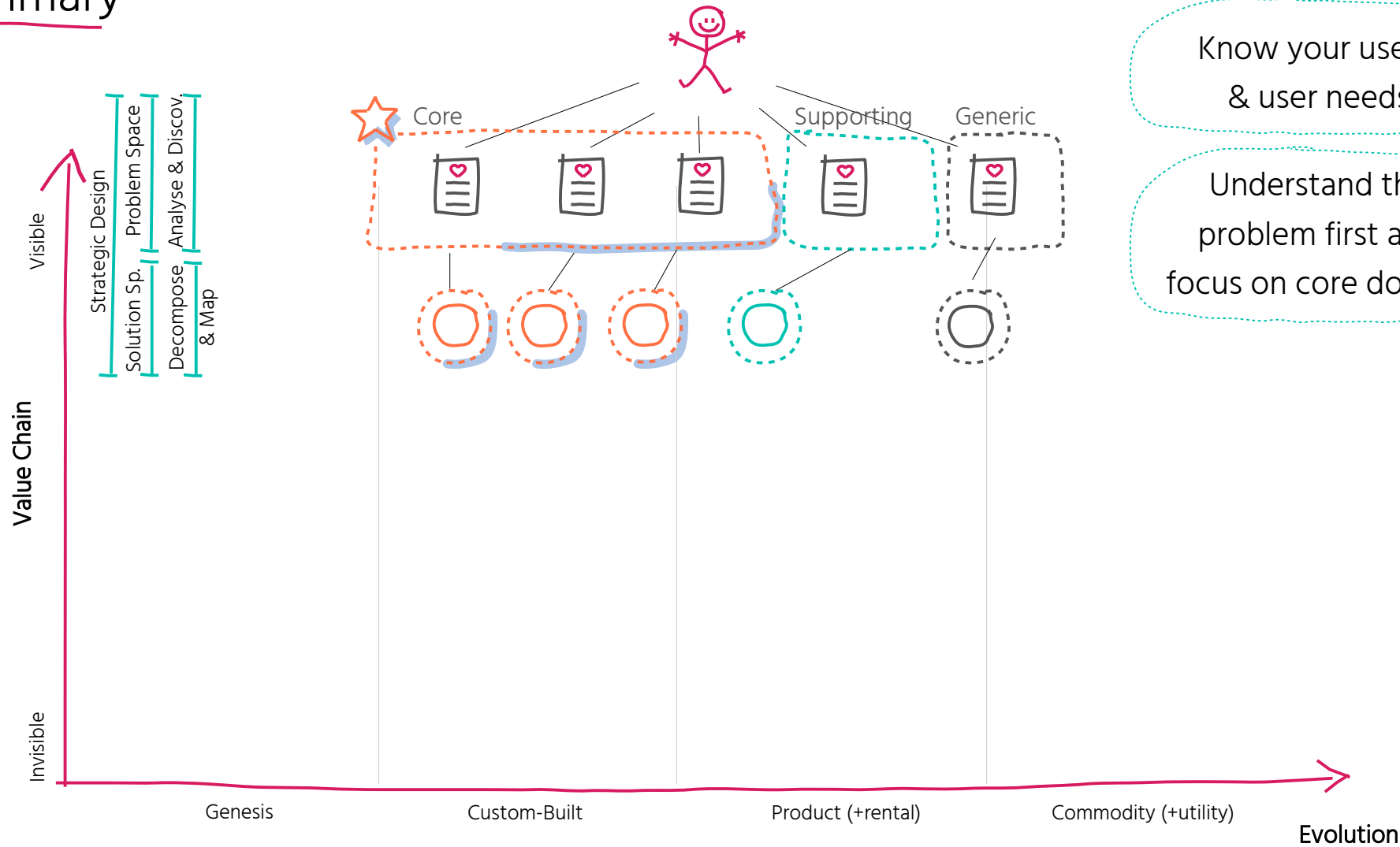
Knative



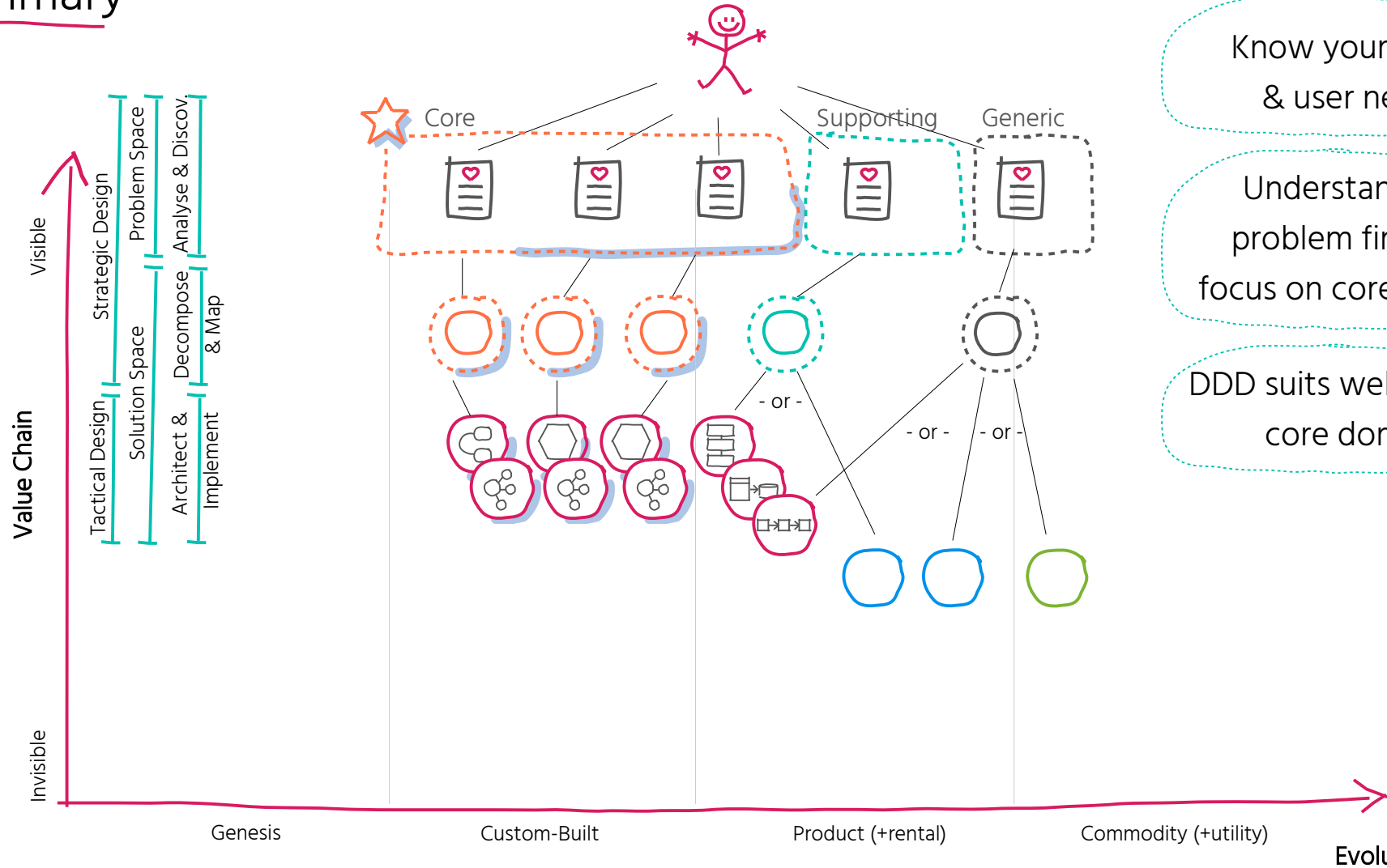
Summary



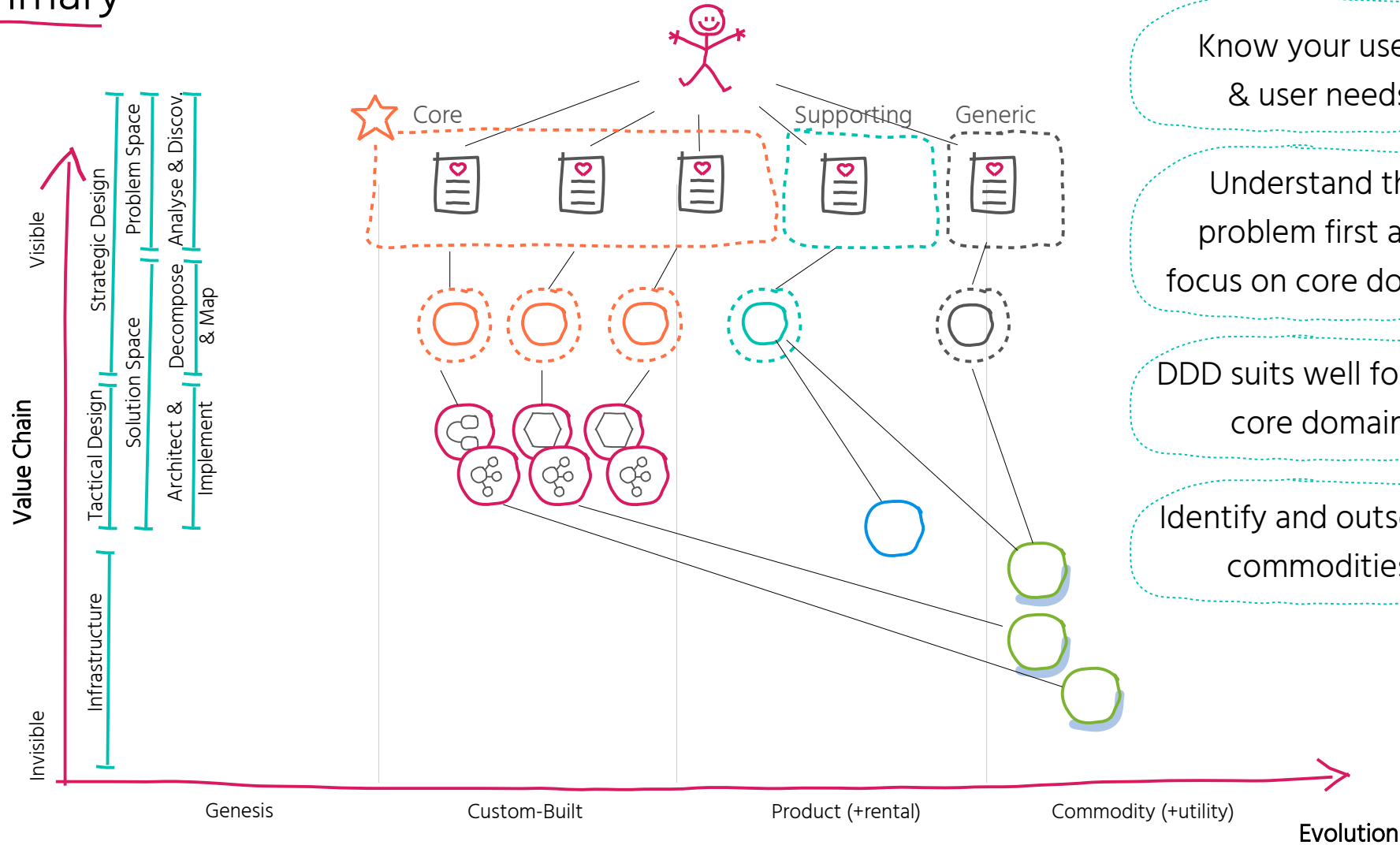
Summary



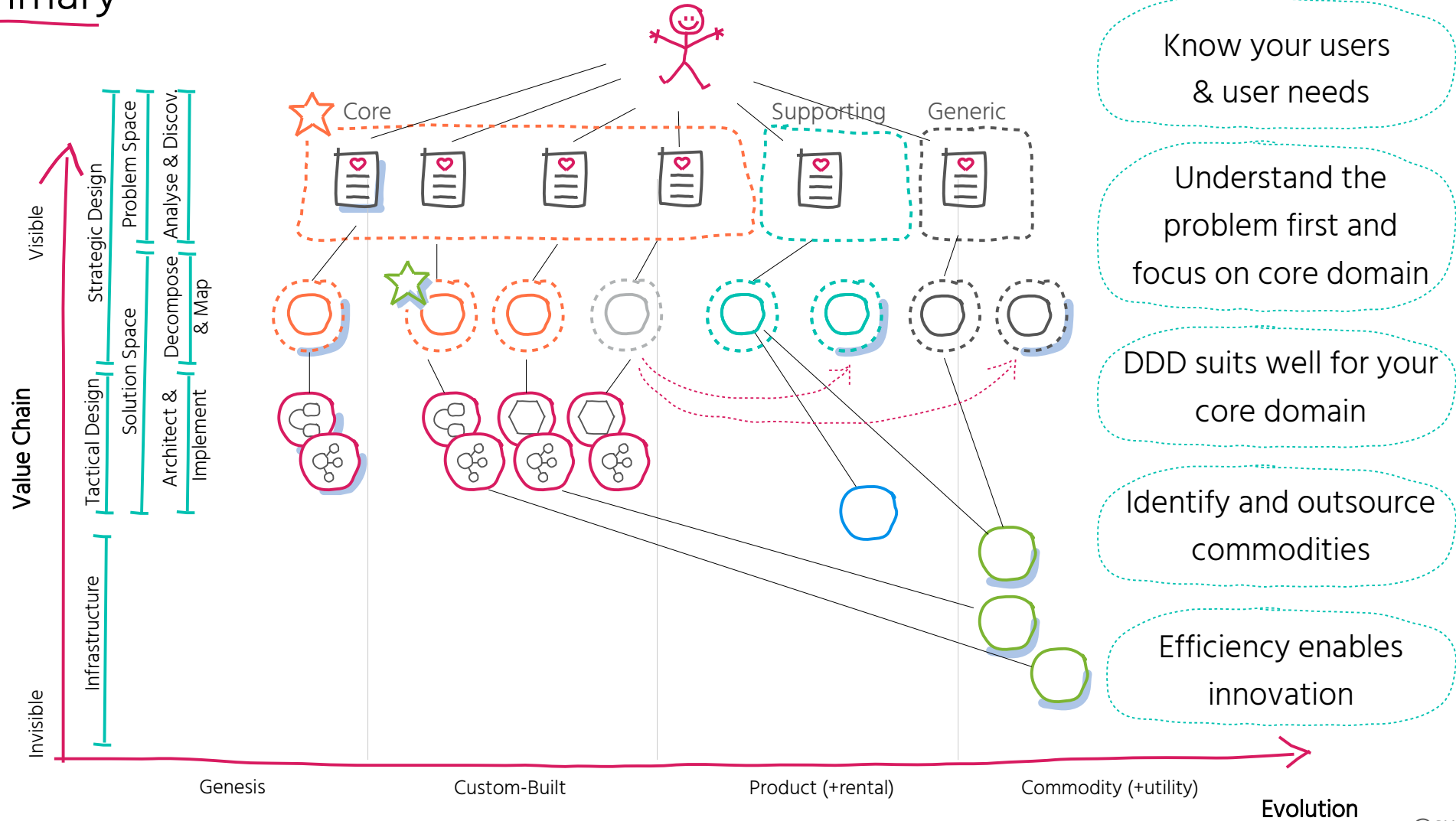
Summary



Summary



Summary



THANK YOU

Susanne Kaiser

Independent Tech Consultant

@suksr

susanne@kaiser-consulting.net