



Preparing For a Future Microservices Journey

Susanne Kaiser

Independent Tech Consultant

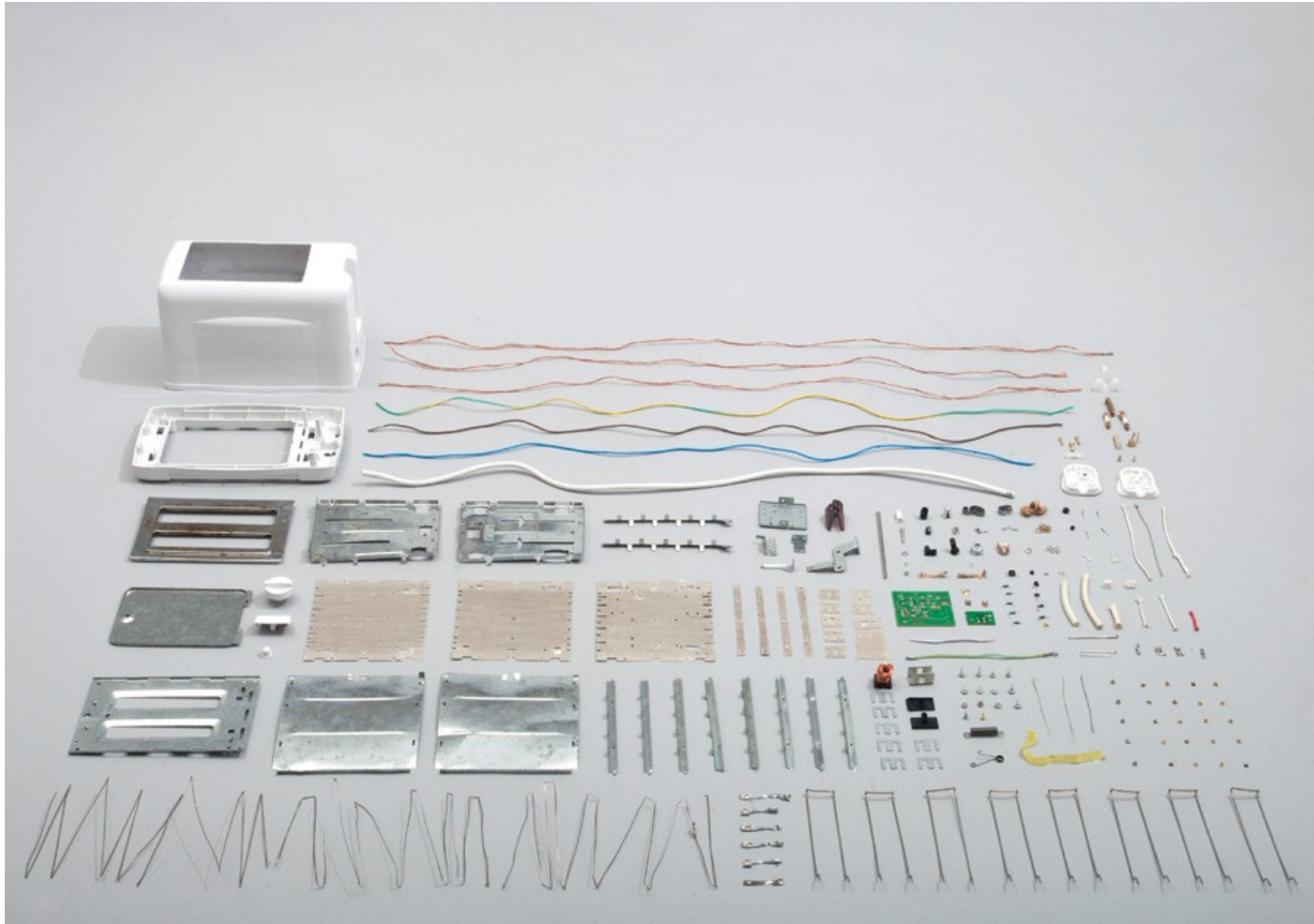
@suksr



THOMASTHWAITES



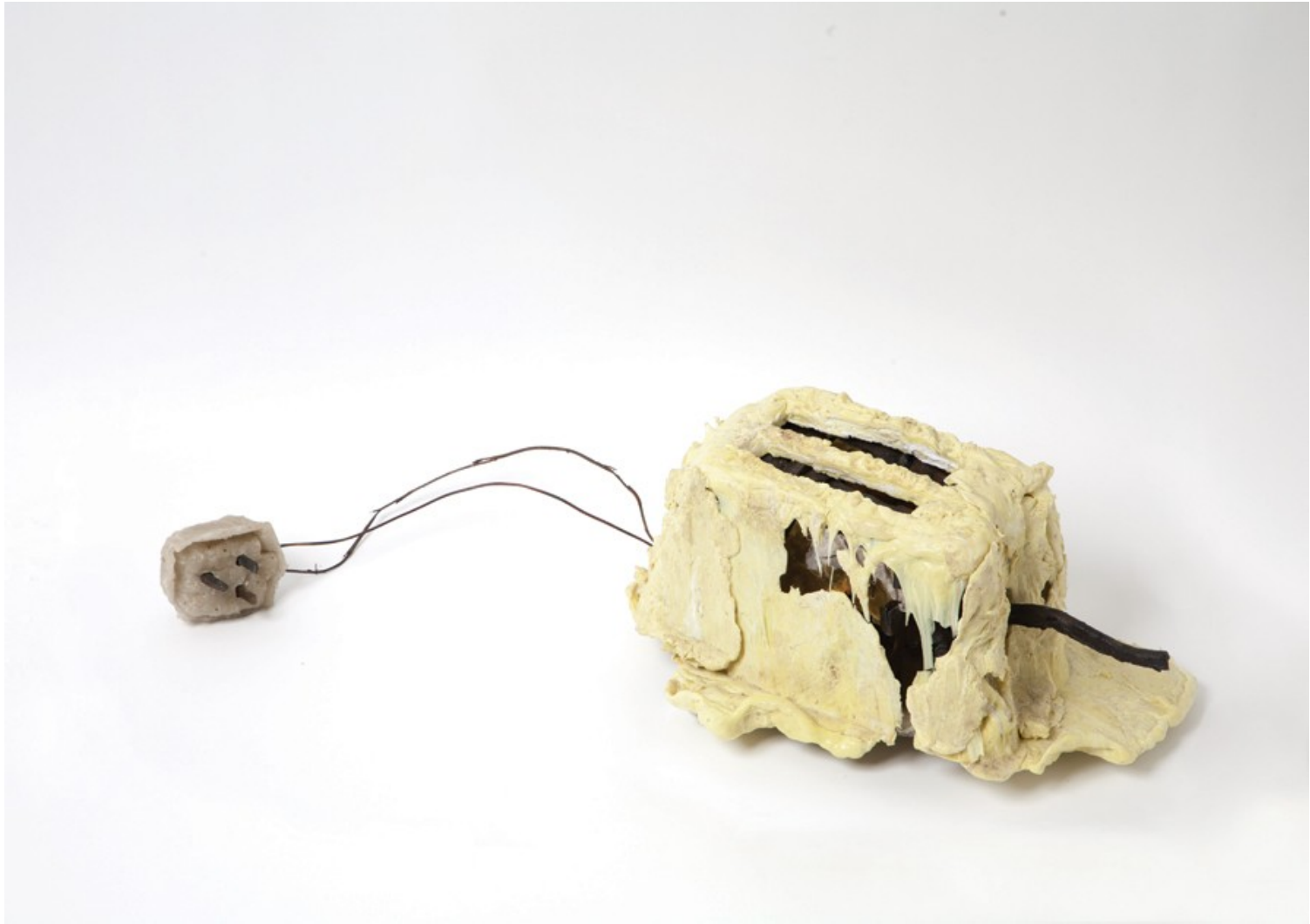




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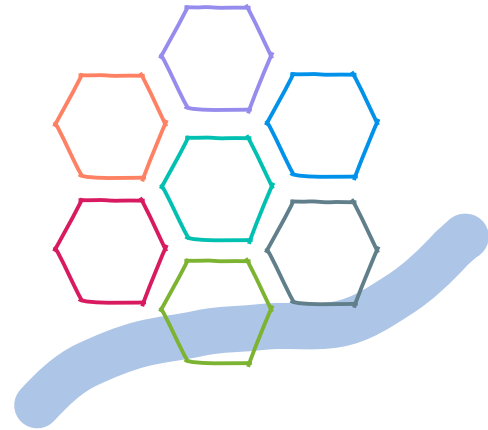
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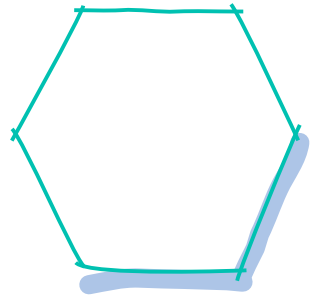


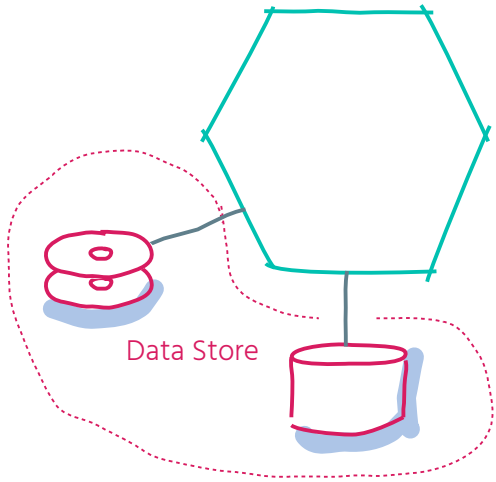


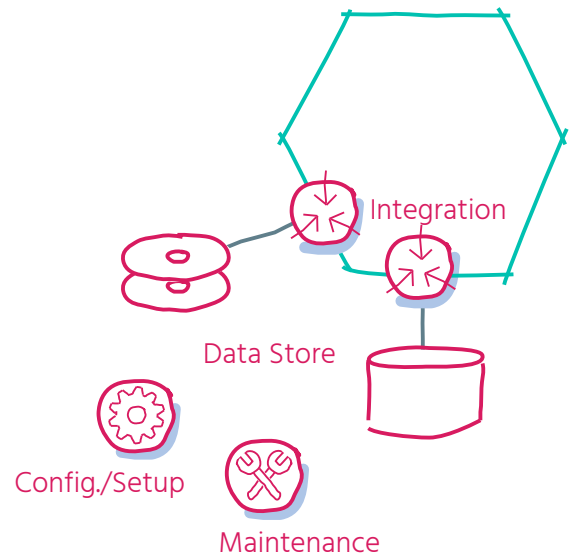
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Runtime



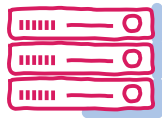
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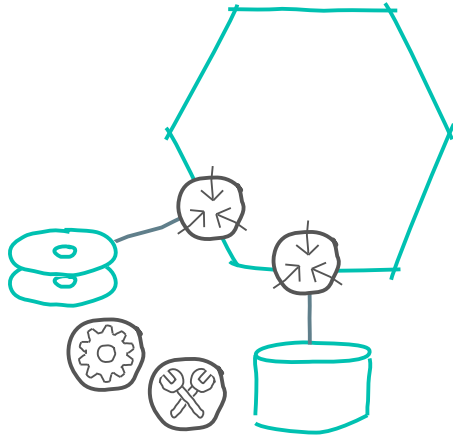
O/S



Virtualization



Hardware





Runtime



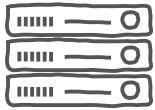
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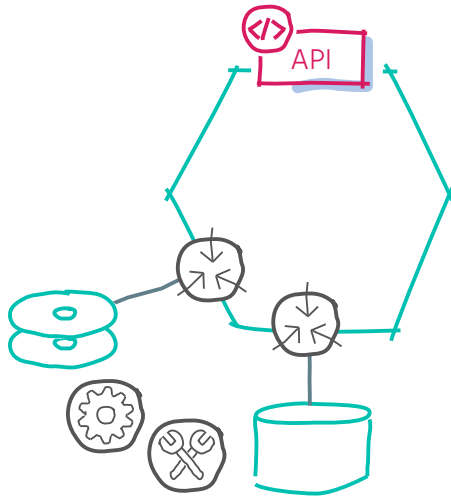
O/S



Virtualization



Hardware





Runtime



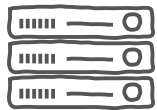
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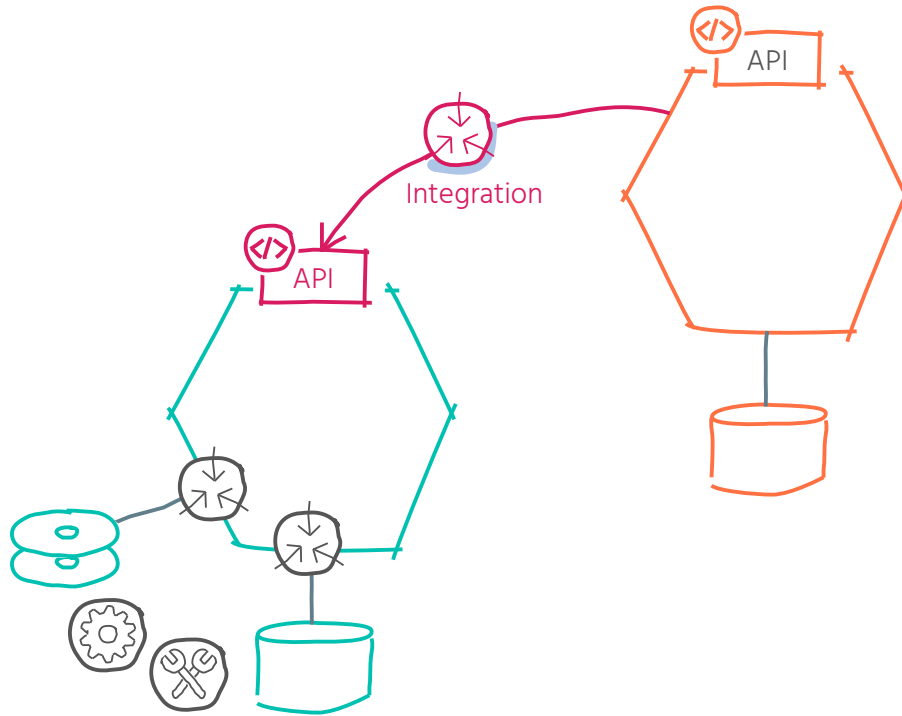
O/S



Virtualization



Hardware





Runtime



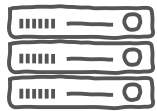
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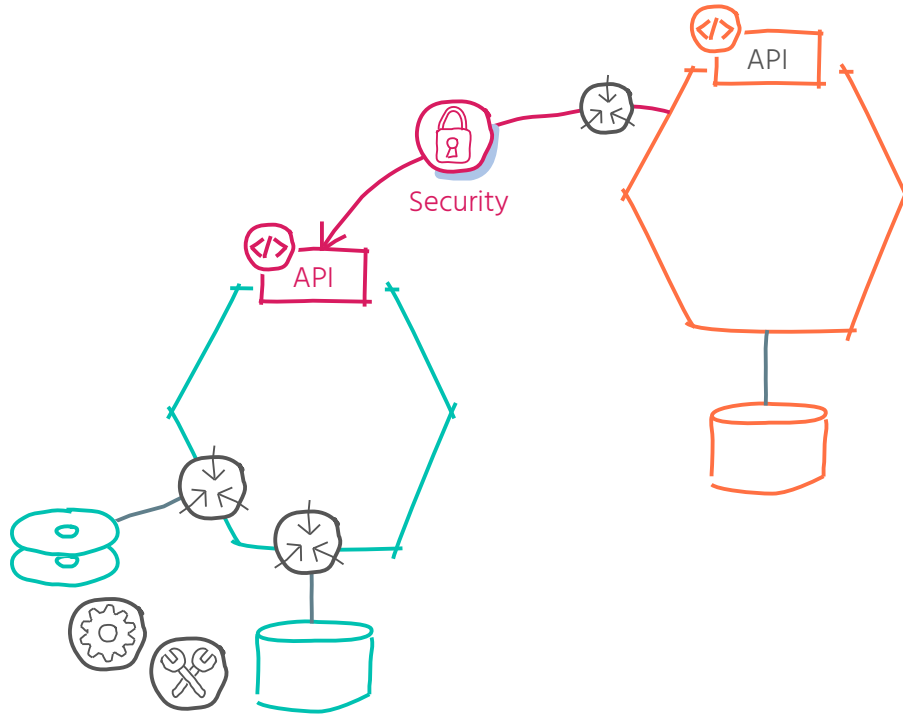
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Virtualization



Hardware





Runtime



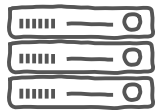
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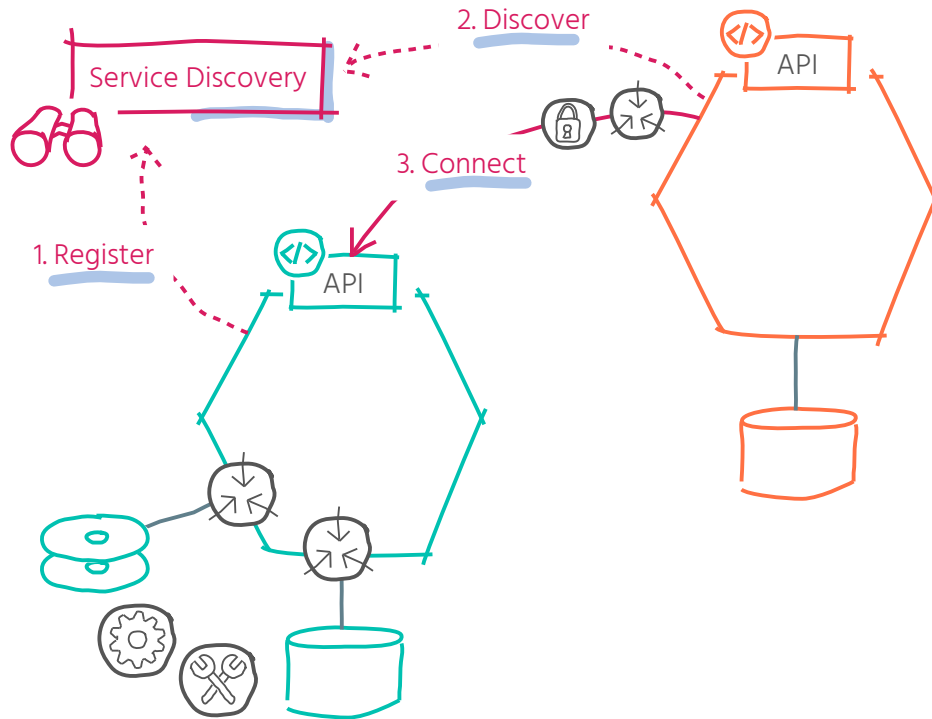
O/S



Virtualization



Hardware





Runtime



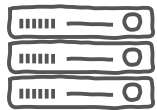
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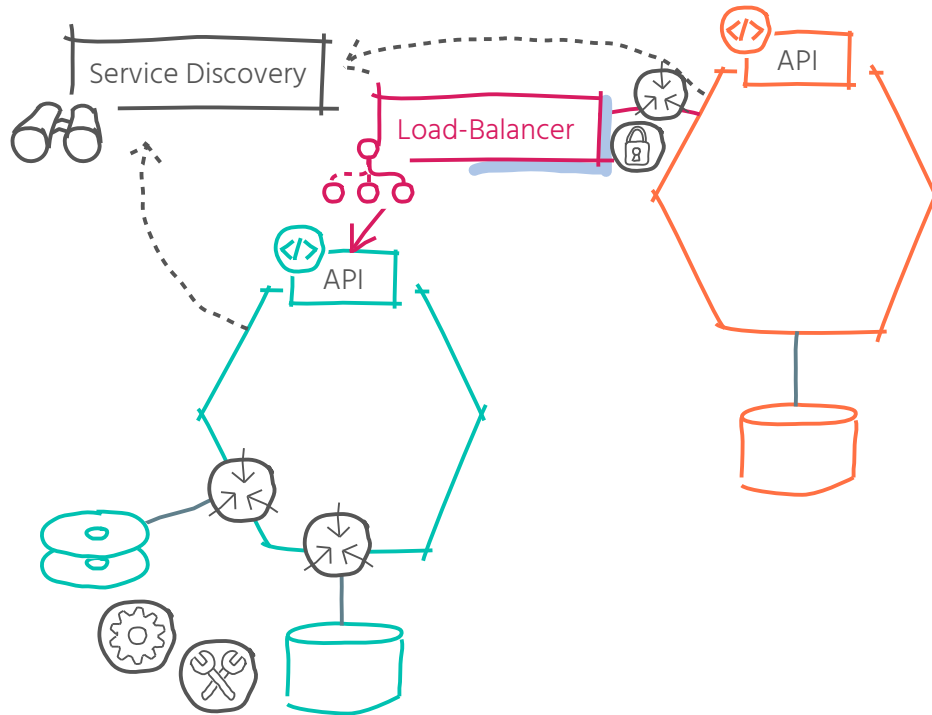
O/S



Virtualization



Hardware





Runtime



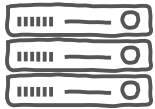
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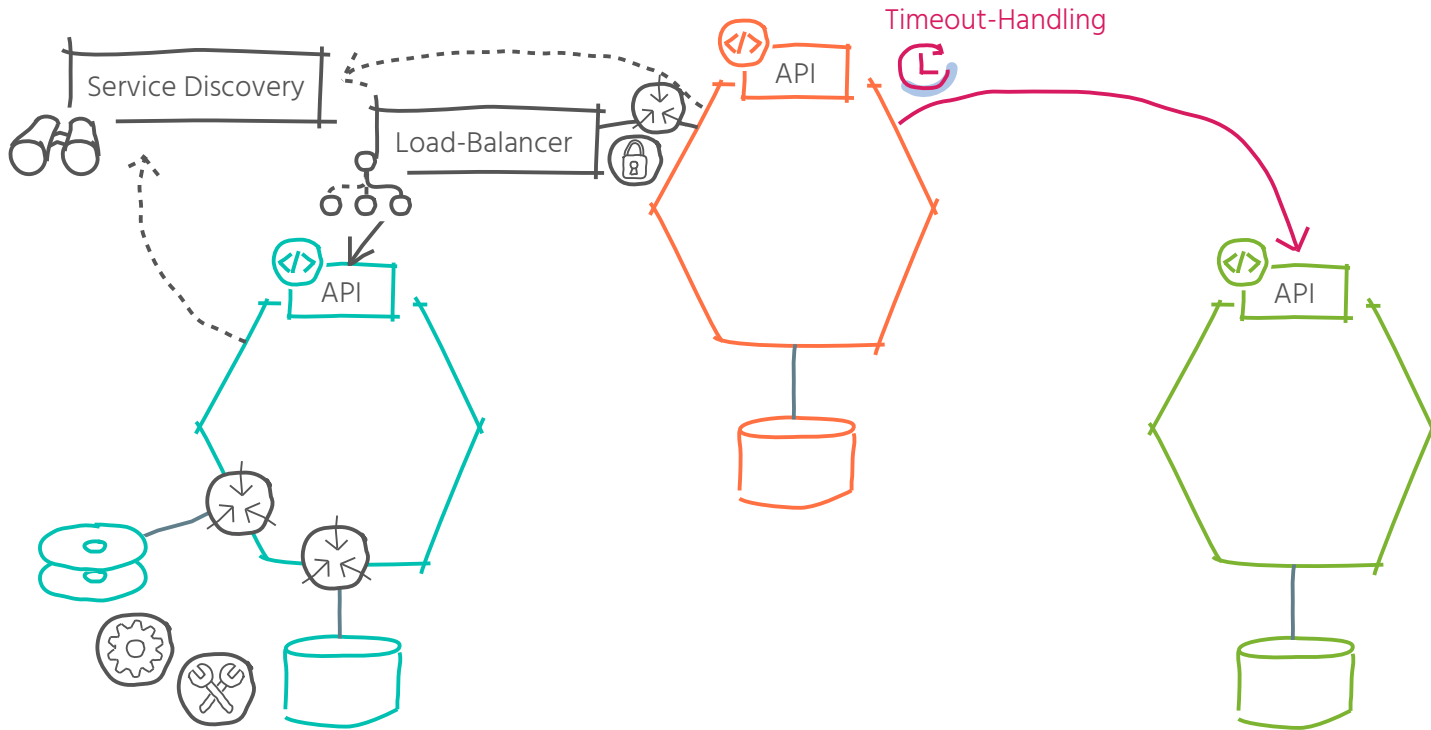
O/S



Virtualization



Hardware





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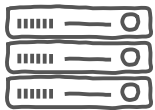
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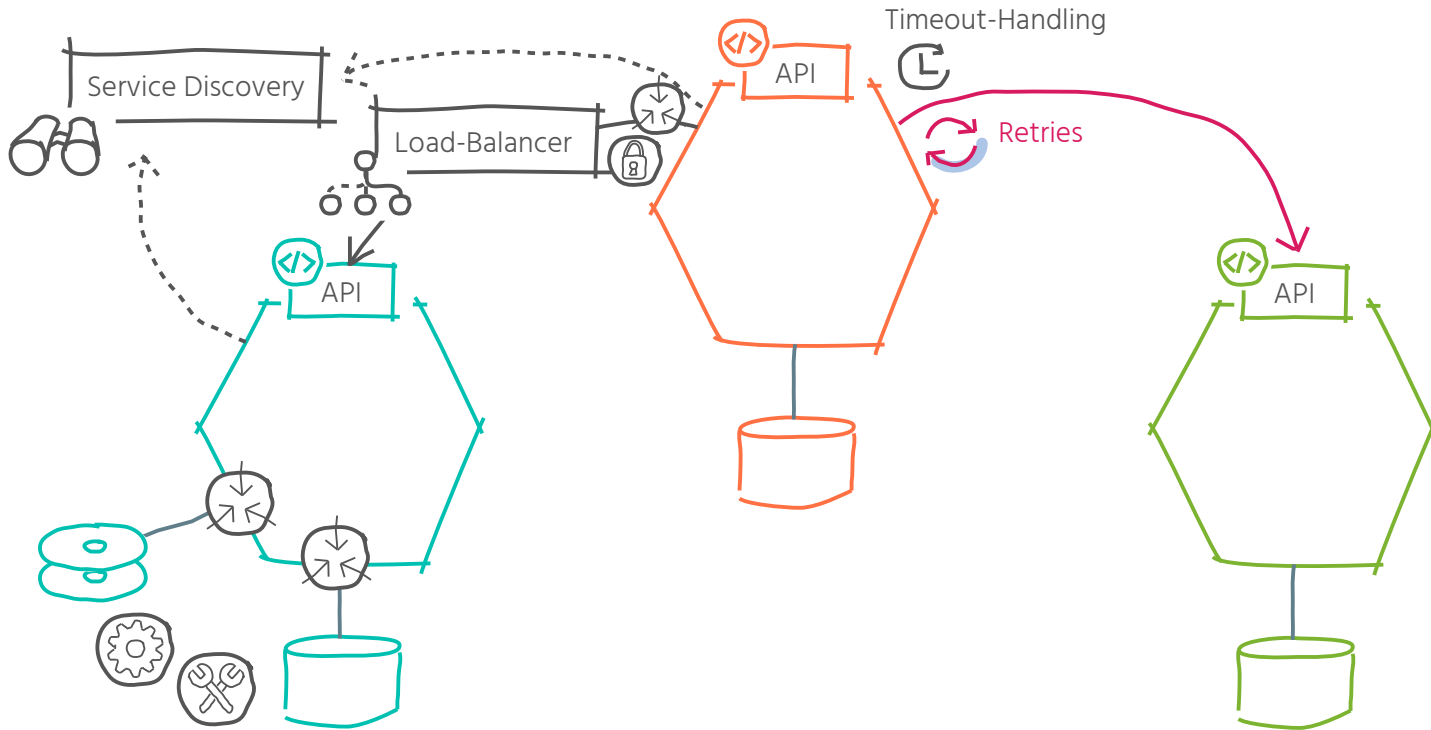
O/S



Virtualization



Hardware





Runtime



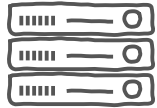
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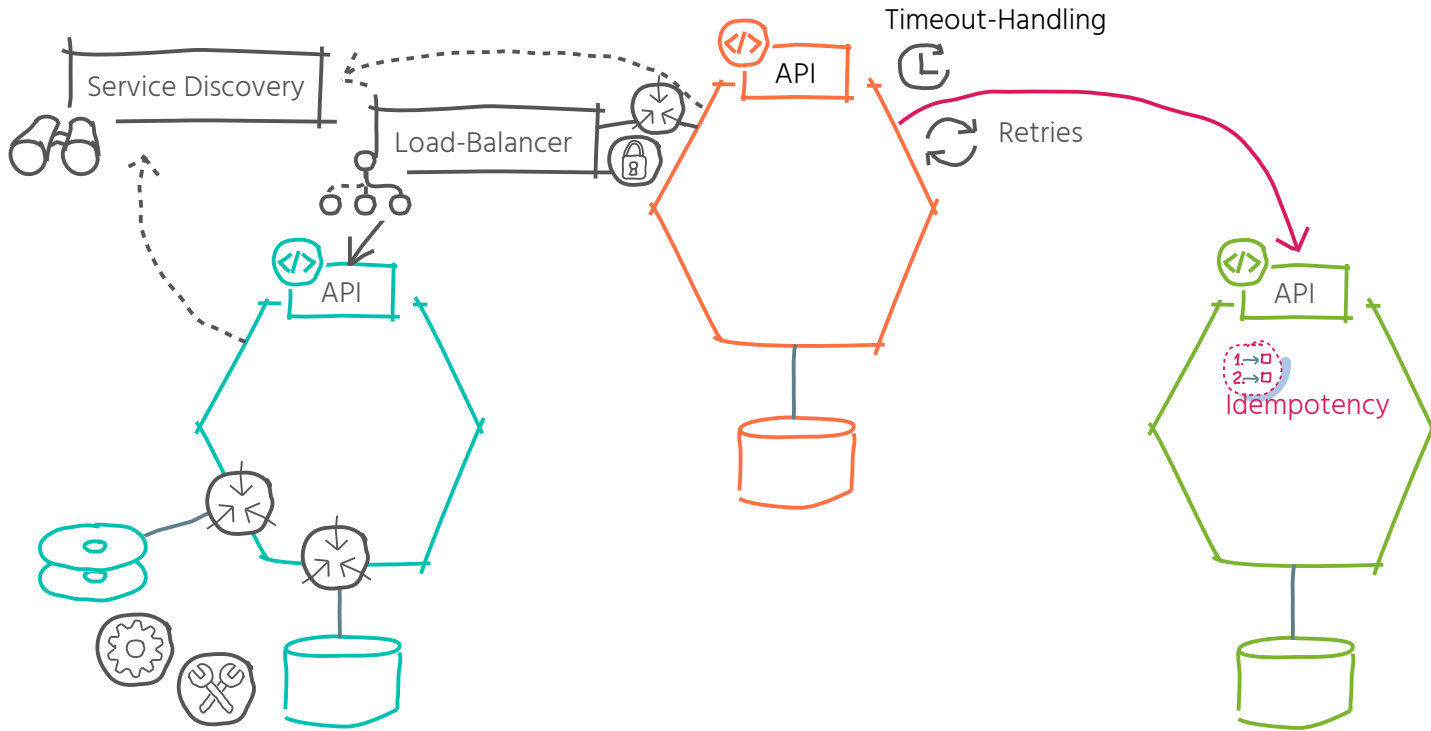
O/S



Virtualization



Hardware





Runtime



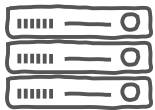
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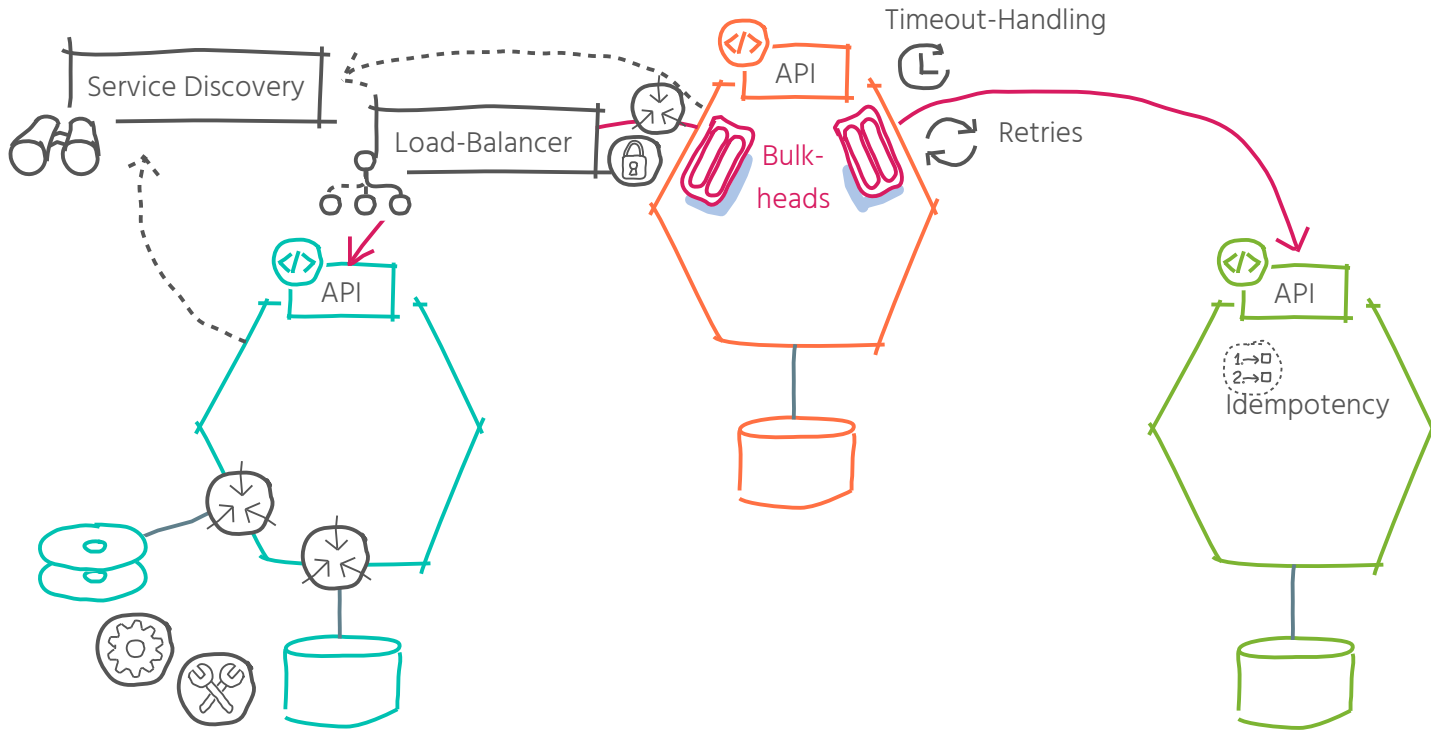
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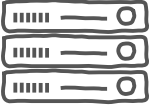


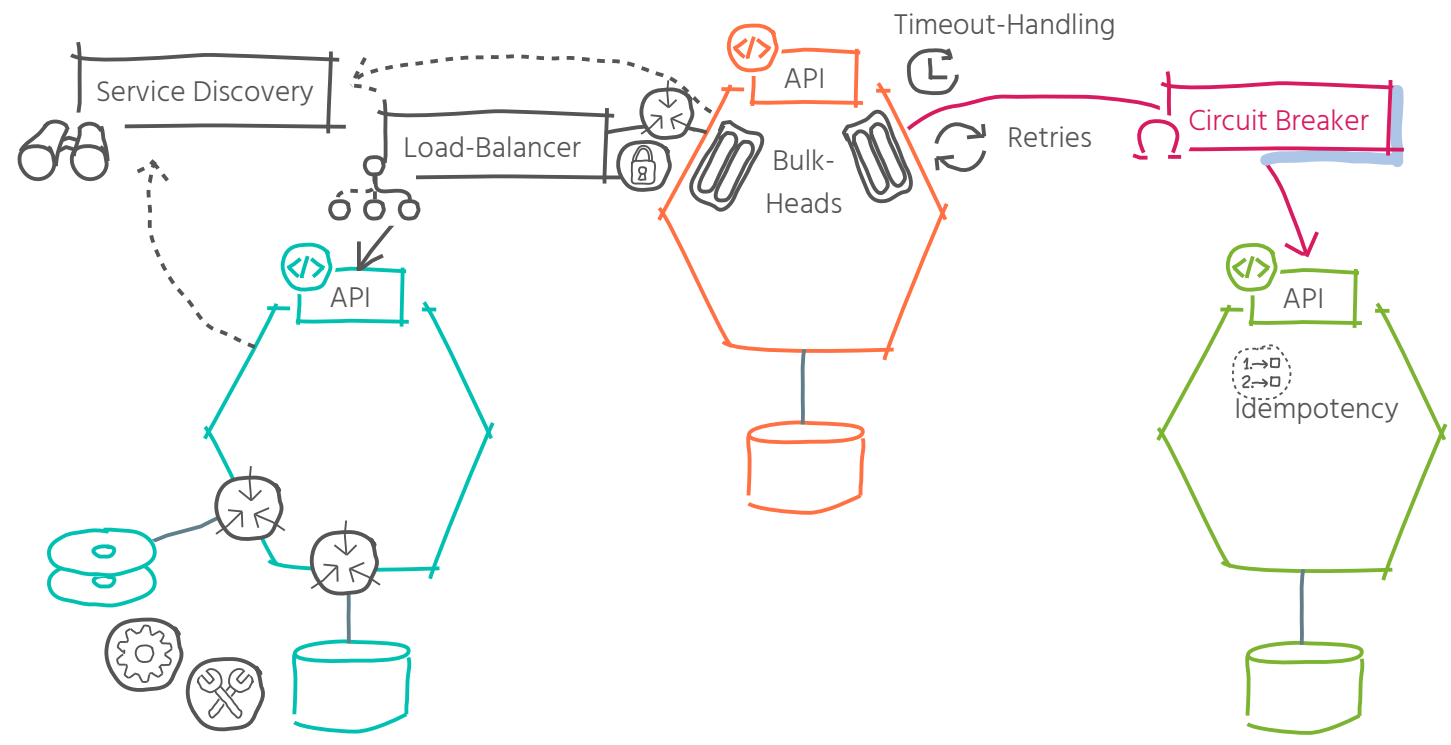
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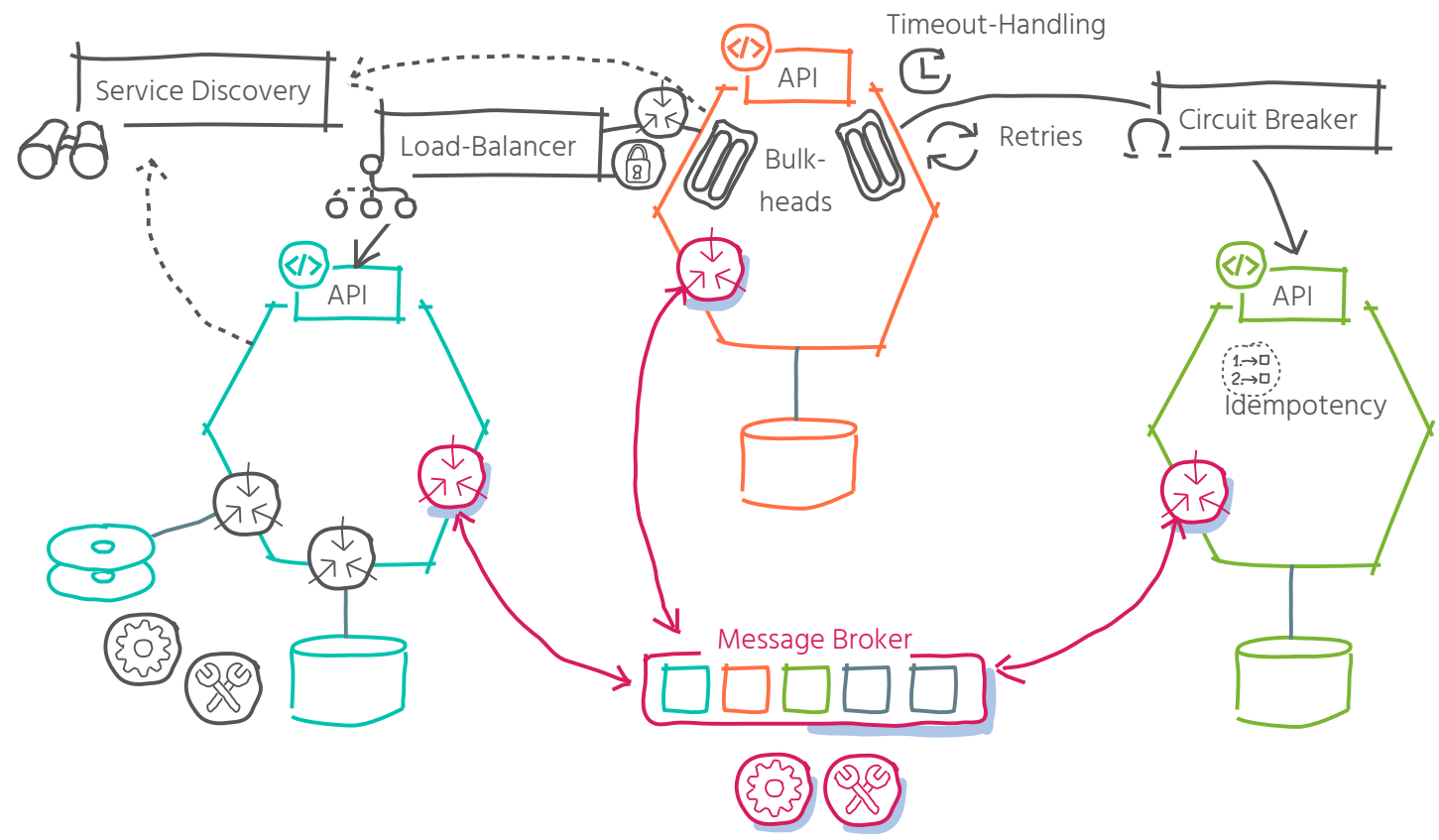
Hardware

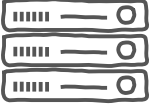


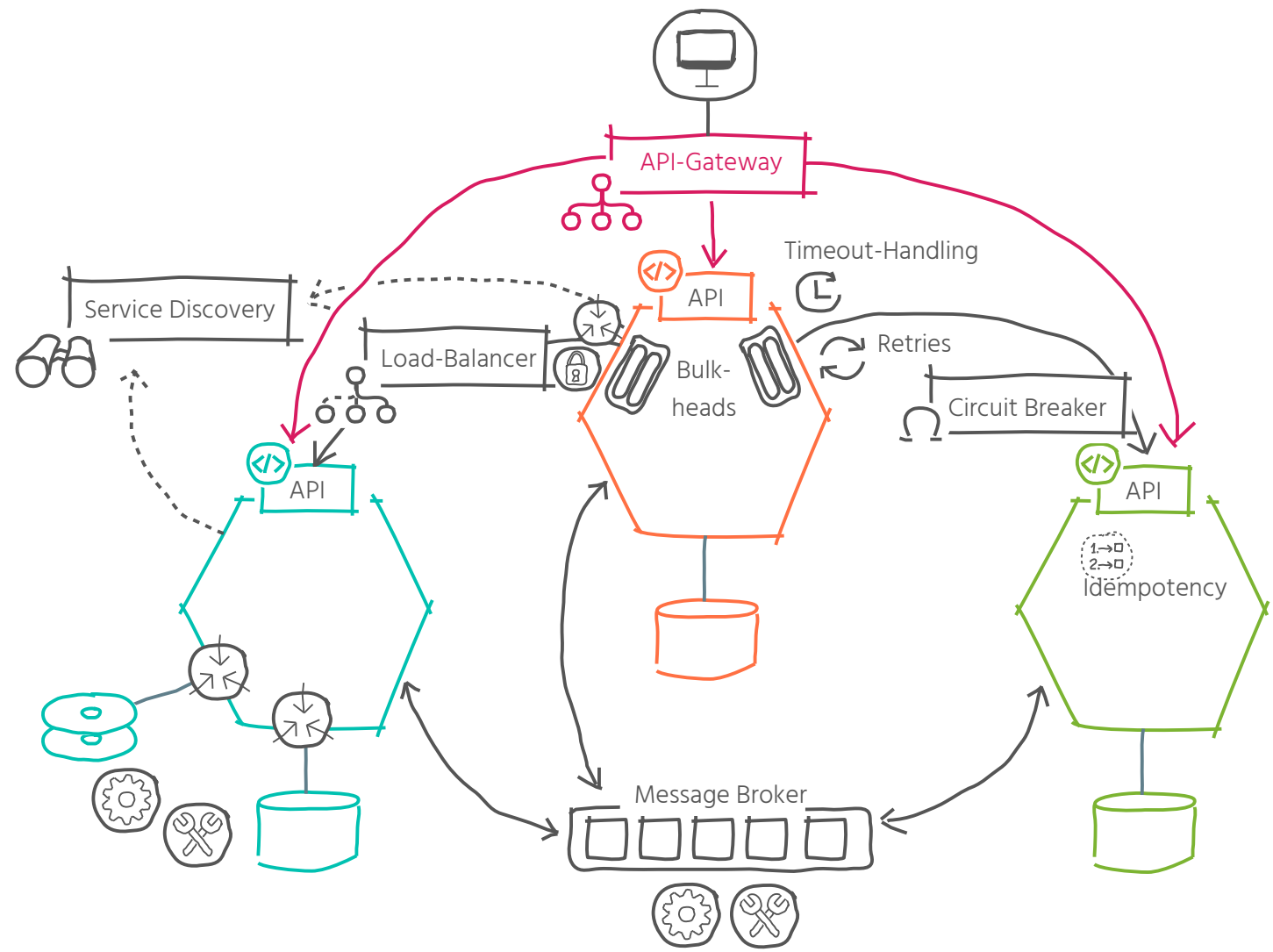
-  Runtime
-  Container
-  O/S
-  Virtualization
-  Hardware


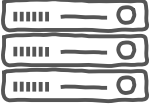


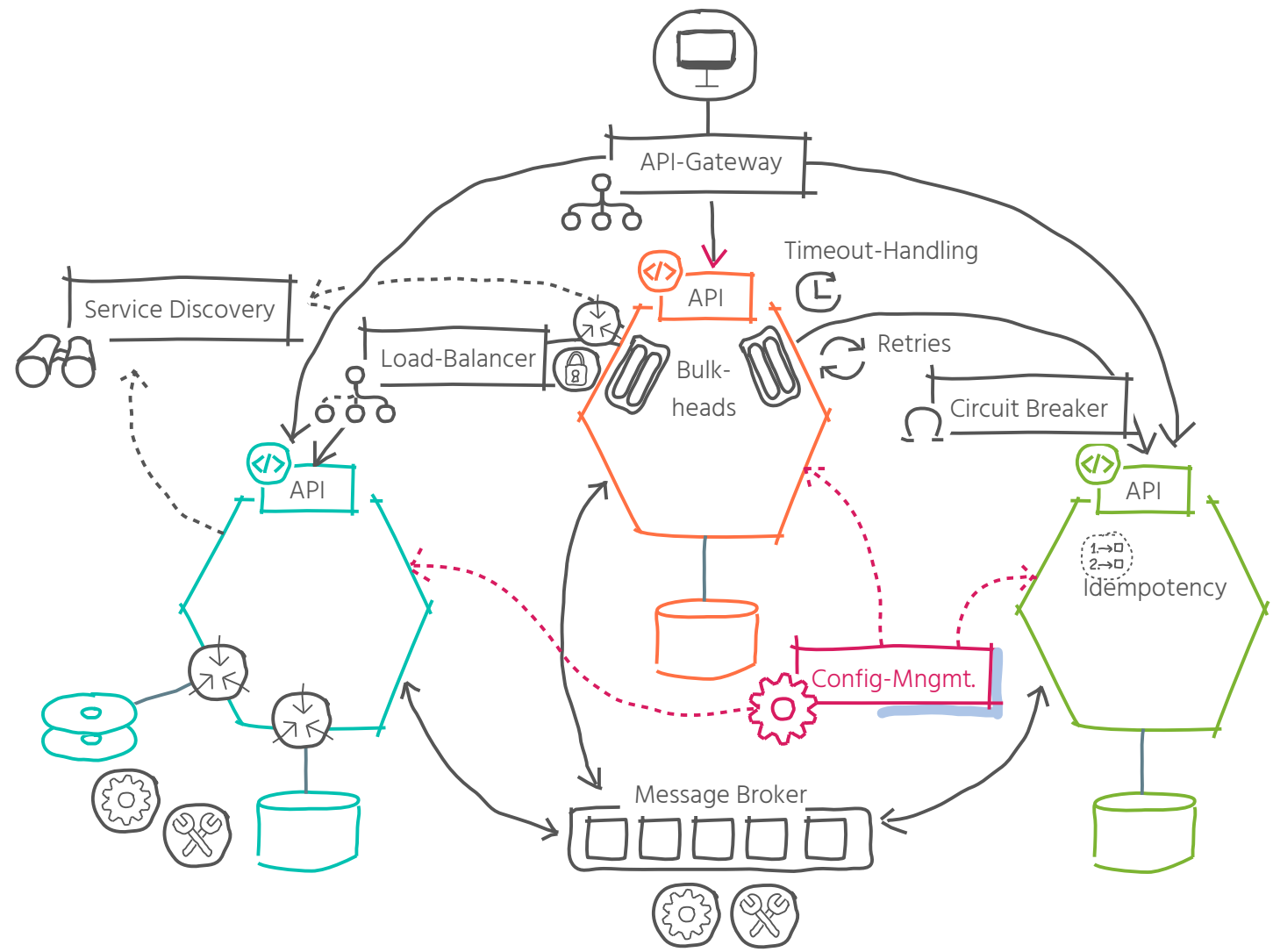
-  Runtime
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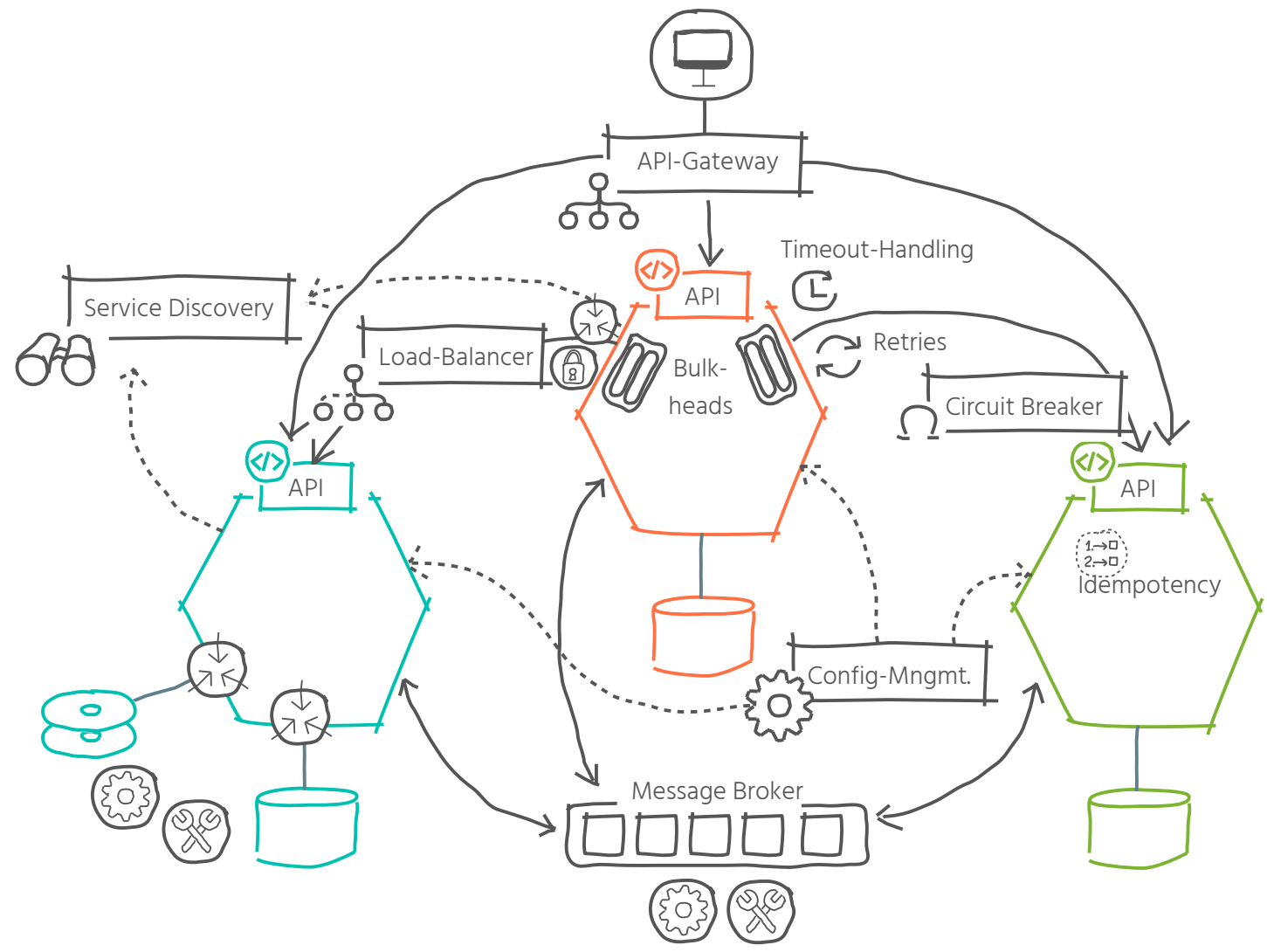
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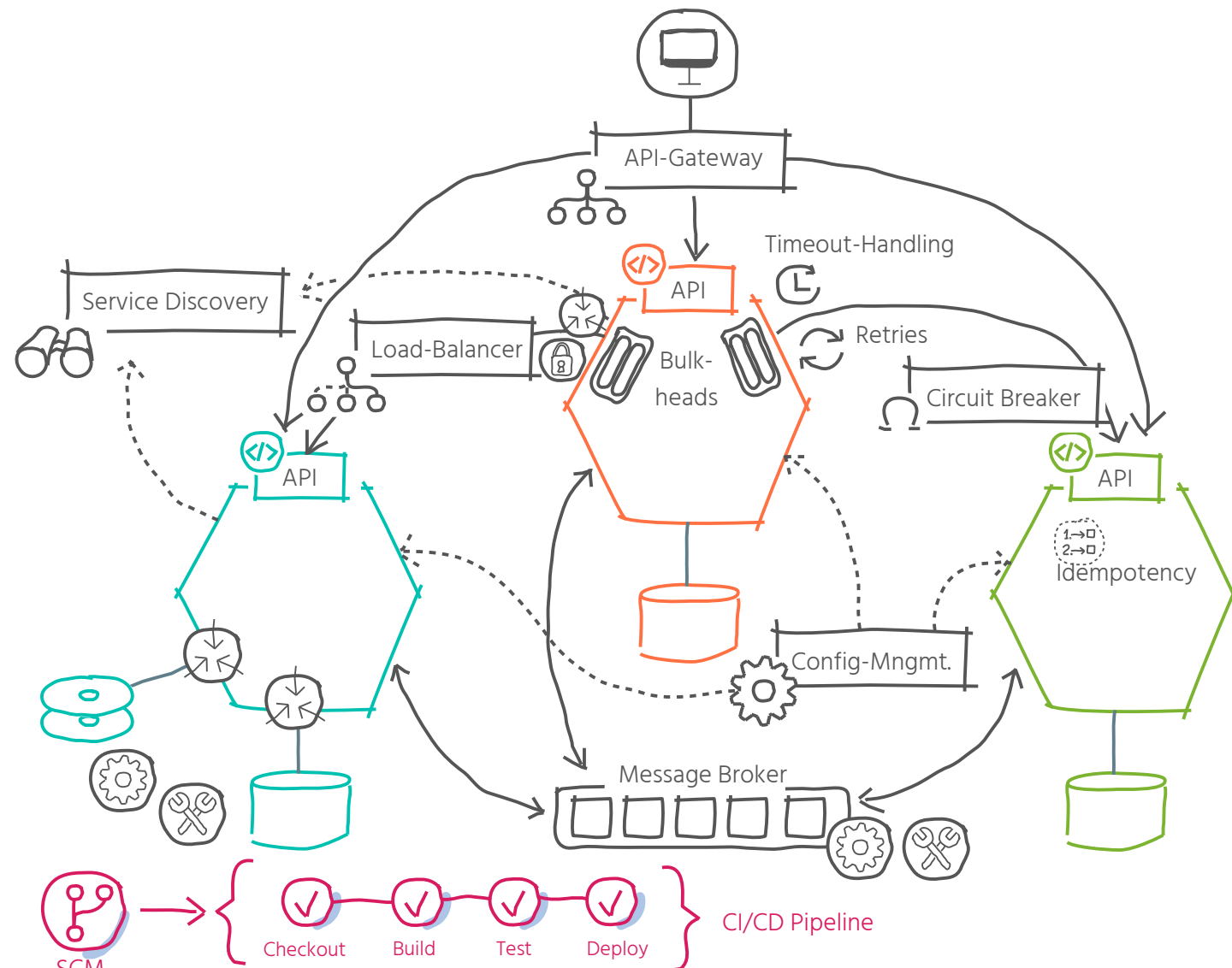


-  Runtime
-  Container
-  O/S
-  Virtualization
-  Hardware



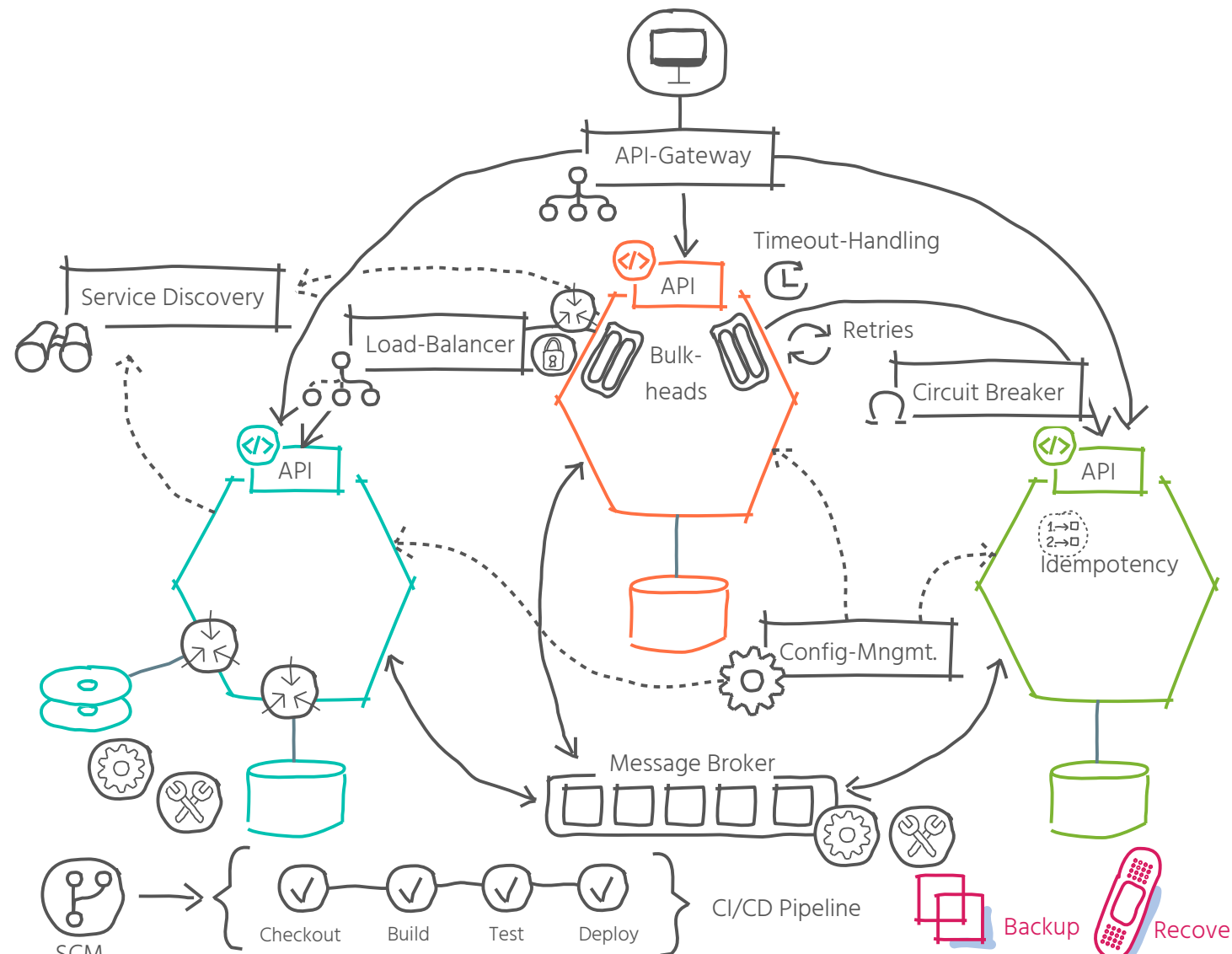
-  Monitoring
-  Log Aggregation
-  Metrics
-  Distributed Tracing
-  Health Checks

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



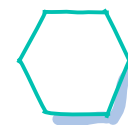
- Monitoring
- Log Aggregation
- Metrics
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- Health Checks

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

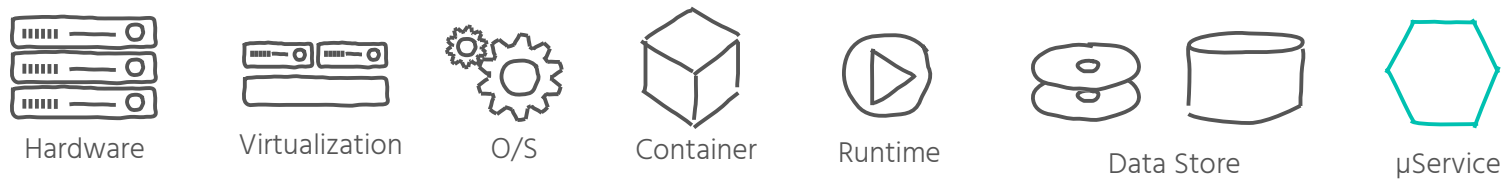


- Monitoring
- Log Aggregation
- Metrics
- Distributed Tracing
- Health Checks

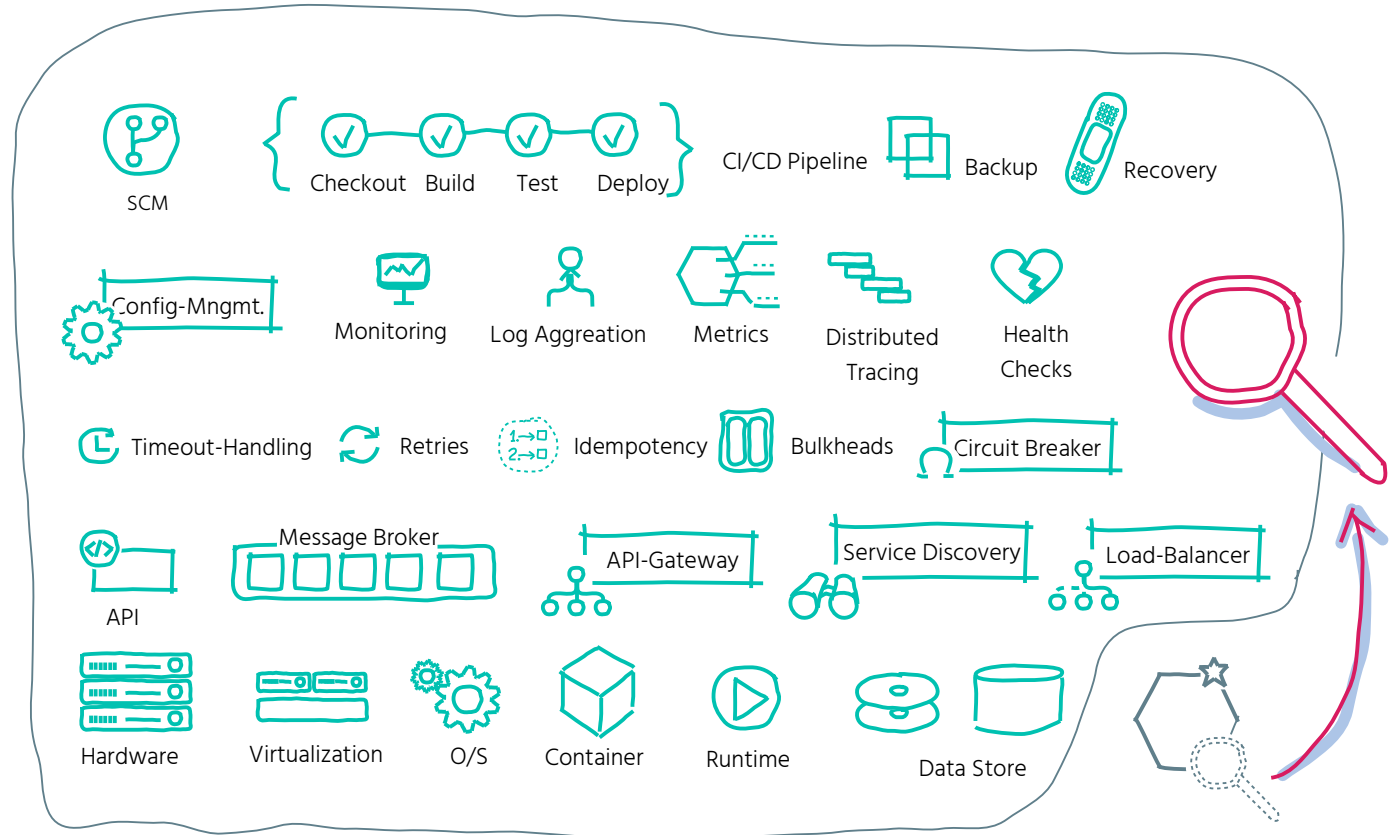
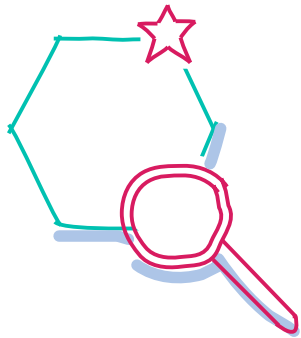
Backup Recovery Scaling @suksr

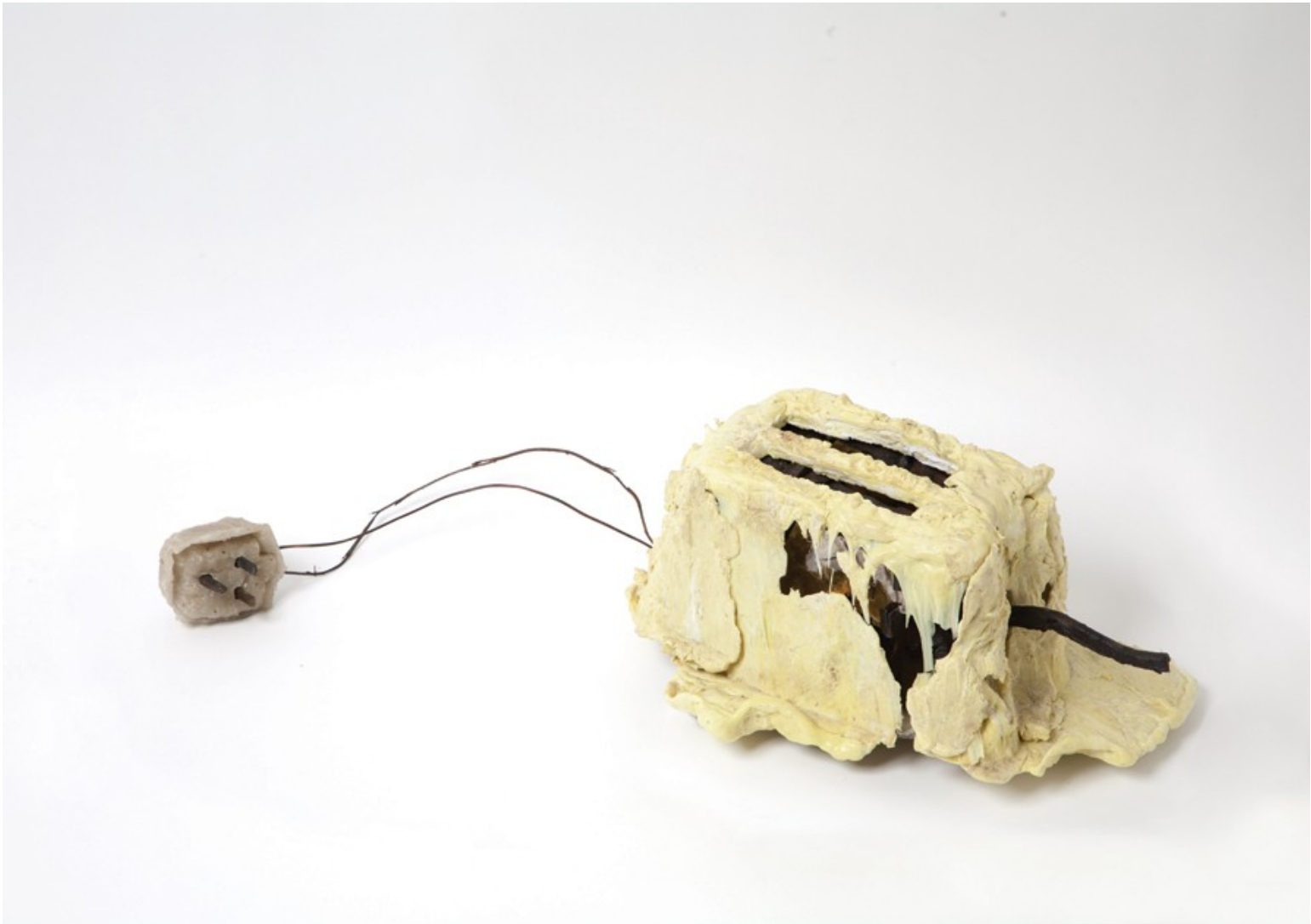


μService



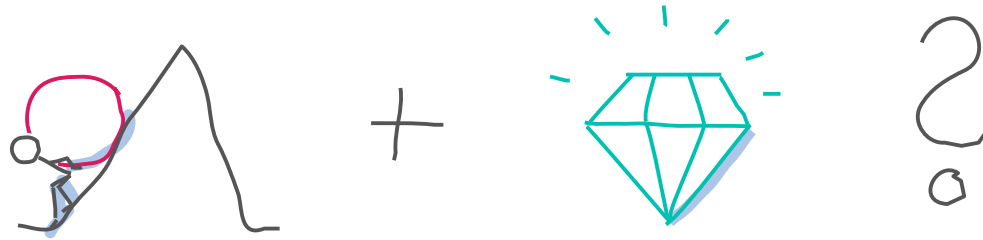
Complexities

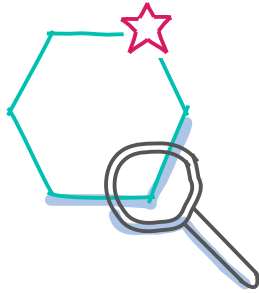




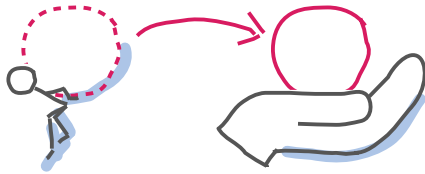
Source: <http://www.thomasthwaites.com>

How can a small team handle infrastructure complexities and deliver user & business value?





Focus on Core Domain



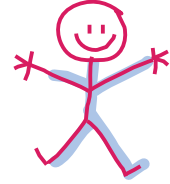
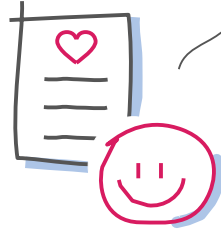
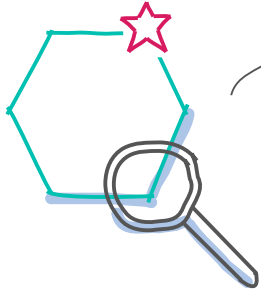
Offload commodities

Build in-house

Core Domain Focus

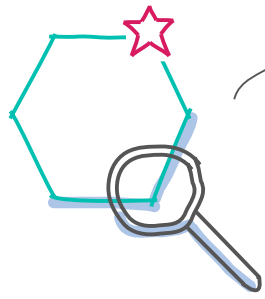
User Needs

User Value

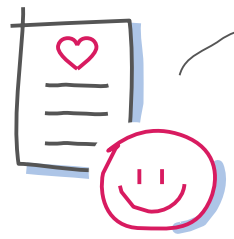


Build in-house

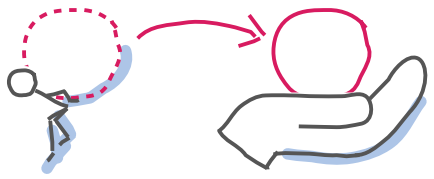
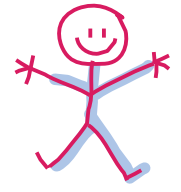
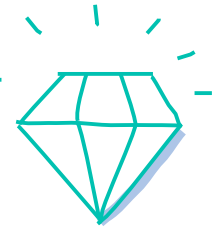
Core Domain Focus



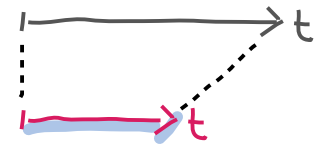
User Needs



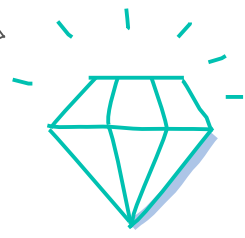
User Value



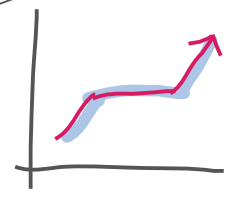
Offloading commodities



Business Needs



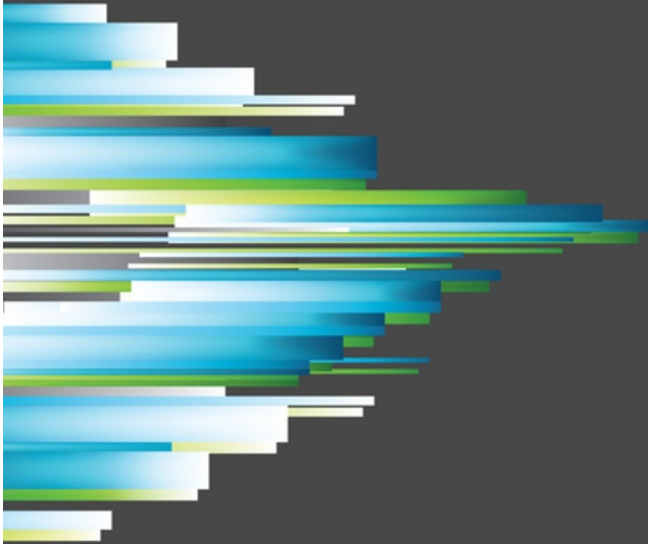
Business Value



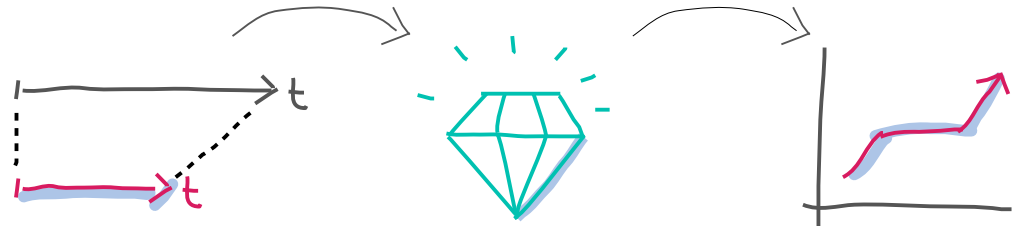
Outsource to utility suppliers

THE SCIENCE OF DEVOPS
ACCELERATE

Building and Scaling High Performing
Technology Organizations

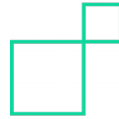


Nicole Forsgren, PhD
Jez Humble *and* Gene Kim



Software Delivery
Performance

Productivity
Profitability
Market Share



Independent Tech Consultant
@suksr



Co-Organizer @microXchg, Berlin



EX-CTO
at Just Software
@JustSocialApps

Susanne Kaiser ... who?



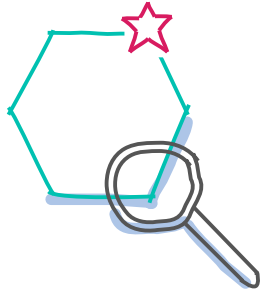
Program committee &
track host
QCon, New York
@qconnewyork



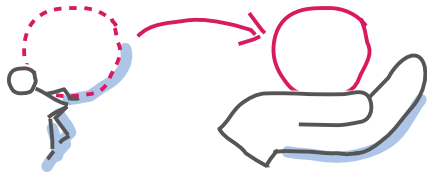
Program committee
MicroCPH, Copenhagen
@MicroCPH



Program committee
ServerlessDays, Hamburg
@ServerlessHAM



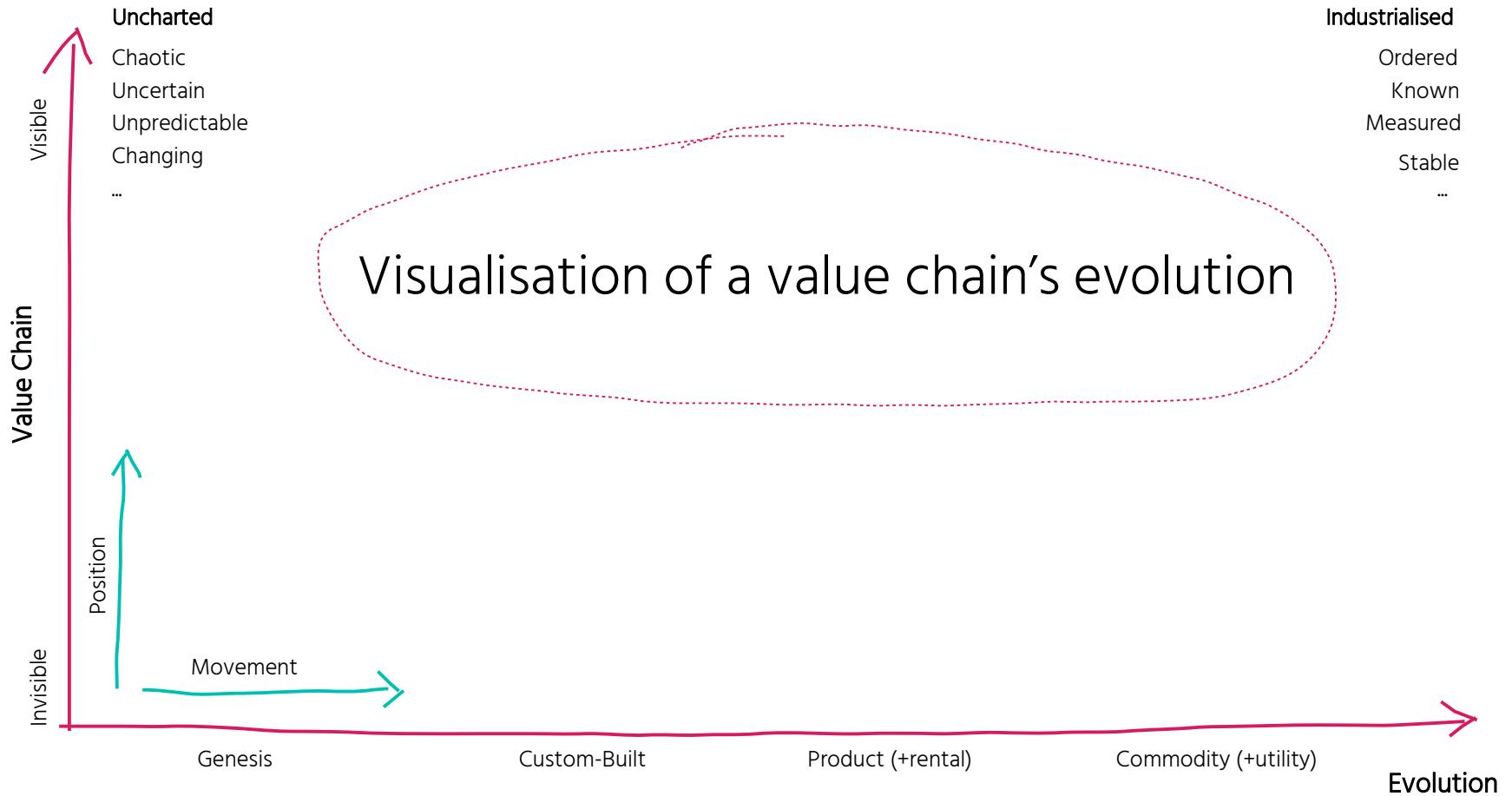
What to build in-house?



What to outsource?

Wardley Maps

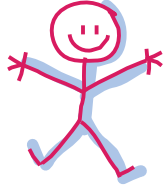
By Simon Wardley



Wardley Maps

Value Chain

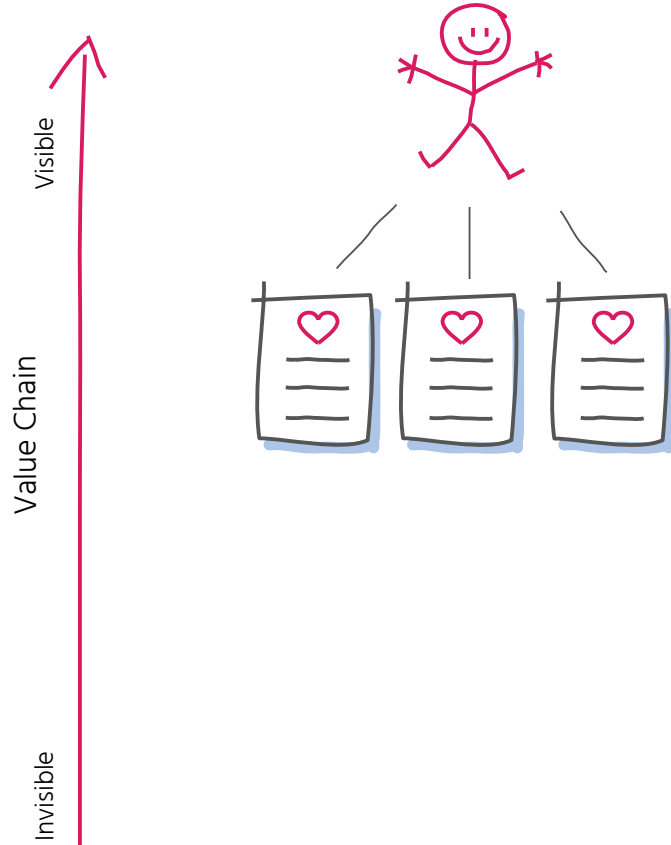
Visible
Value Chain
Invisible



Who are your users?

Wardley Maps

Value Chain

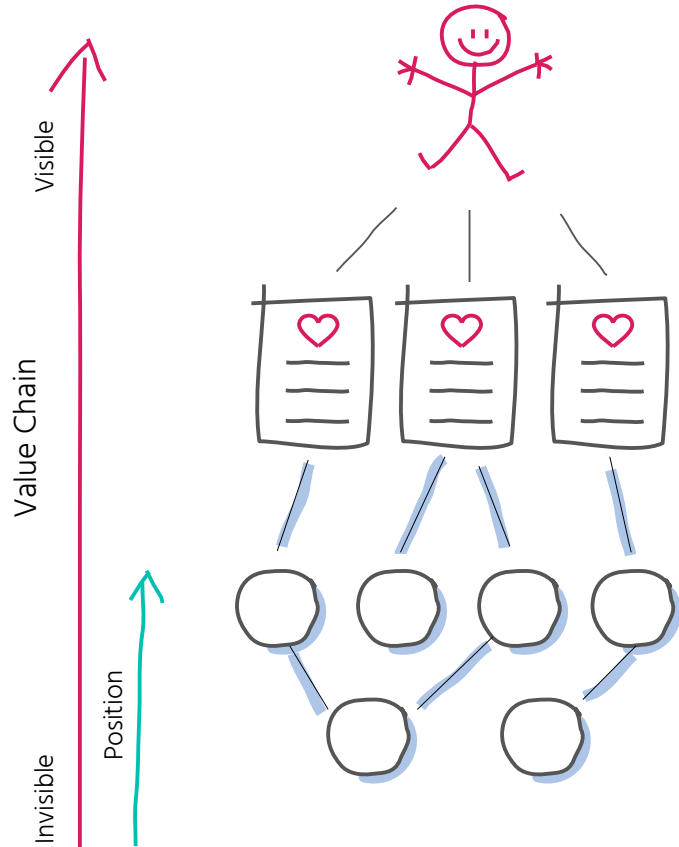


Who are your users?

What are your users' needs?

Wardley Maps

Value Chain



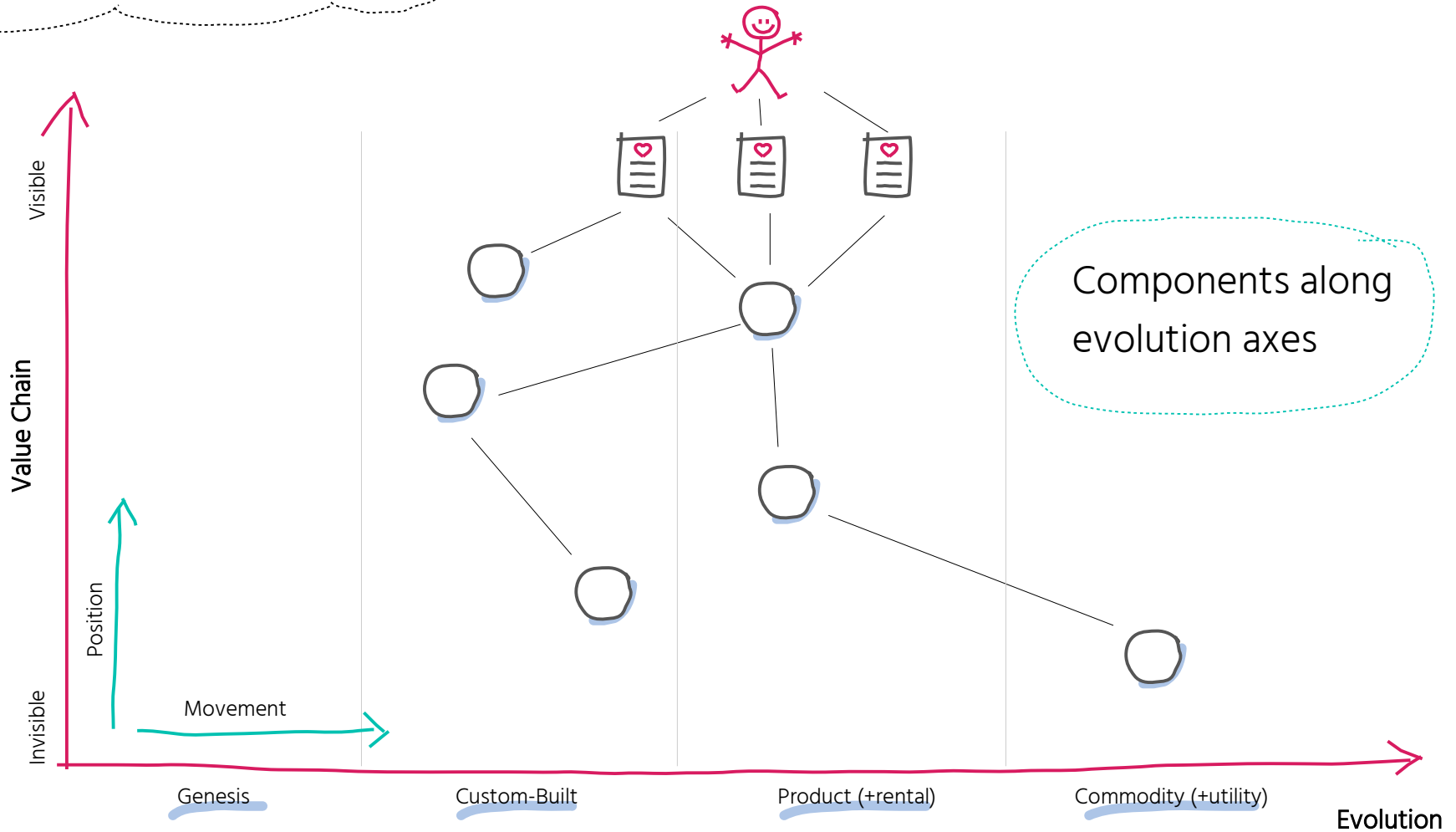
Who are your users?

What are your users' needs?

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

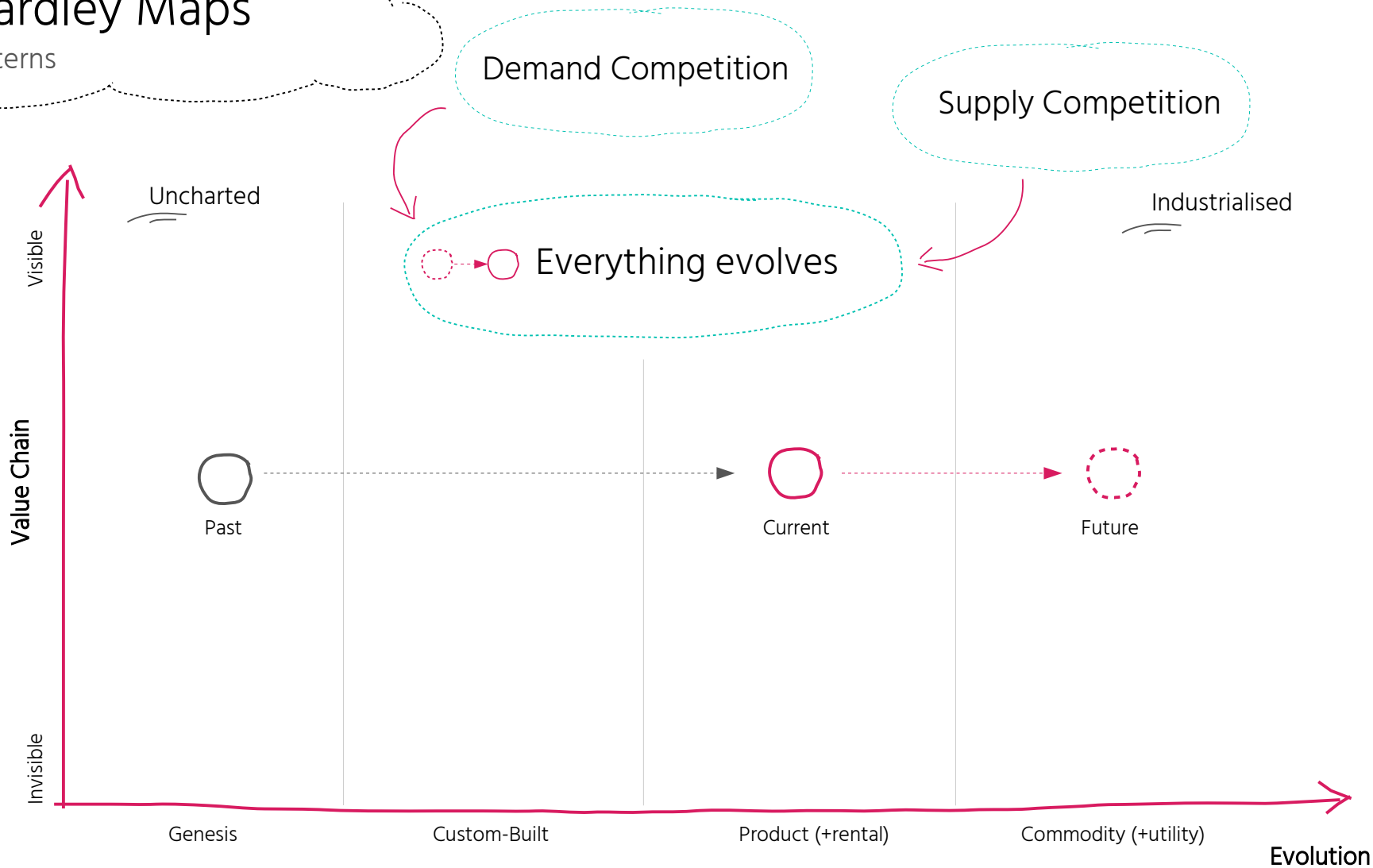
Wardley Maps

Landscape



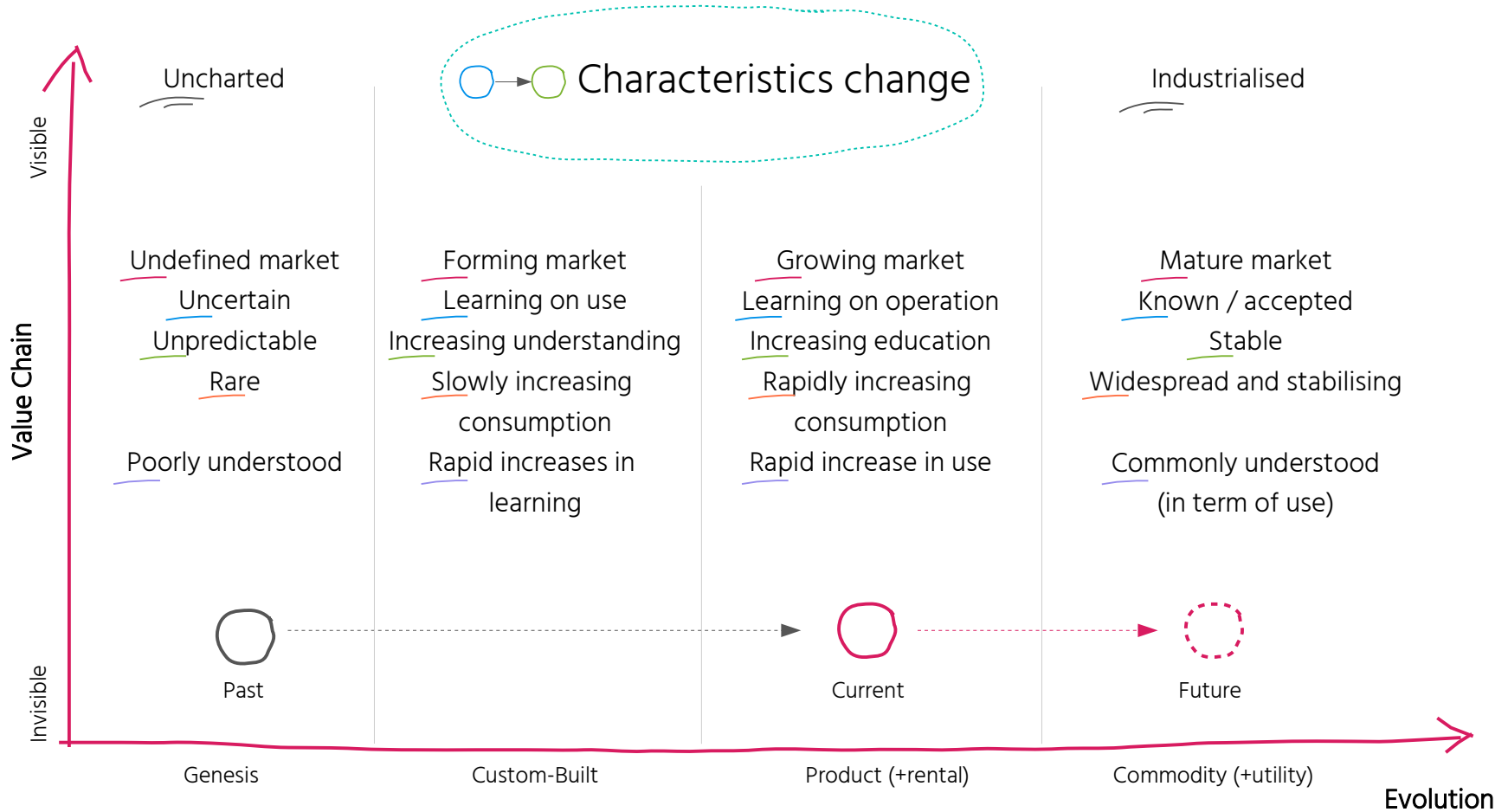
Wardley Maps

Patterns



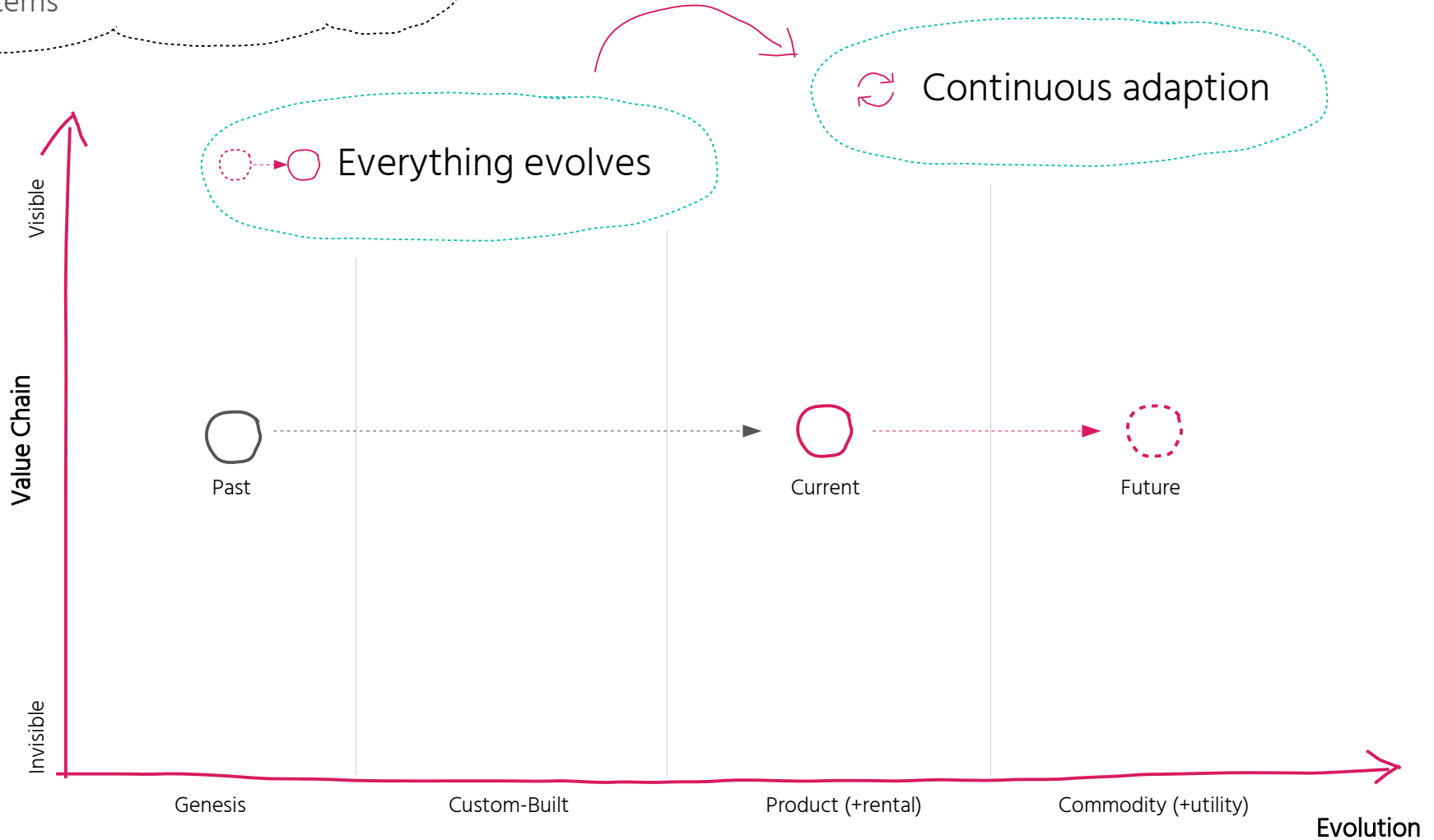
Wardley Maps

Patterns



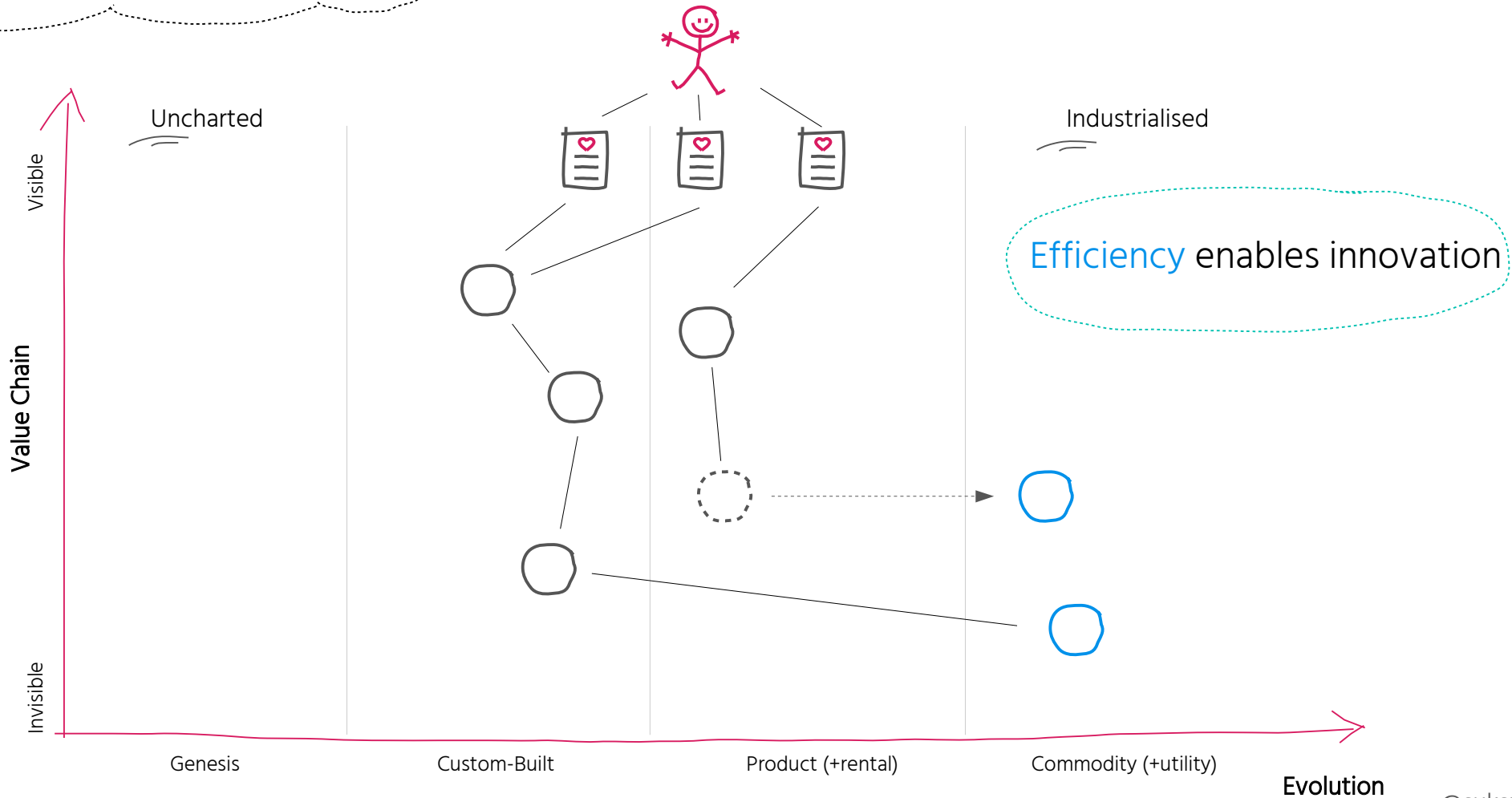
Wardley Maps

Patterns



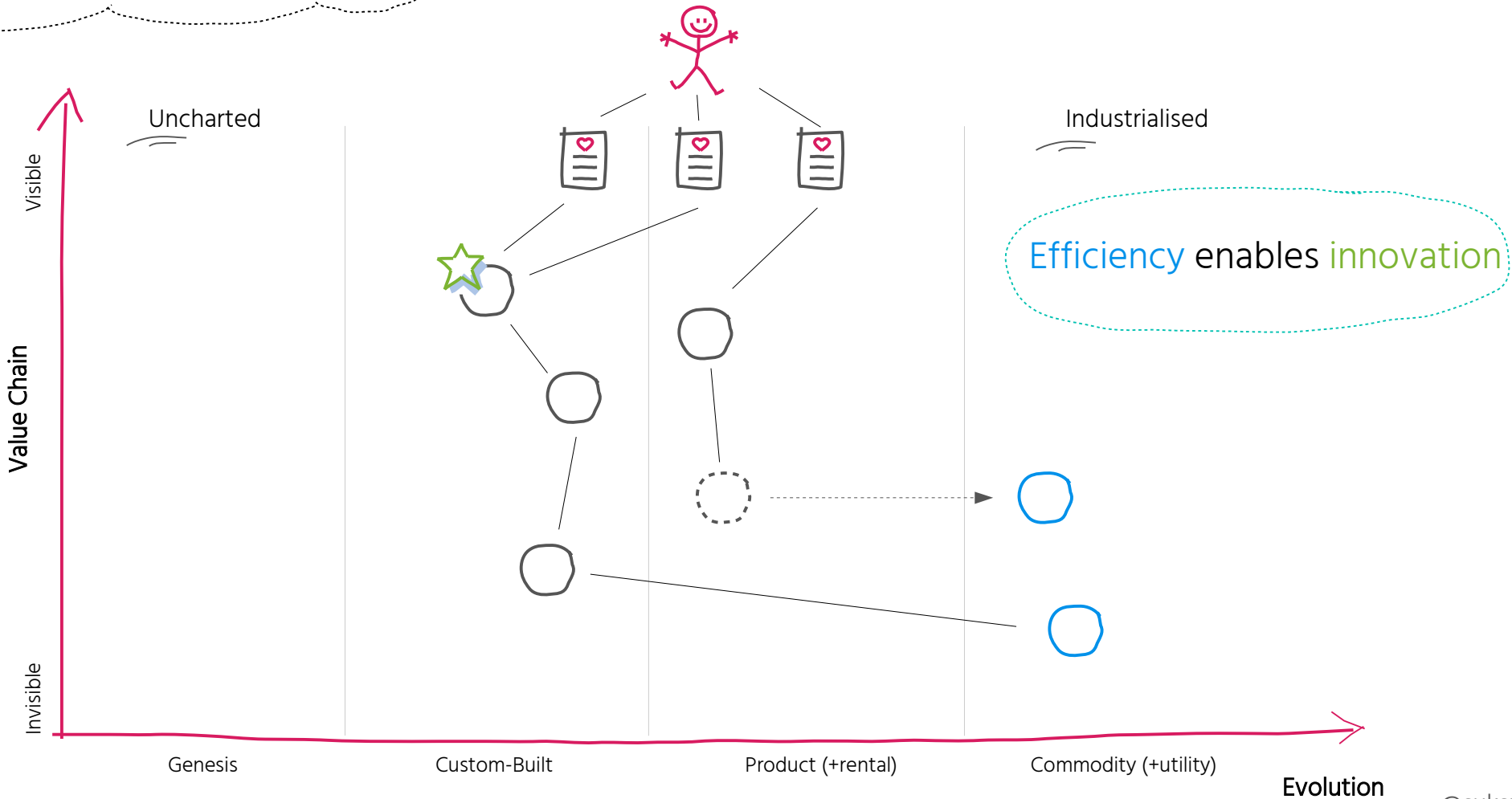
Wardley Maps

Patterns



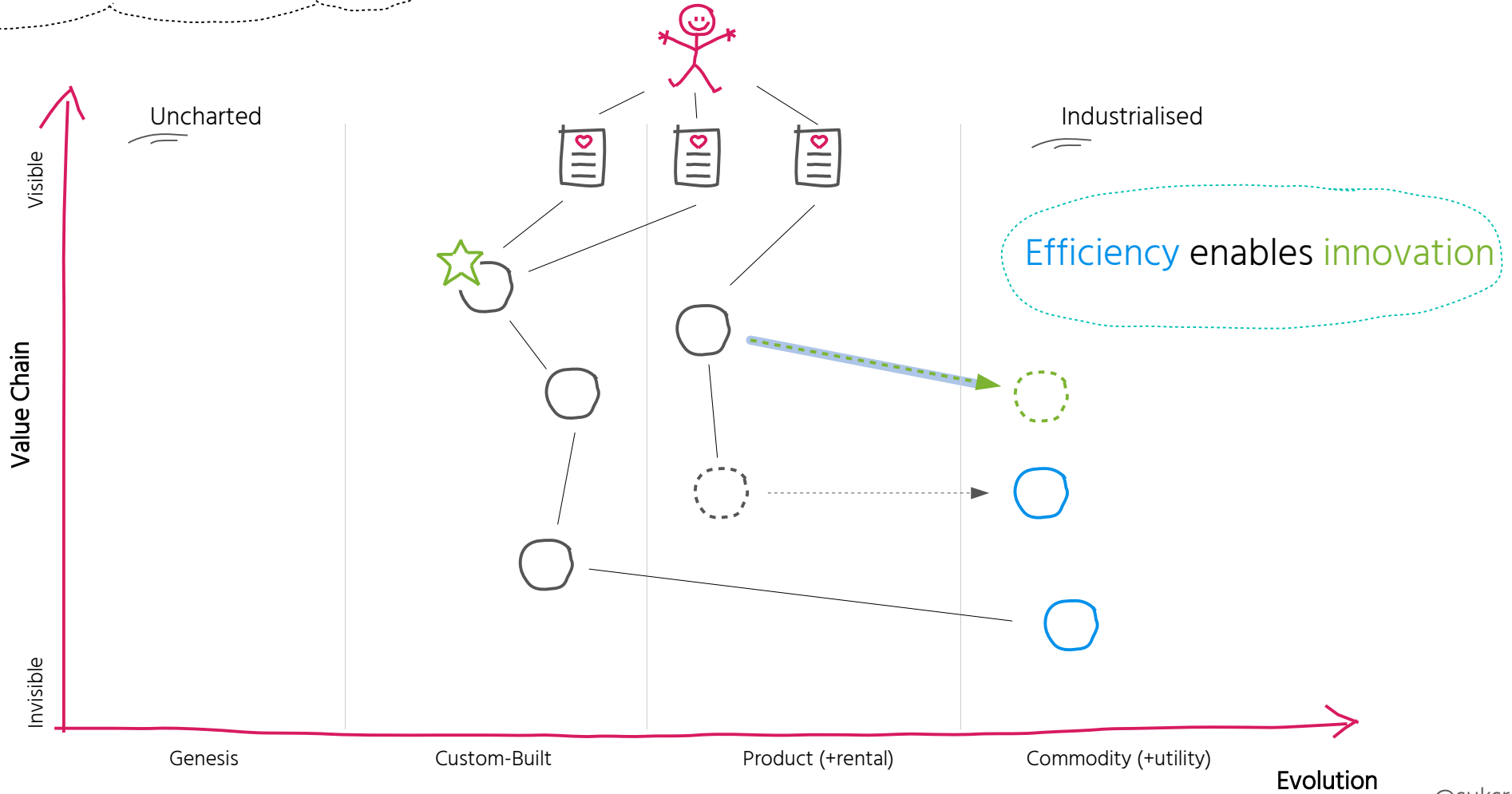
Wardley Maps

Patterns



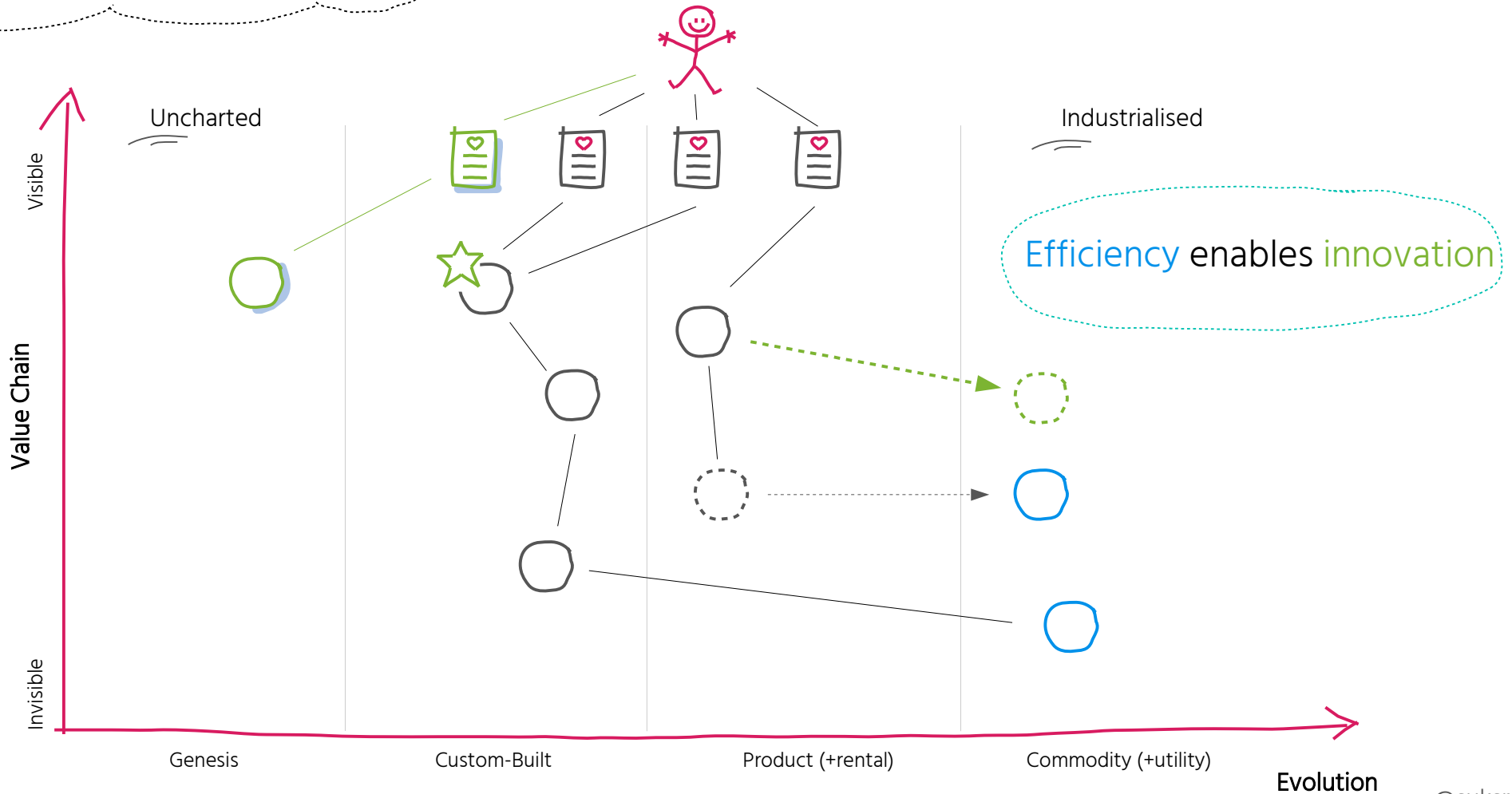
Wardley Maps

Patterns



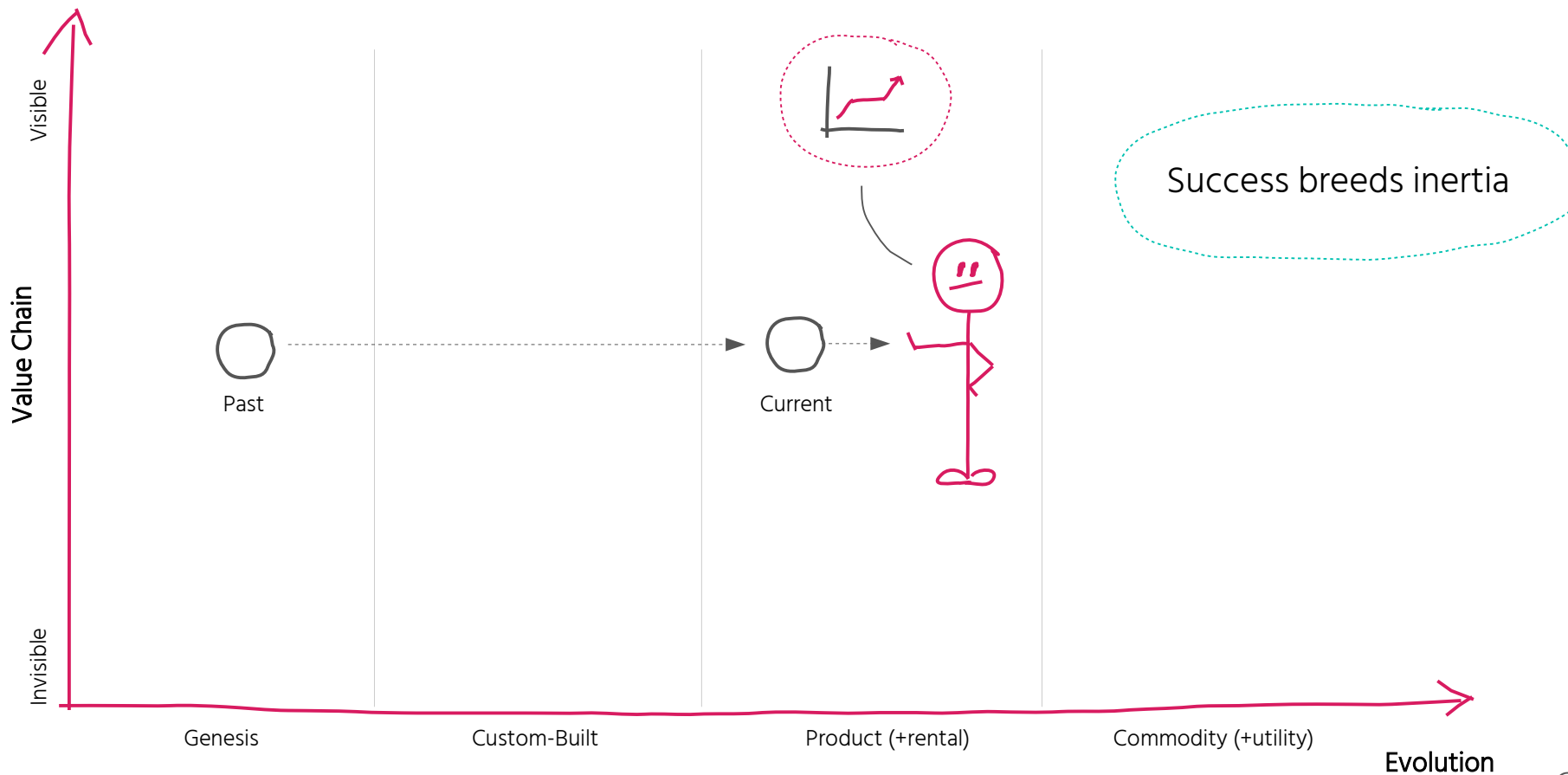
Wardley Maps

Patterns



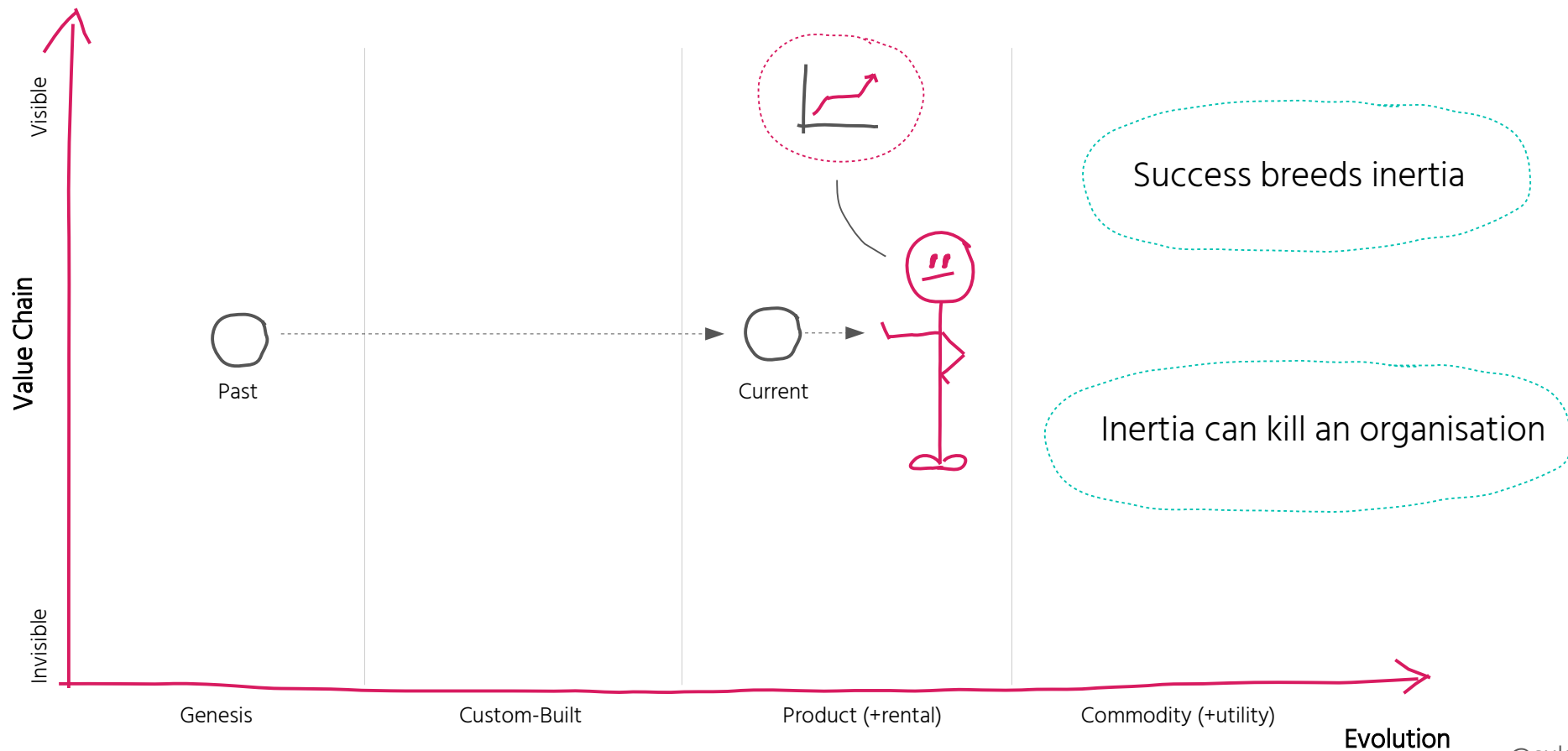
Wardley Maps

Patterns



Wardley Maps

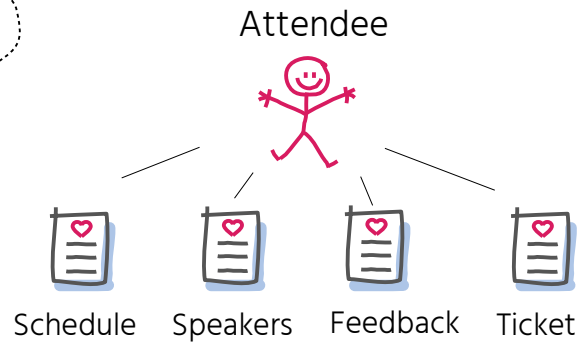
Patterns



Wardley Maps

Example Conference Solution

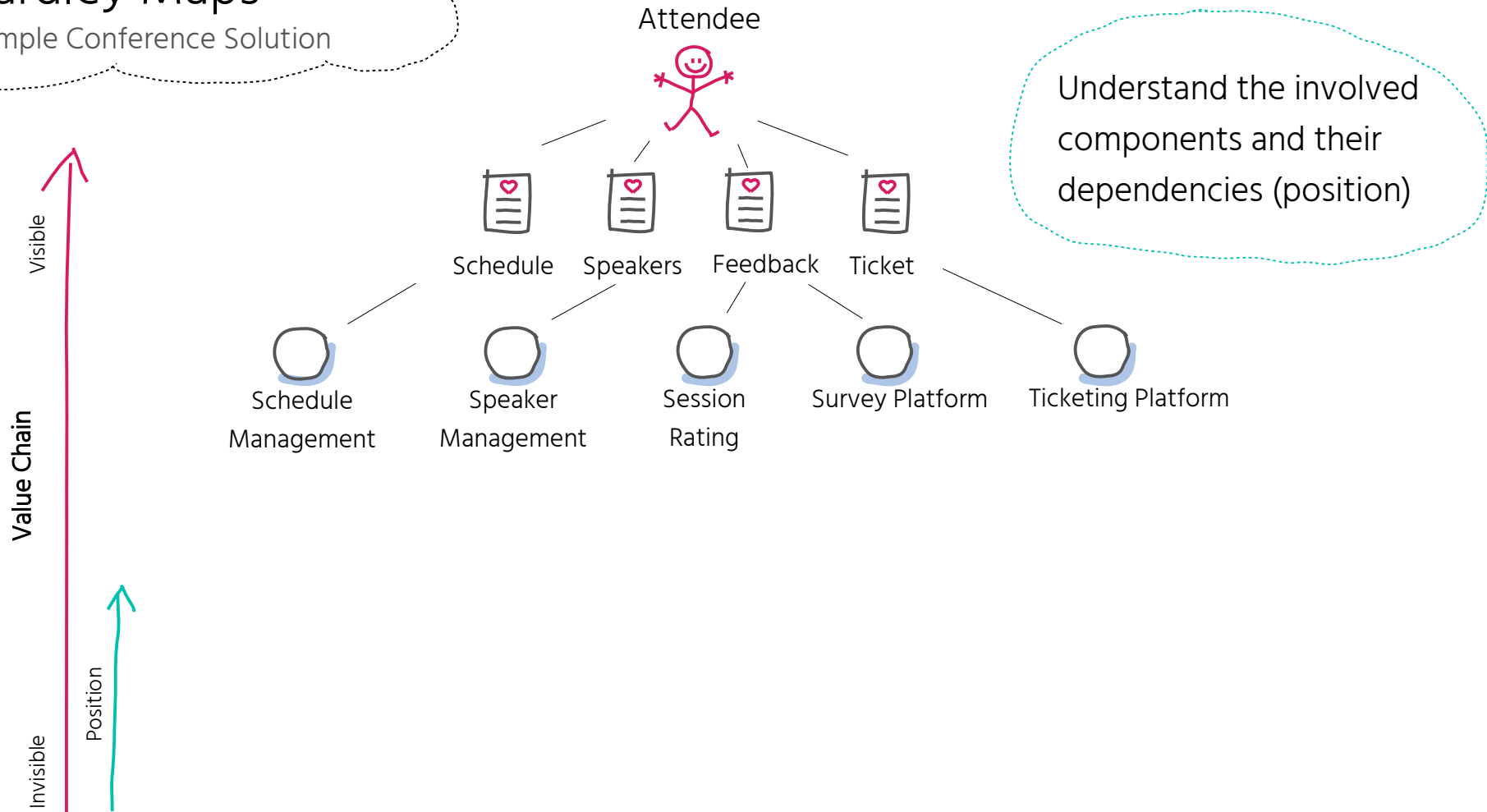
Visible
Value Chain
Invisible



Focus on user needs

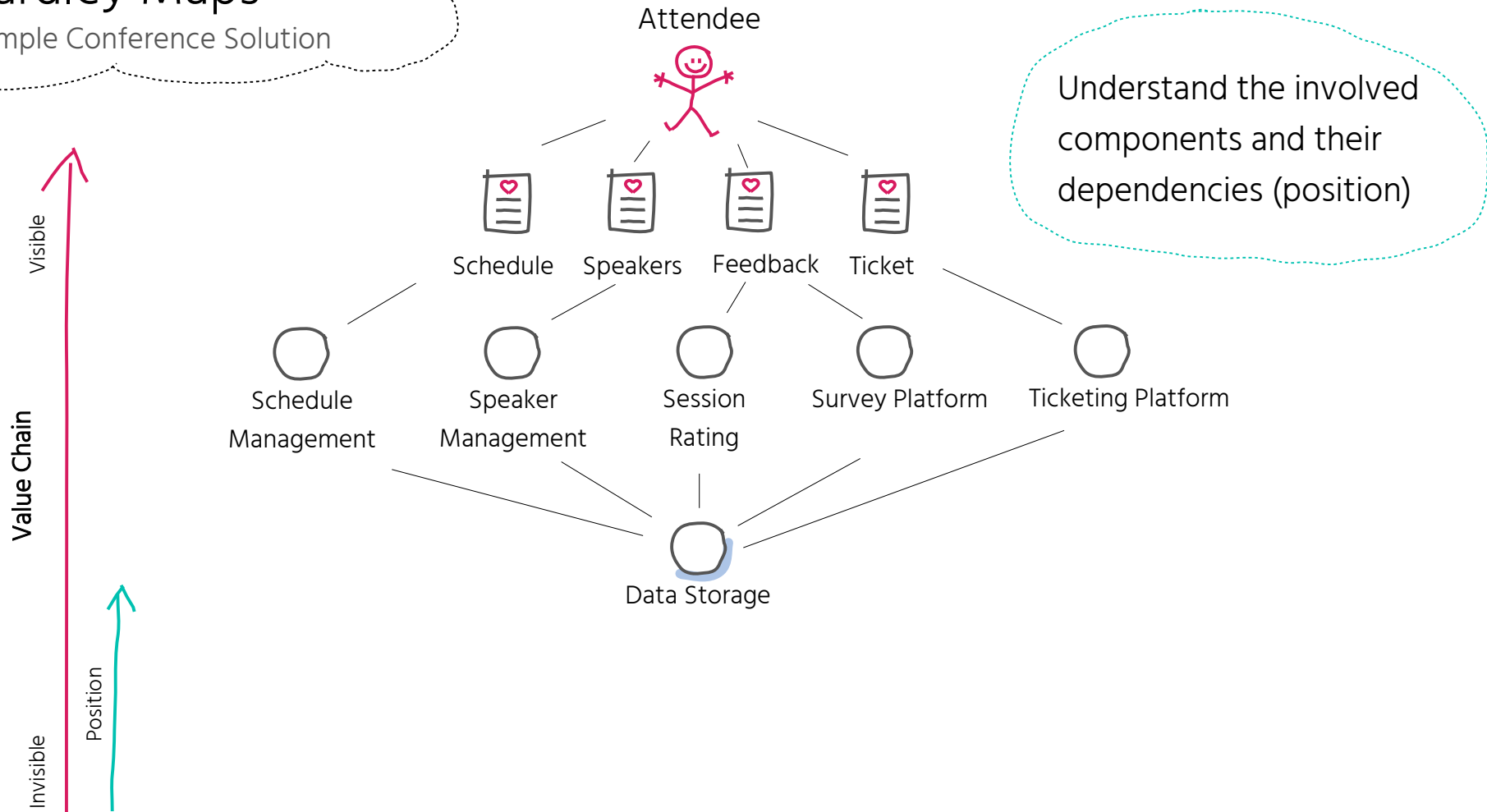
Wardley Maps

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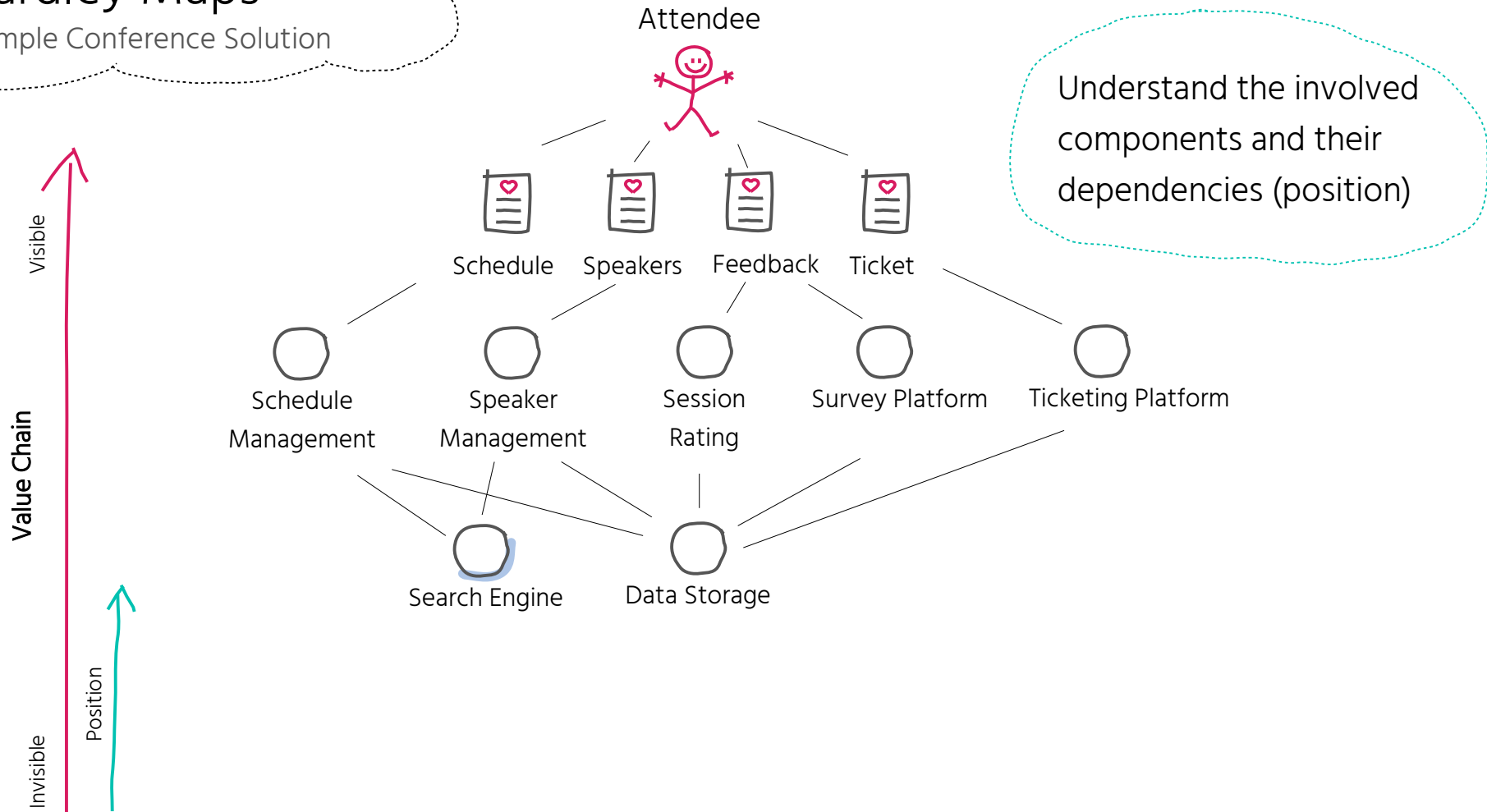
Wardley Maps

Example Conference Solution



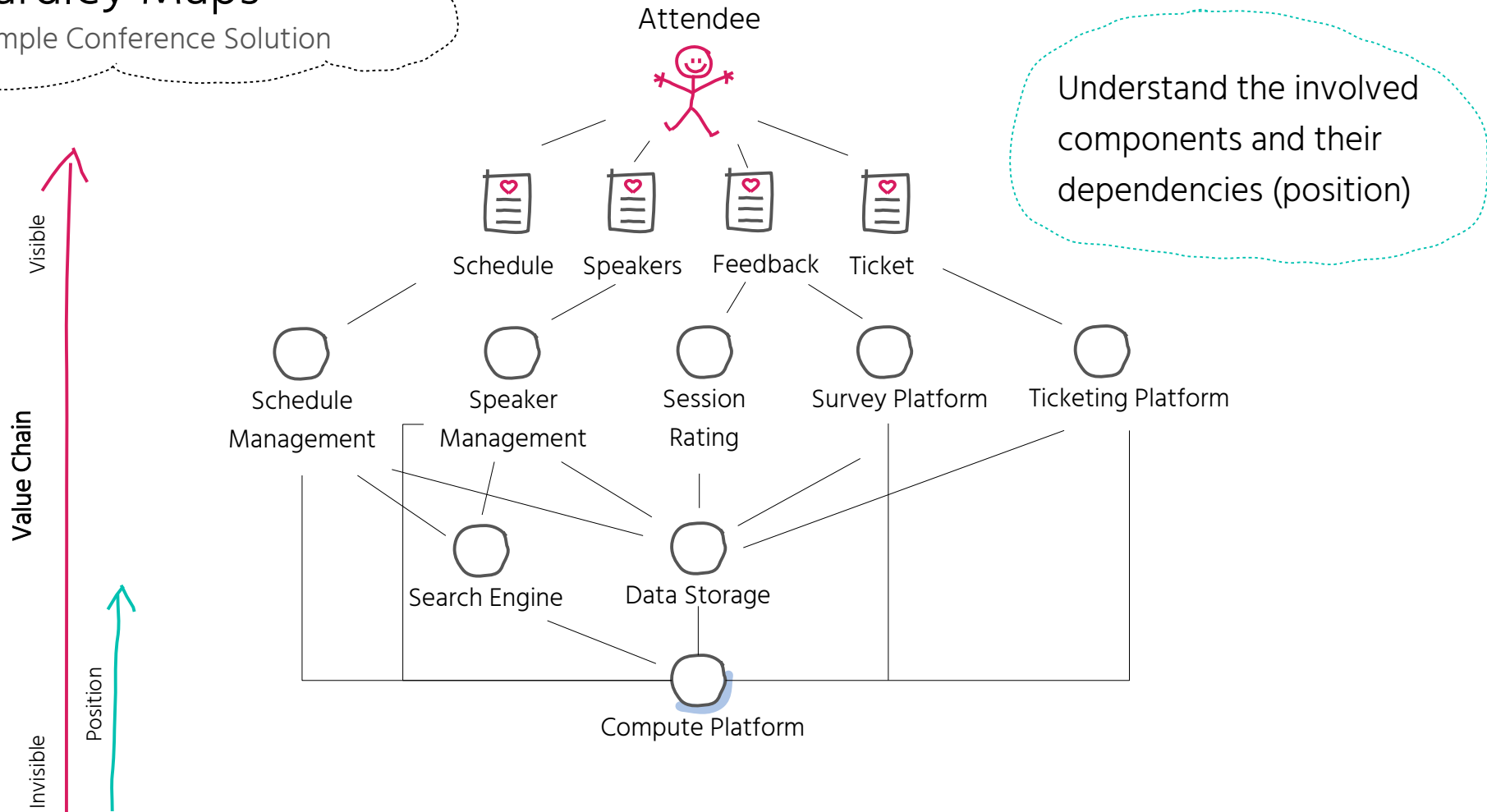
Wardley Maps

Example Conference Solution



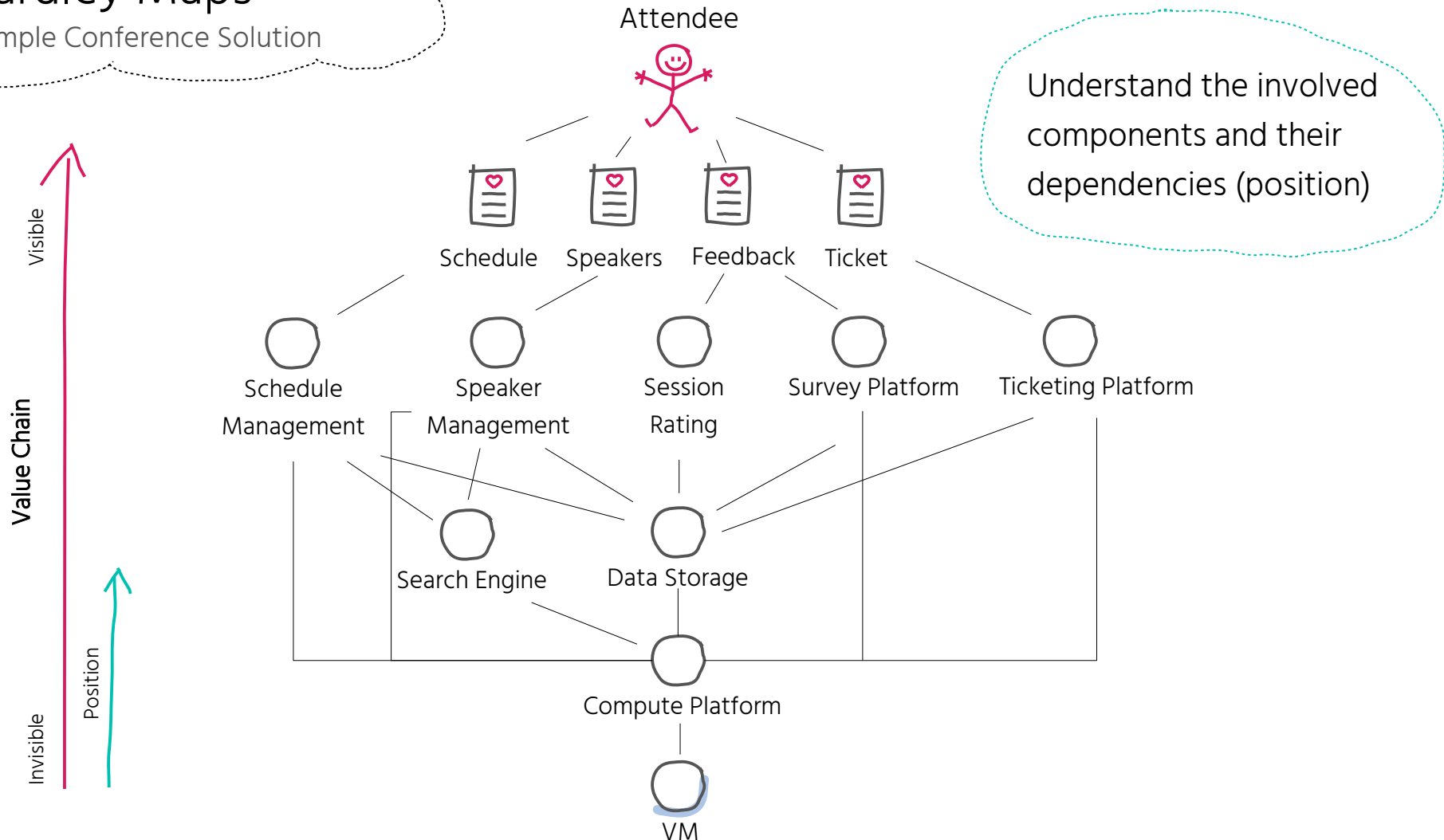
Wardley Maps

Example Conference Solution



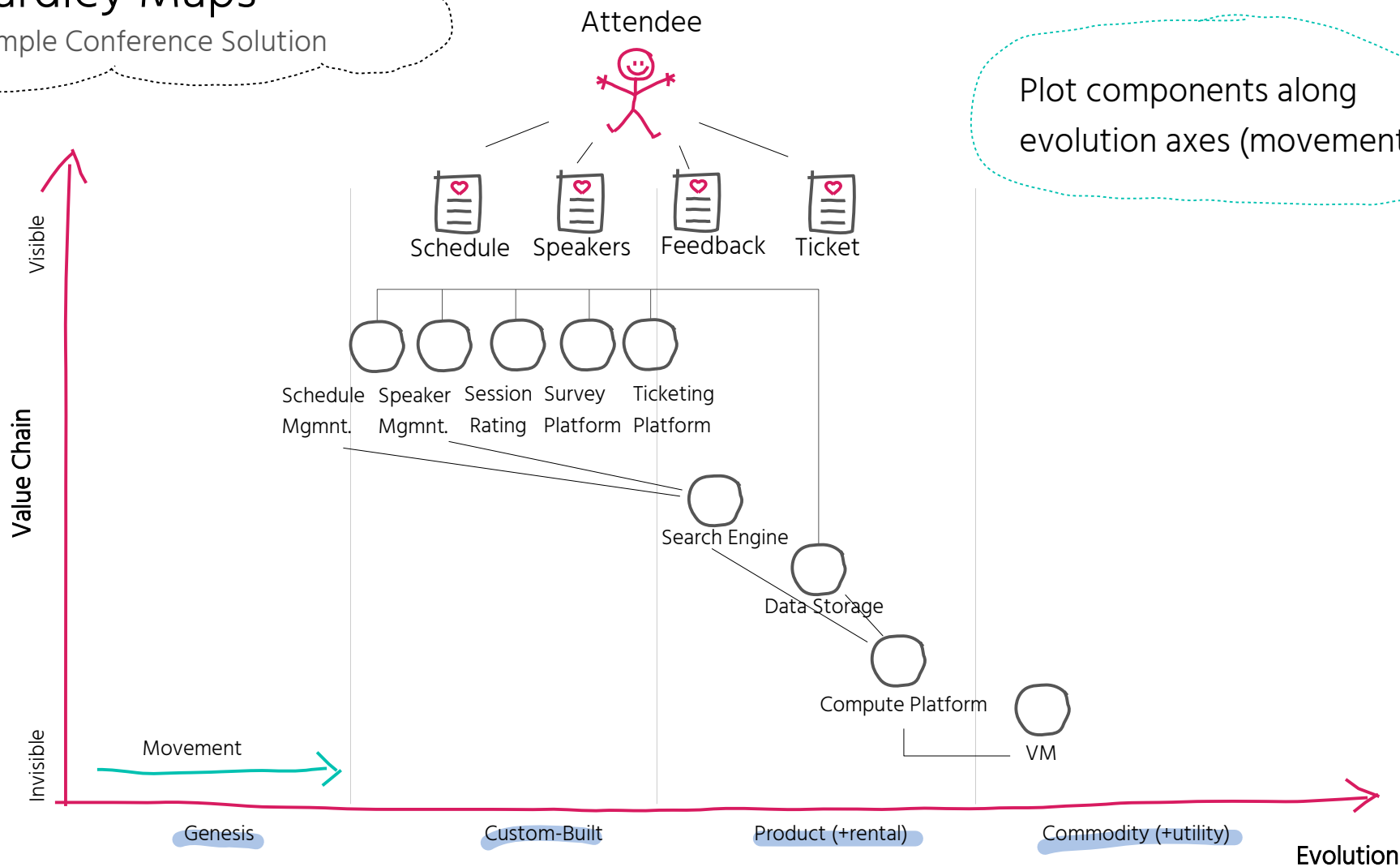
Wardley Maps

Example Conference Solution



Wardley Maps

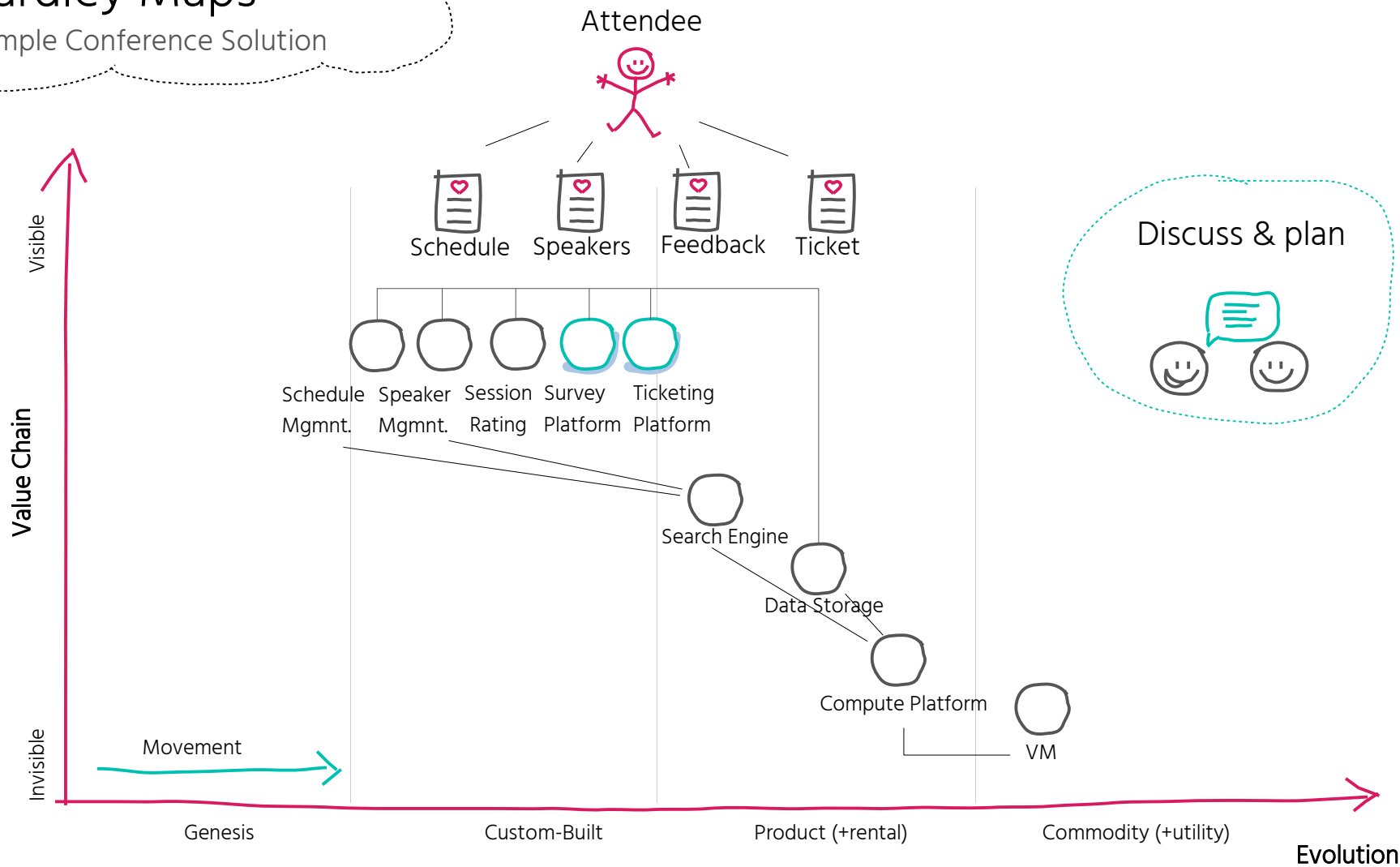
Example Conference Solution



Plot components along evolution axes (movement)

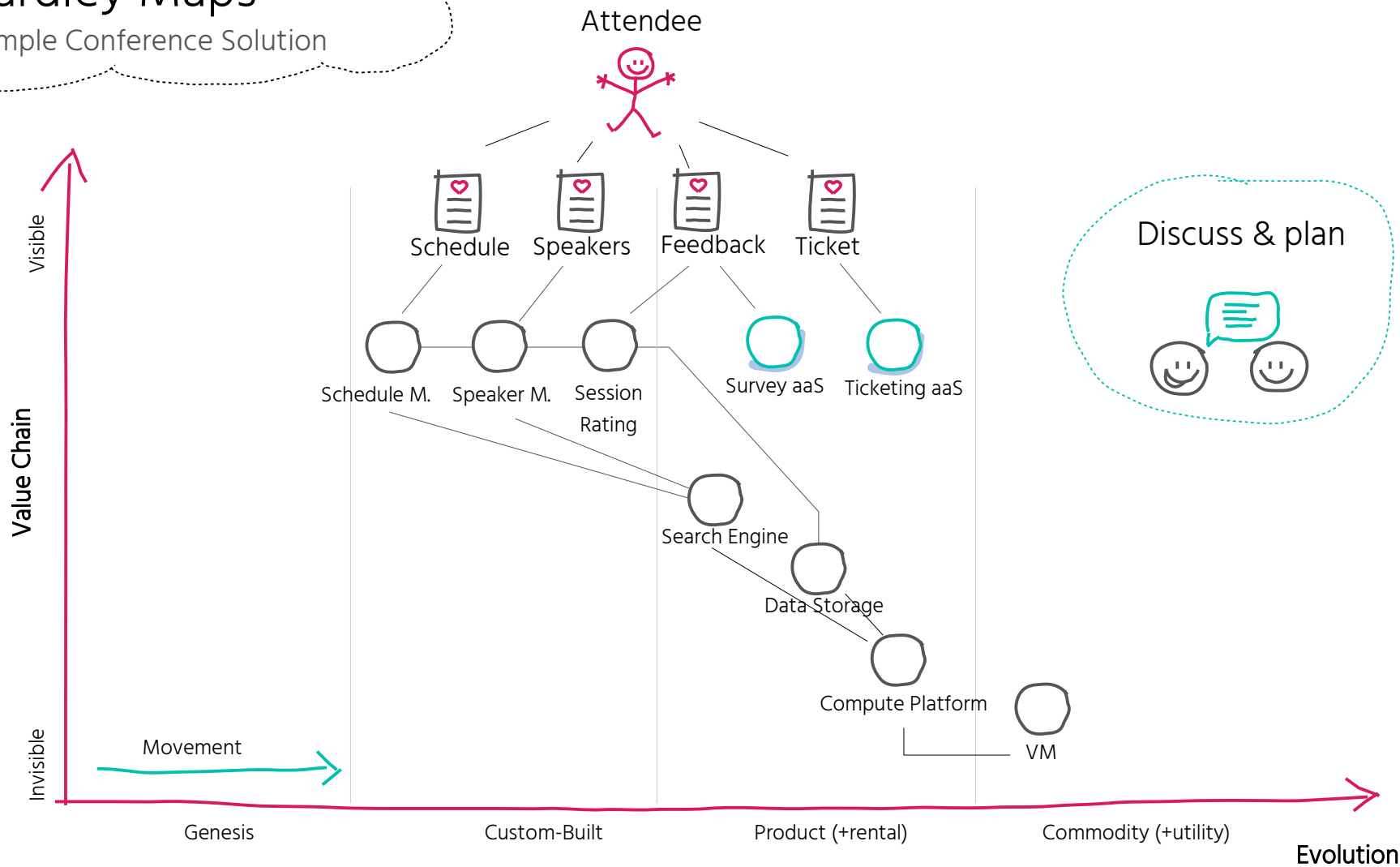
Wardley Maps

Example Conference Solution



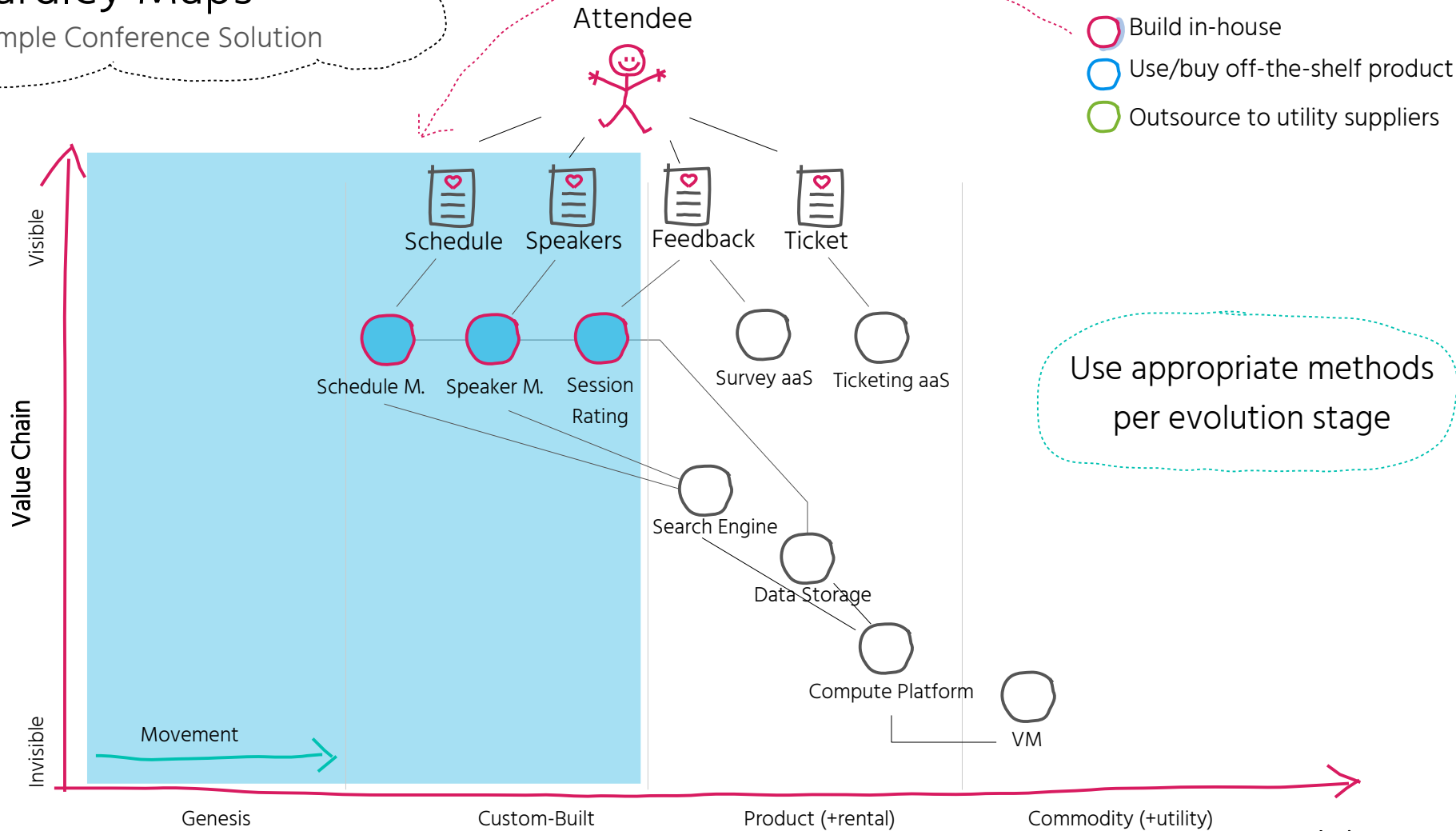
Wardley Maps

Example Conference Solution



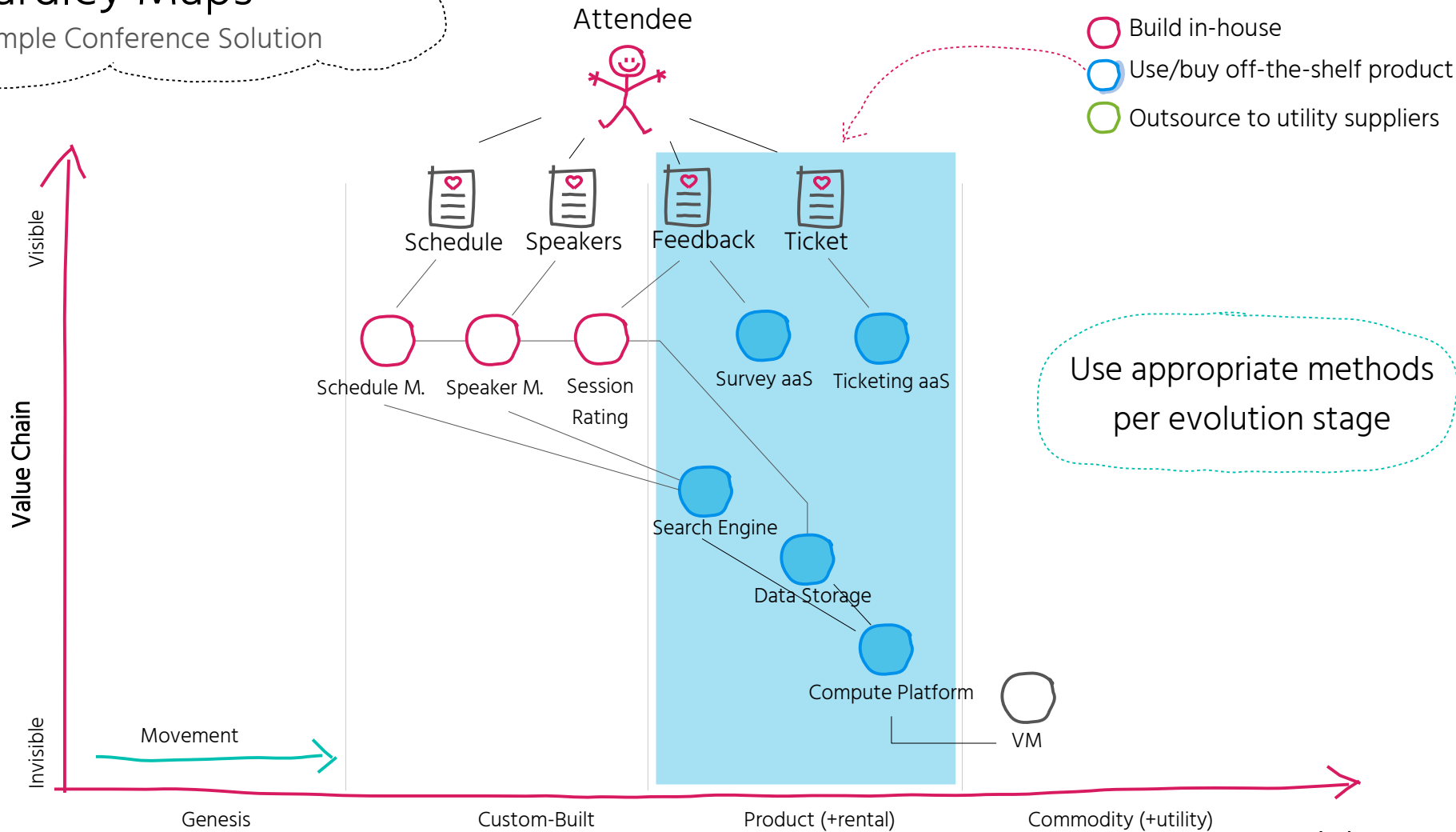
Wardley Maps

Example Conference Solution



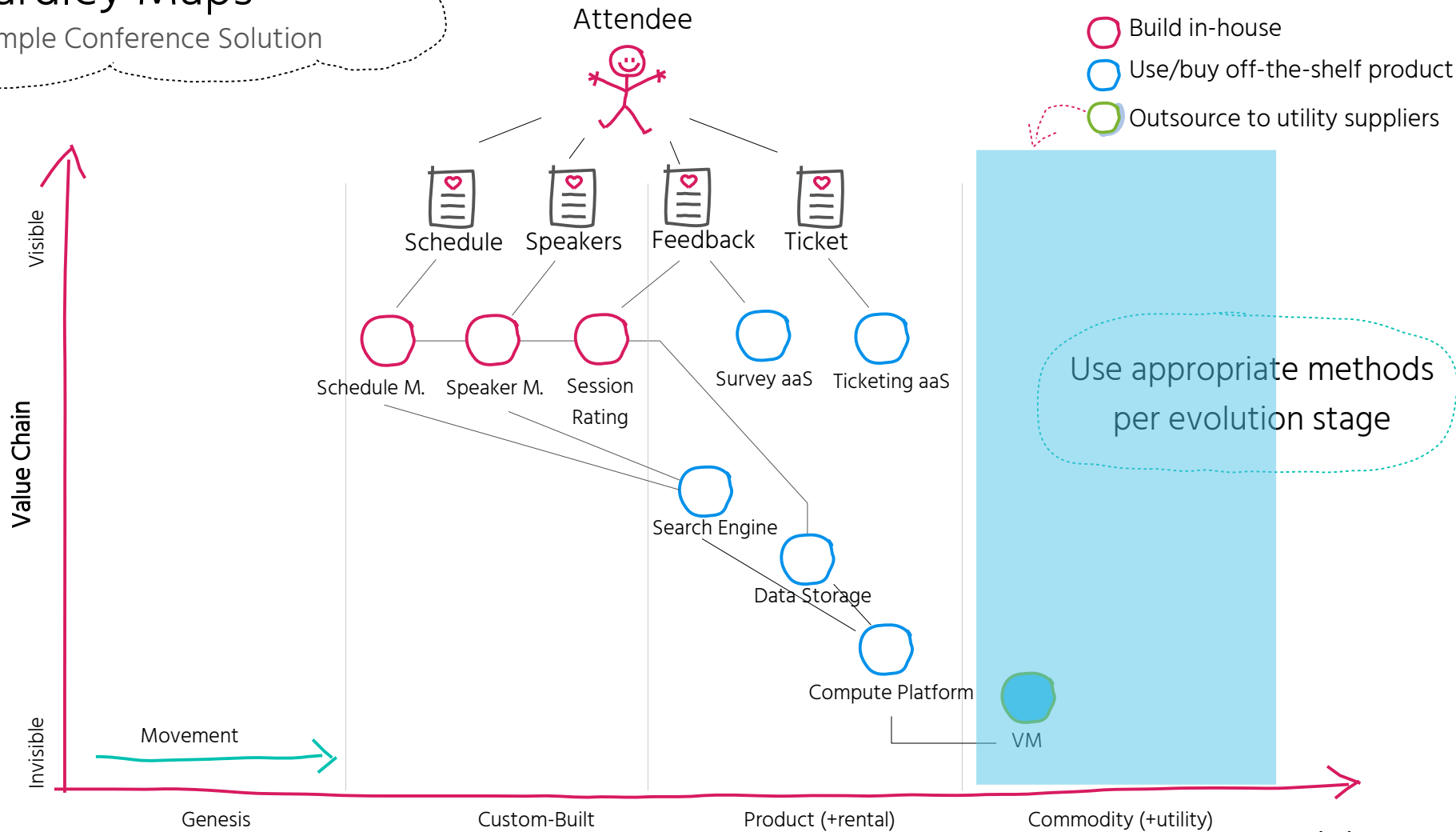
Wardley Maps

Example Conference Solution



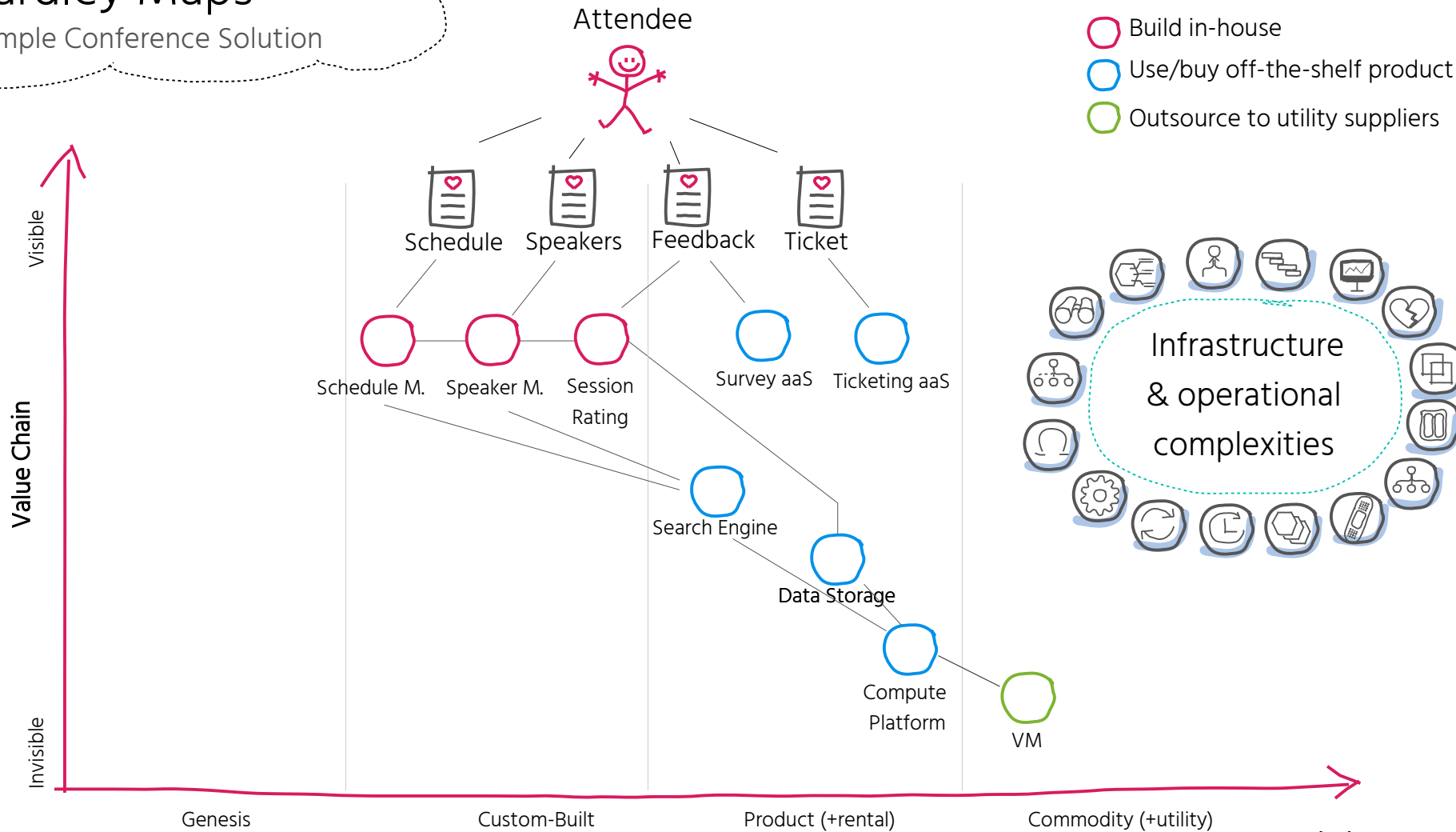
Wardley Maps

Example Conference Solution



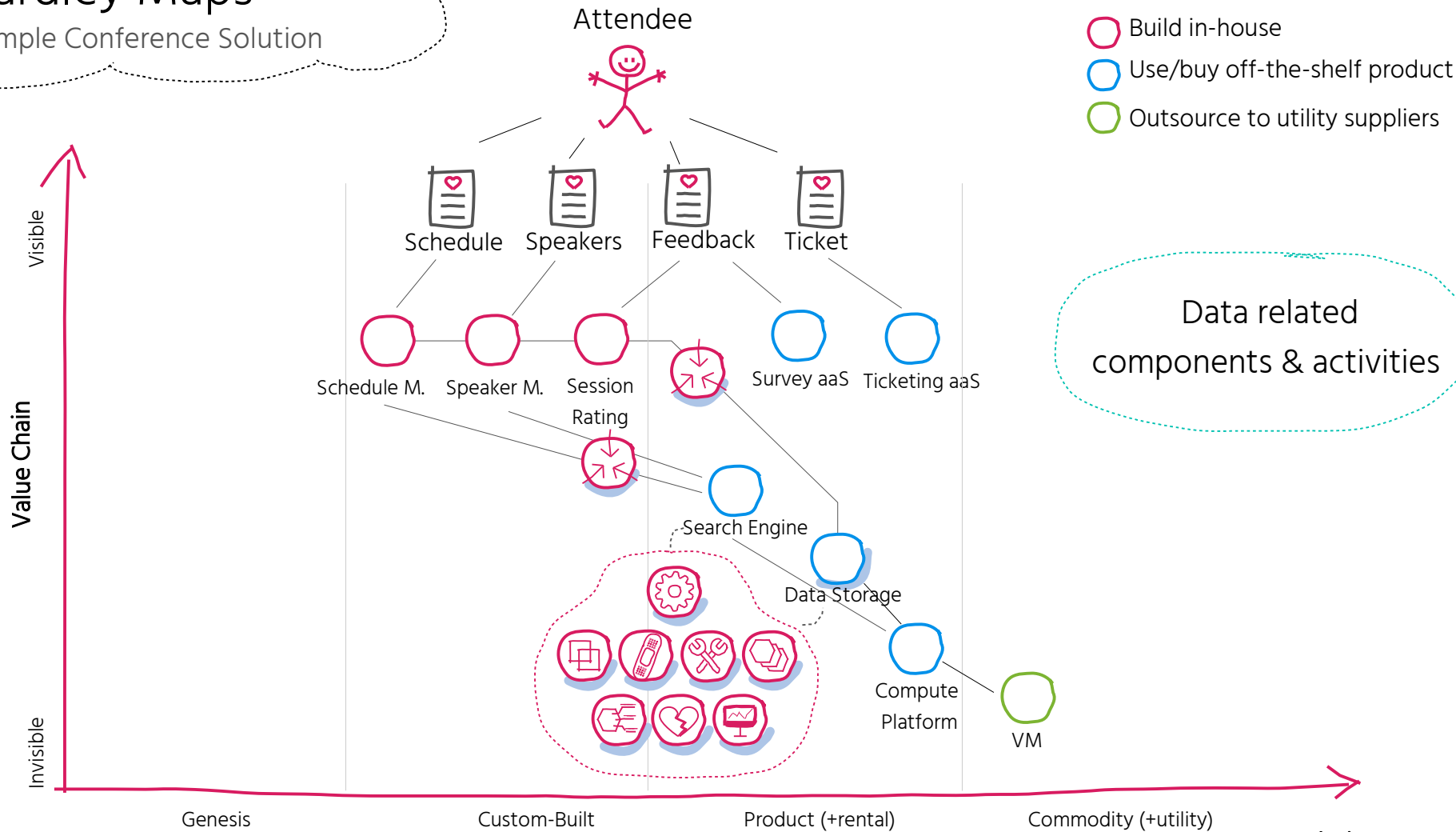
Wardley Maps

Example Conference Solution



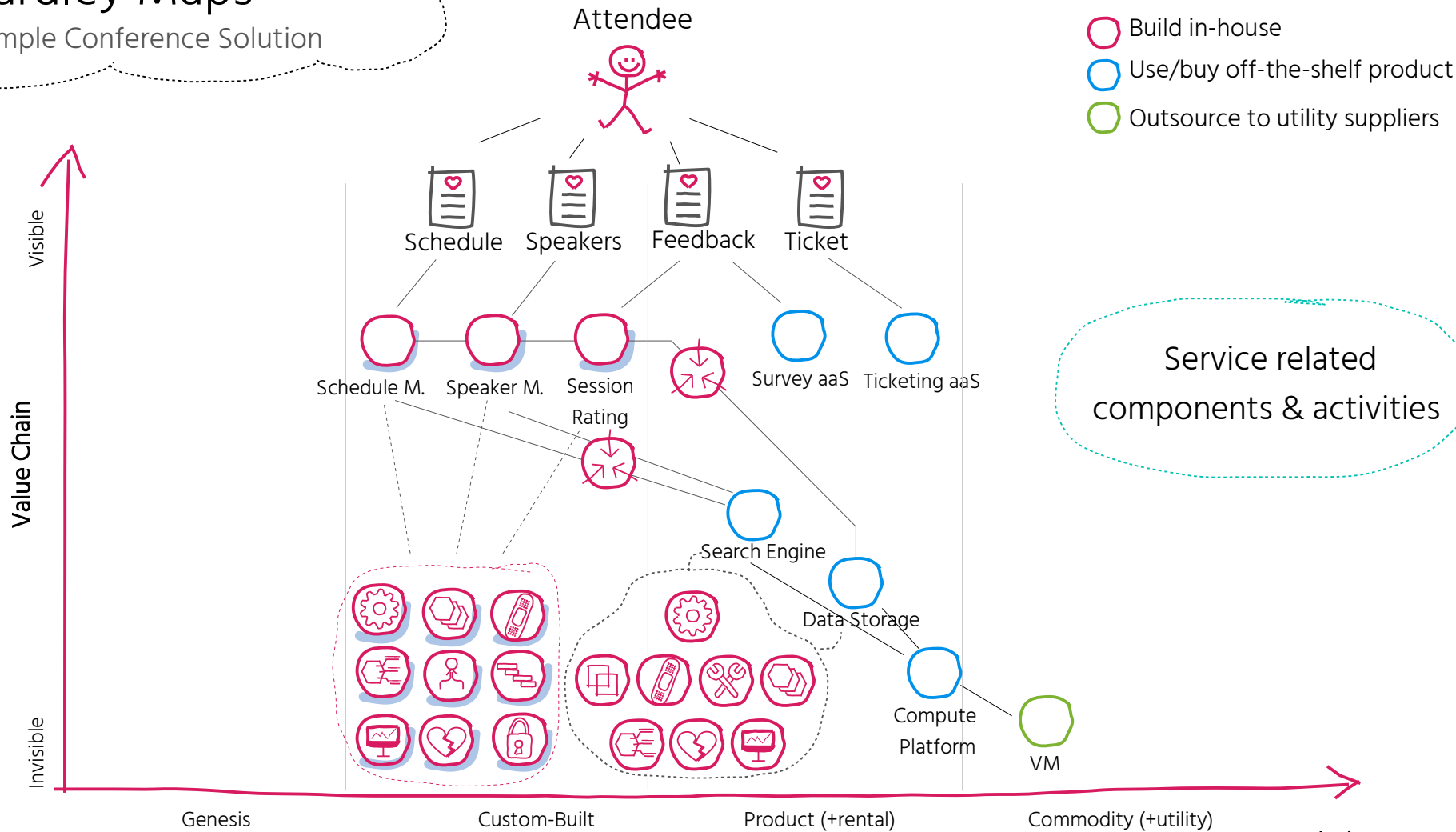
Wardley Maps

Example Conference Solution



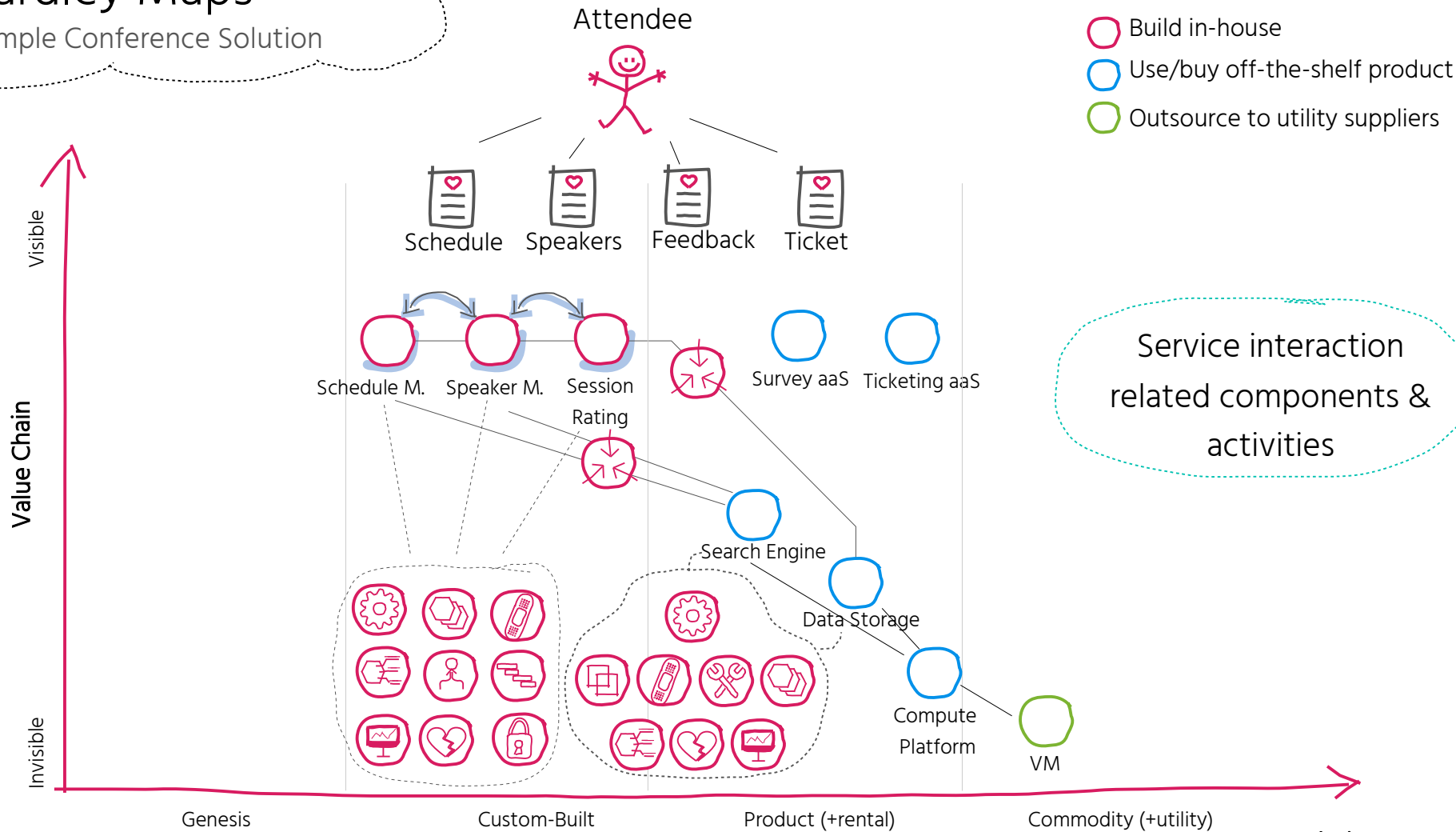
Wardley Maps

Example Conference Solution

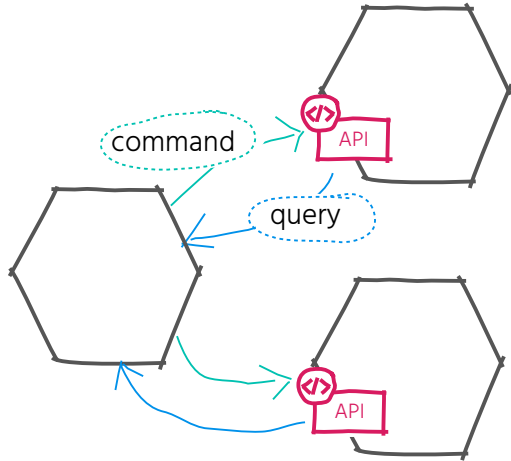


Wardley Maps

Example Conference Solution

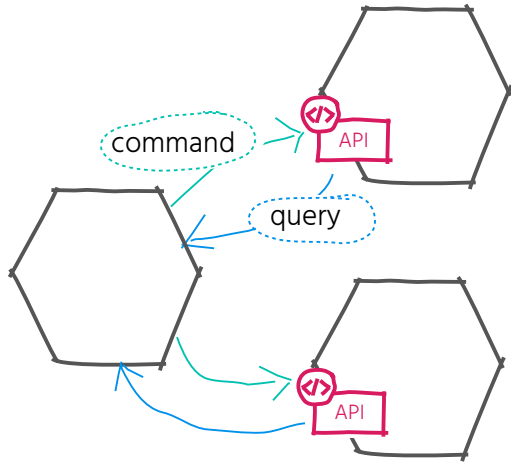


Service Interactions

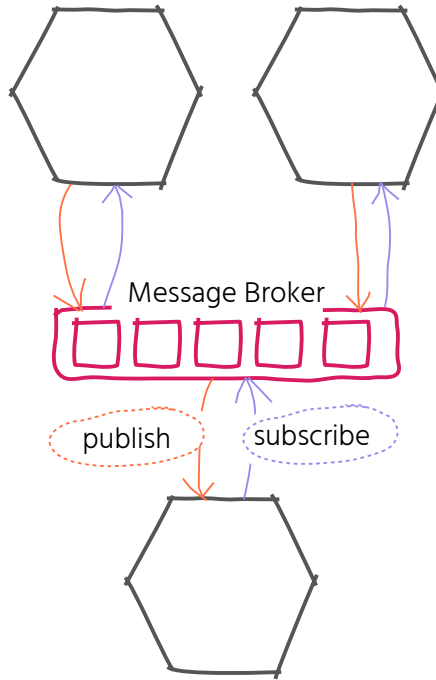


Request-Driven

Service Interactions

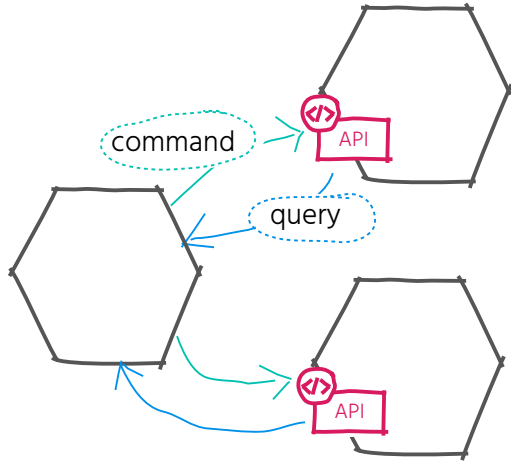


Request-Driven

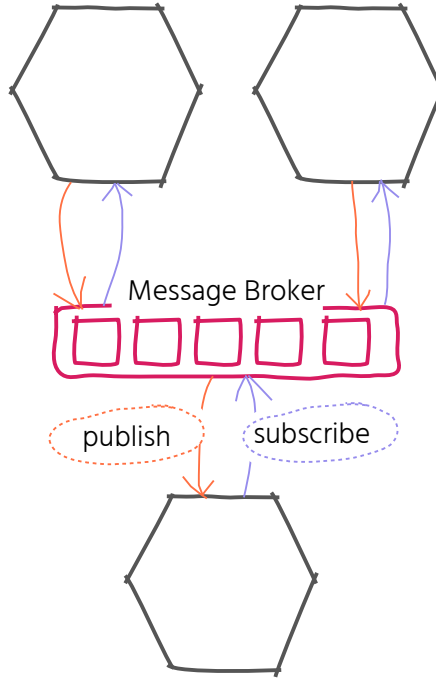


Event-Driven

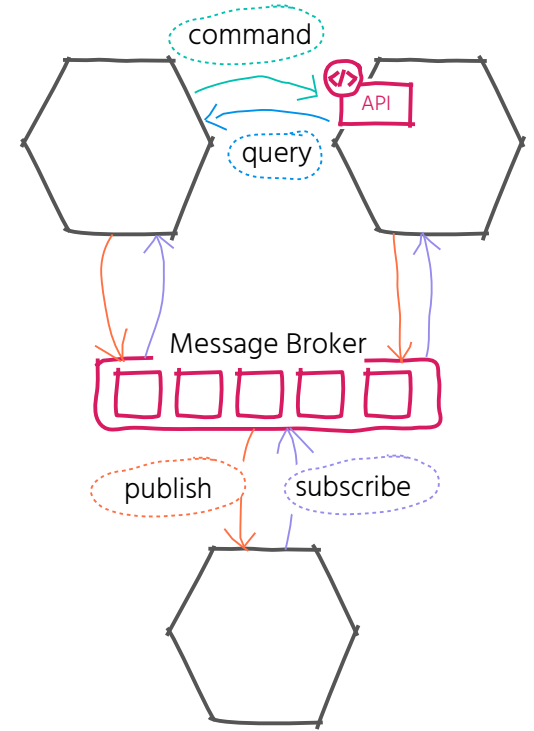
Service Interactions



Request-Driven



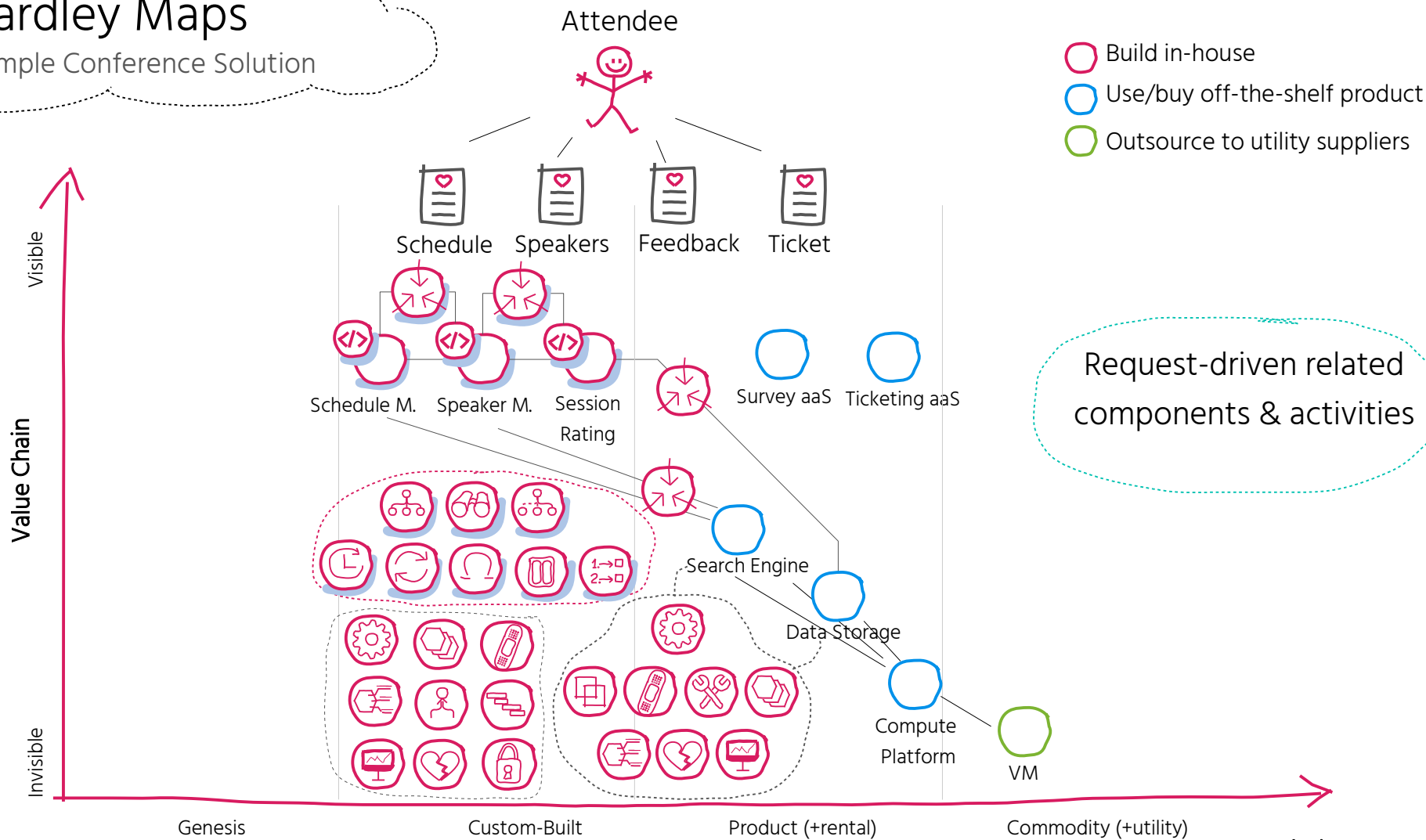
Event-Driven



Hybrid

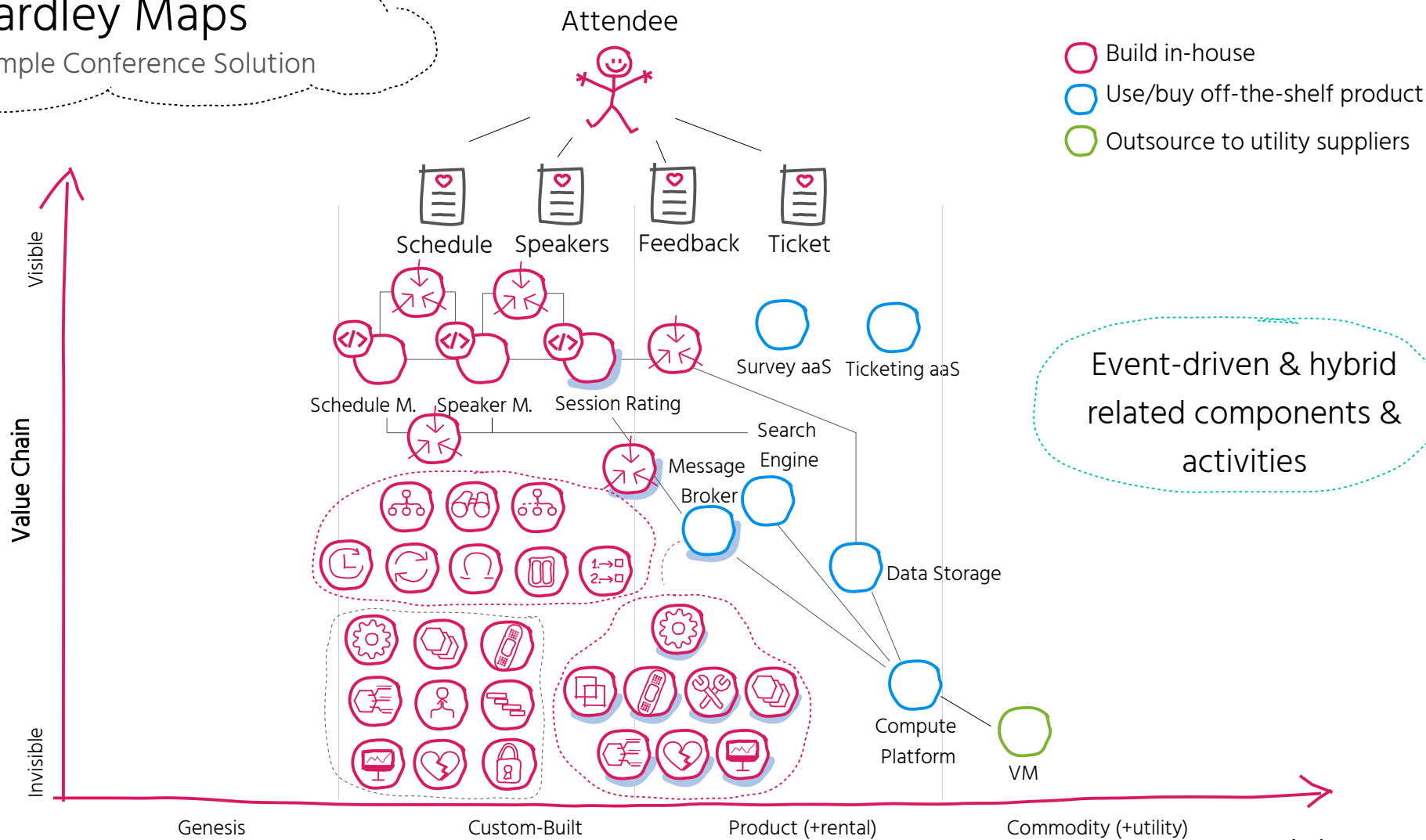
Wardley Maps

Example Conference Solution



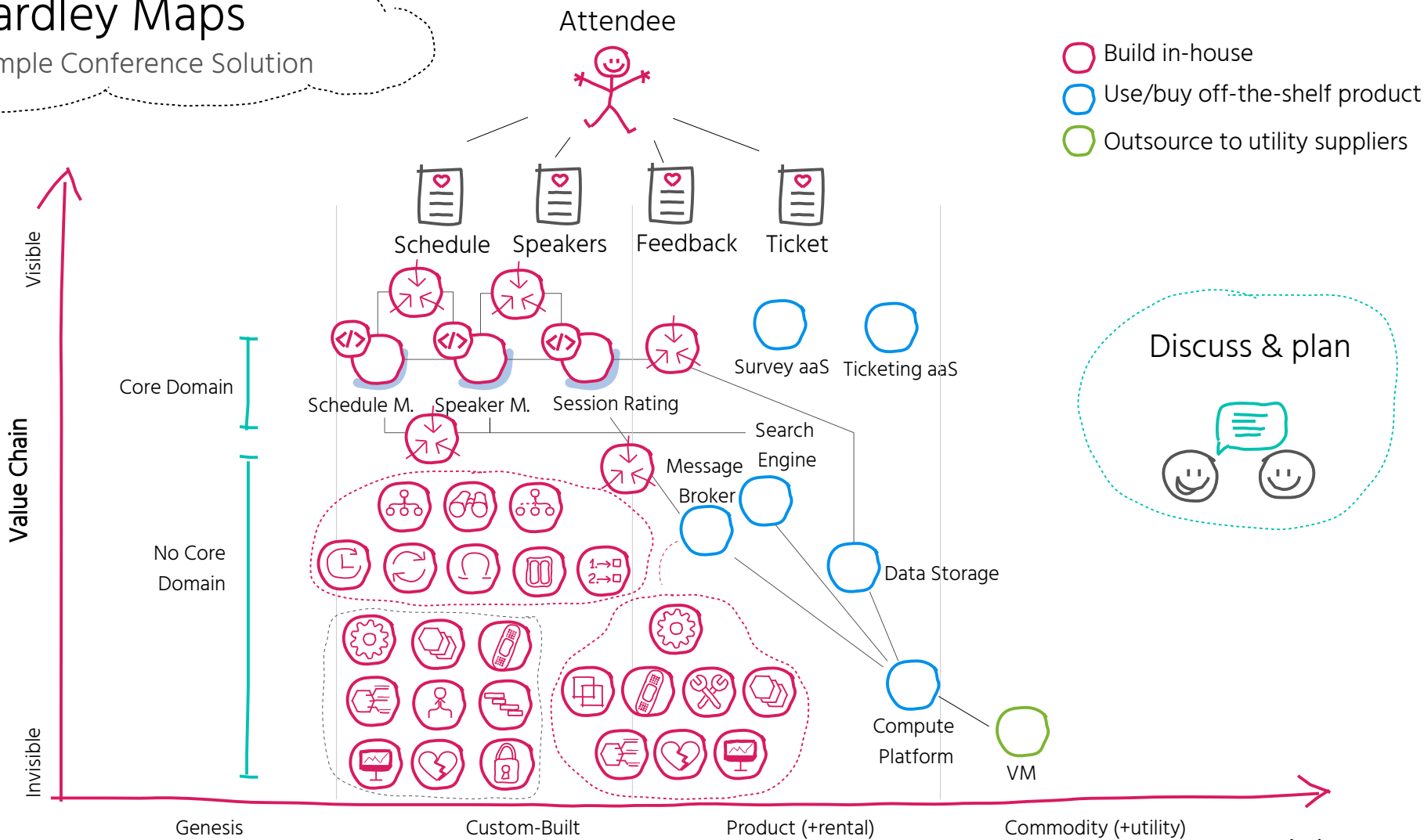
Wardley Maps

Example Conference Solution



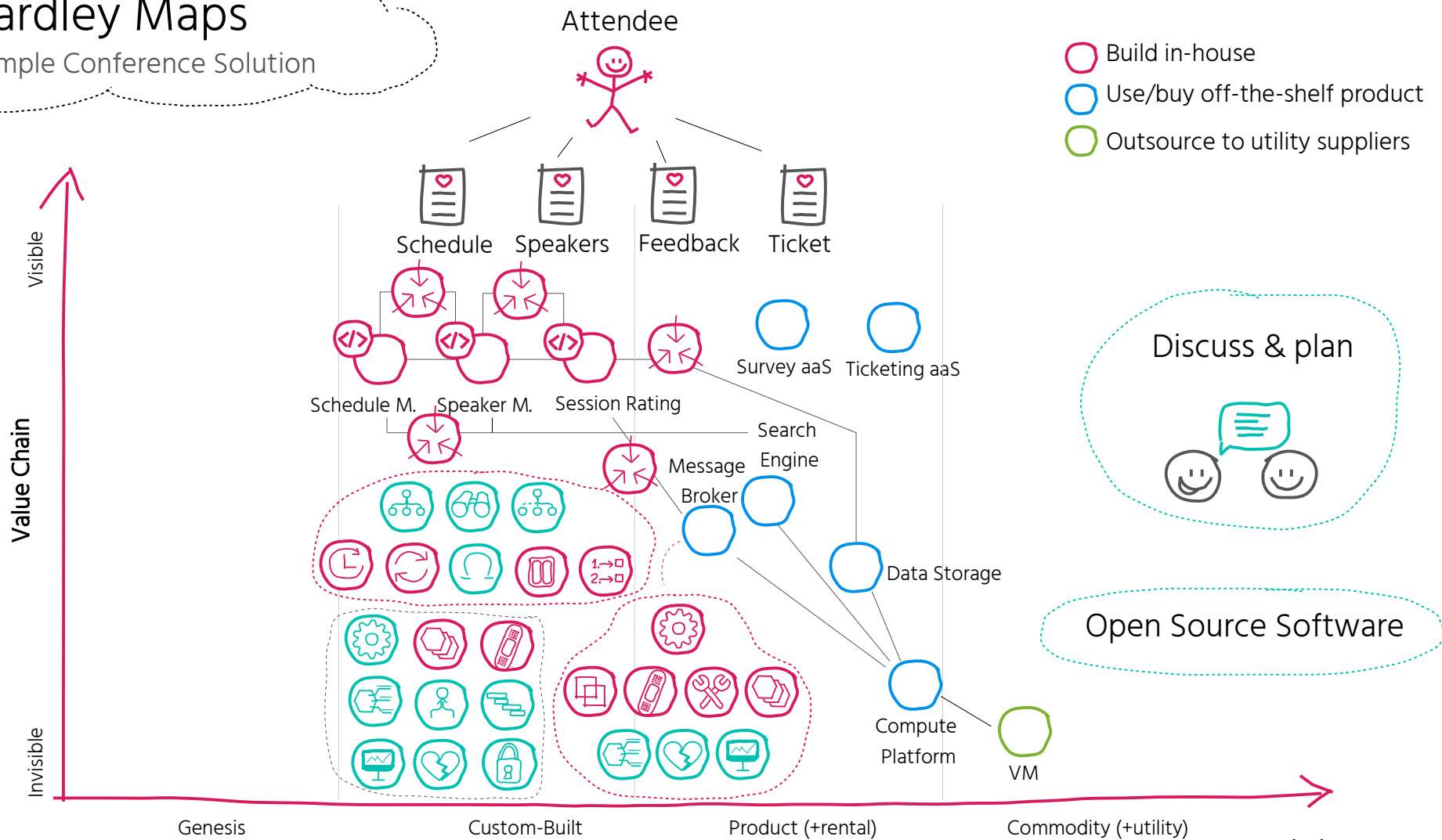
Wardley Maps

Example Conference Solution



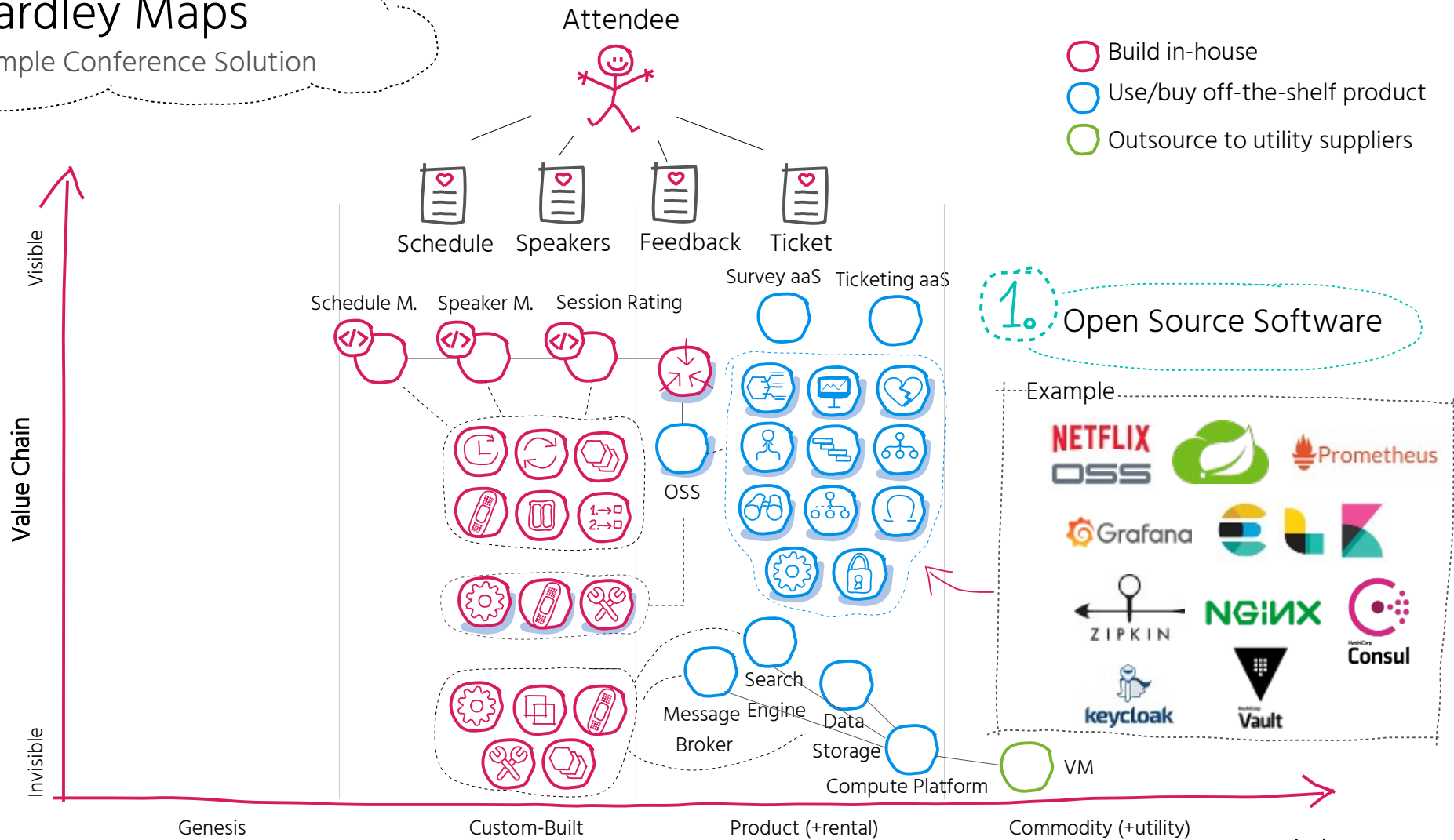
Wardley Maps

Example Conference Solution



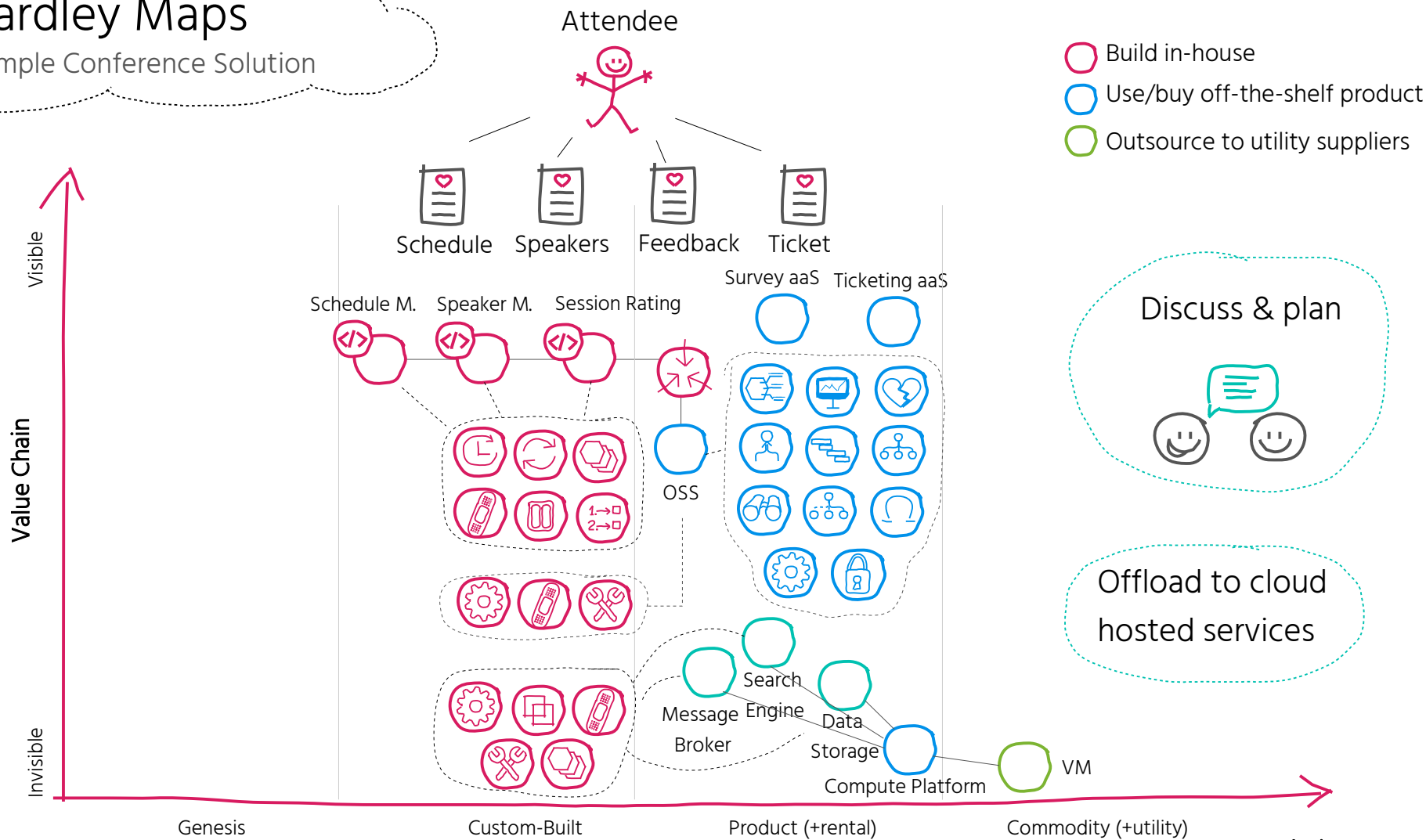
Wardley Maps

Example Conference Solution



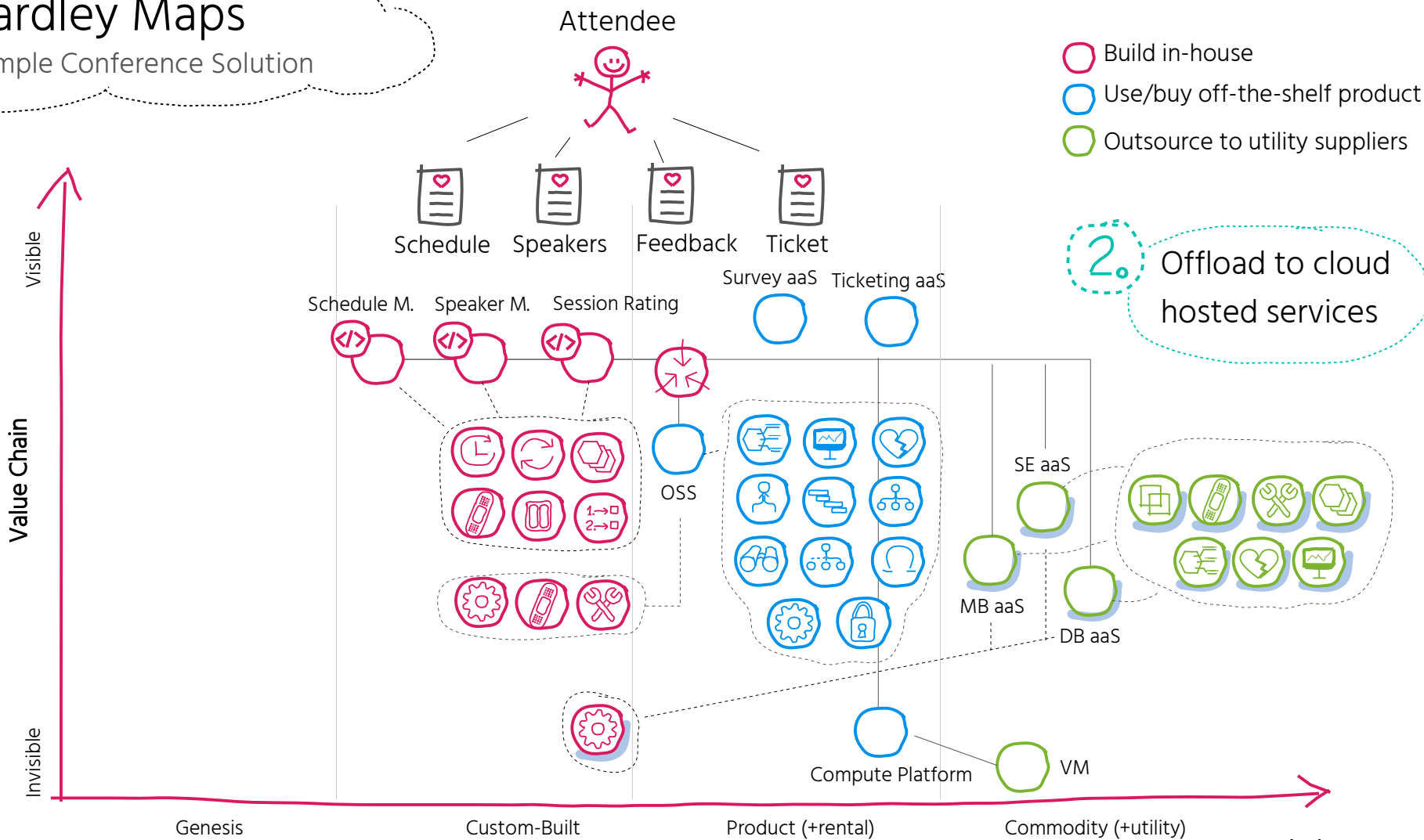
Wardley Maps

Example Conference Solution



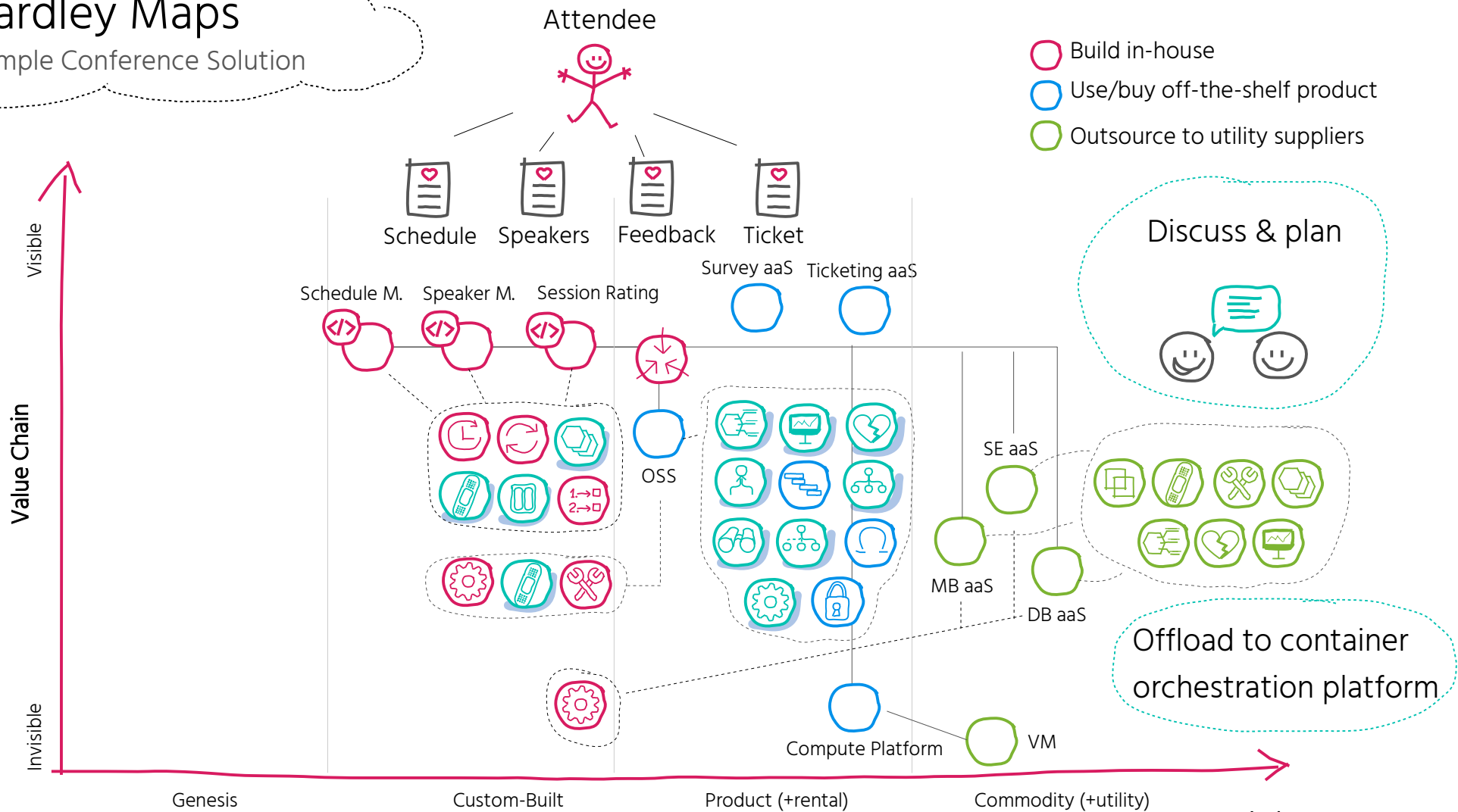
Wardley Maps

Example Conference Solution



Wardley Maps

Example Conference Solution



Container Orchestration



Recovery



Service Discovery



Load Balancer



Config-Mngmt.



API Gateway



μService



μService



Runtime



Runtime



Container



Container



Scaling



Monitoring



Log Aggregation



Health Checks

Orchestration



O/S

O/S



Virtualization

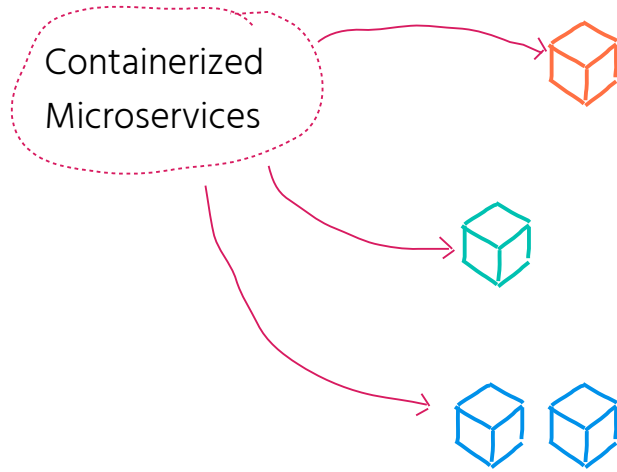


Hardware

Managed by YOU
Managed by Platform

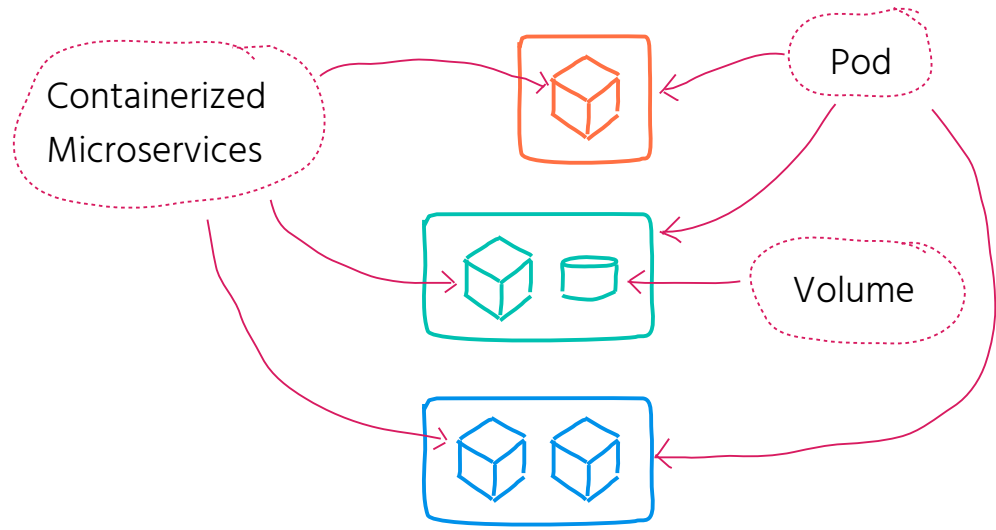
Container Orchestration

Basic components of Kubernetes



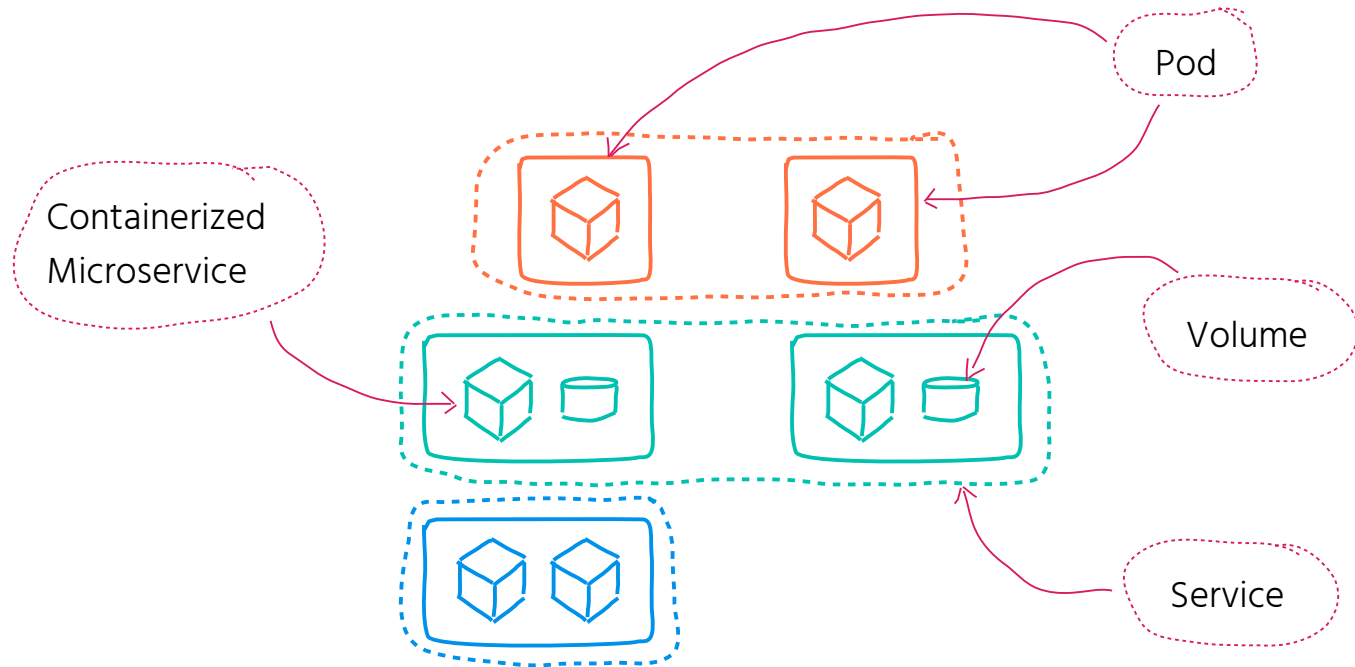
Container Orchestration

Basic components of Kubernetes



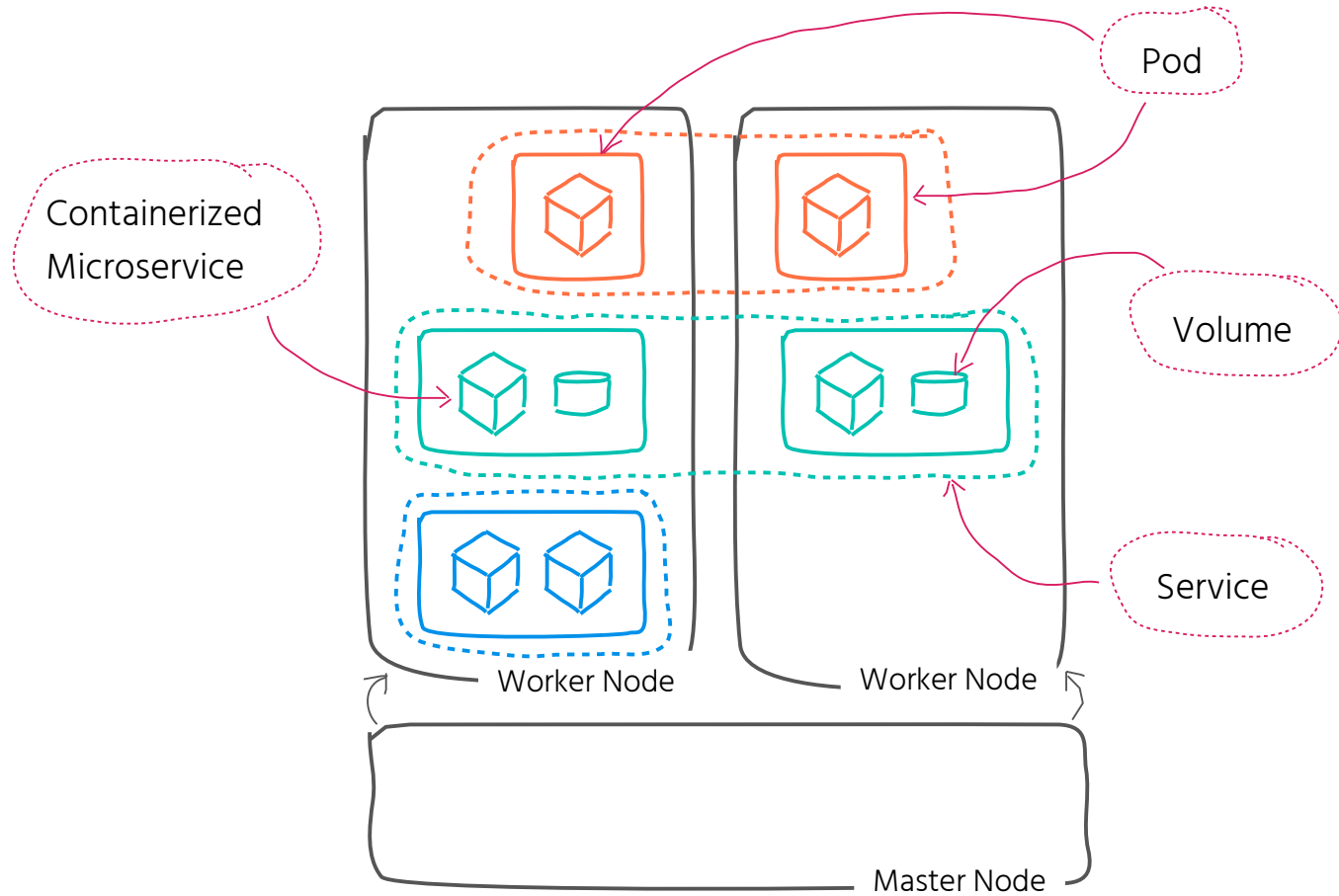
Container Orchestration

Basic components of Kubernetes



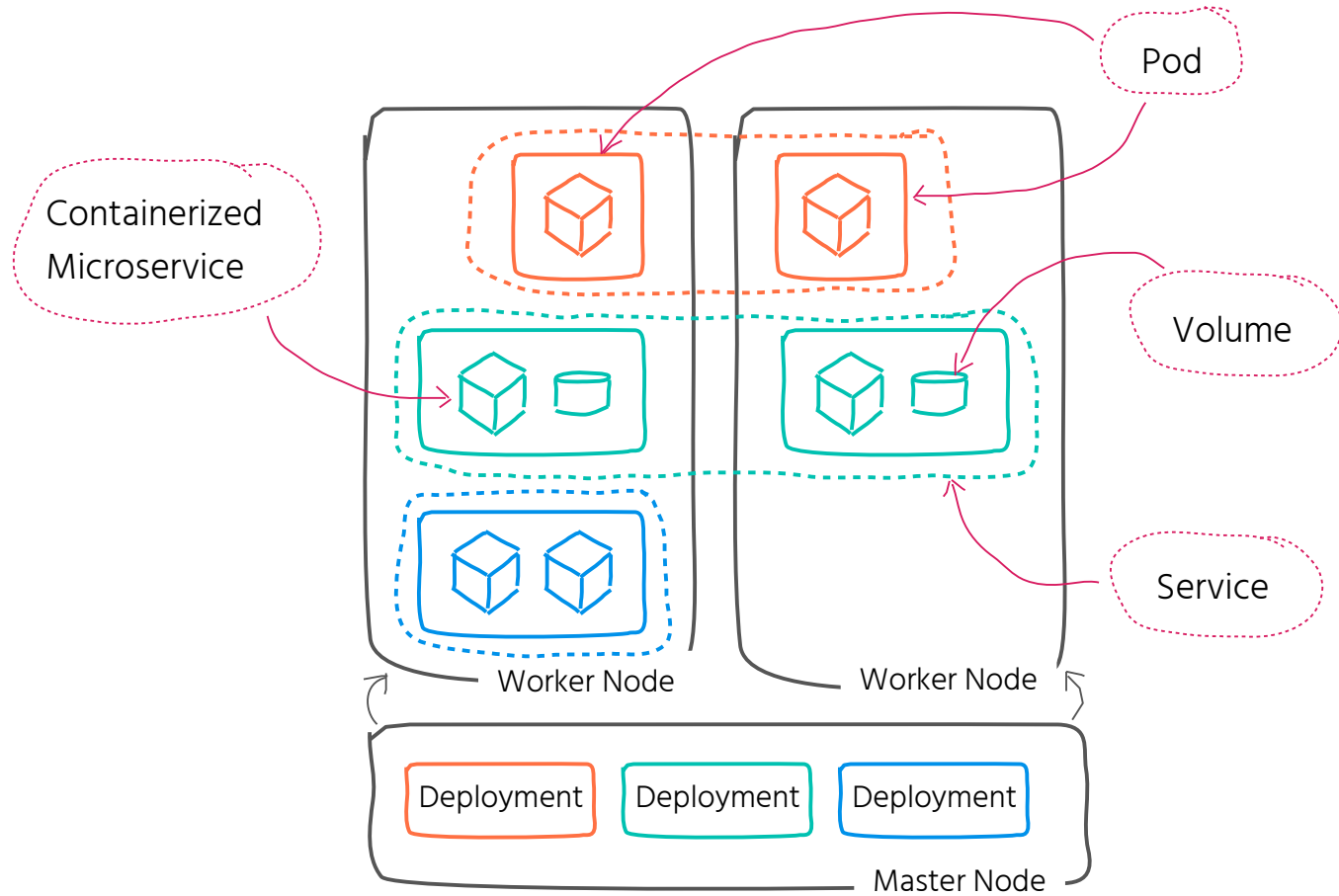
Container Orchestration

Basic components of Kubernetes



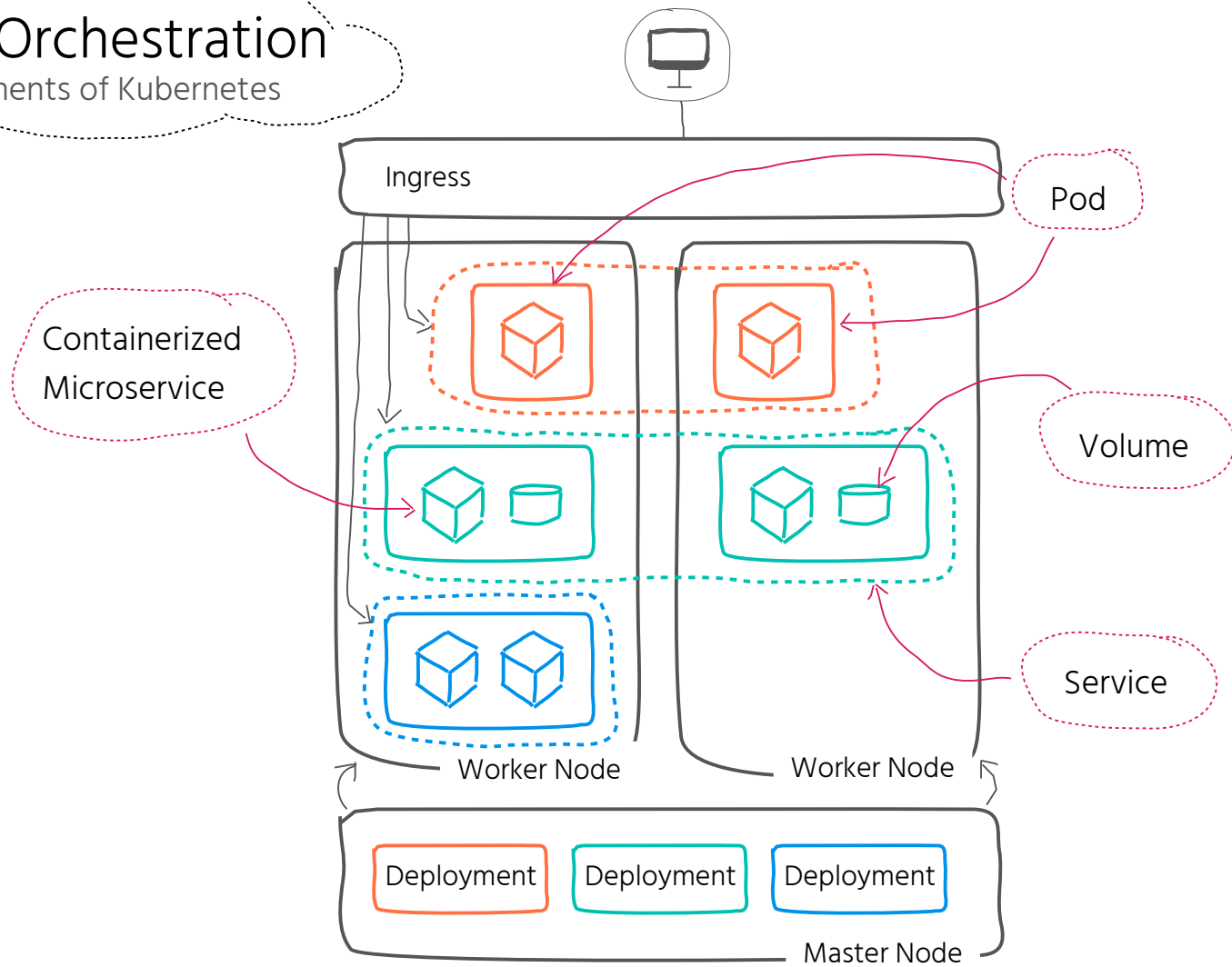
Container Orchestration

Basic components of Kubernetes



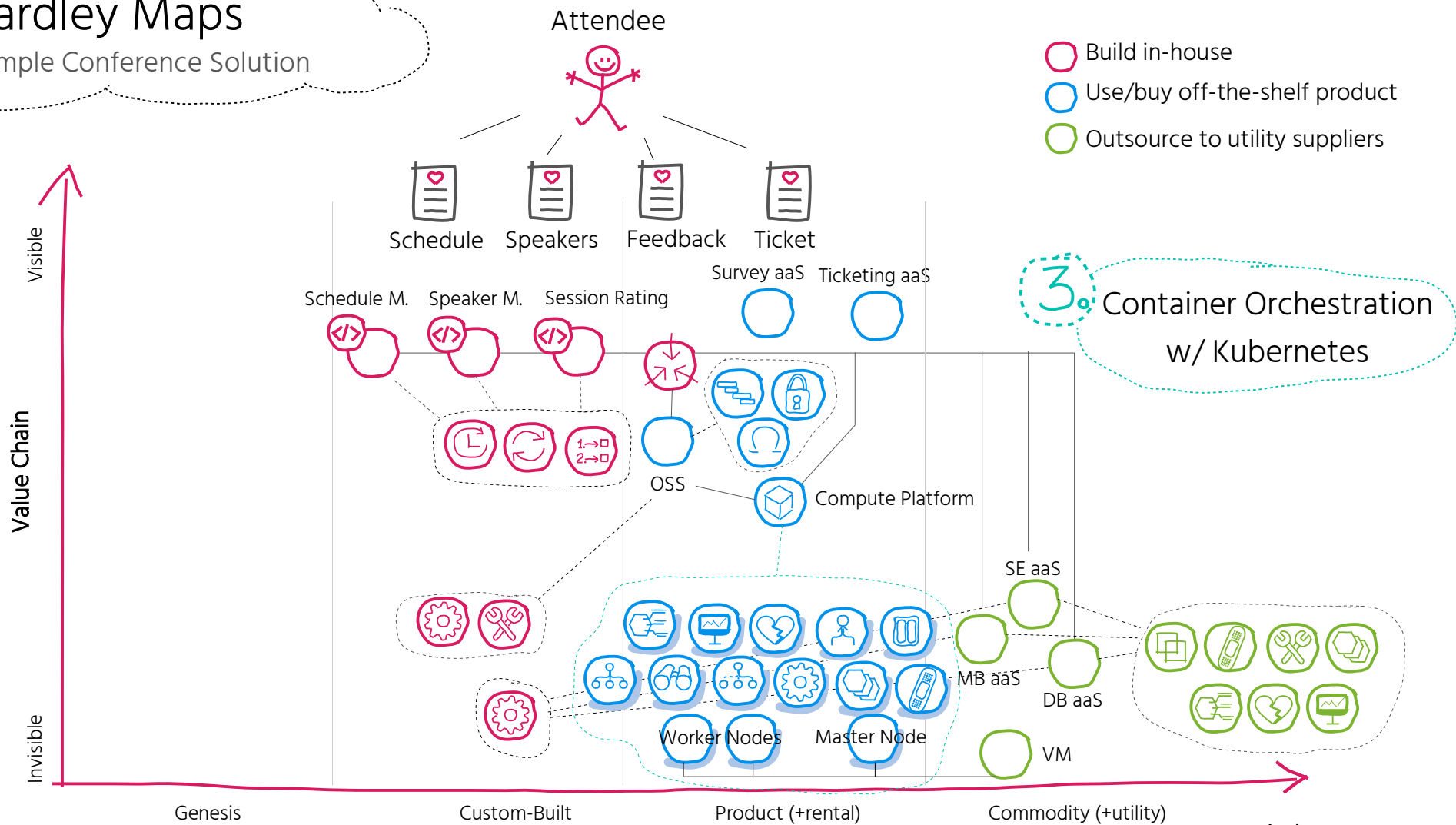
Container Orchestration

Basic components of Kubernetes



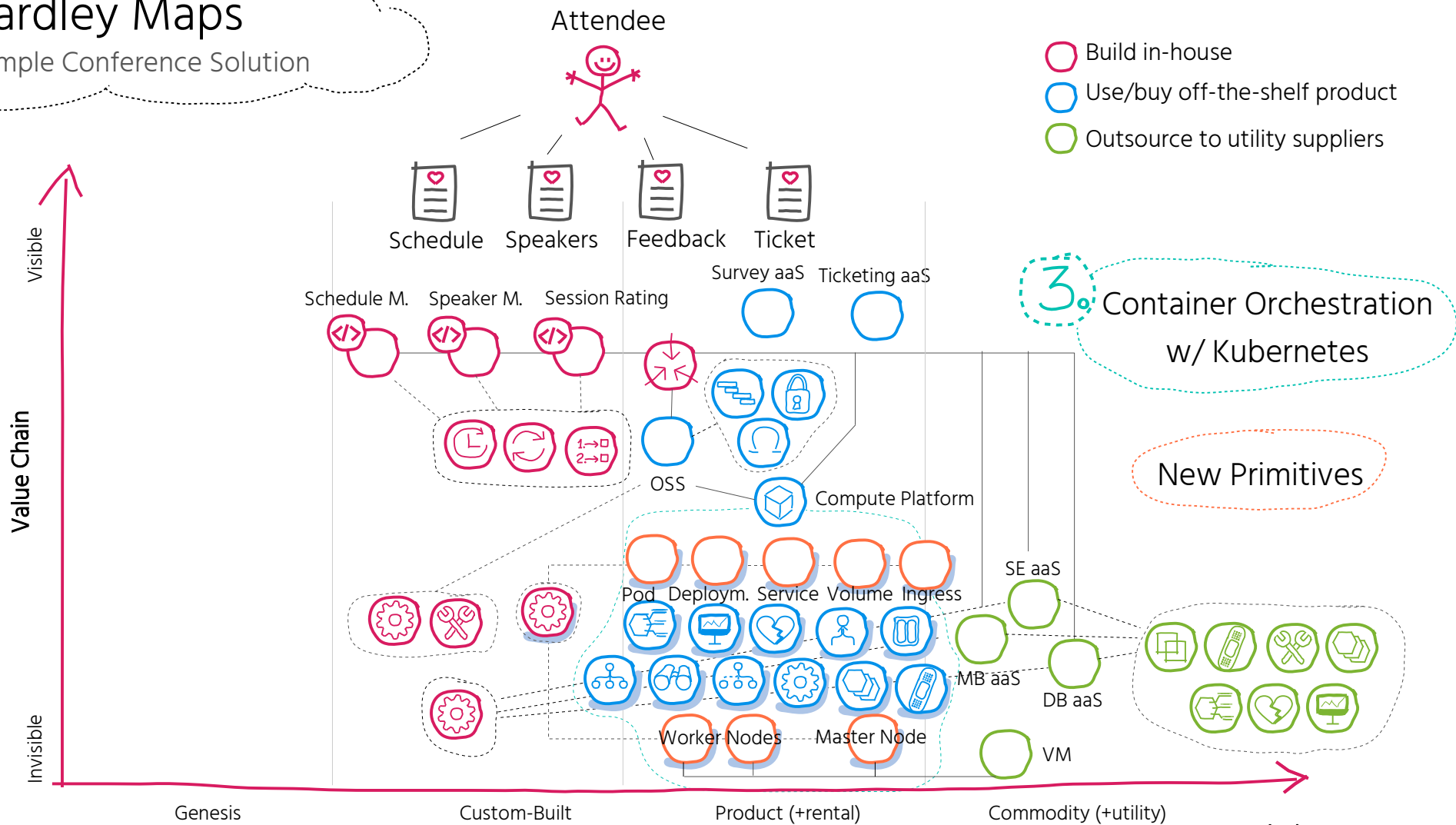
Wardley Maps

Example Conference Solution



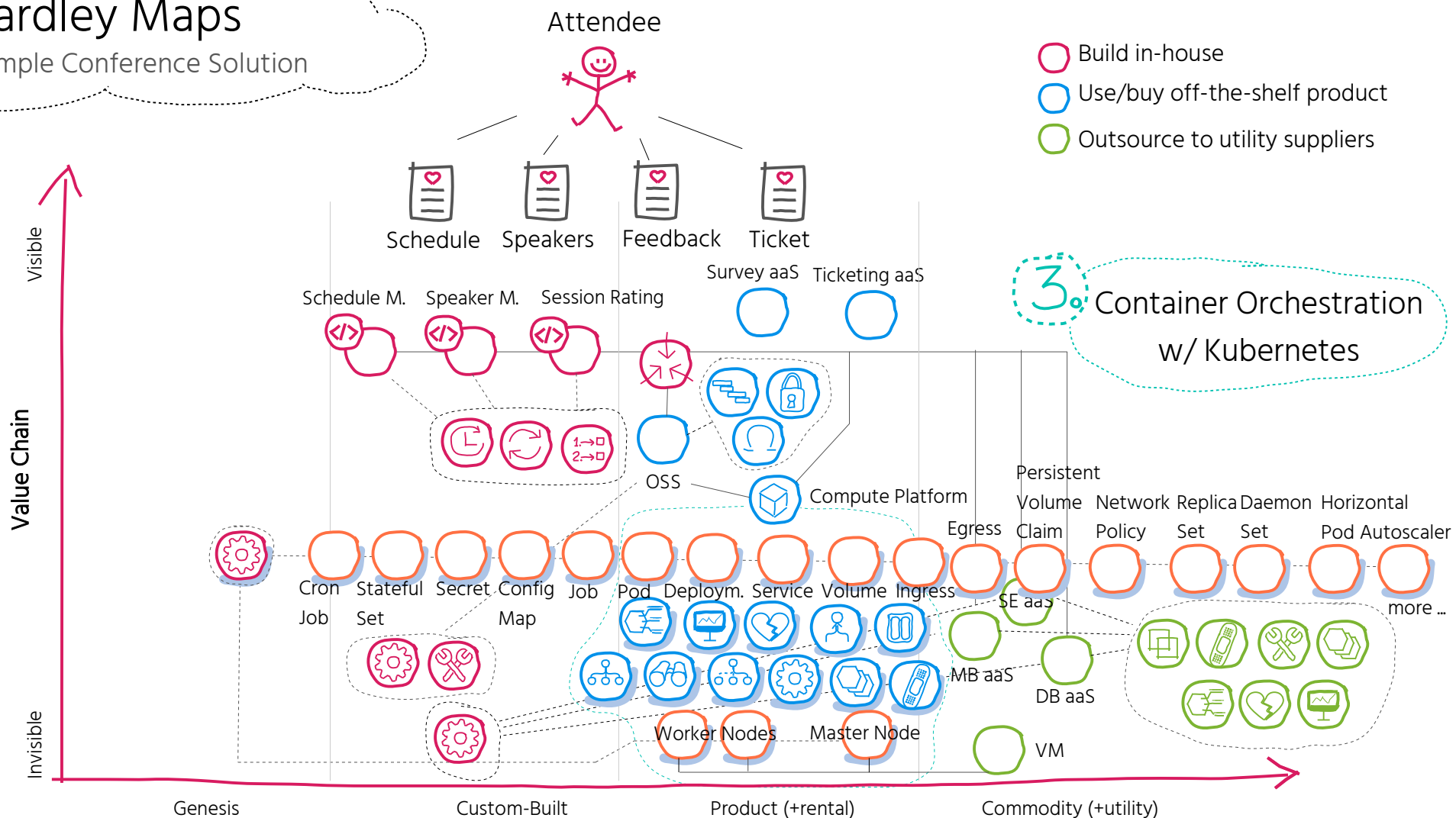
Wardley Maps

Example Conference Solution



Wardley Maps

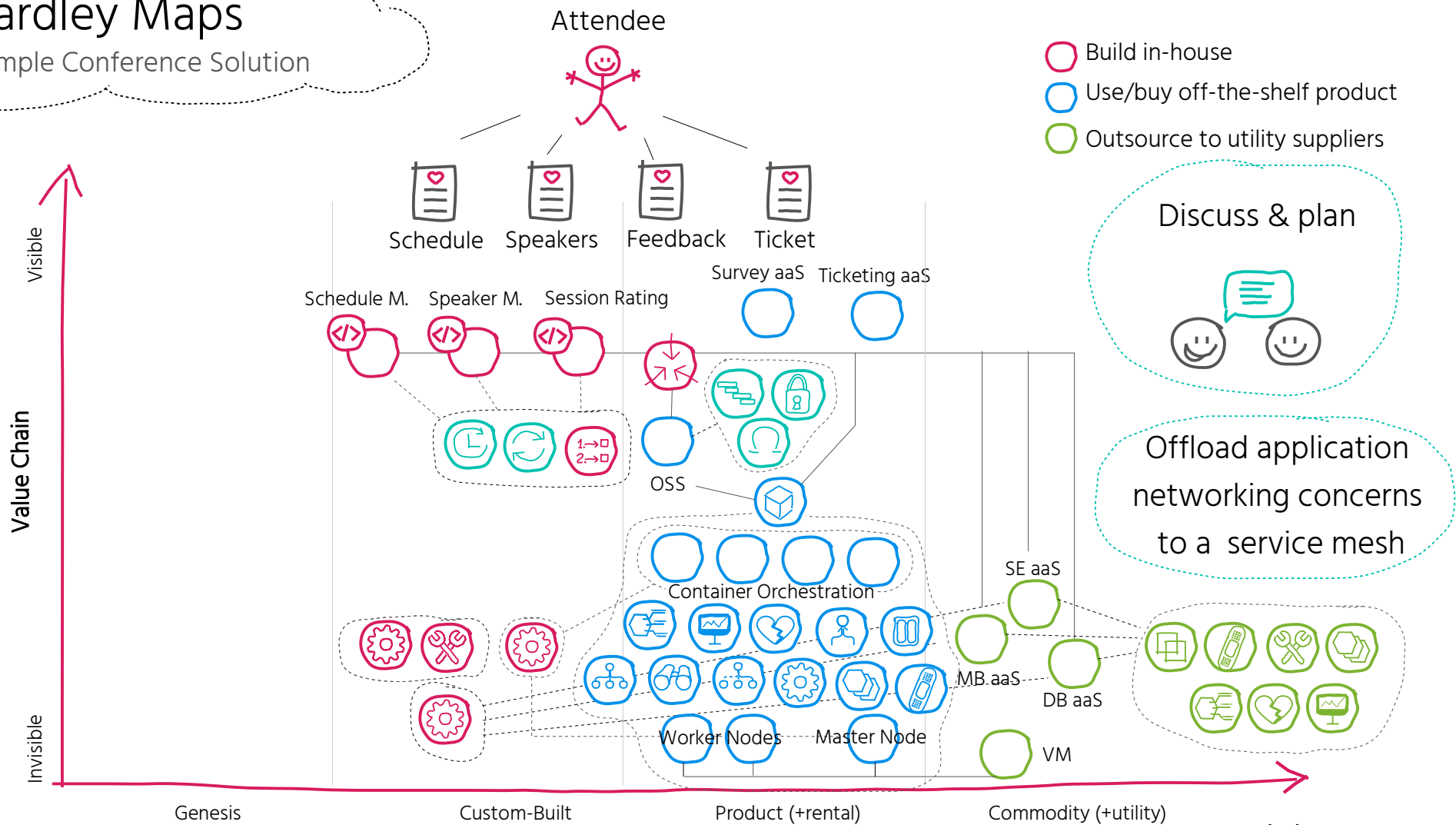
Example Conference Solution



Evolution

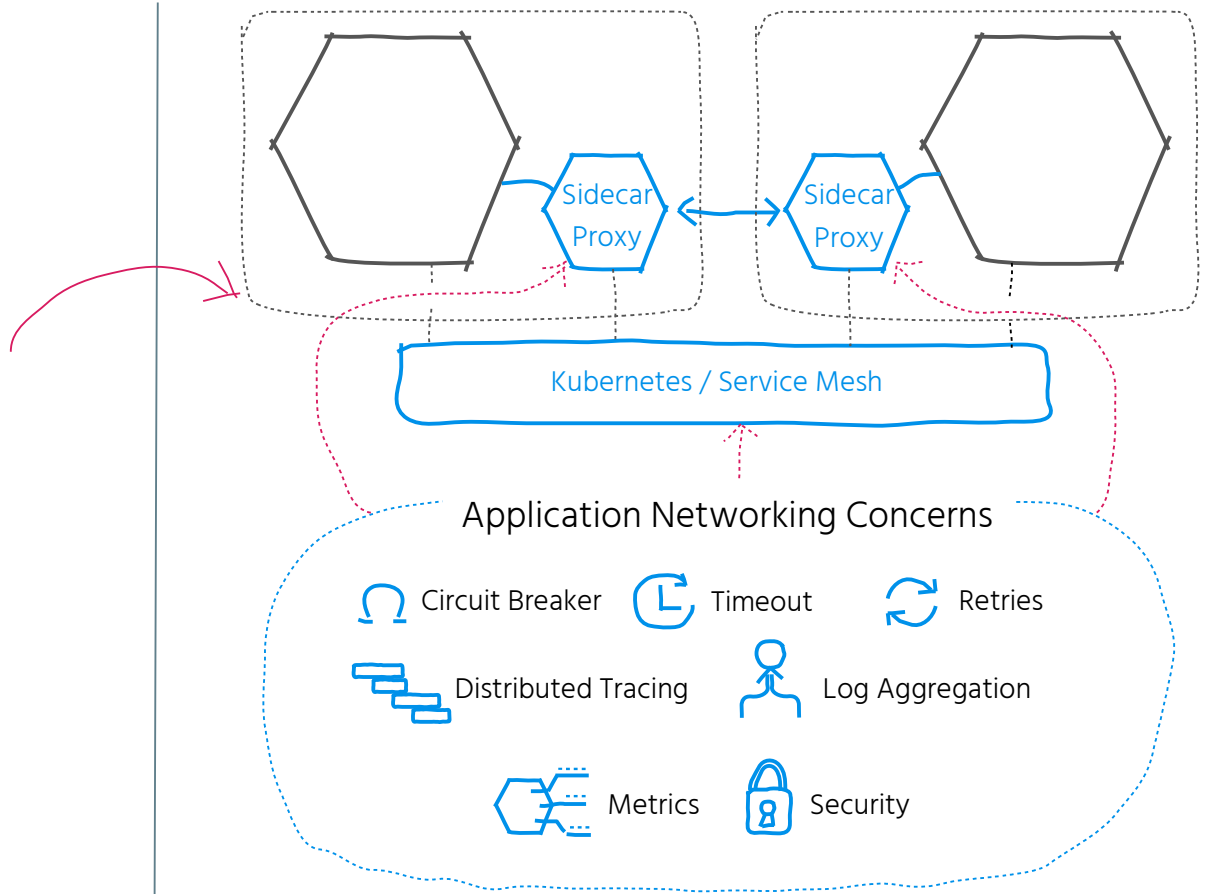
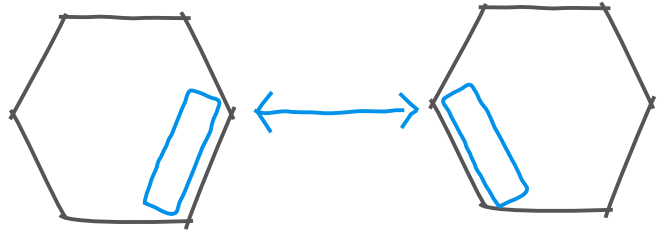
Wardley Maps

Example Conference Solution



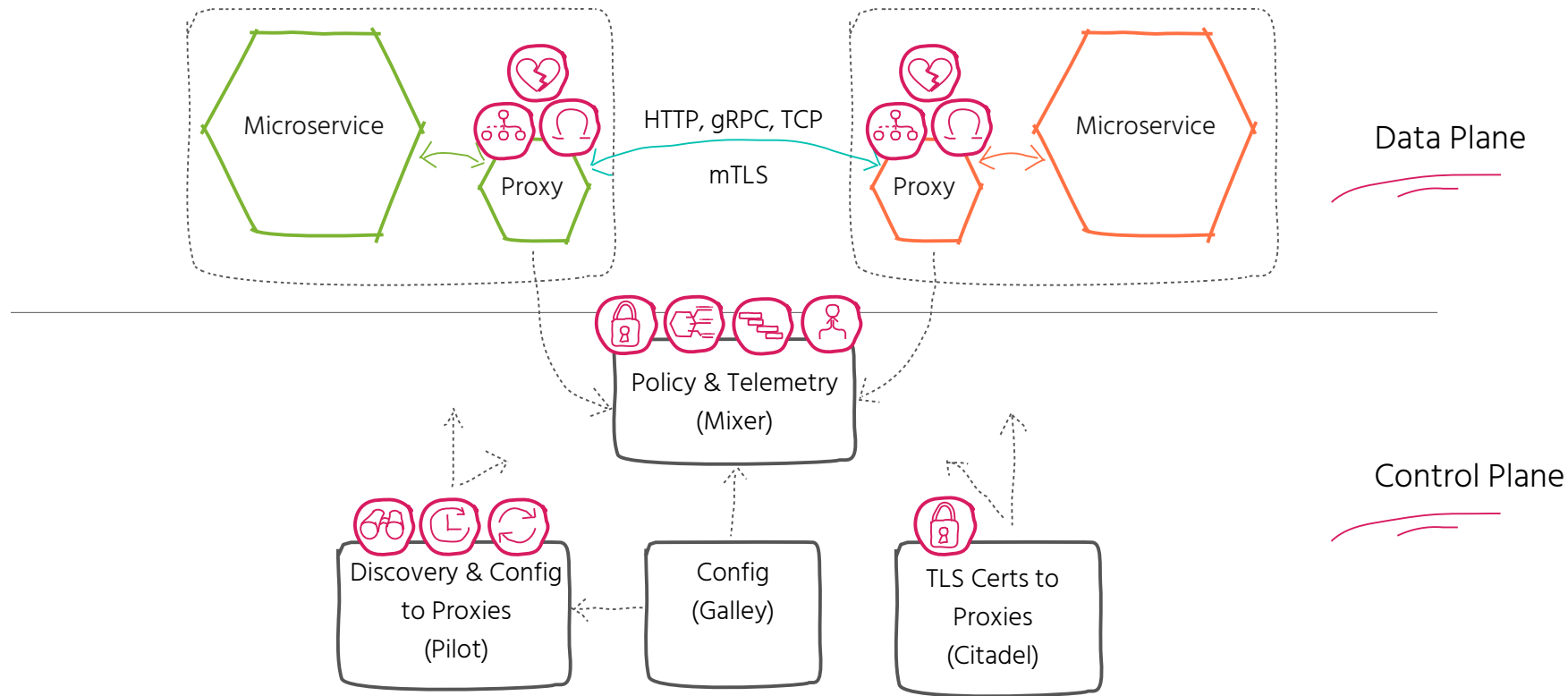
Separation Of Concerns

Service Mesh



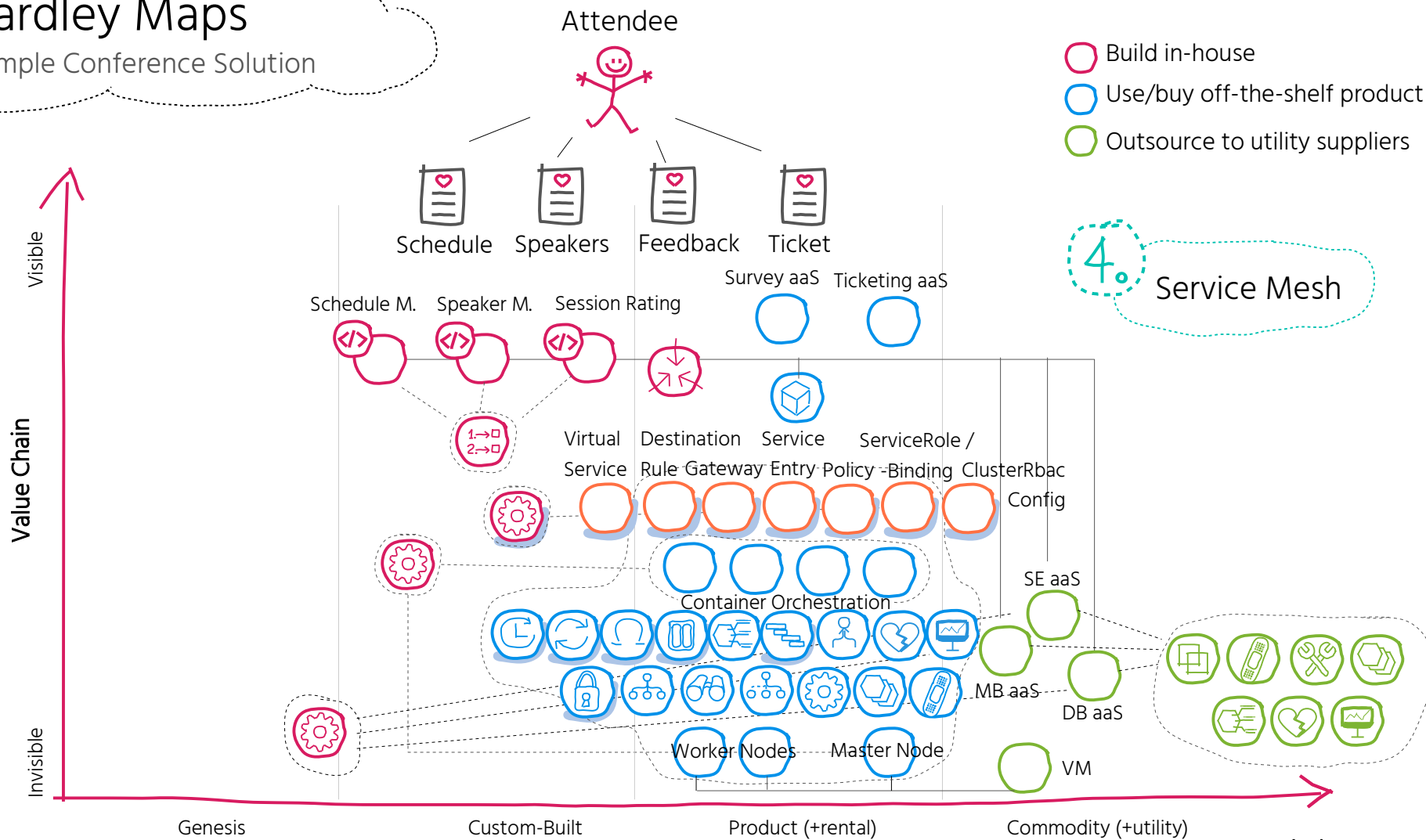
Service Mesh

Components of Istio



Wardley Maps

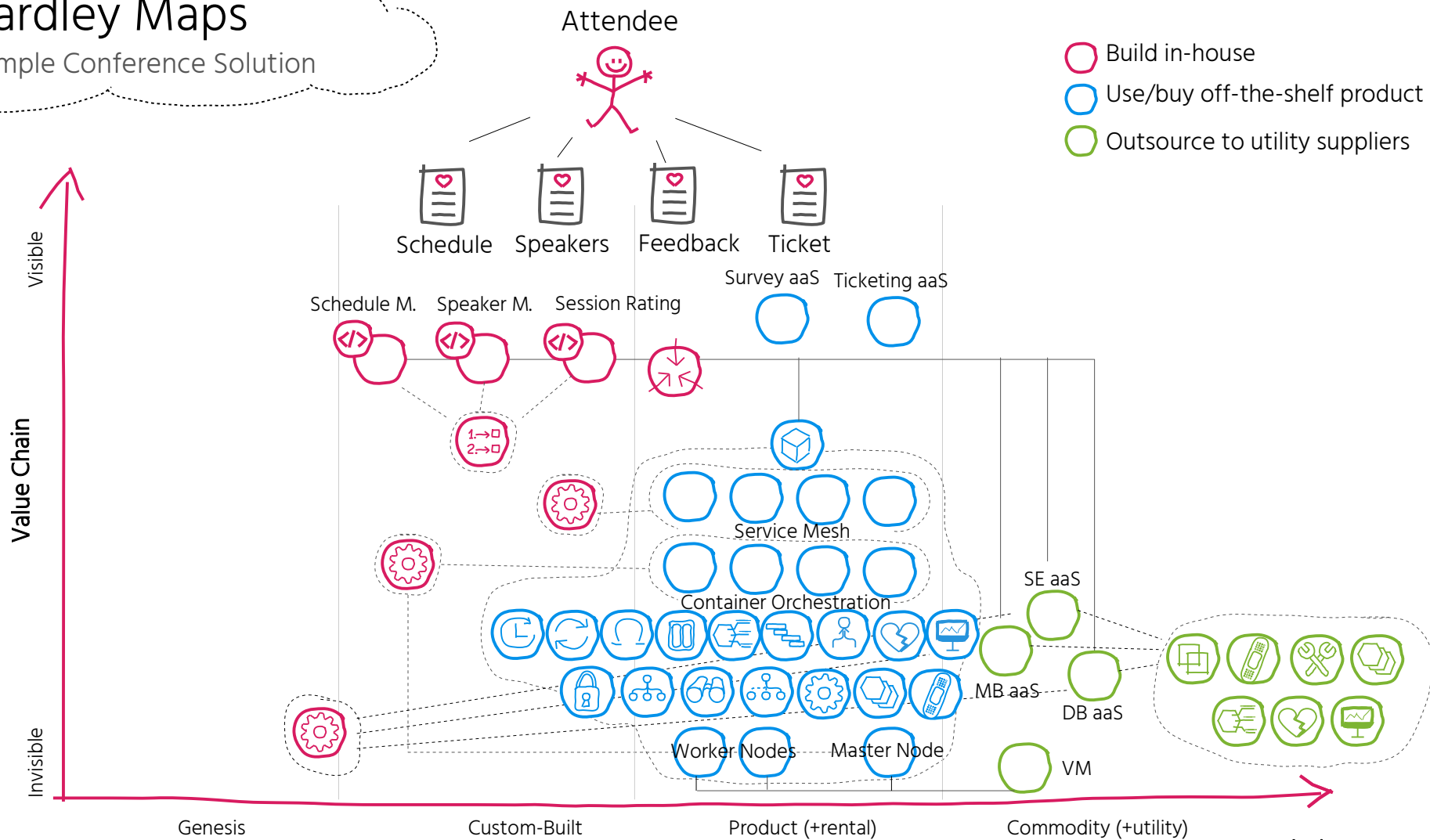
Example Conference Solution



Evolution

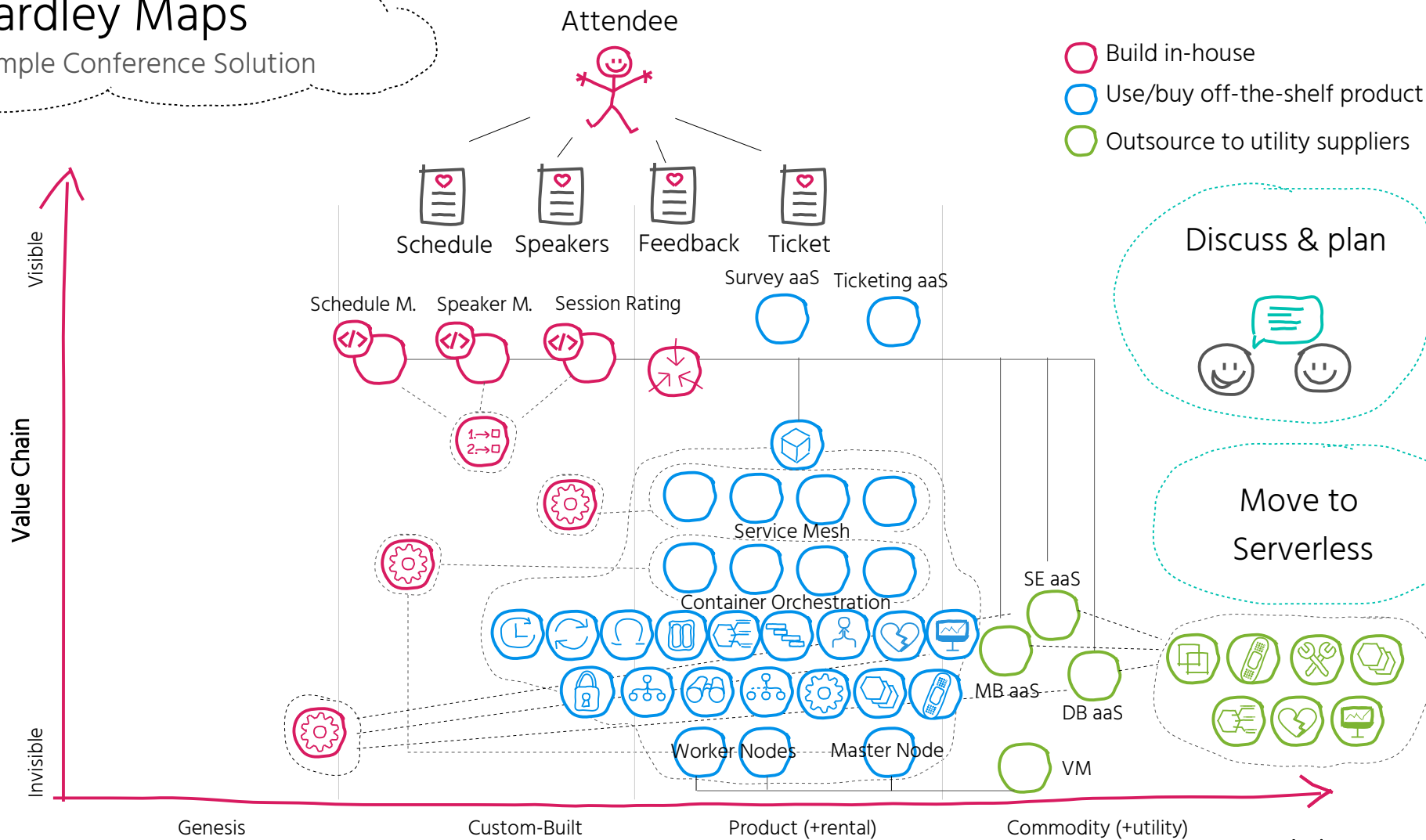
Wardley Maps

Example Conference Solution



Wardley Maps

Example Conference Solution



Serverless w/ FaaS

Characteristics

Event-Driven Workflow

Ephemeral Function



Event



Function

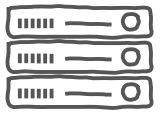


Auto-Scaling



Pay-per-Execution

Fully Managed By Third Party



Hardware



Virtualization



O/S



Container



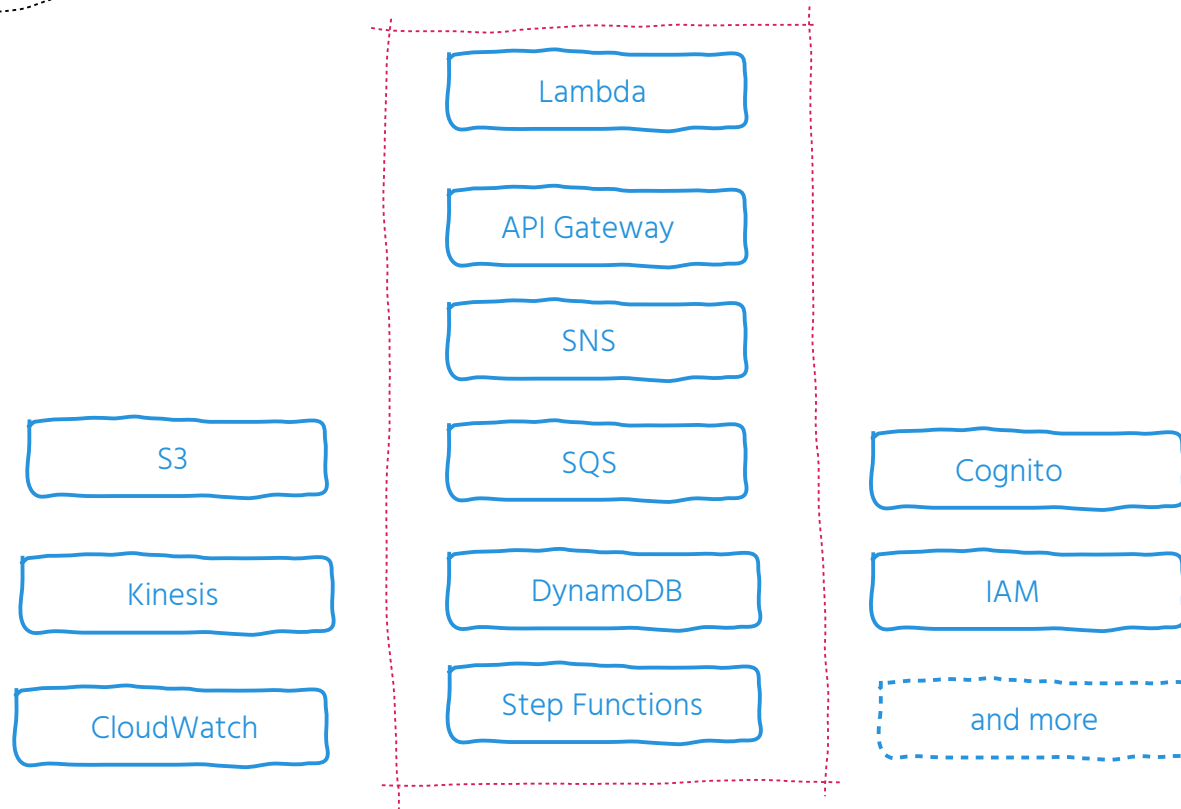
Runtime



Data Store

Serverless

AWS Building Blocks



Core AWS Serverless Building Blocks

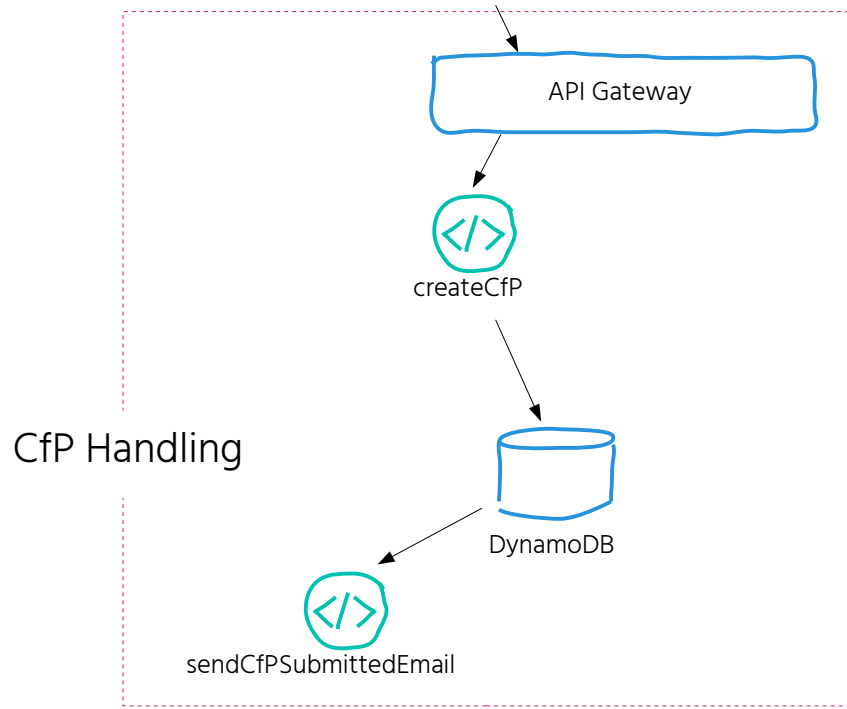
Serverless

Example Conference Solution

Speaker

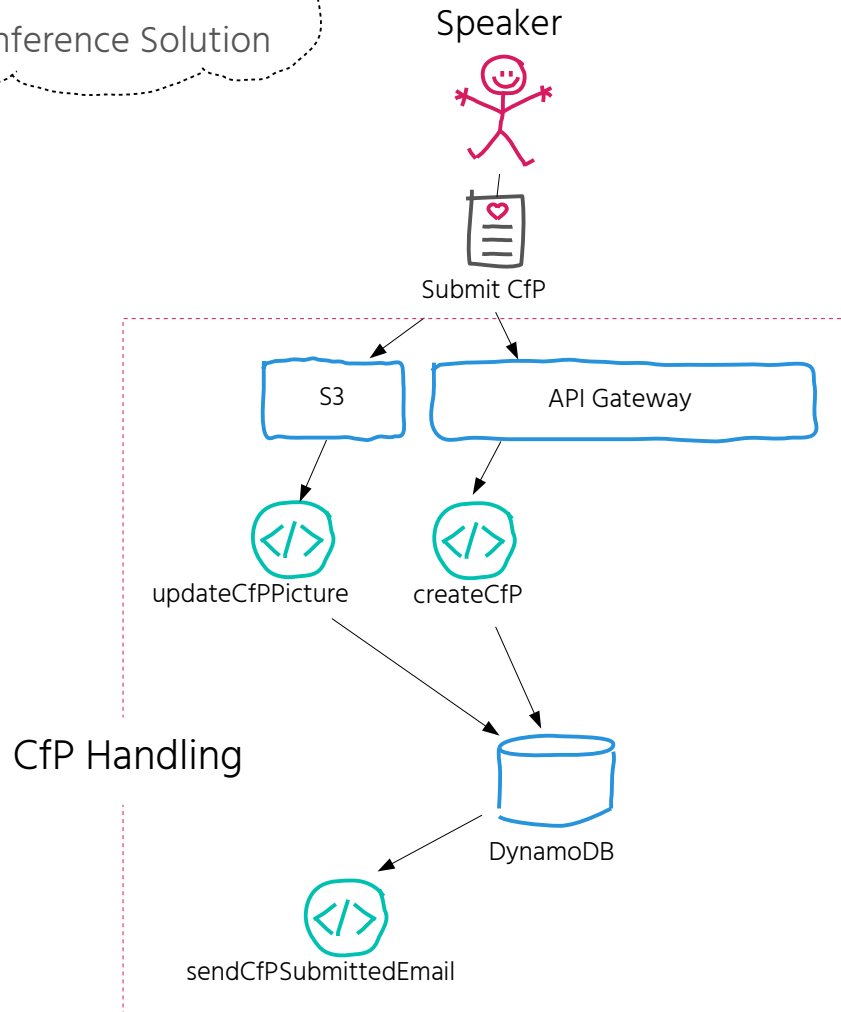


Submit CfP



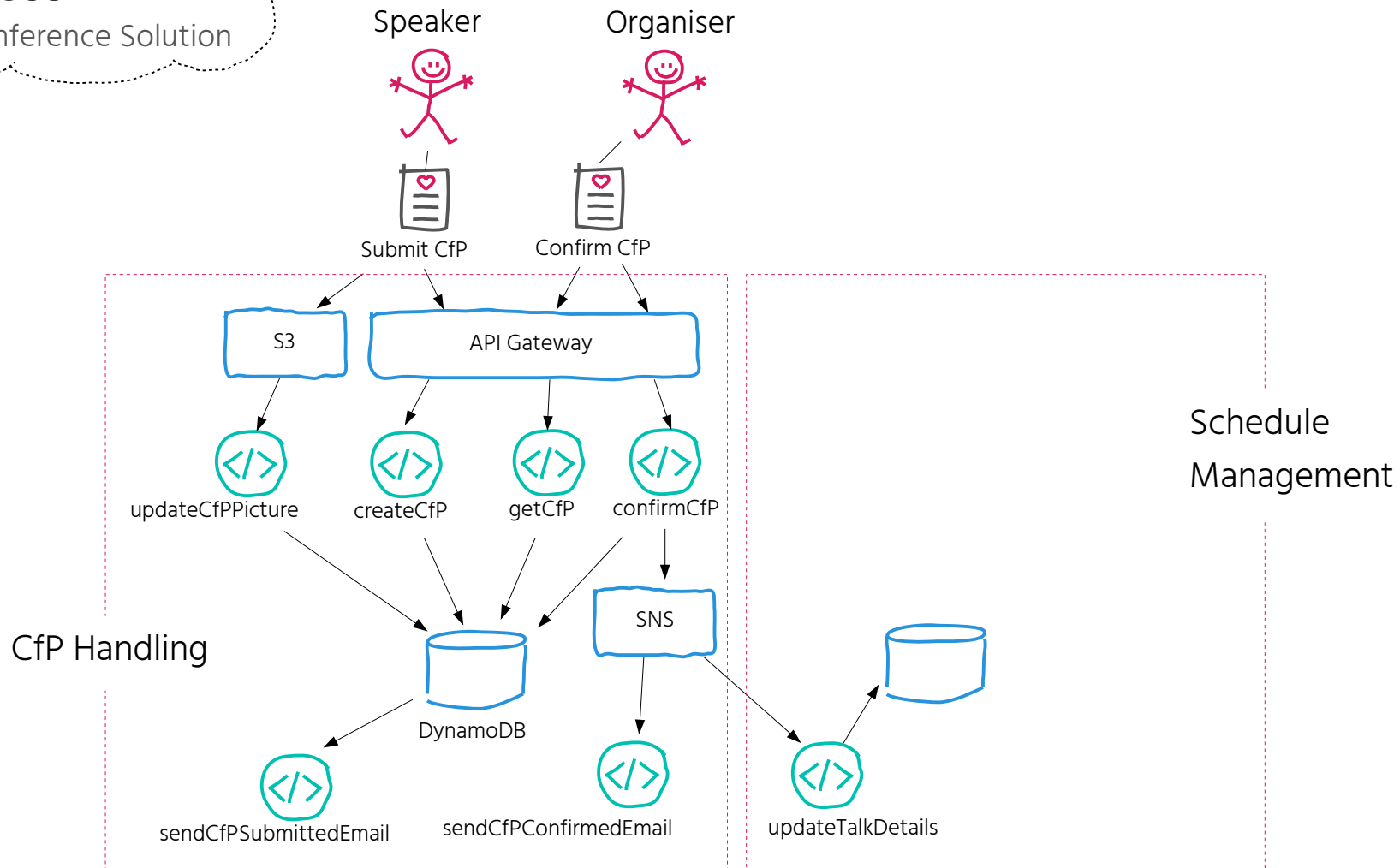
Serverless

Example Conference Solution



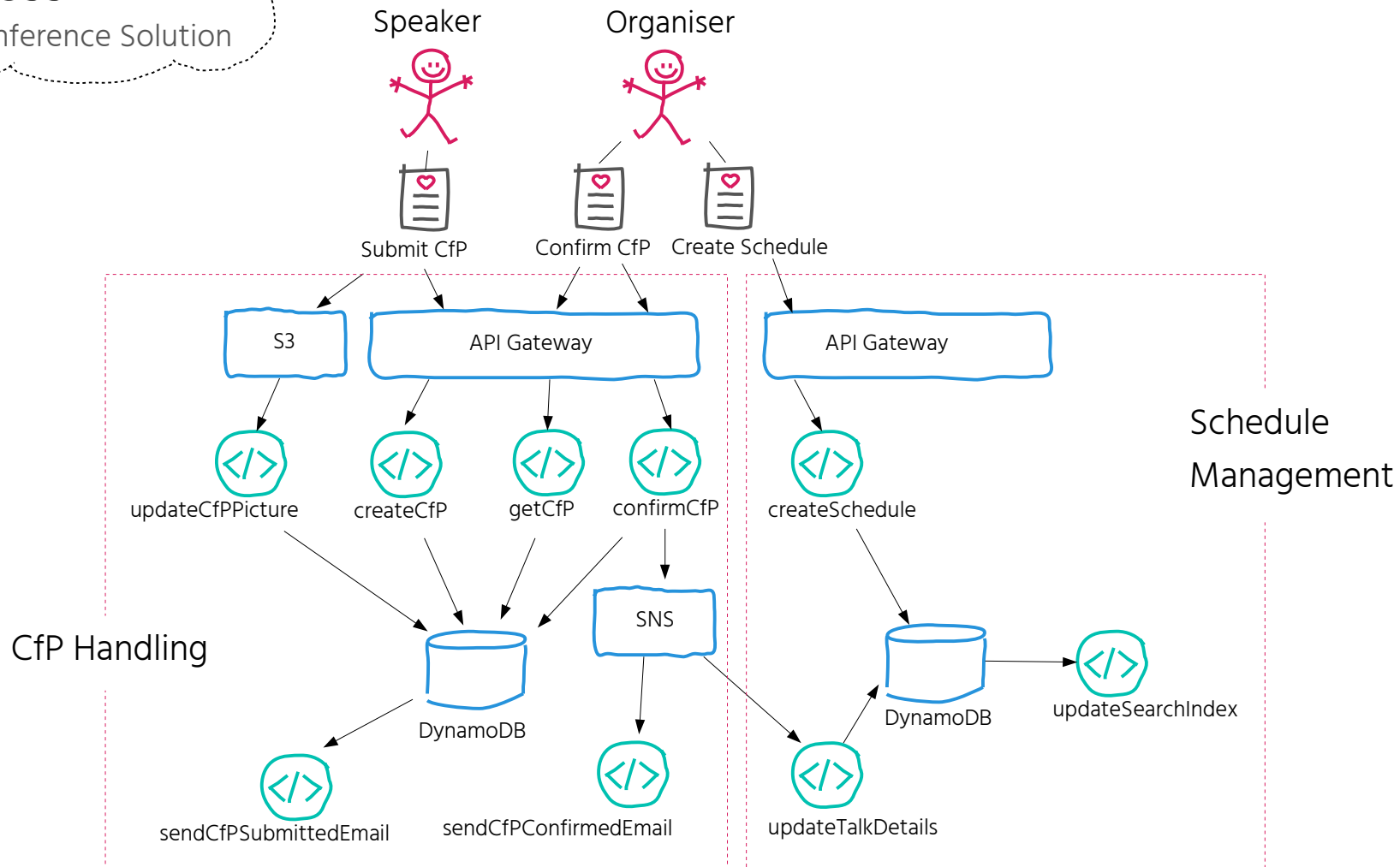
Serverless

Example Conference Solution



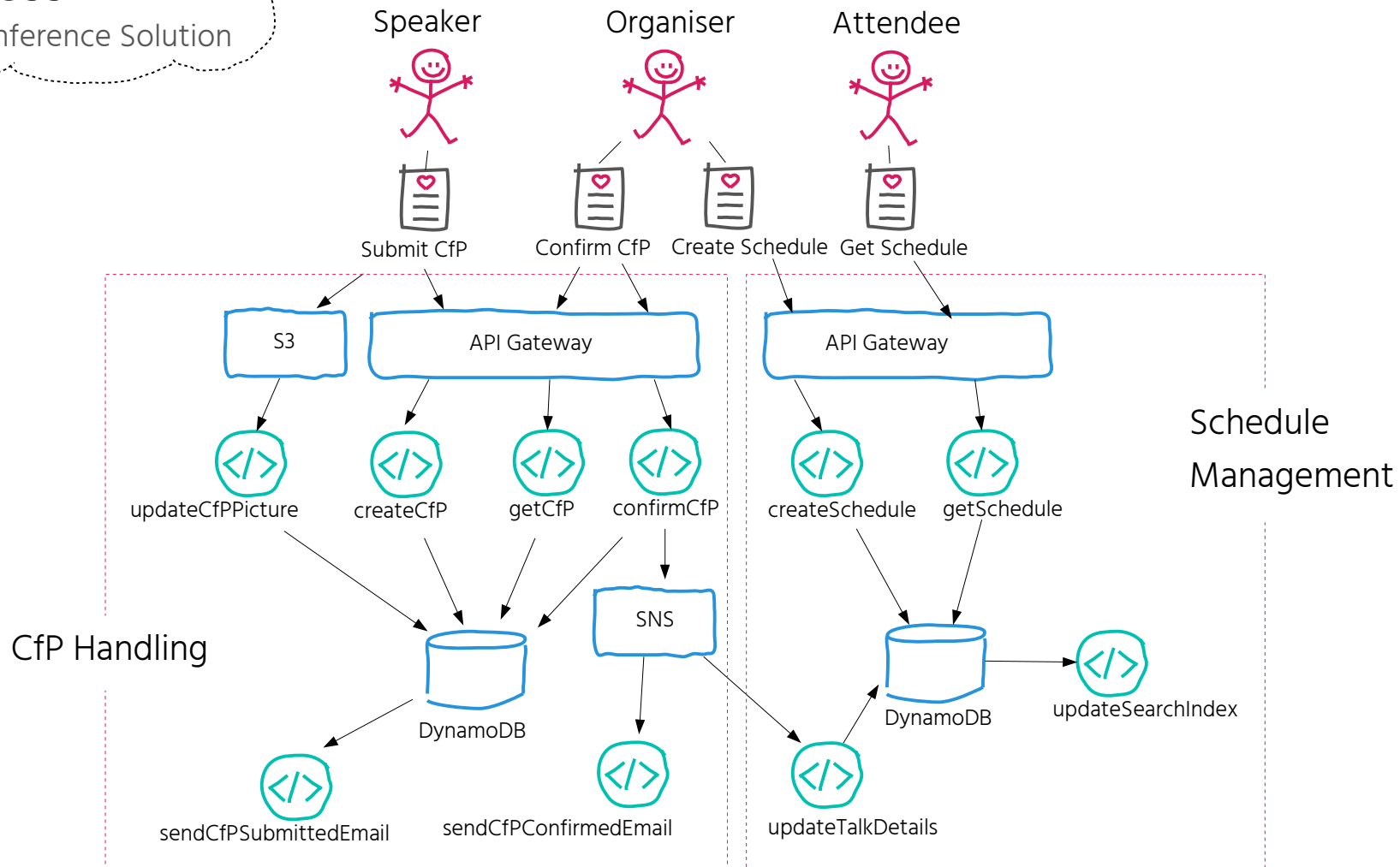
Serverless

Example Conference Solution



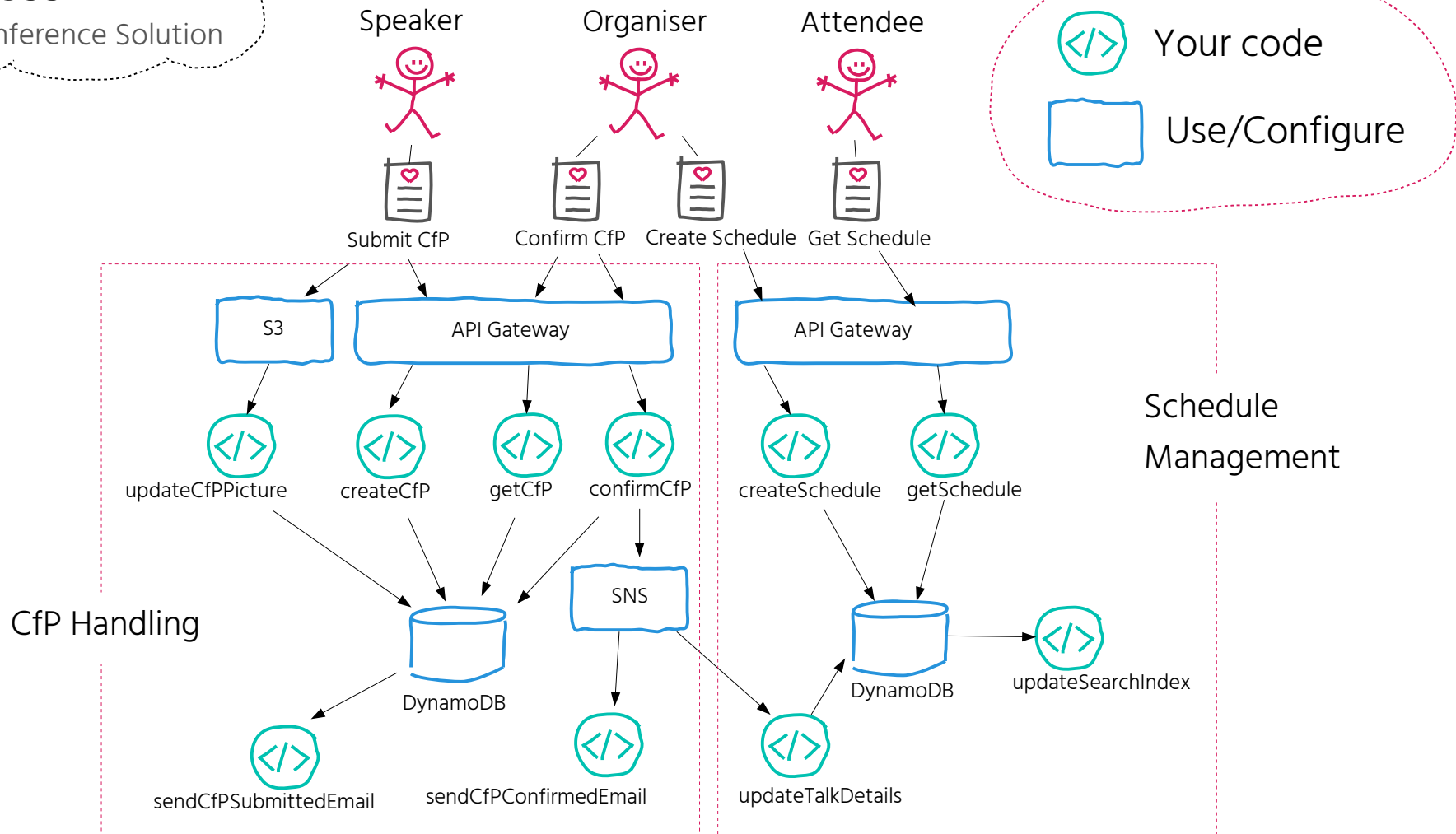
Serverless

Example Conference Solution



Serverless

Example Conference Solution



Wardley Maps

Example Conference Solution

Visible
Value Chain
Invisible

Attendee

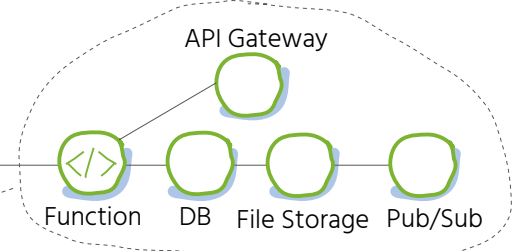


Schedule Speakers Feedback Ticket



- Build in-house
- Use/buy off-the-shelf product
- Outsource to utility suppliers

5. Serverless w/ FaaS

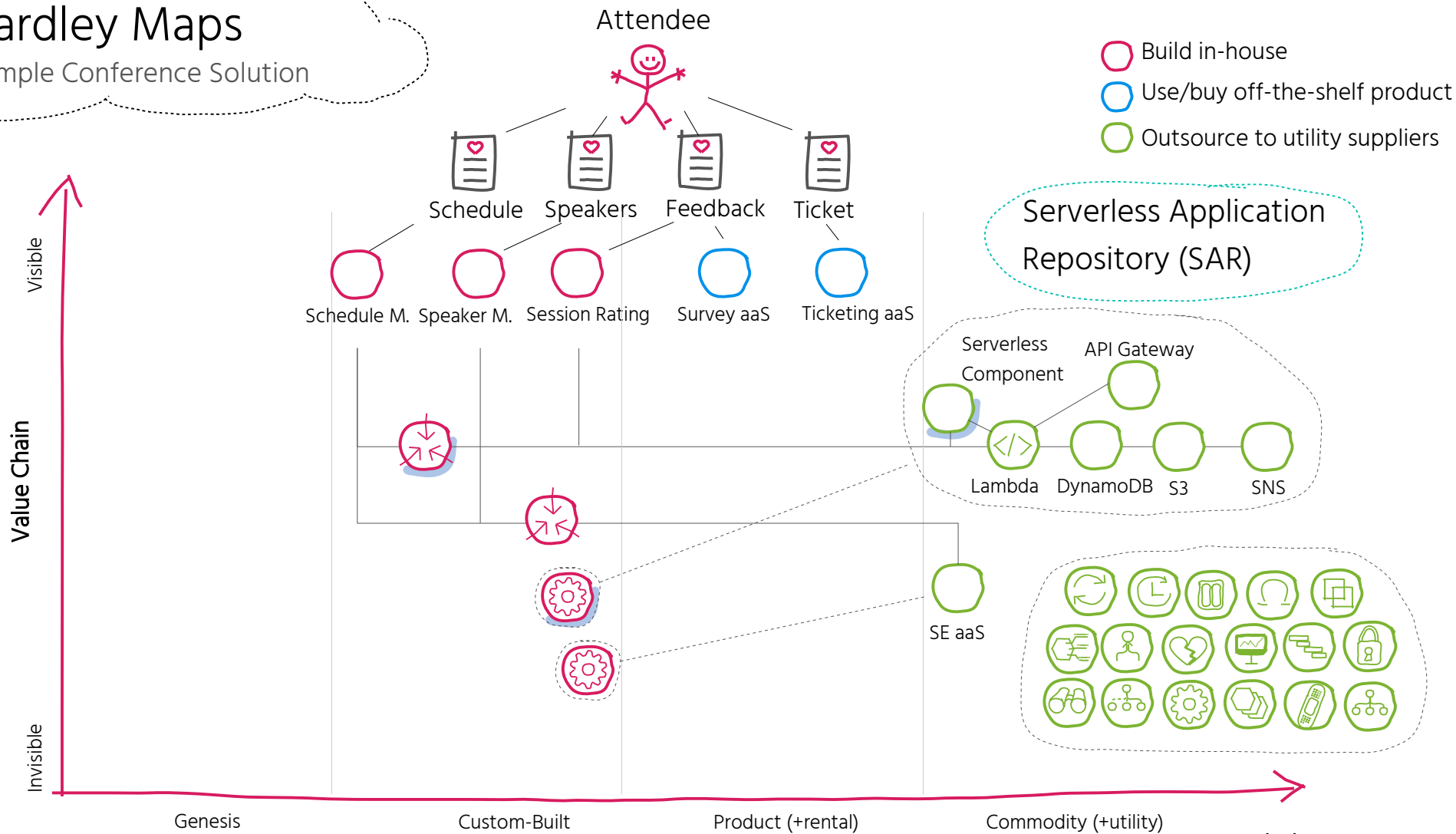


Genesis Custom-Built Product (+rental) Commodity (+utility)

Evolution

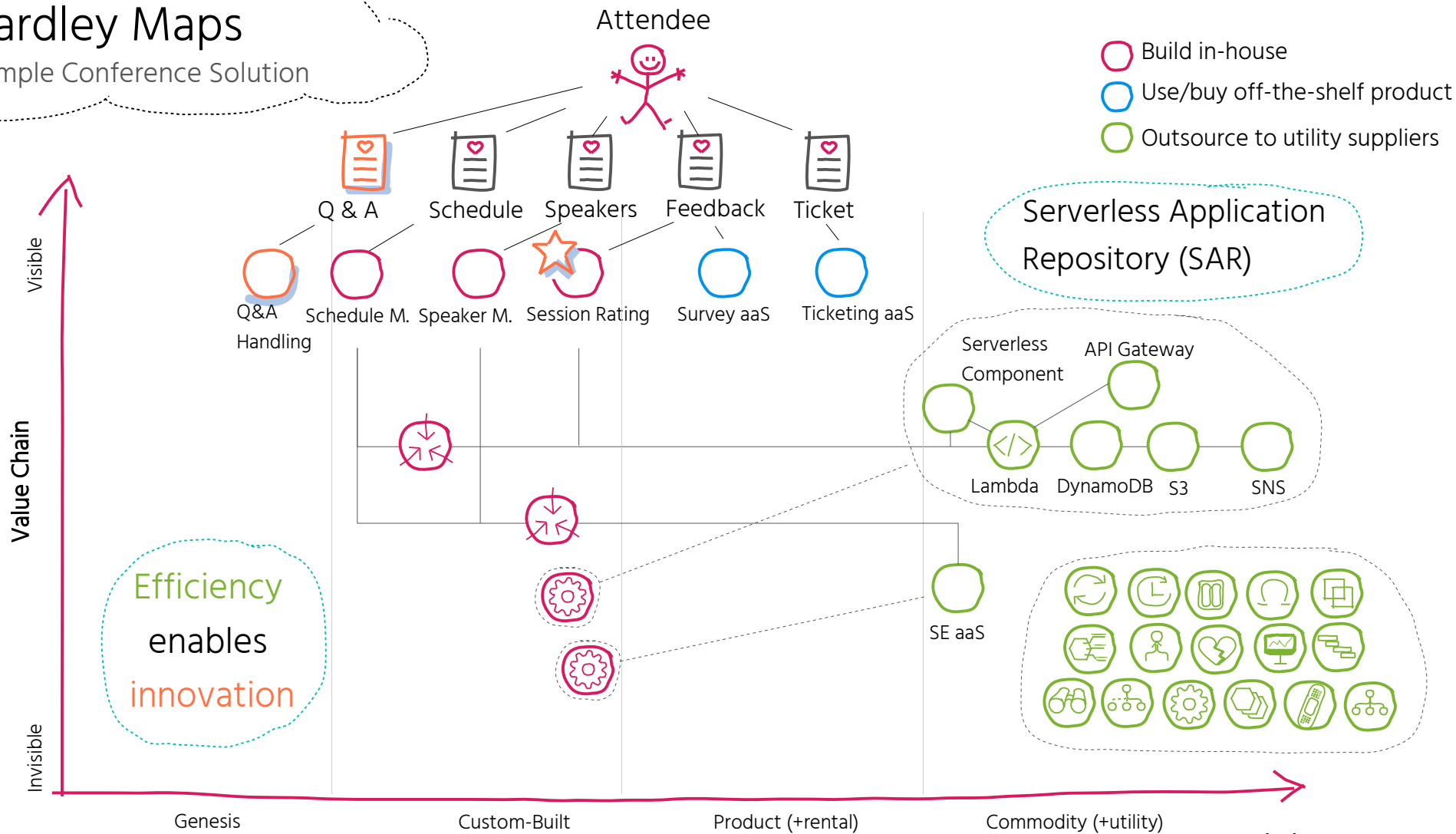
Wardley Maps

Example Conference Solution



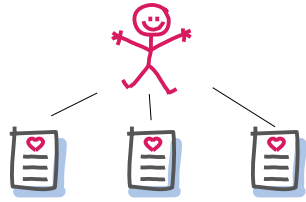
Wardley Maps

Example Conference Solution

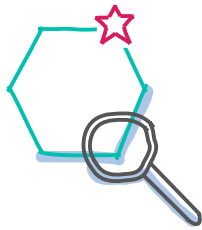


Serverless Infrastructure Providers

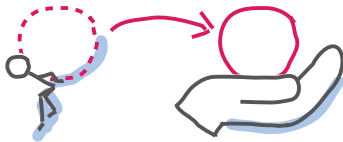




Fulfill user & business needs



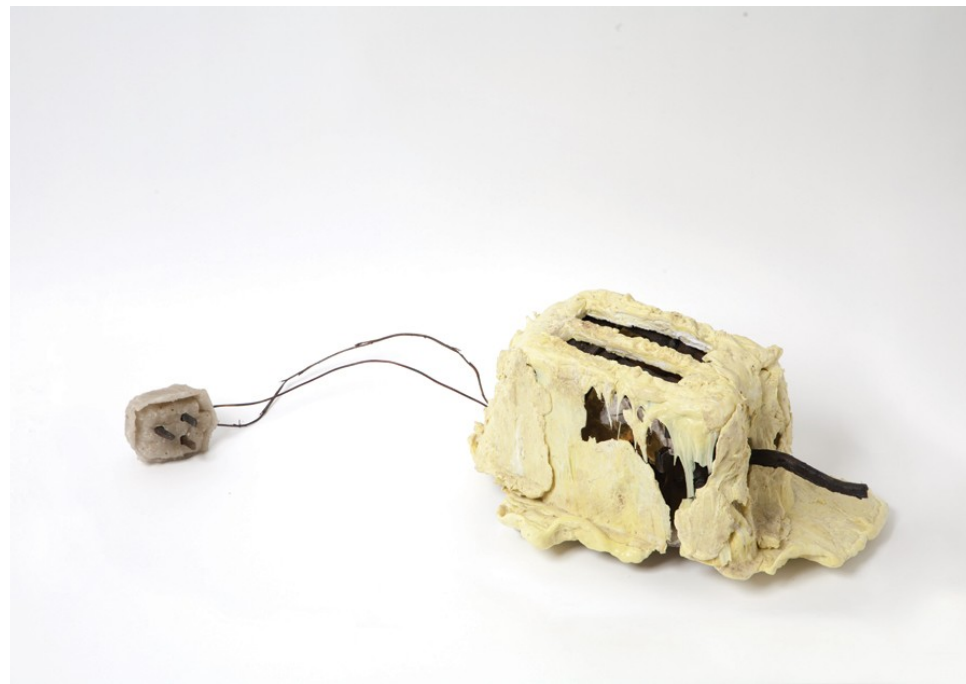
Focus on core domain & build in-house



Identify & outsource commodities



Continuously adapt



THANK YOU

Susanne Kaiser

Independent Tech Consultant

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susanne@kaiser-consulting.net