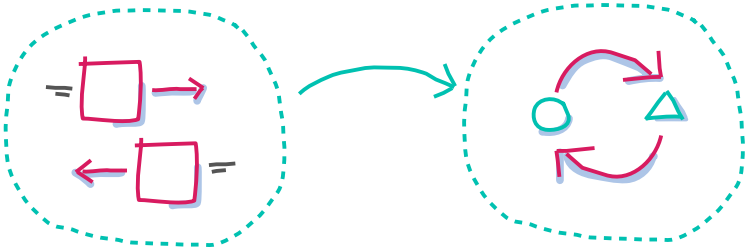

Adaptive, Socio-Technical Systems w/ Architecture for Flow

Susanne Kaiser
Independent Tech Consultant
@suksr

Challenges of Building Systems

Building the right thing

- How aligned is our solution to business / user needs?
- Have we understood the problem?
- Do we share the same common understanding?

Effectiveness

Building the thing right

- How efficient are our engineering practices?
- How fast can we deliver changes?
- How easy and fast can we change and adapt?

Efficiency

Challenges of Building Systems

"Doing the wrong thing right

Dr. Russell Ackoff

Building the wrong thing right

Challenges of Building Systems

"Doing the wrong thing right is not nearly as good as doing the right thing wrong"

Dr. Russell Ackoff

Building the wrong thing right < Building the right thing wrong

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"Crap delivered quickly (and sustainably) is still crap,

John Cutler

Challenges of Building Systems

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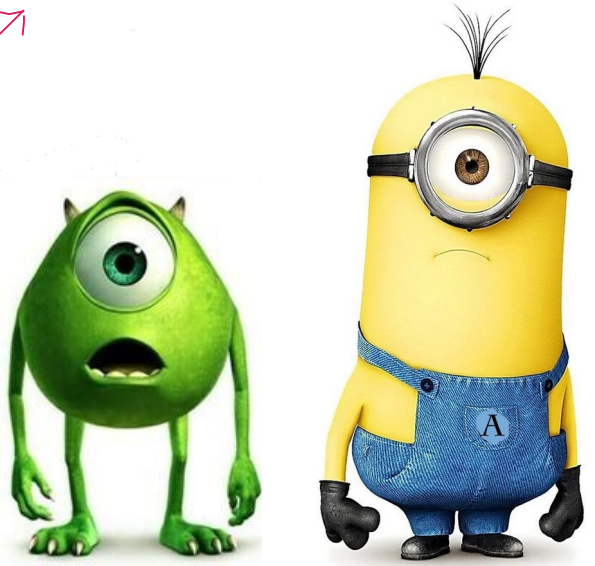
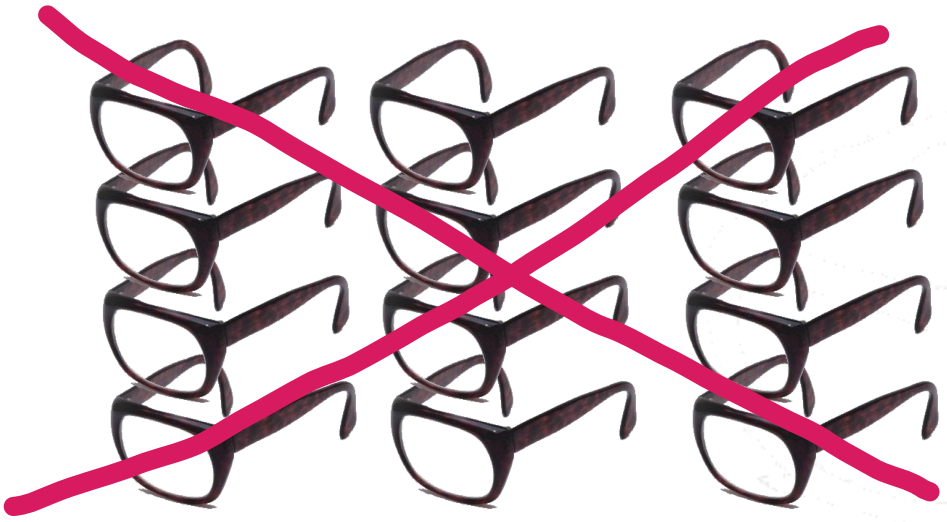


New Profitable Niche Market Discovered?

Challenges of Building Systems

"Doing the wrong thing right is not nearly as good as doing the right thing wrong"

Dr. Russell Ackoff



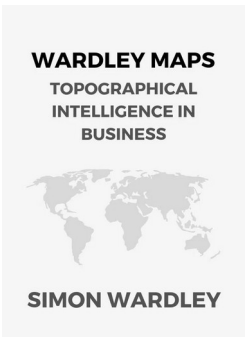
"Crap delivered quickly (and sustainably) is still crap, (unless we learn something, and act on that learning...)"

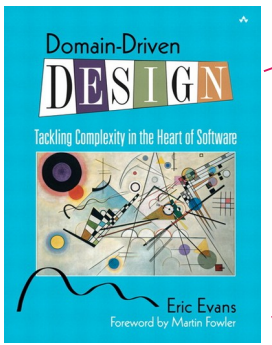
John Cutler

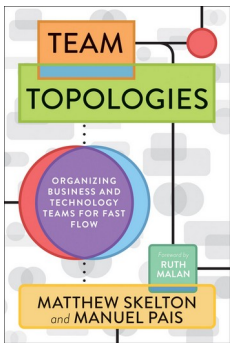
New Profitable Niche Market Discovered?

Building the right thing right

Building adaptive, socio-technical systems optimized for a fast flow of value & feedback





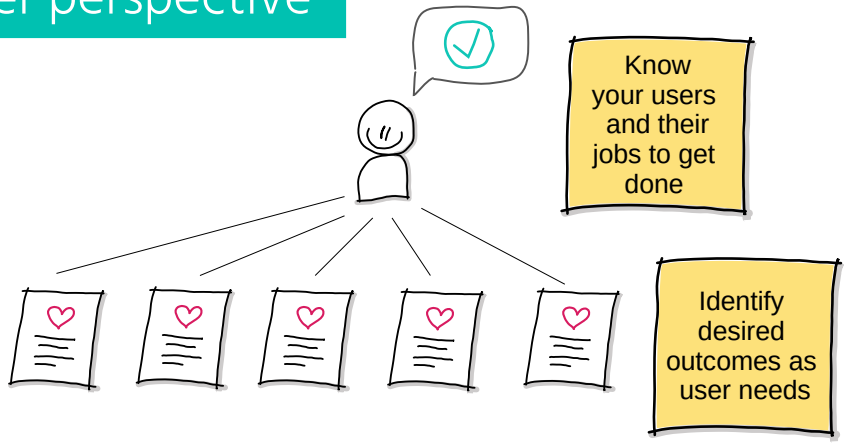


Architecture for Flow

Starting from the user perspective

Building the right thing

Problem Space



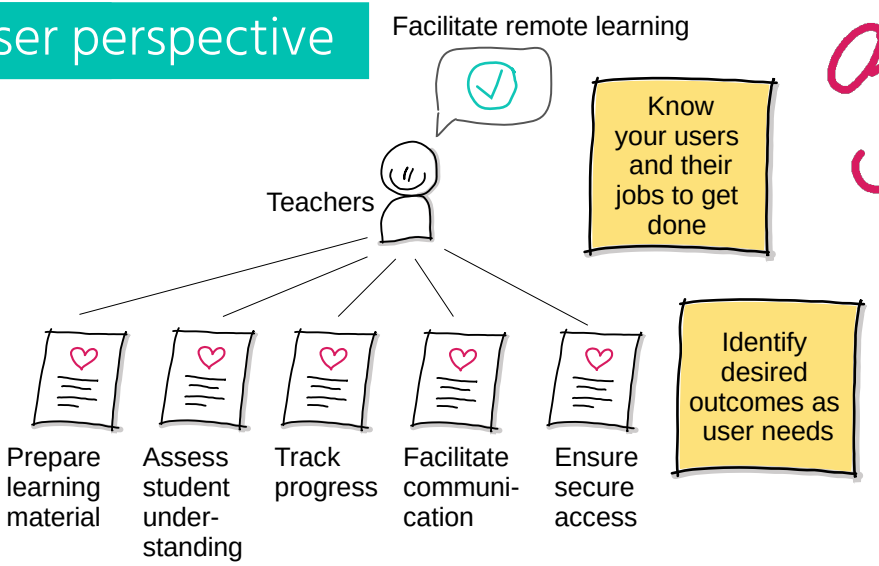
"People buy products and services to get a job done."

Clayton Christensen

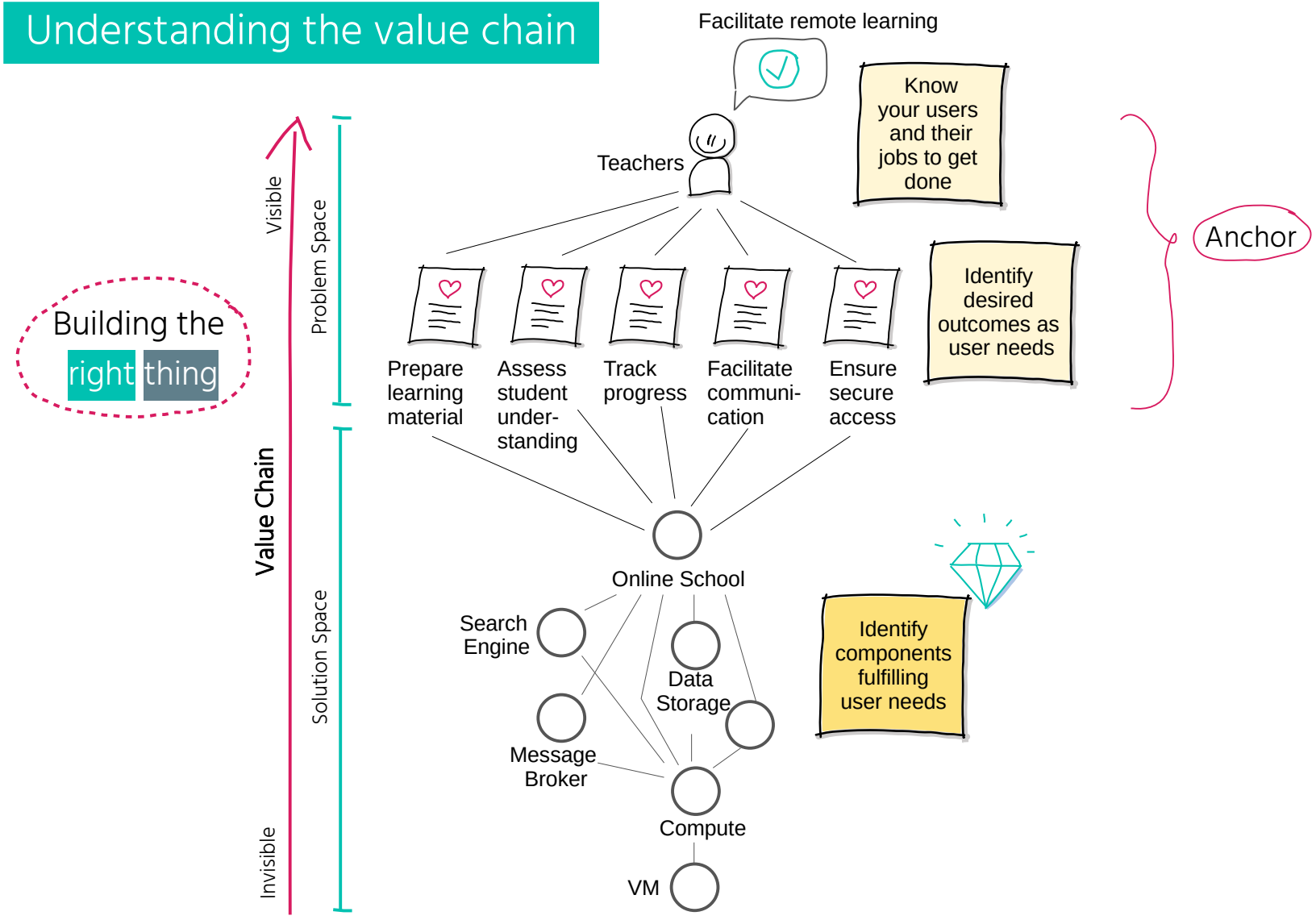
Starting from the user perspective

Building the right thing

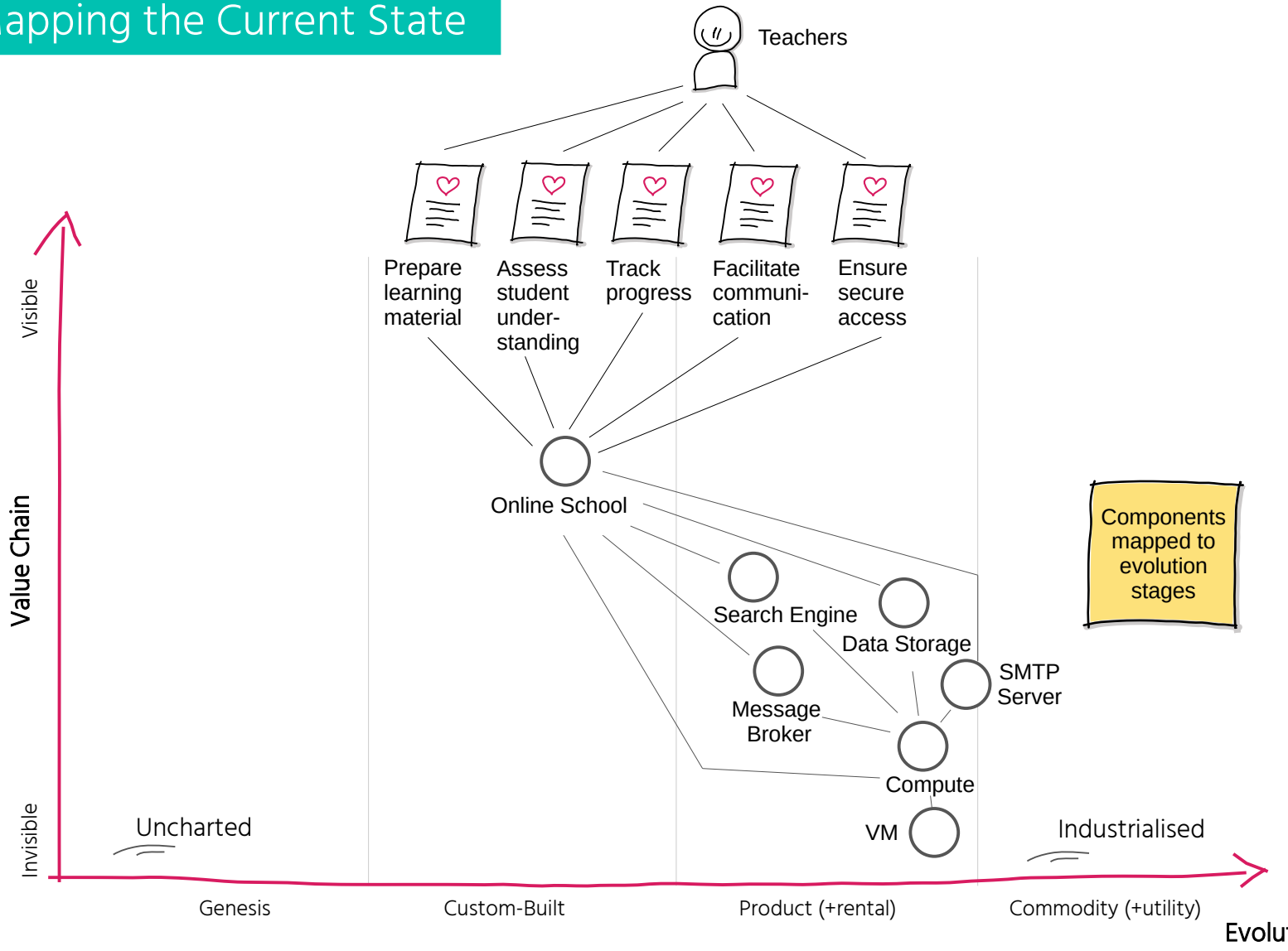
Problem Space

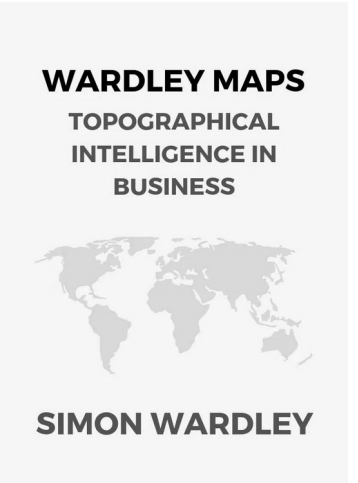


Understanding the value chain



Mapping the Current State





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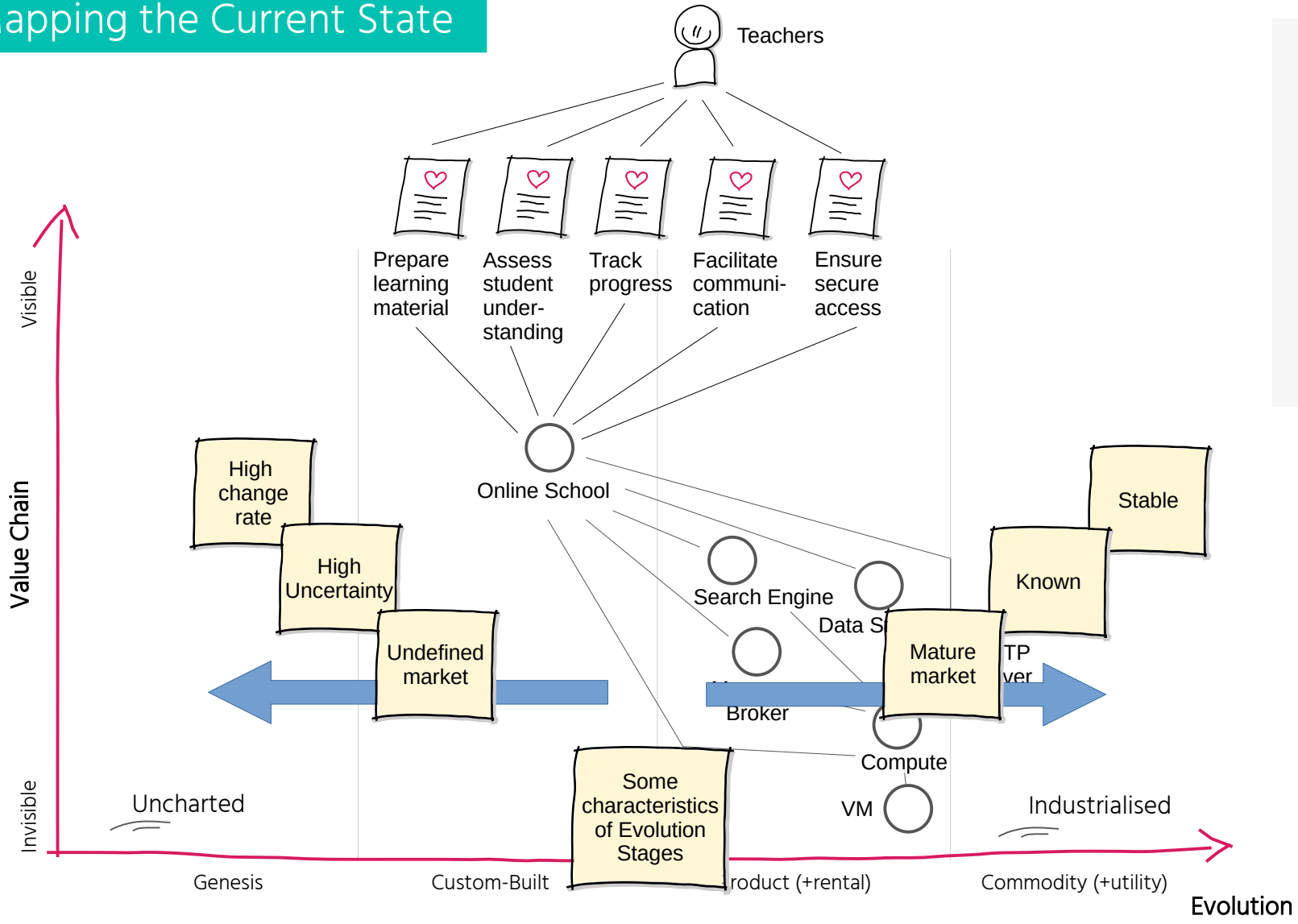
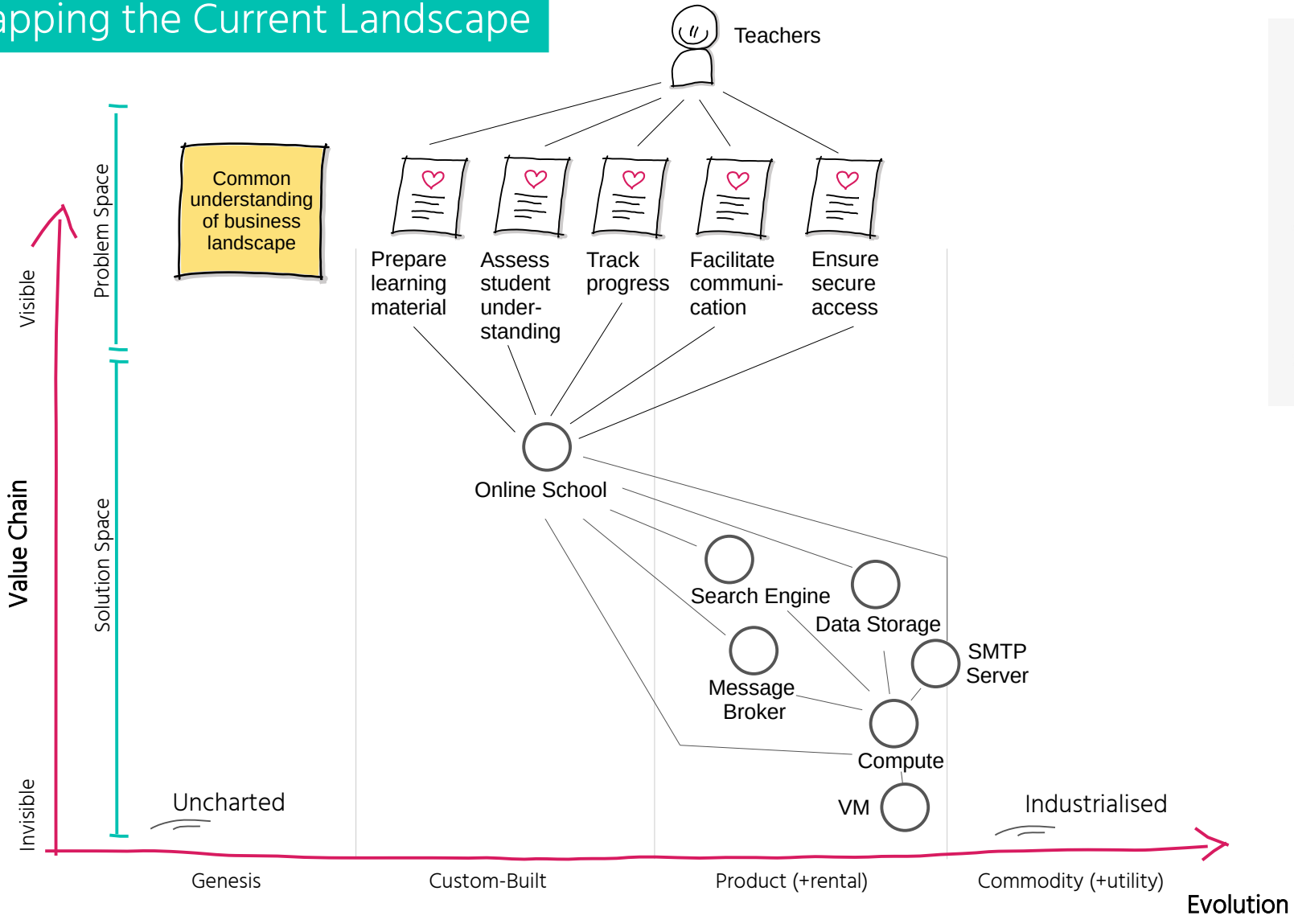


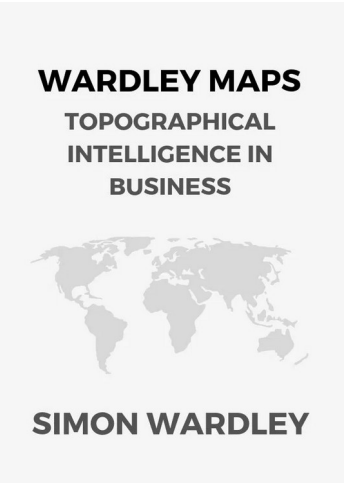
WARDLEY MAPS

TOPOGRAPHICAL INTELLIGENCE IN BUSINESS

SIMON WARDLEY

Mapping the Current Landscape





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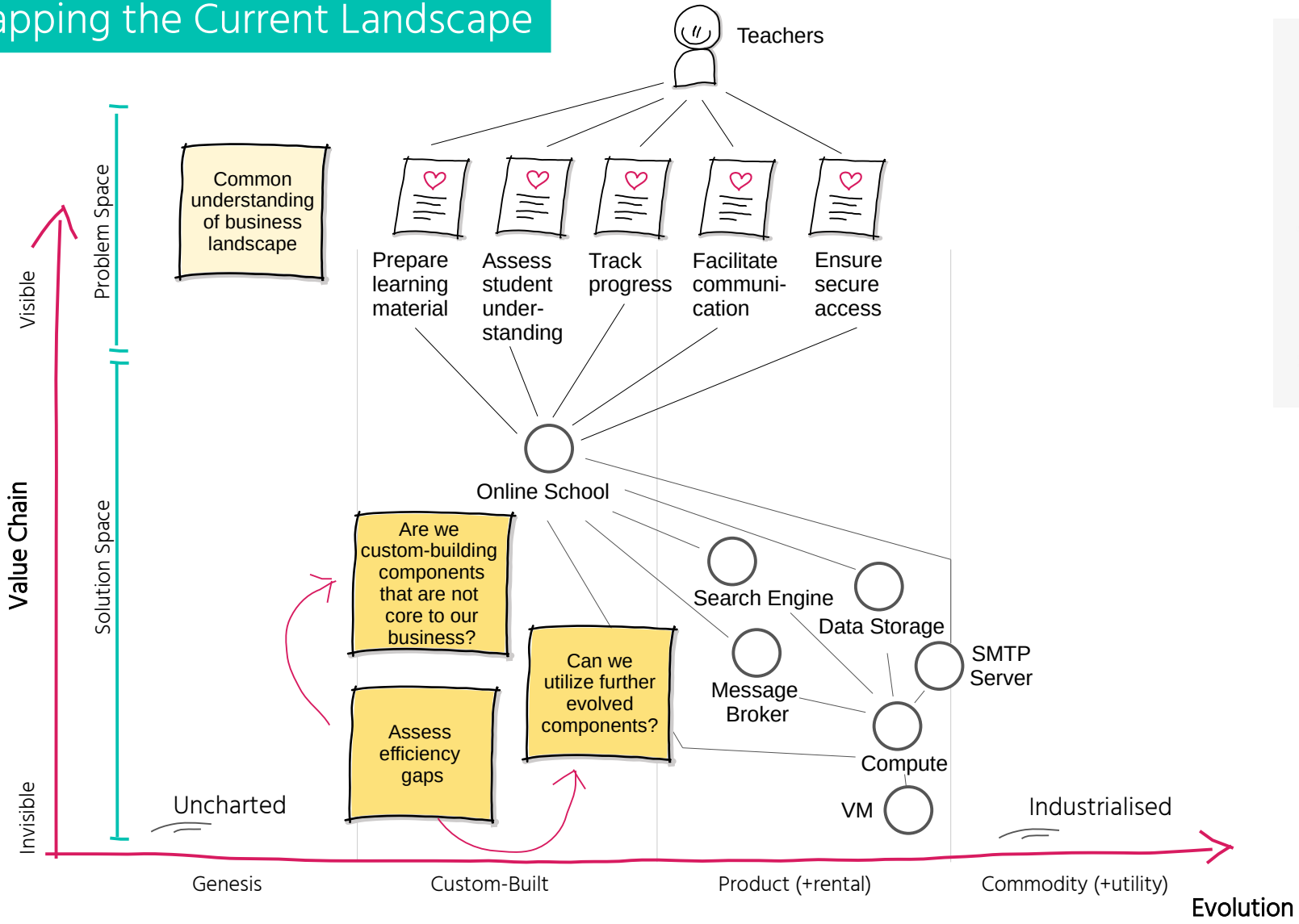

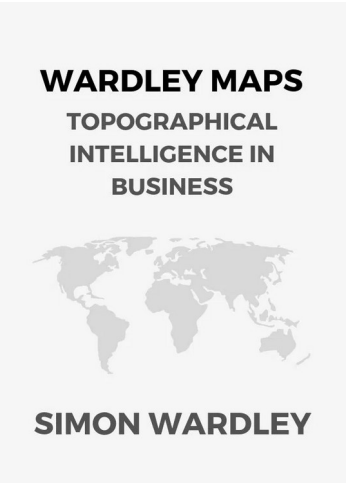

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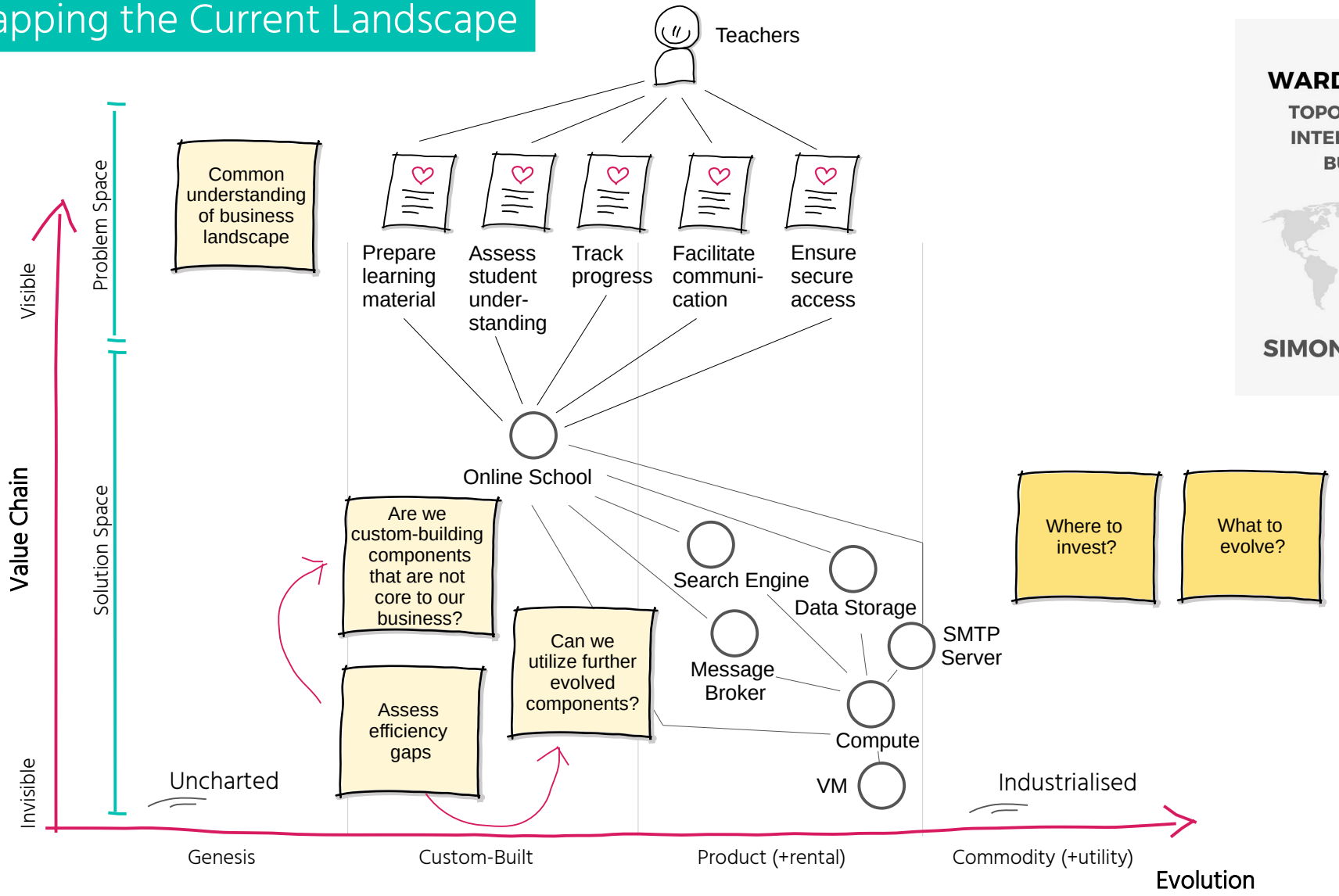

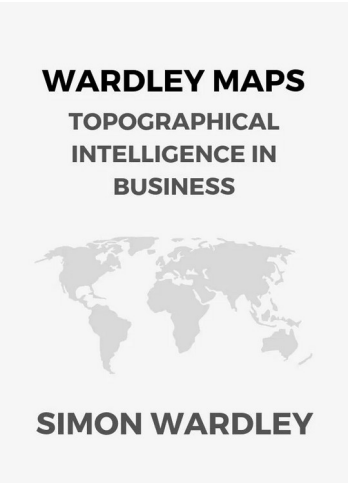

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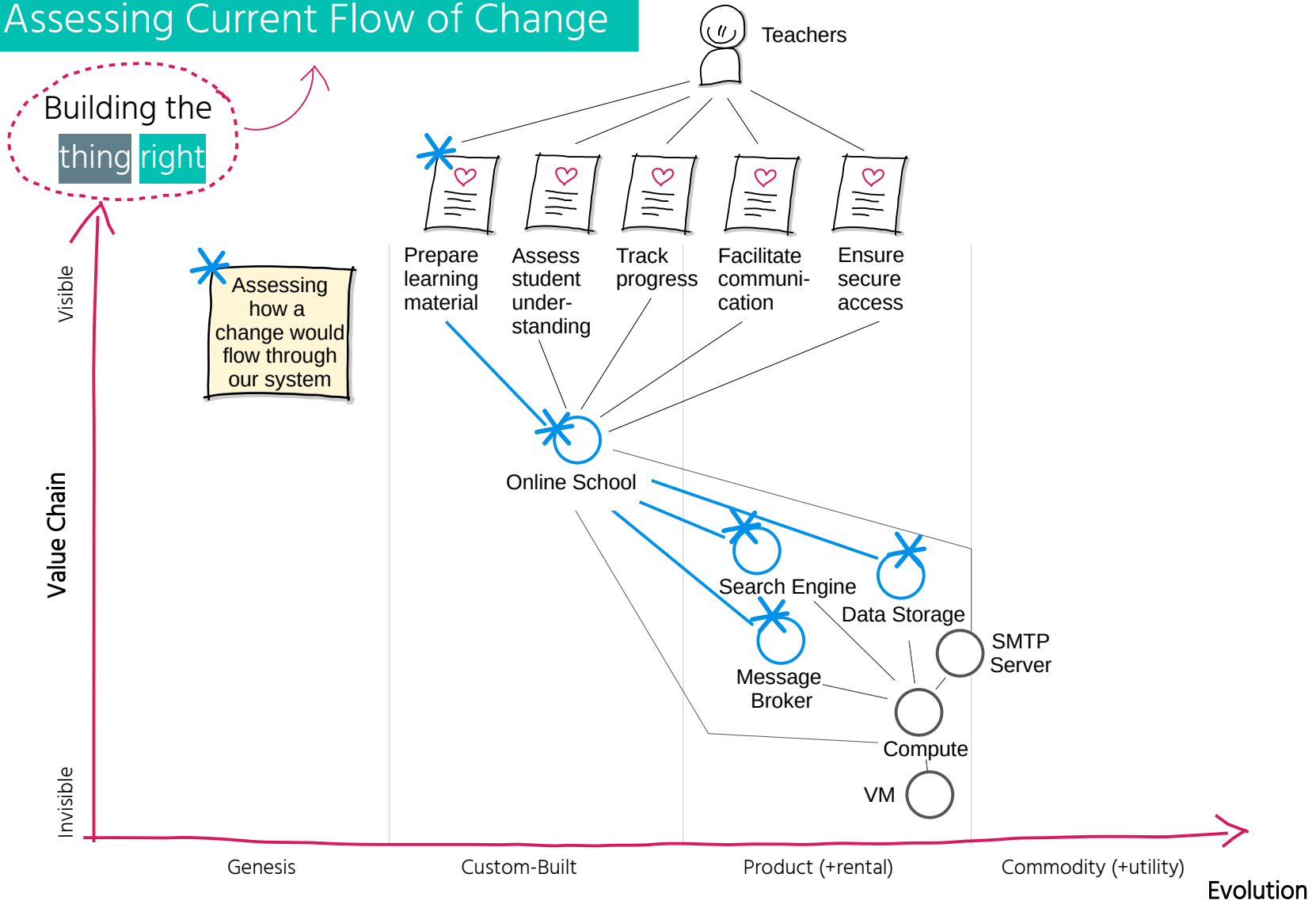
Assessing Current Flow of Change



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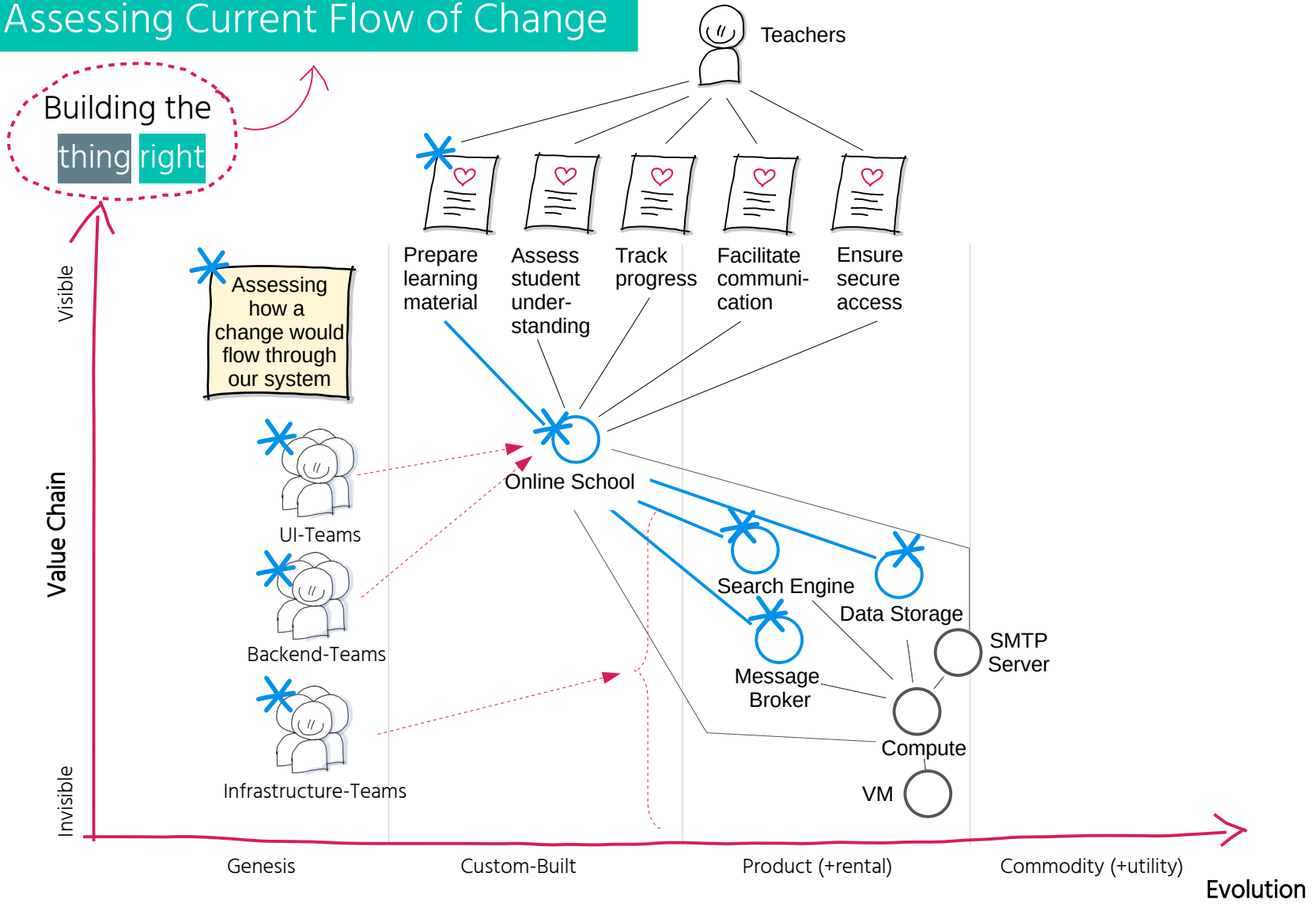

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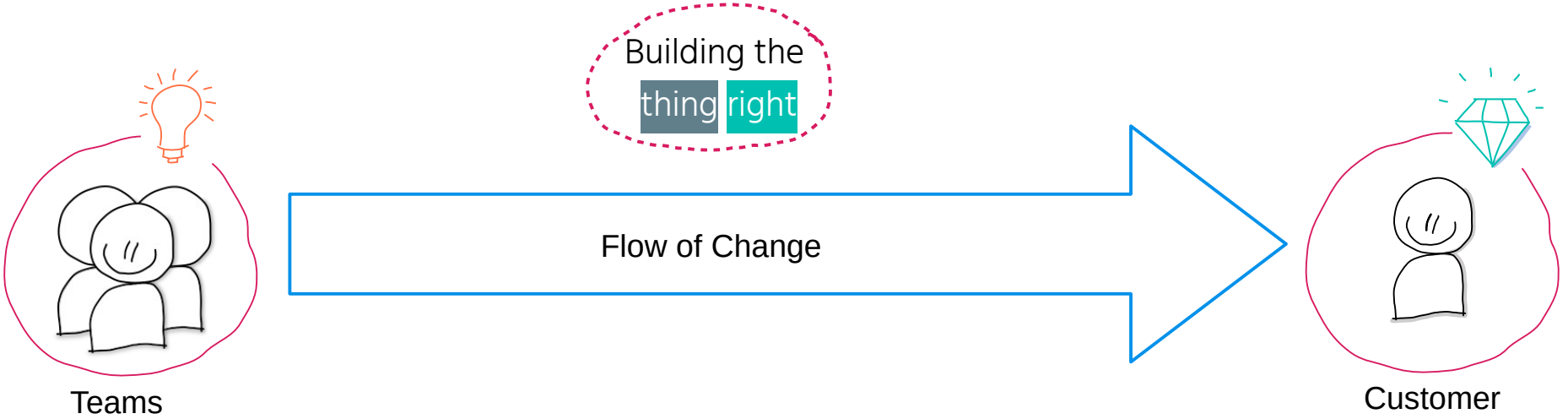

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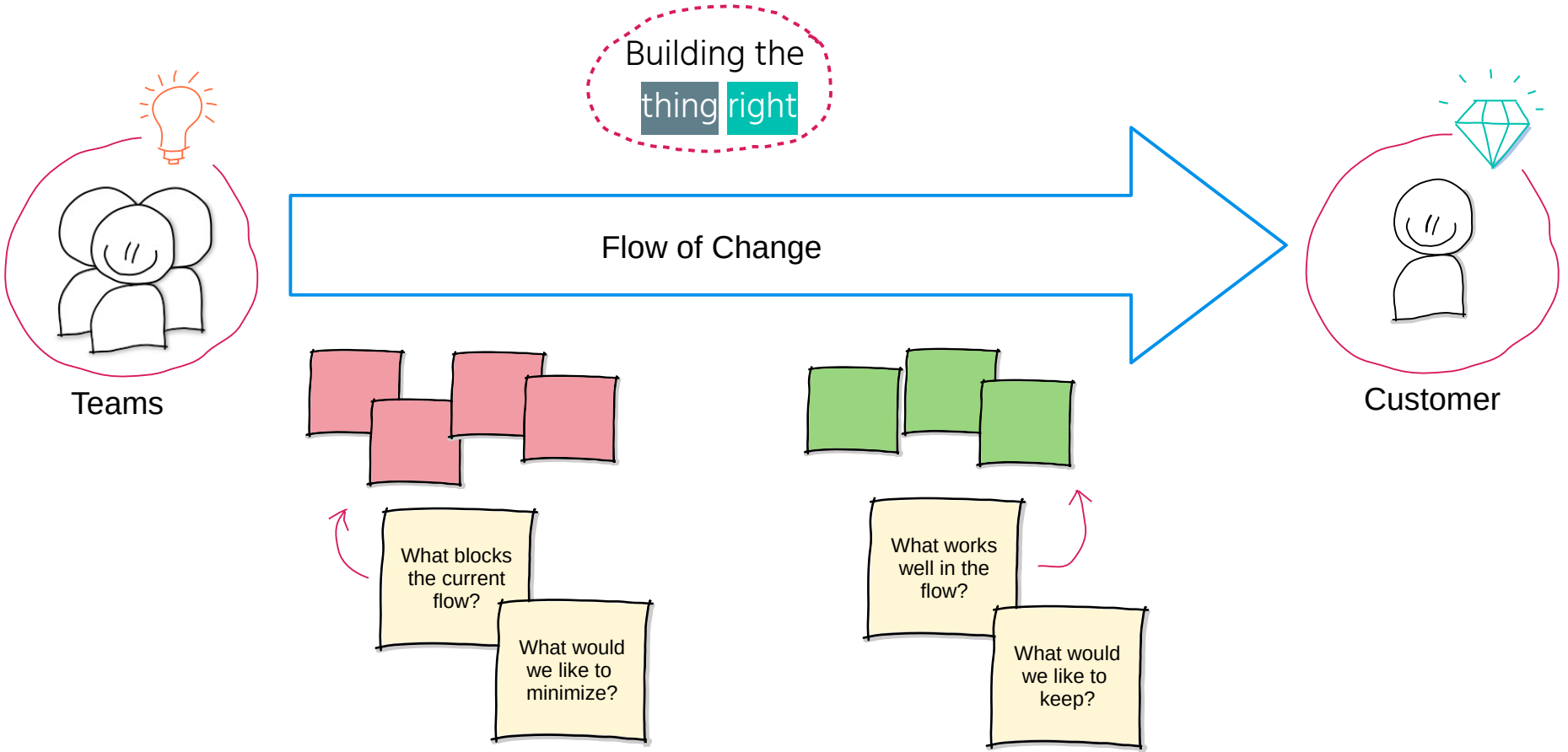
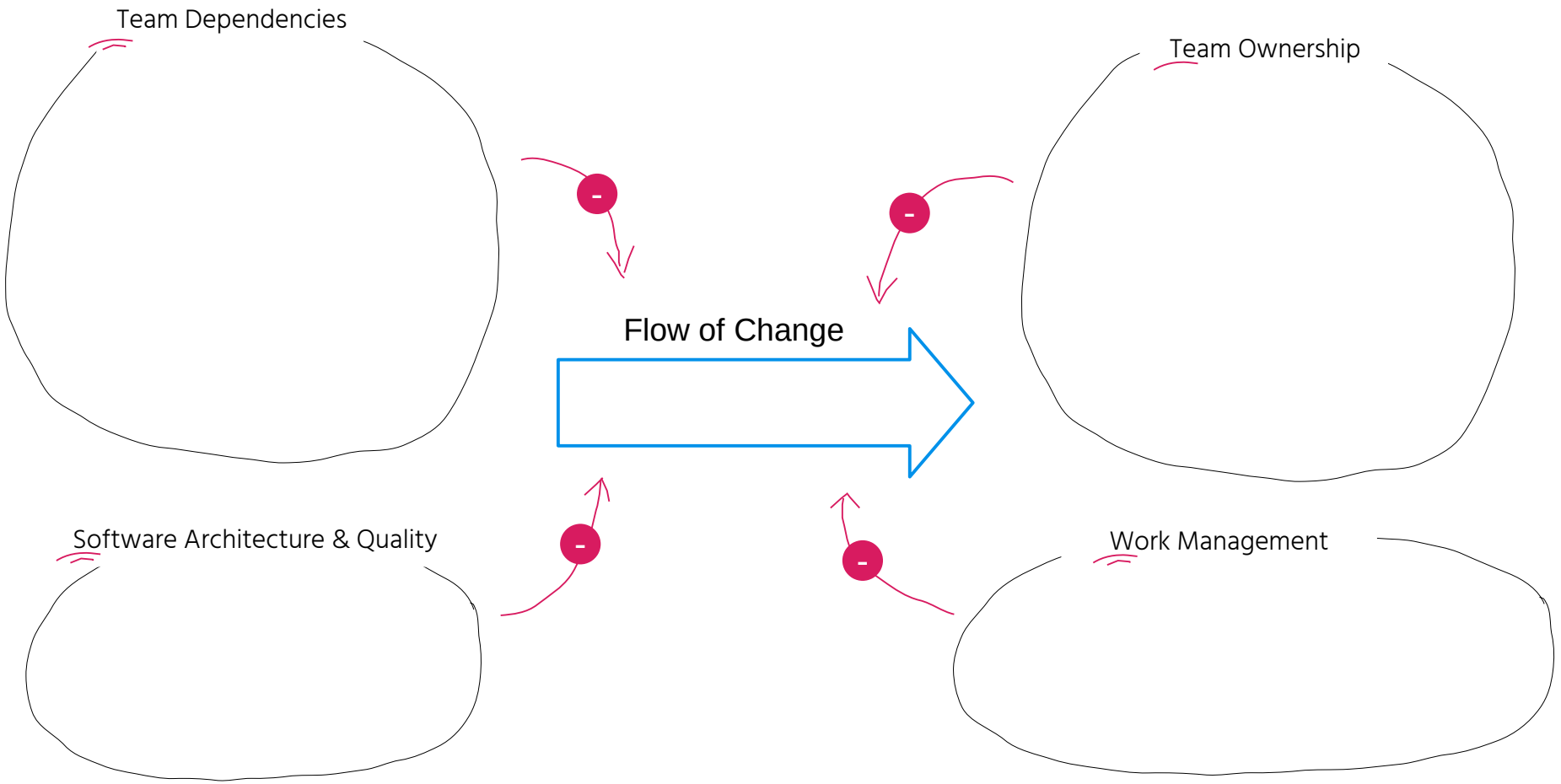


What is Preventing Flow? (Examples)



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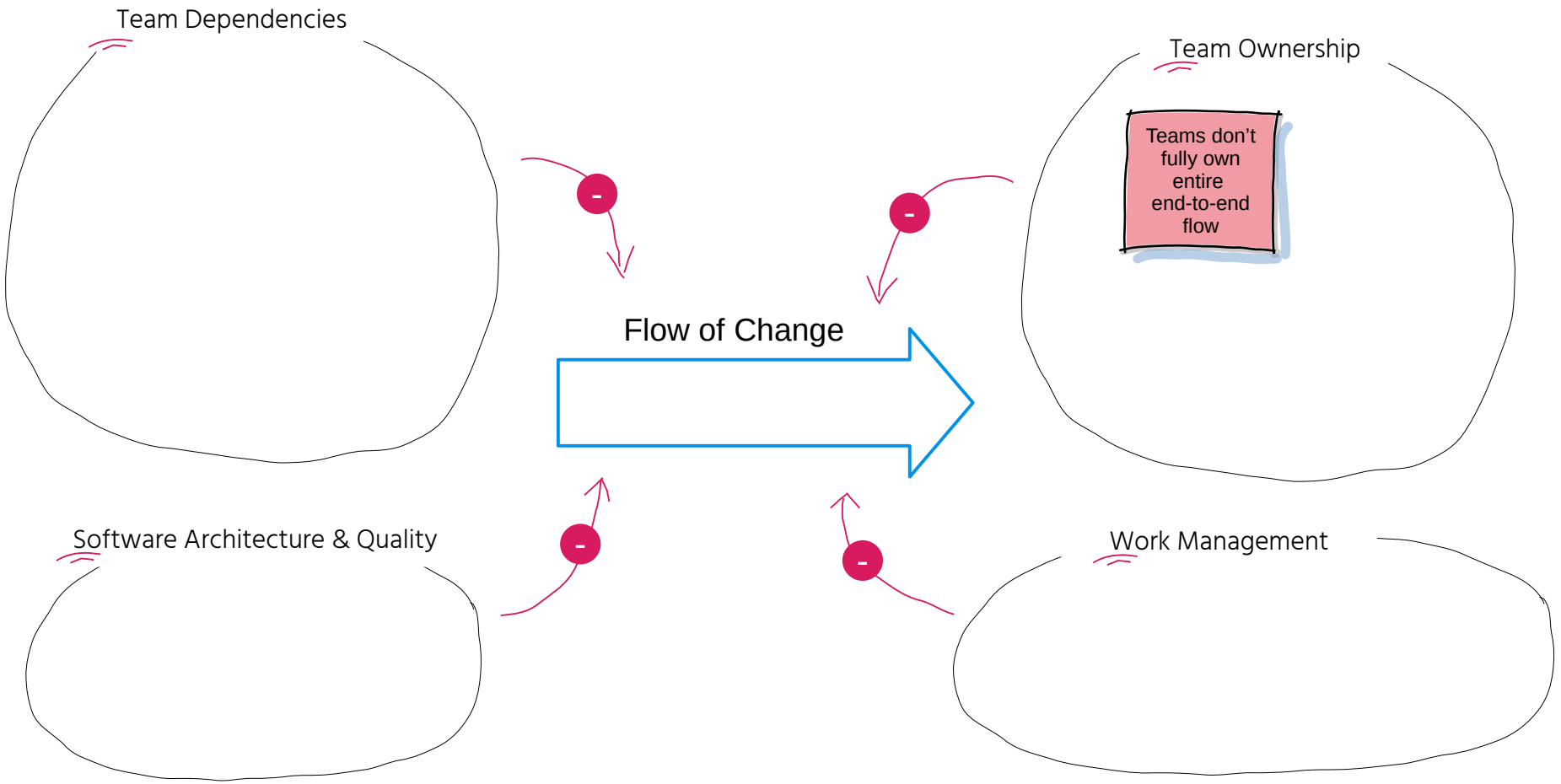

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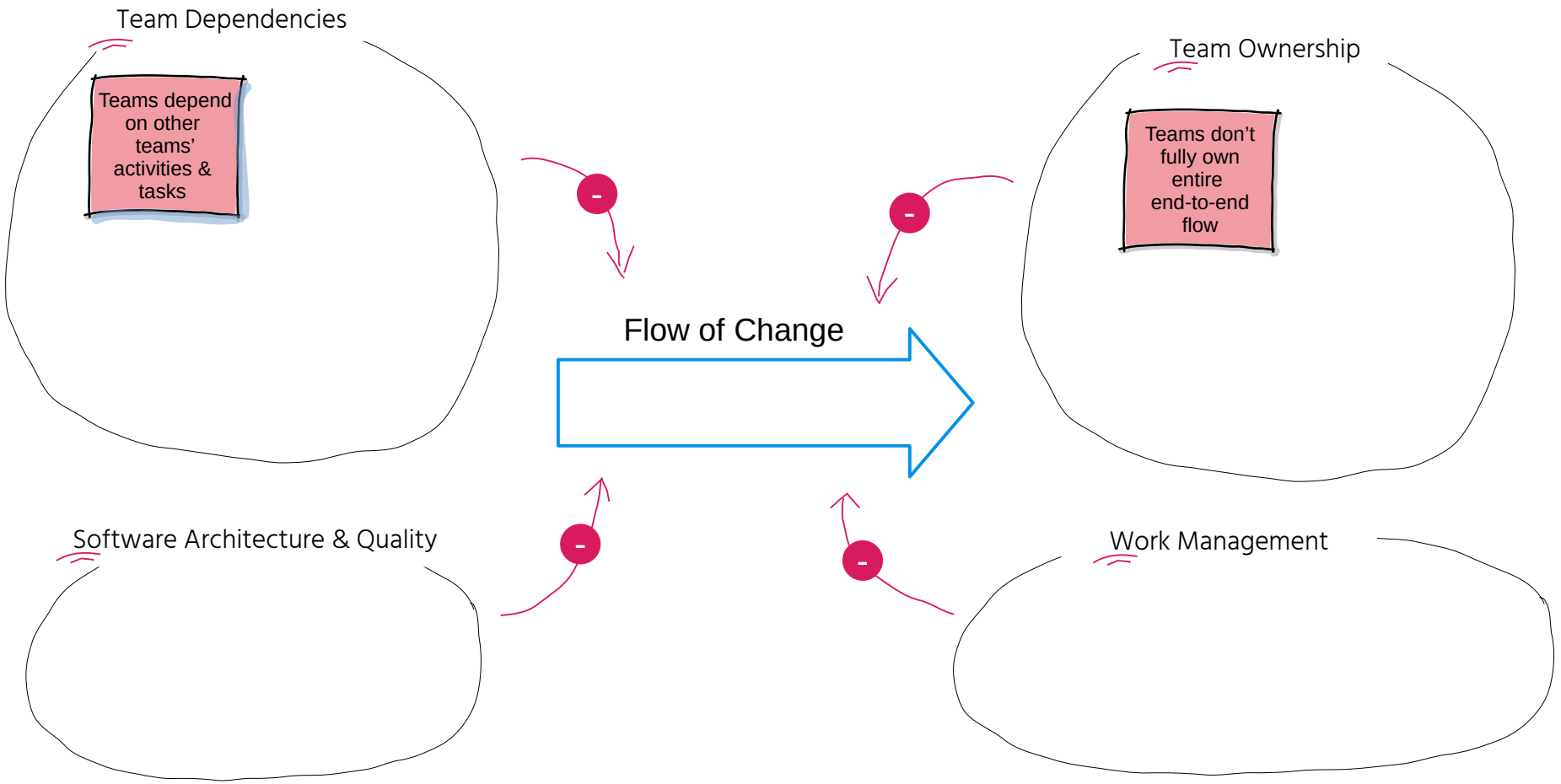

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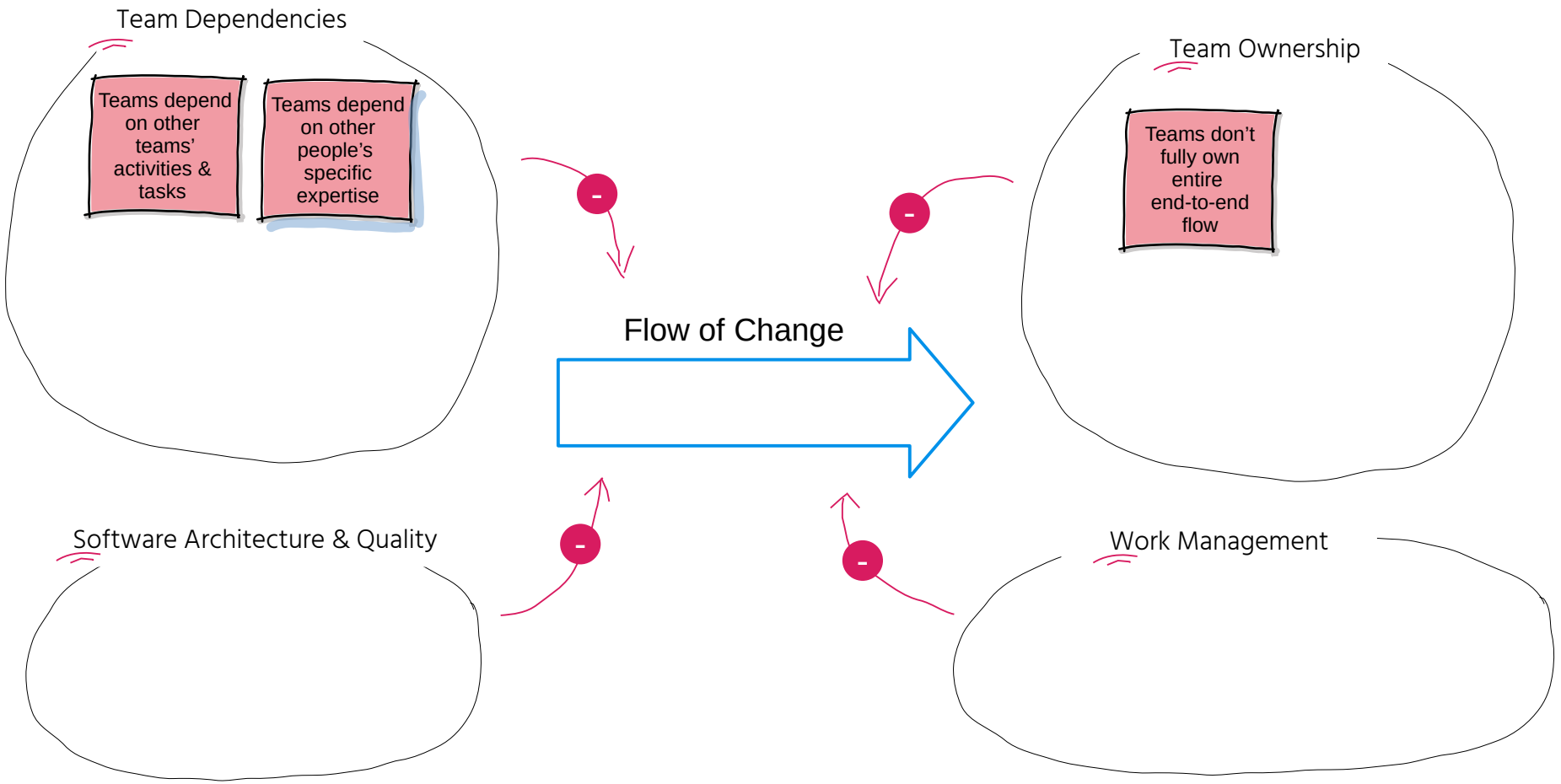

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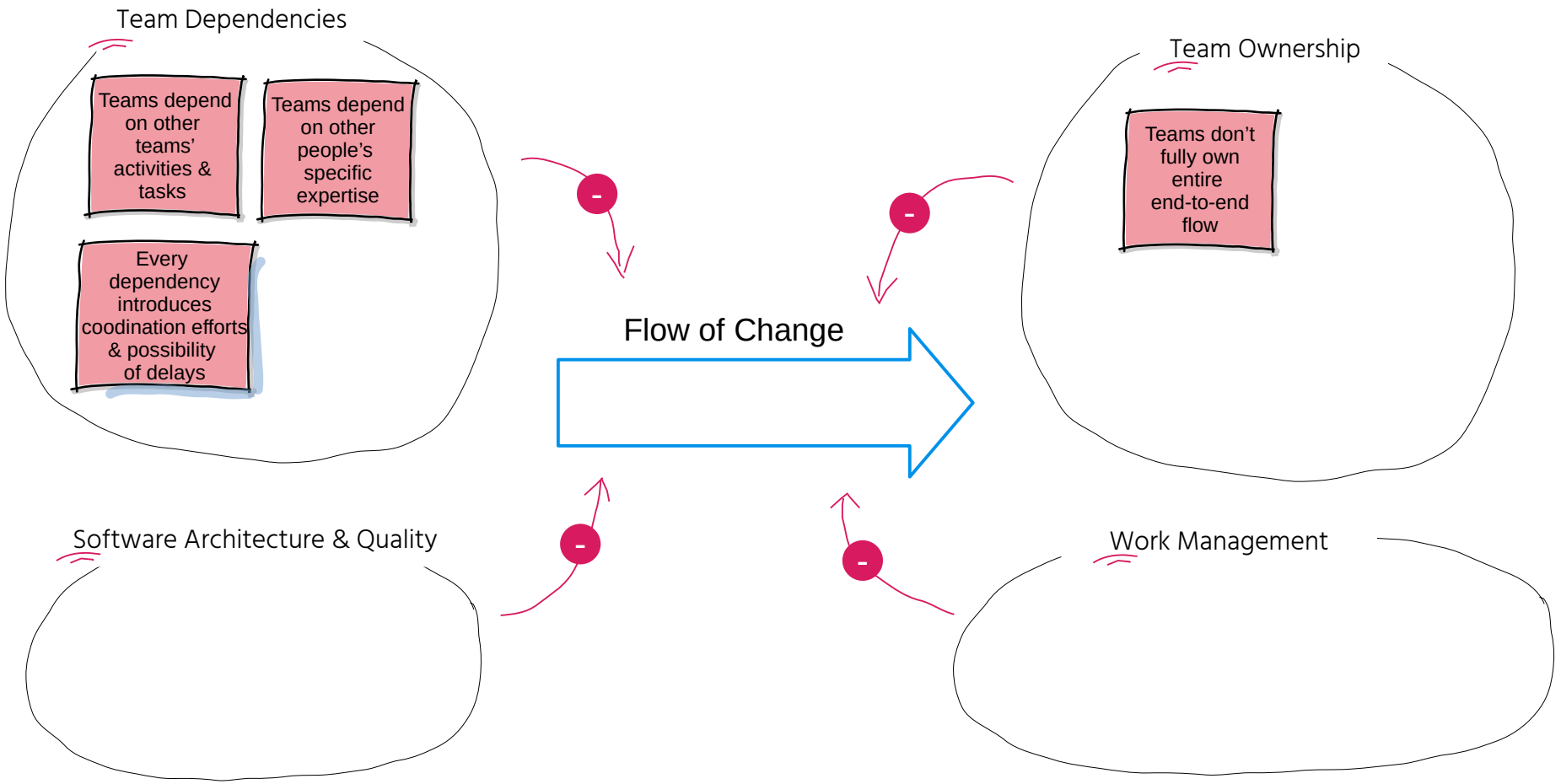

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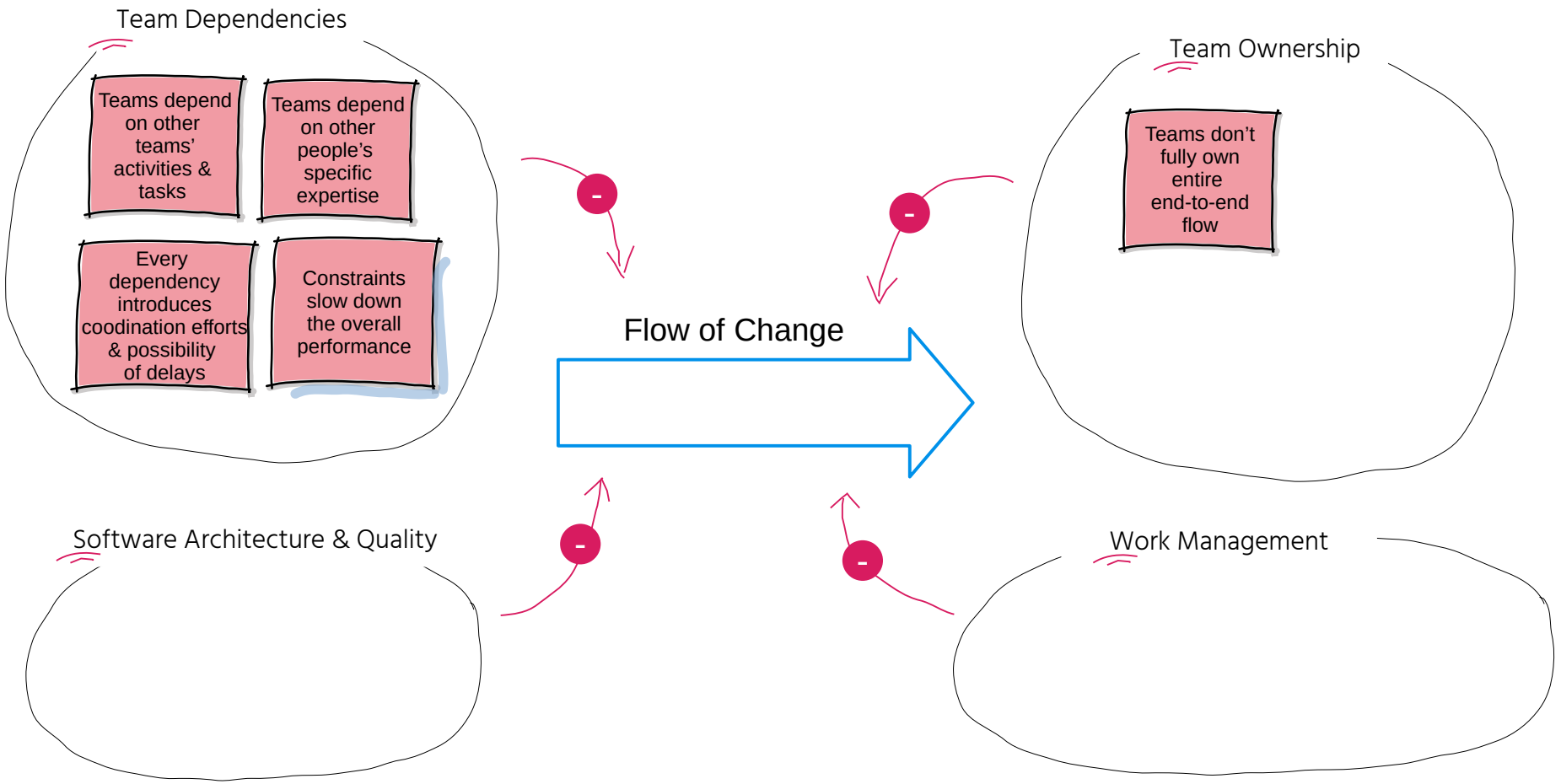

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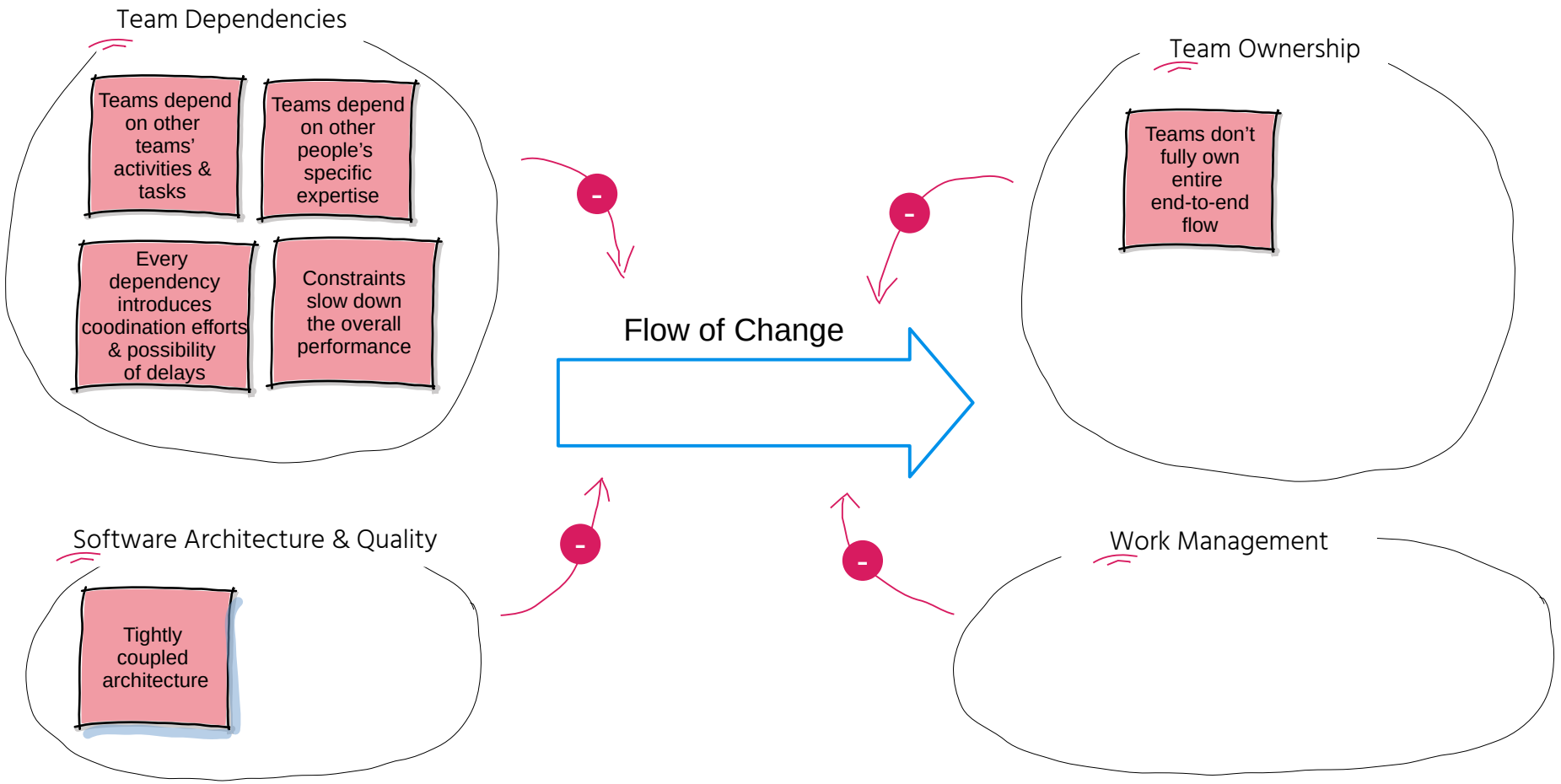

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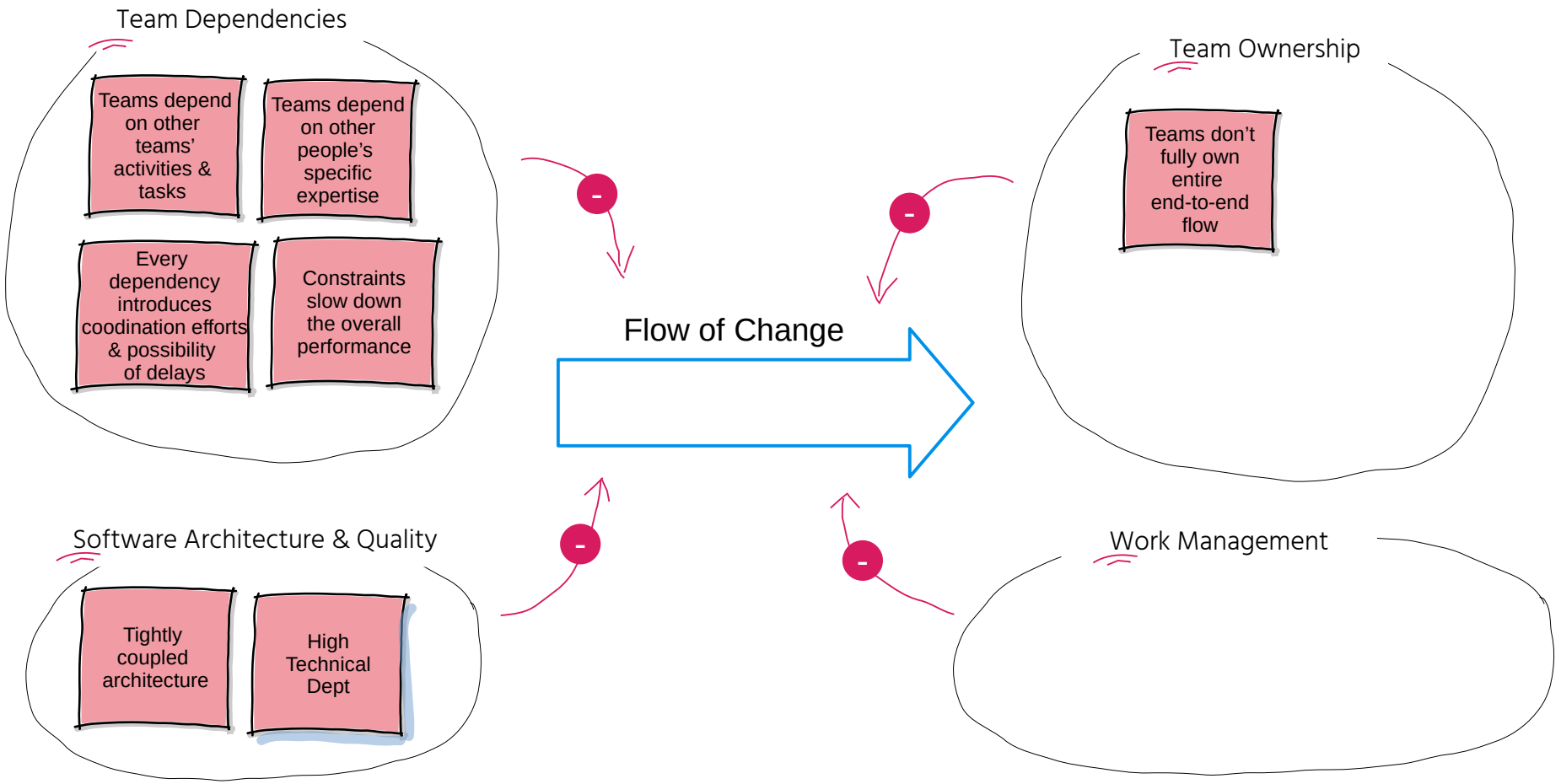

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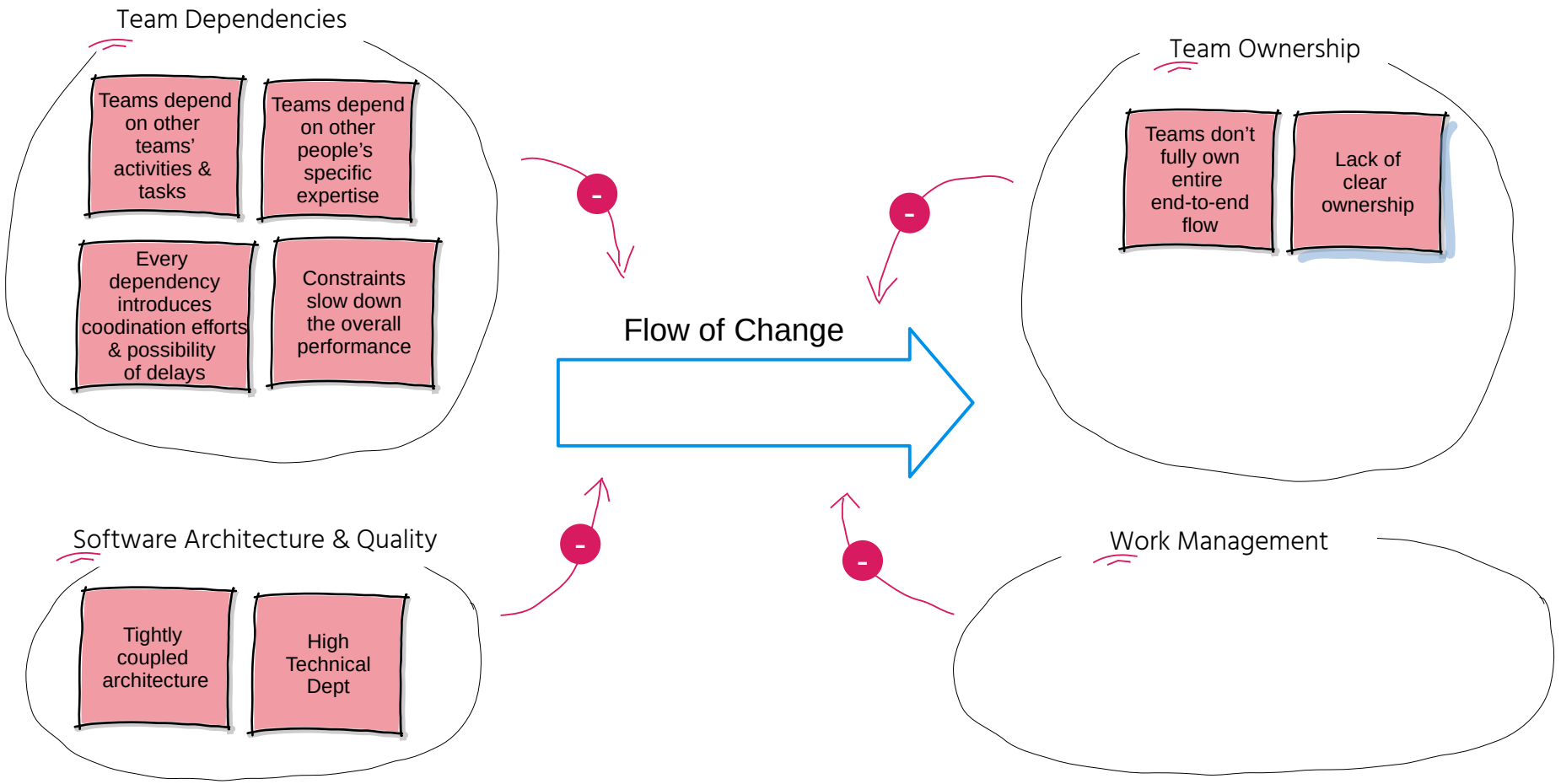

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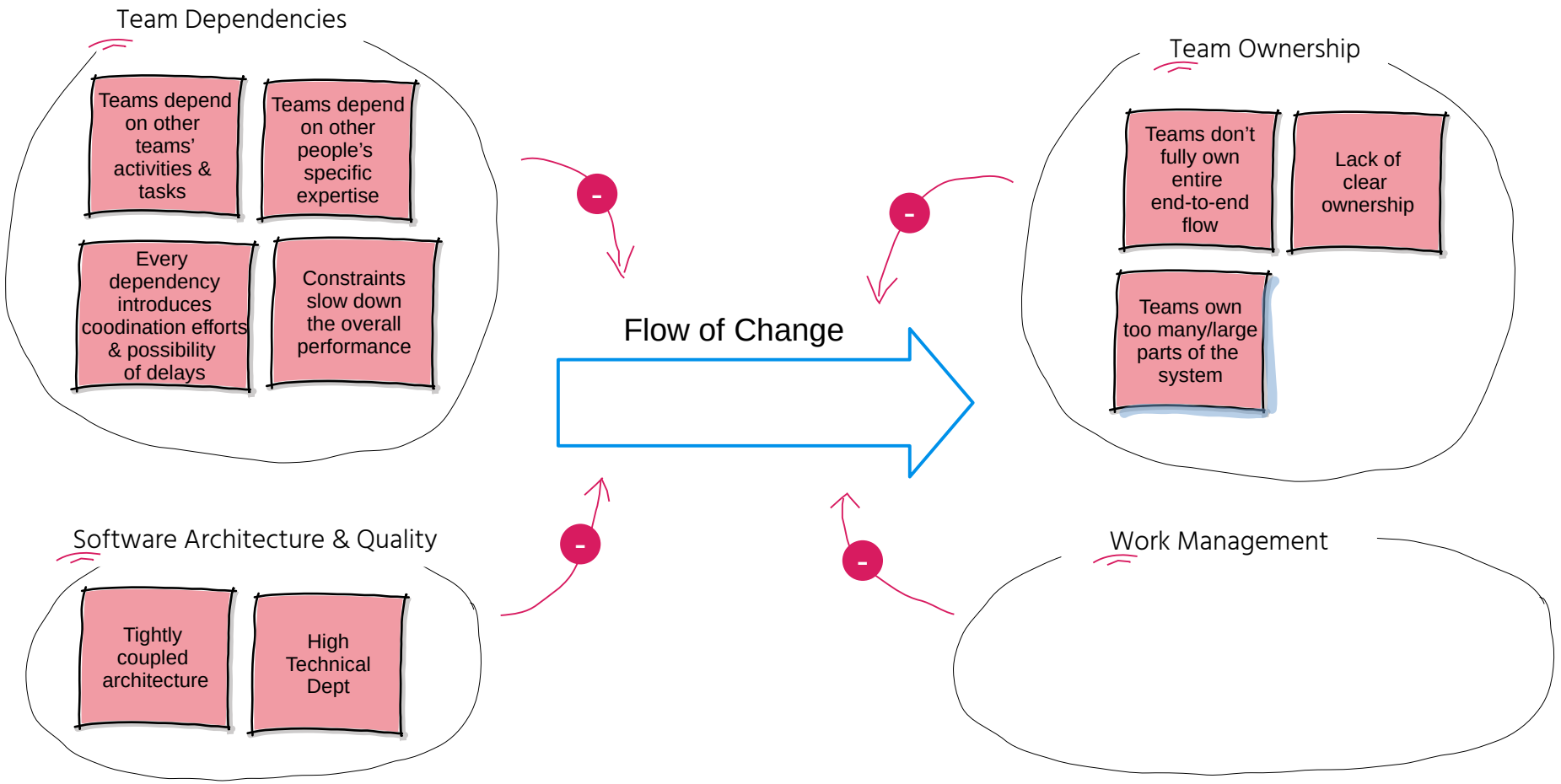

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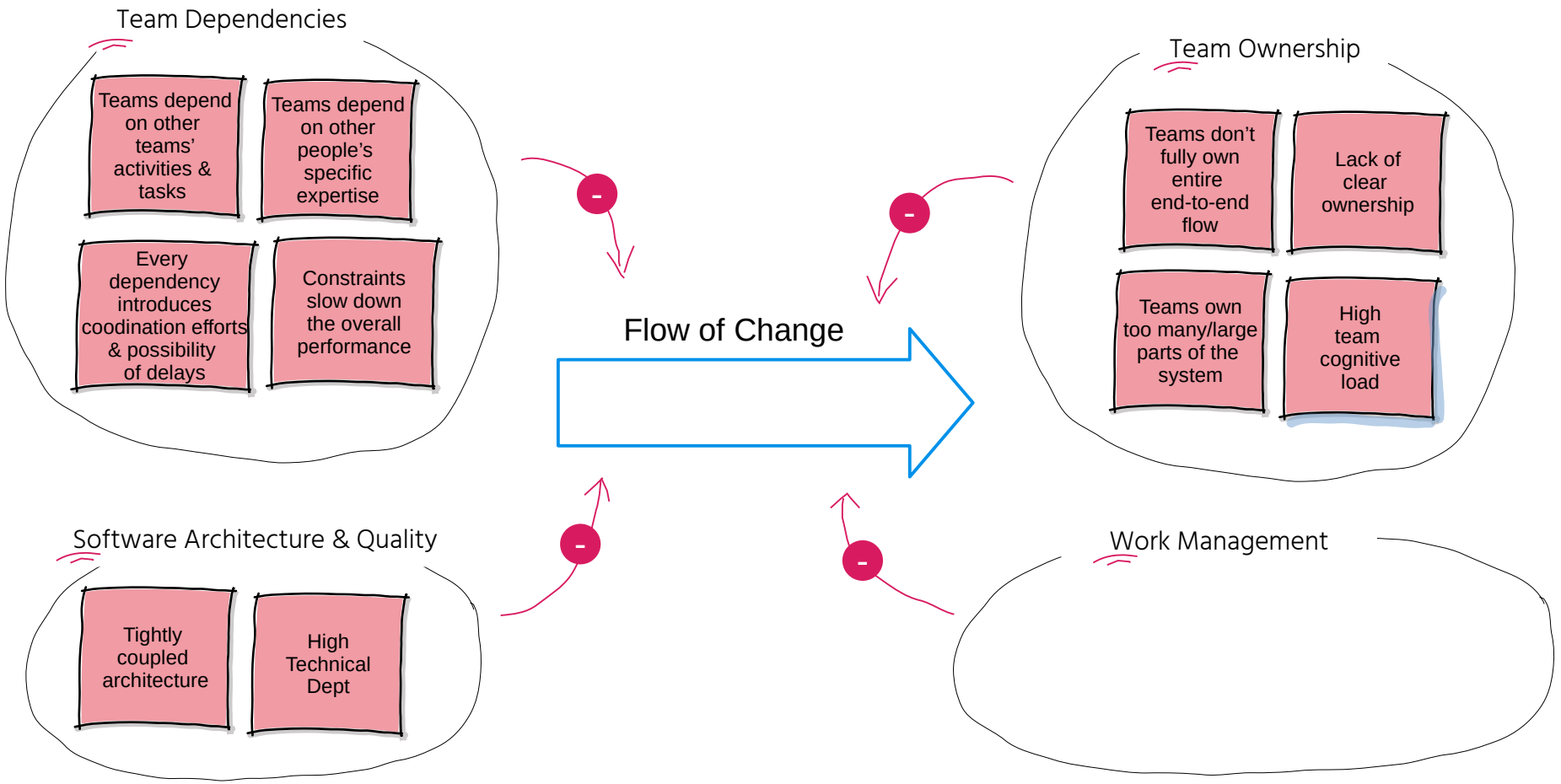

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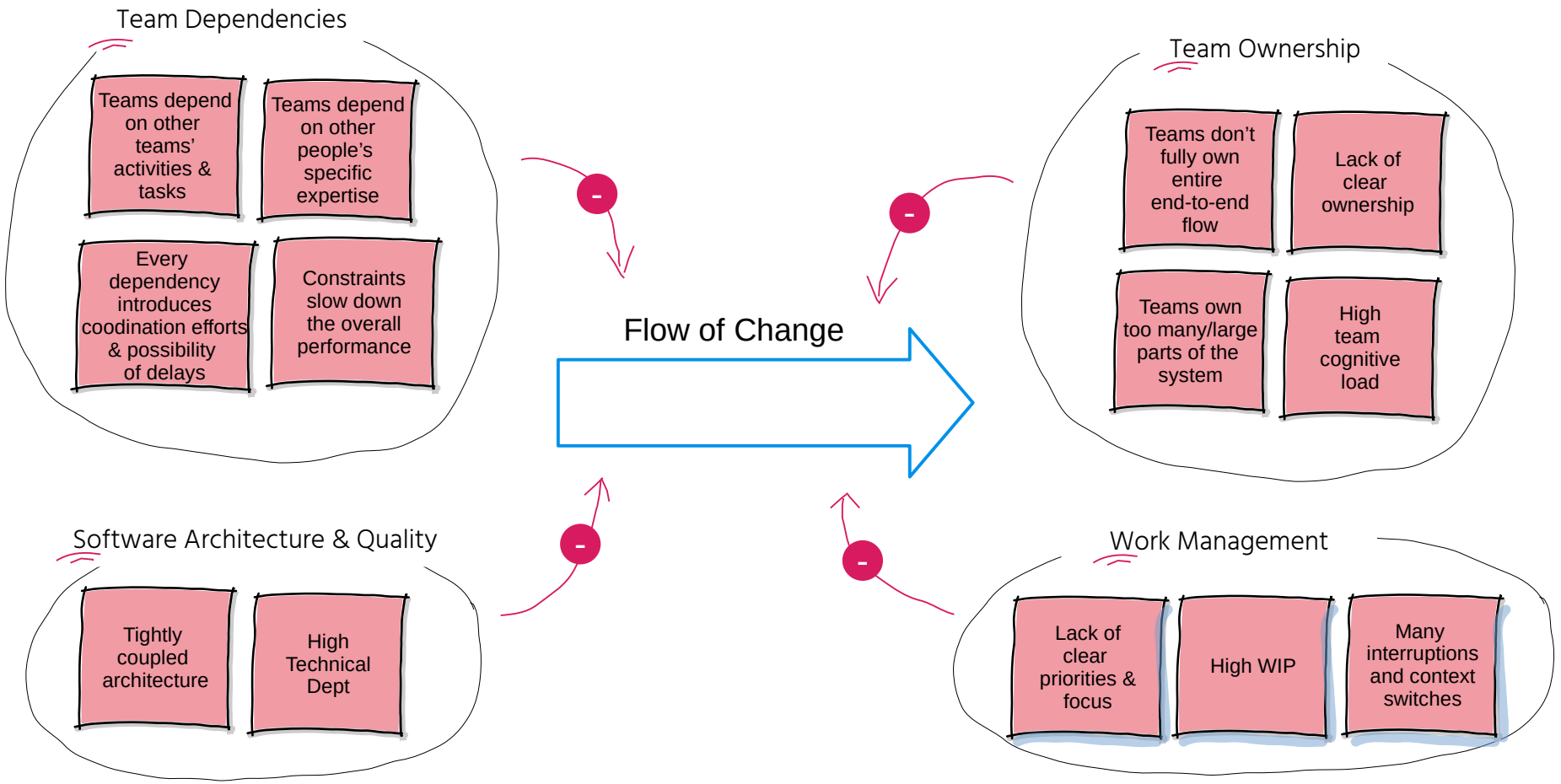


unlock

Lack of clear ownership

Tightly coupled architecture

Teams own too many/large parts of the system

Can we utilize better evolved components?

High team cognitive load

ams depend on other teams' activities & tasks

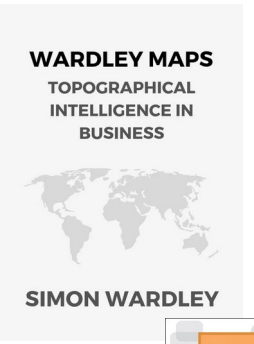
Teams depend on other people's specific expertise

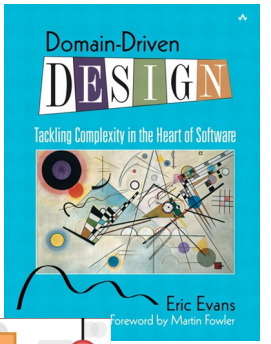
Teams depend on external decisions & approval

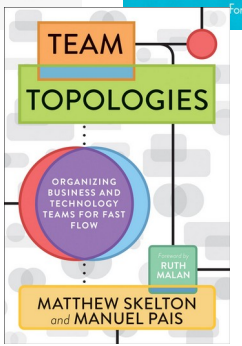
Are we tom-building omponents that are not core to our business?

Handover, waiting times introduces coodination efforts & delays

Constraints slow down the overall performance







Architecture for Flow

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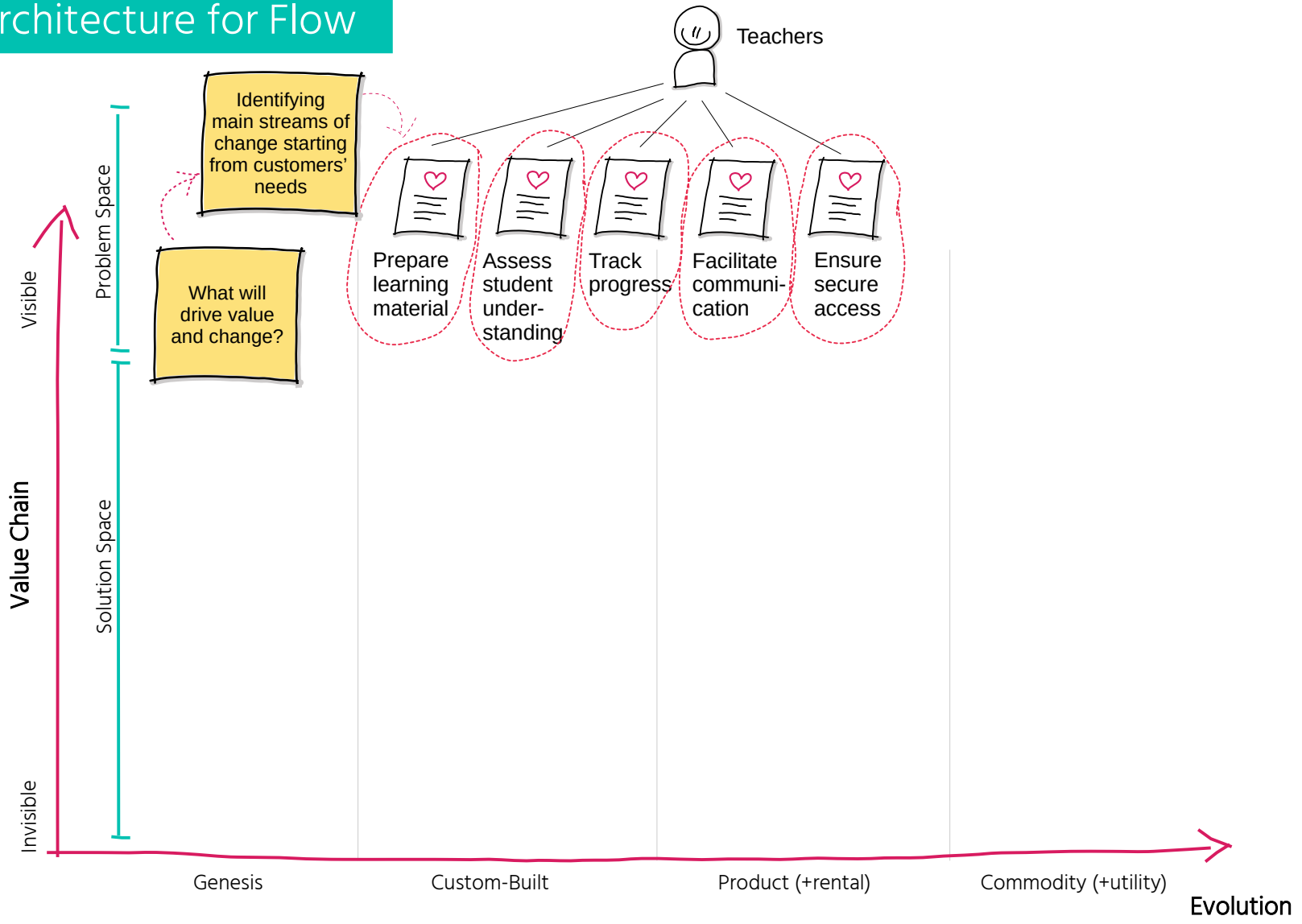

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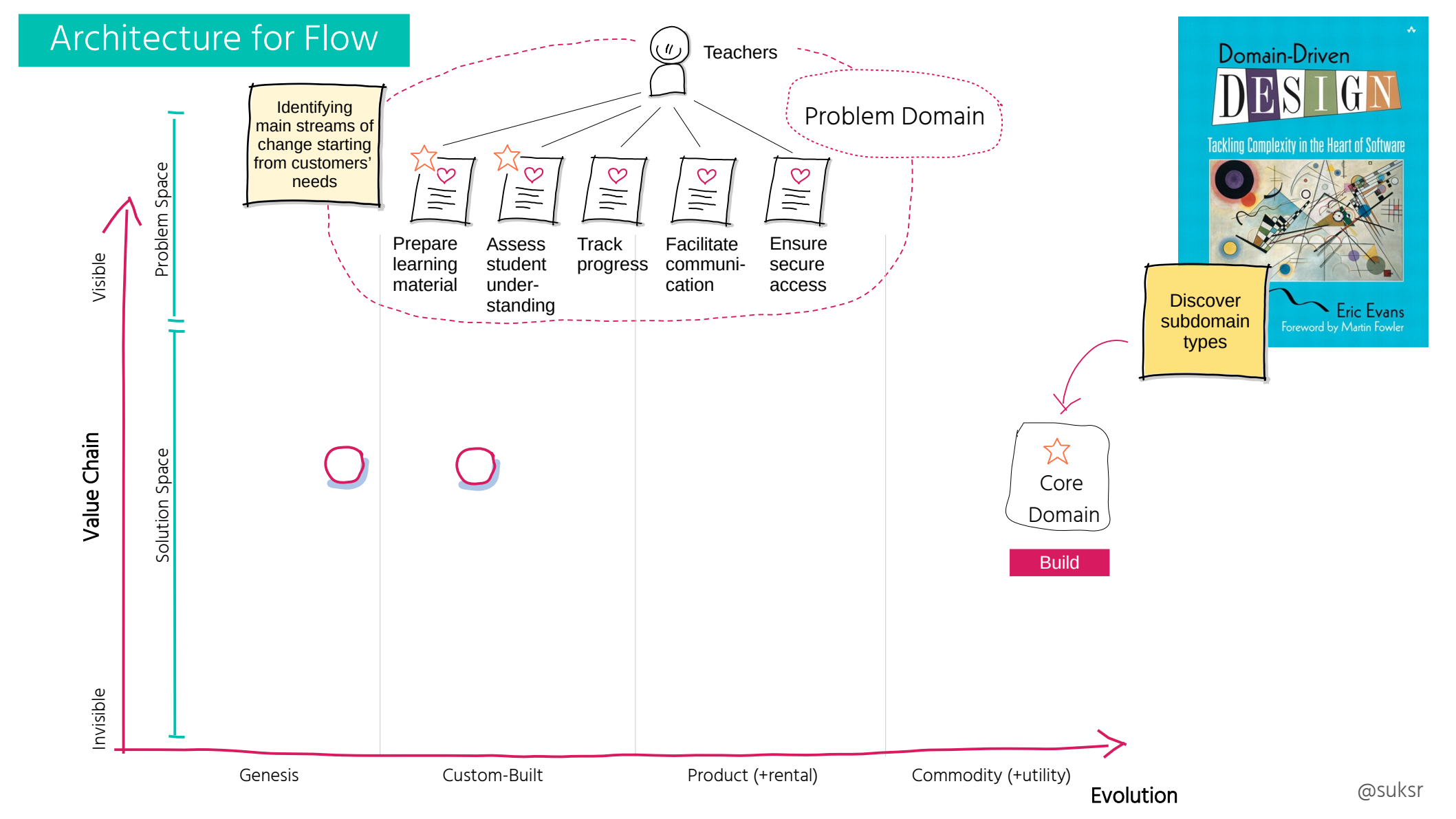

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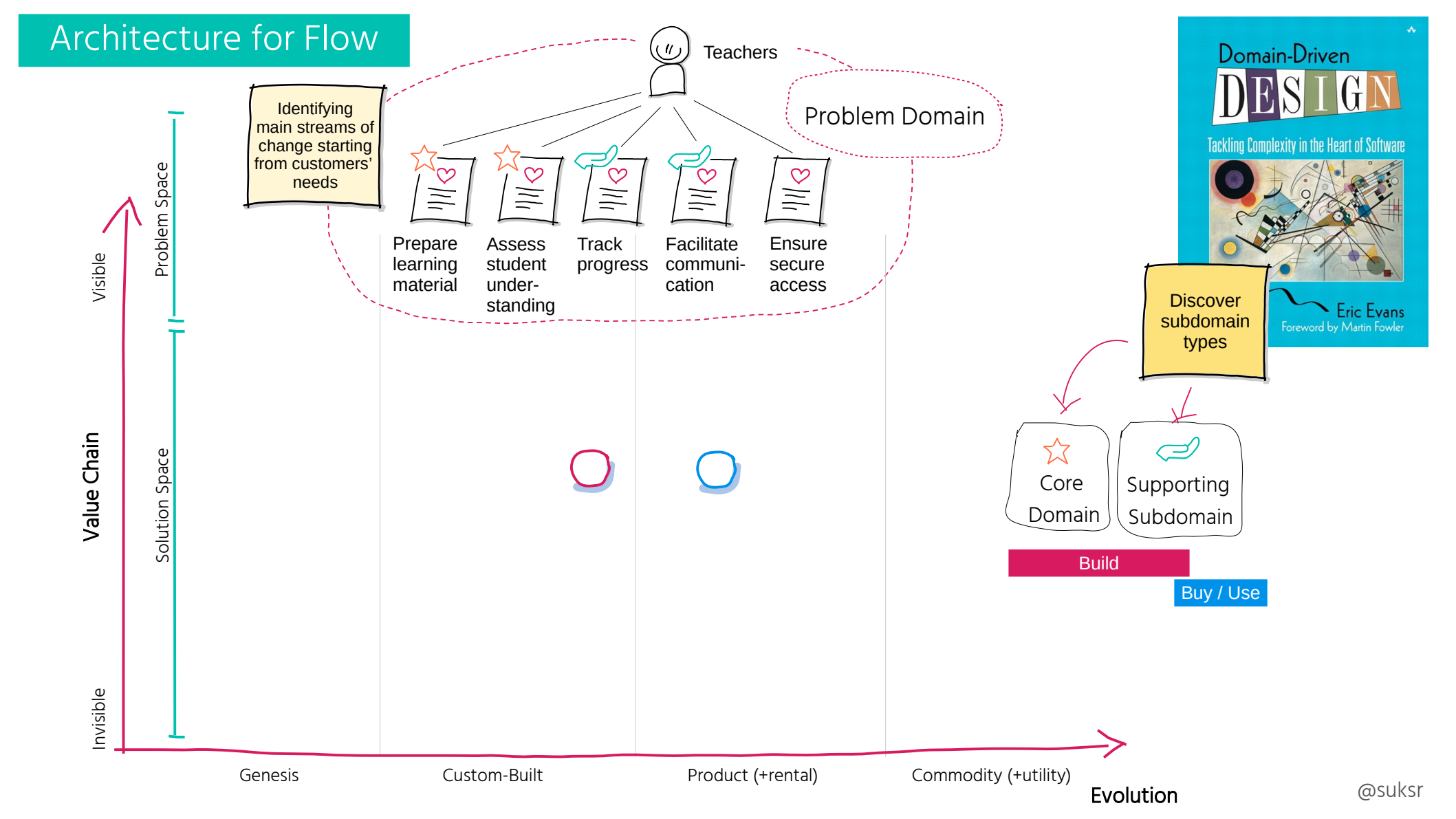

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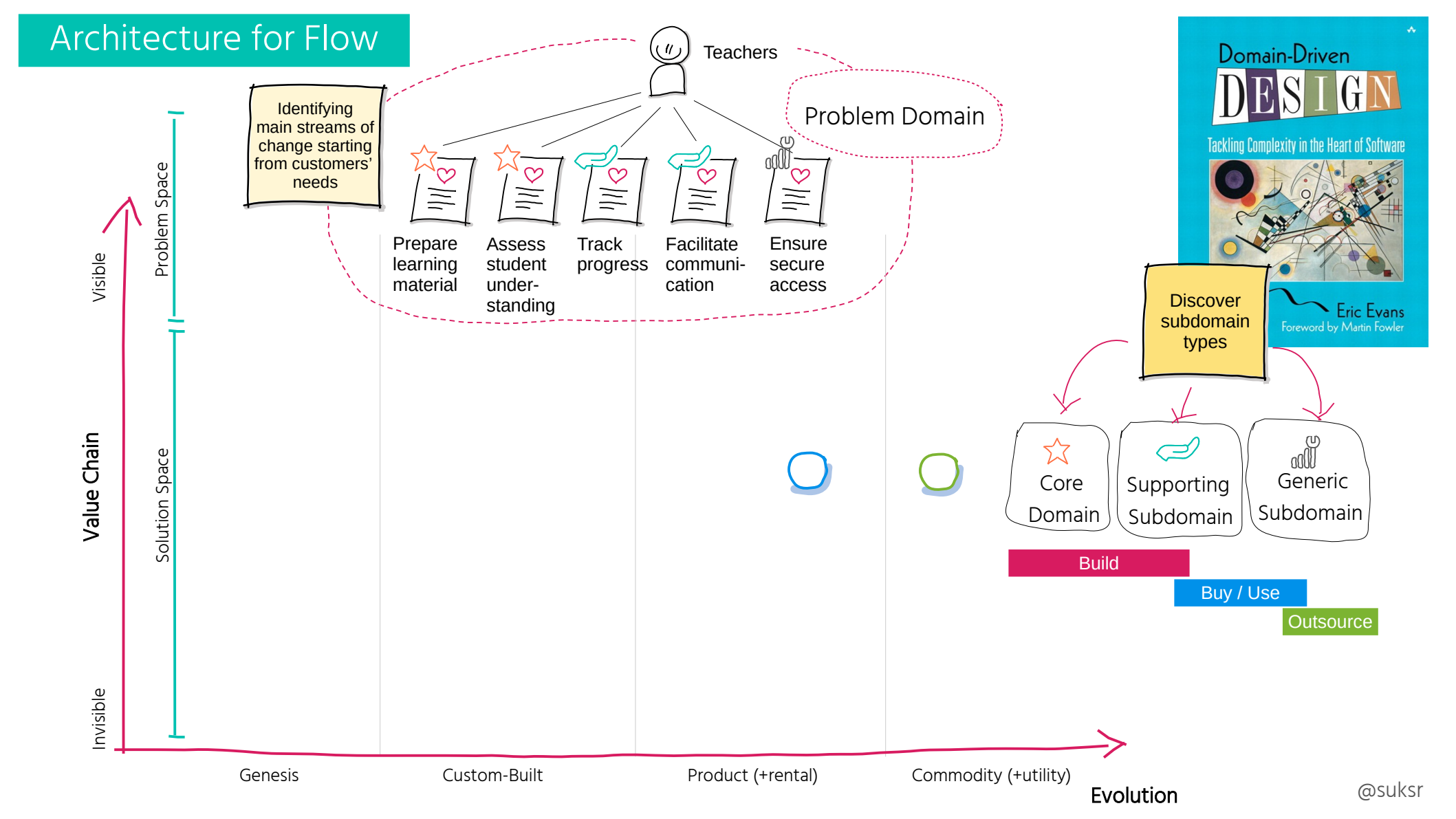

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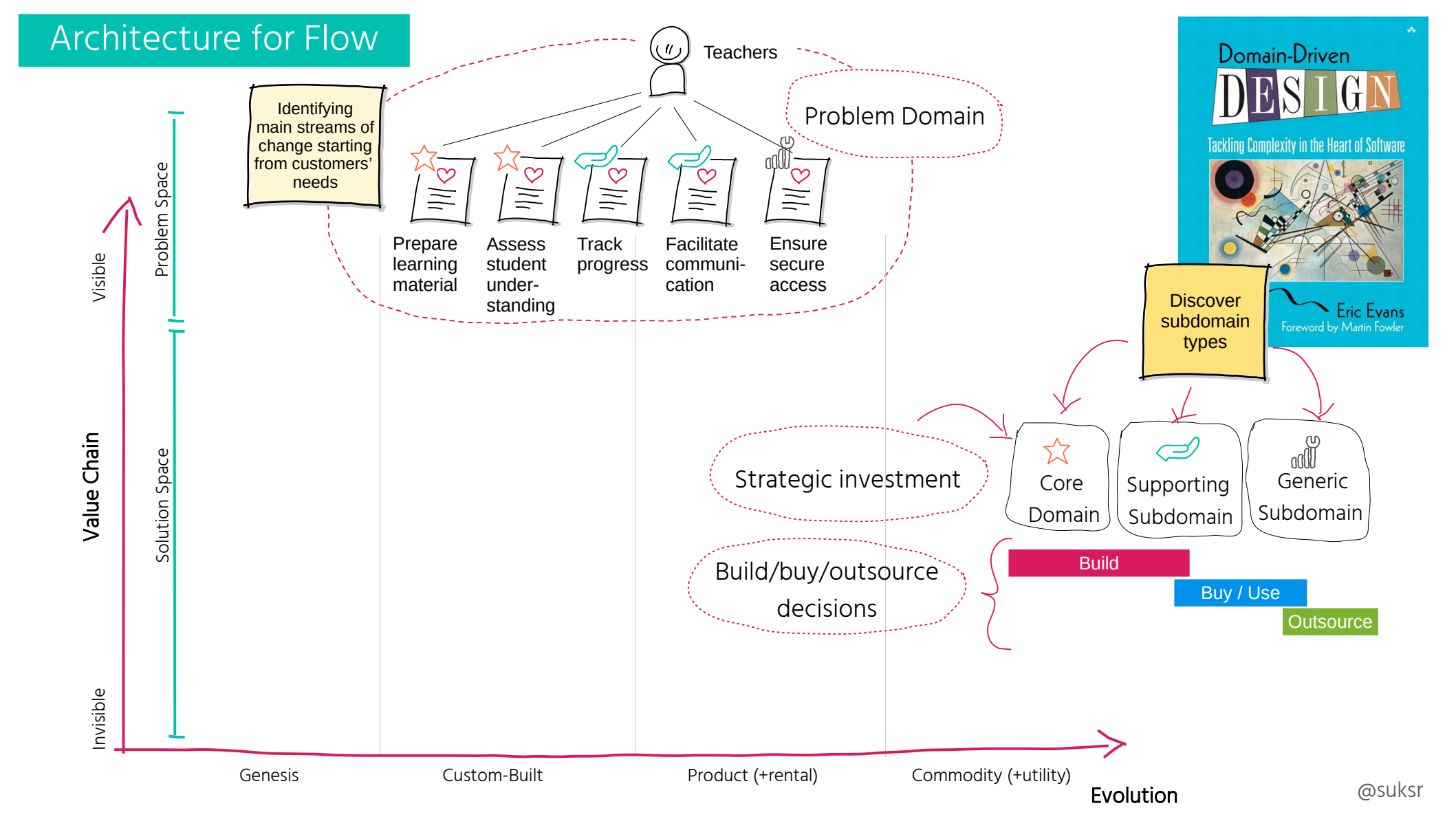

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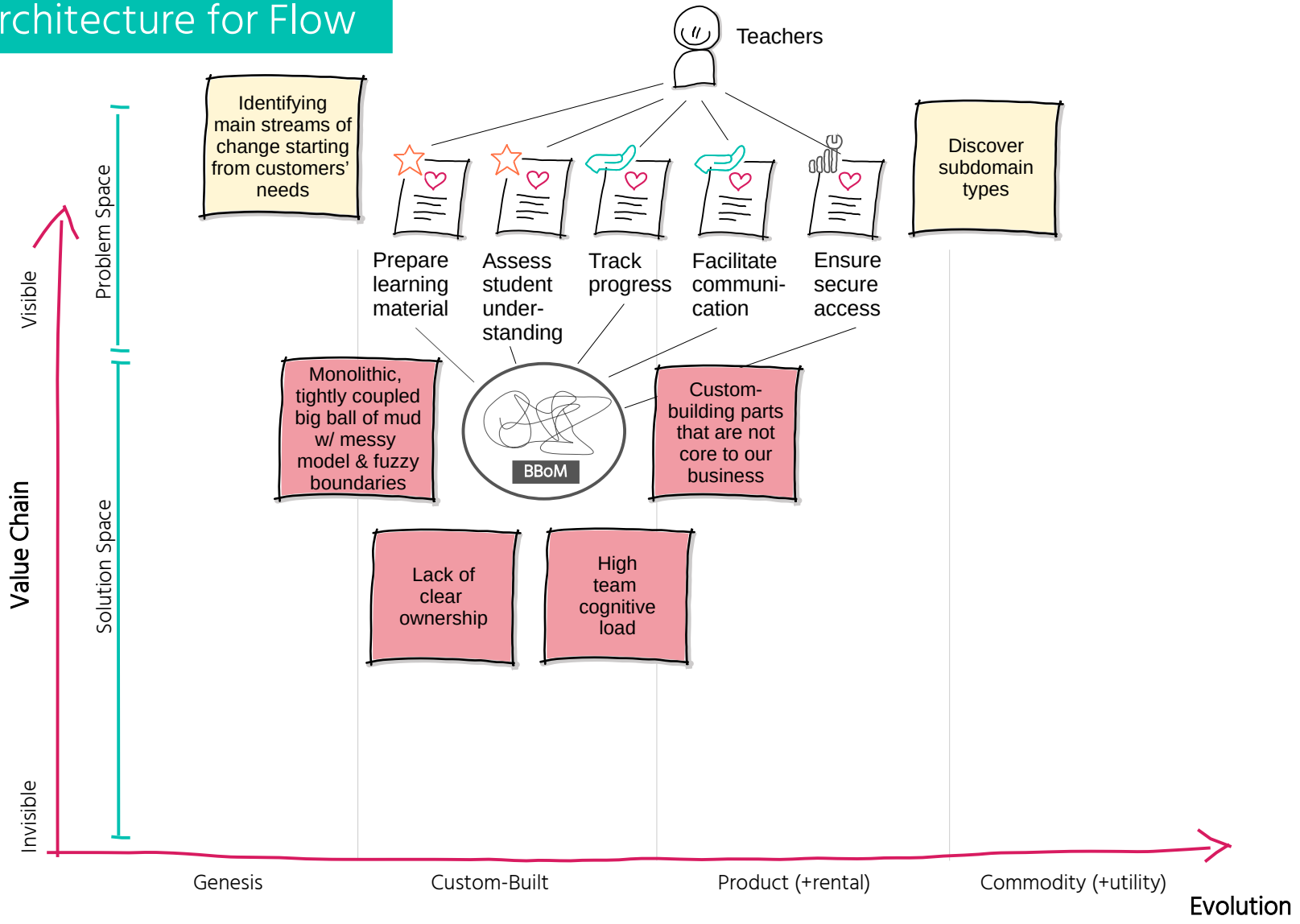

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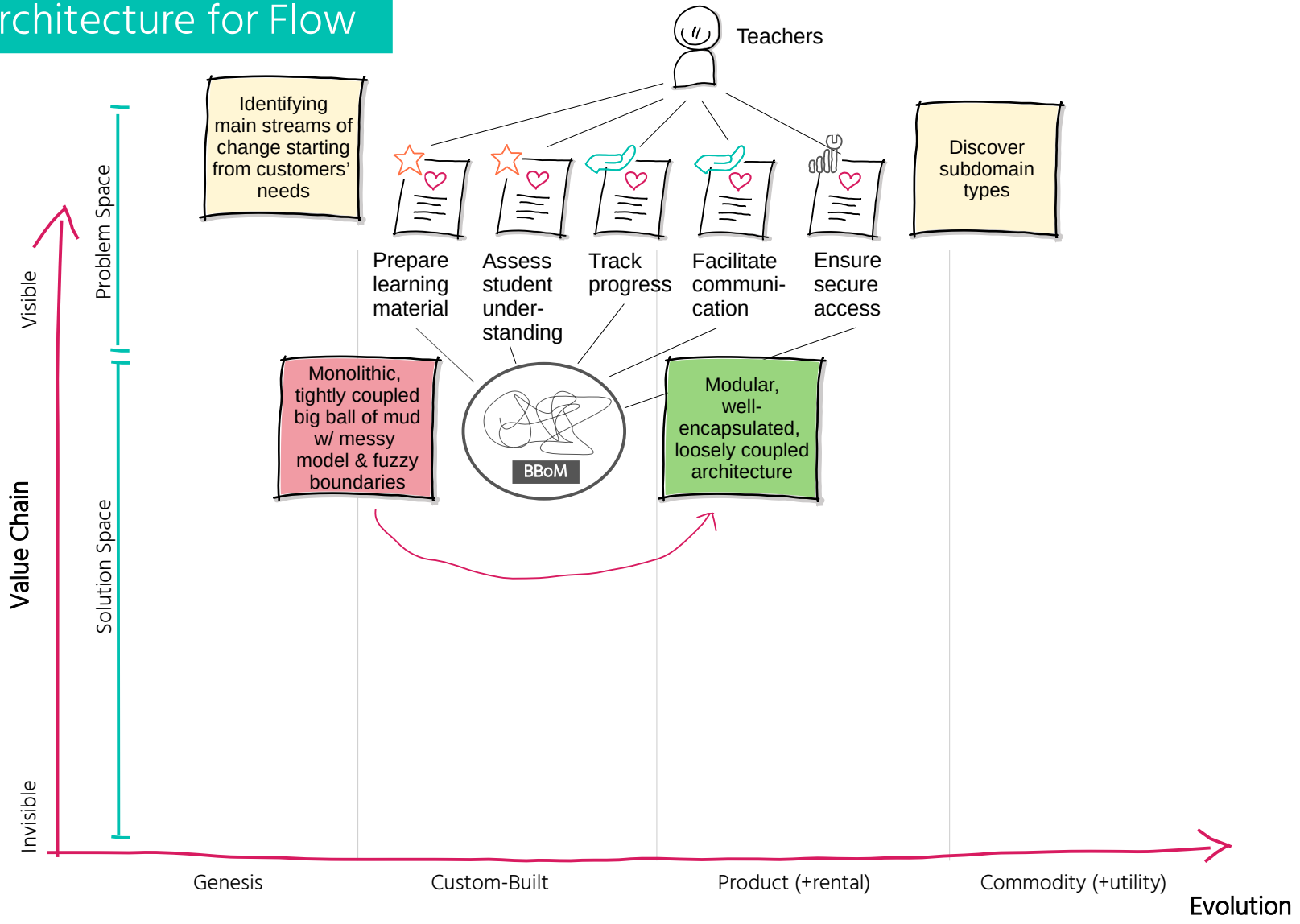

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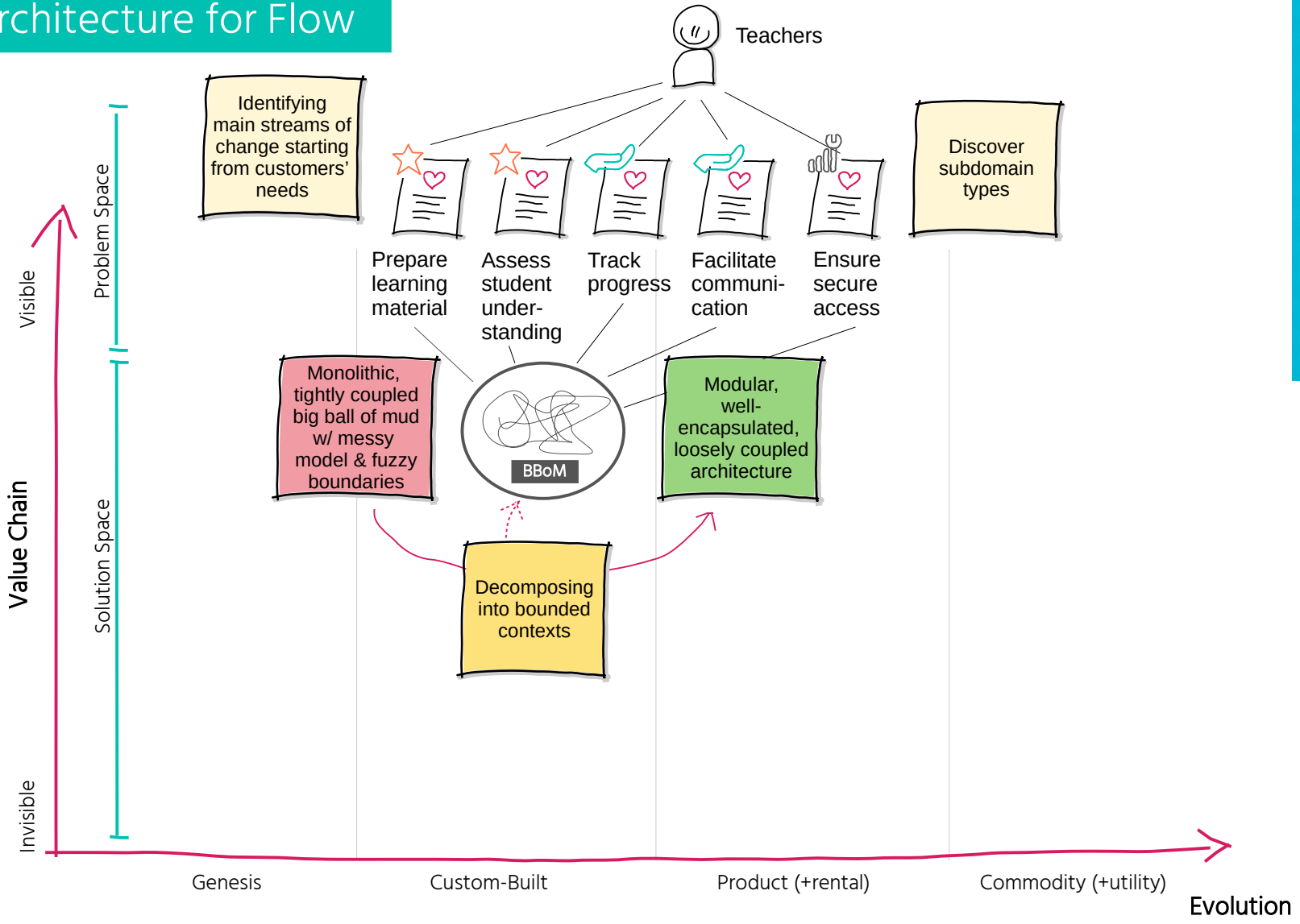

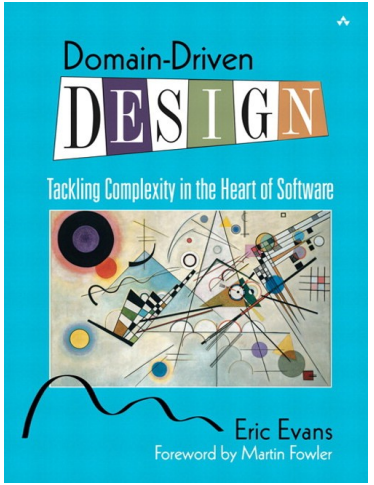

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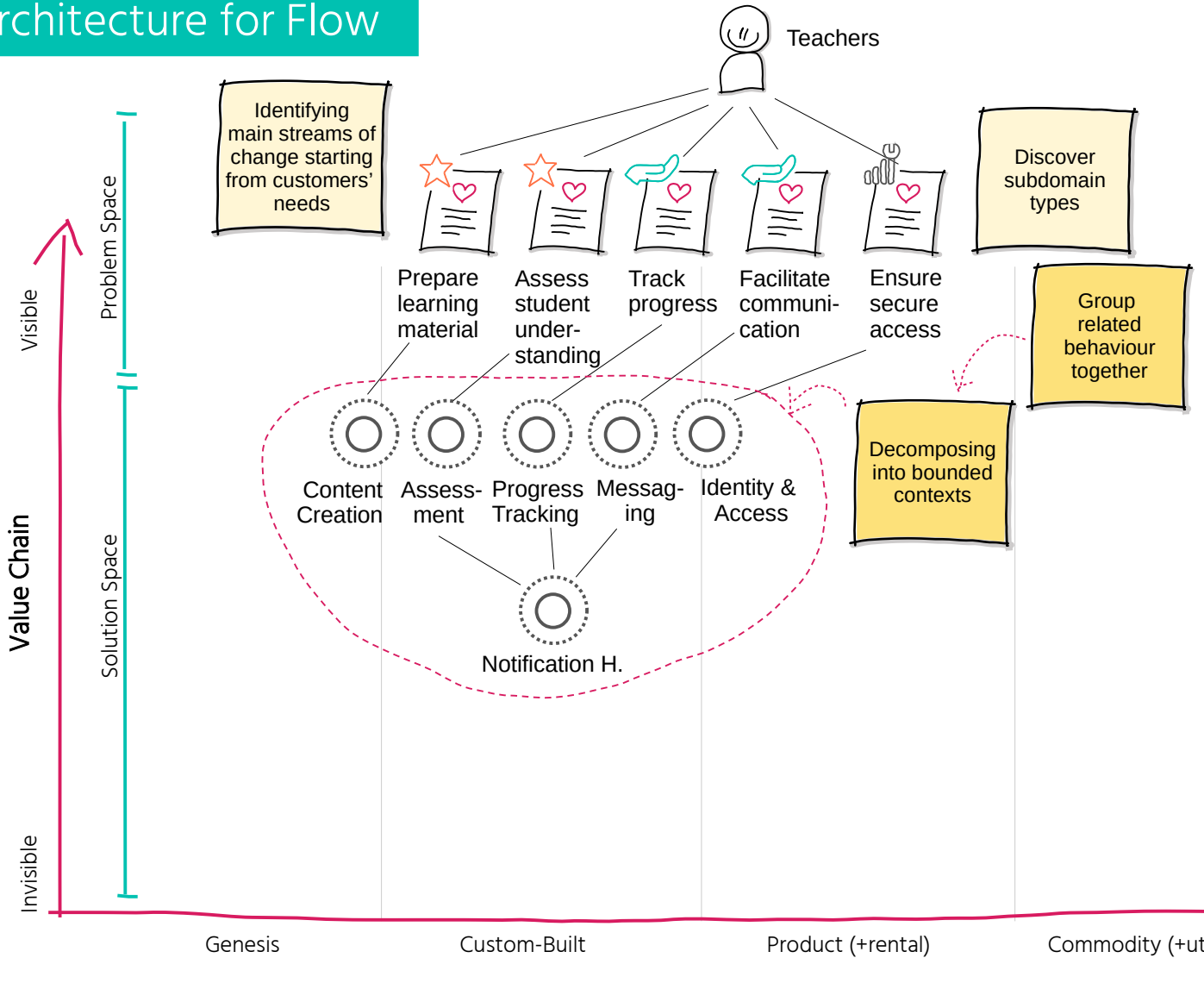

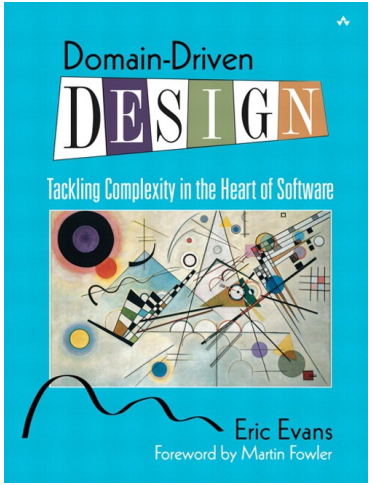

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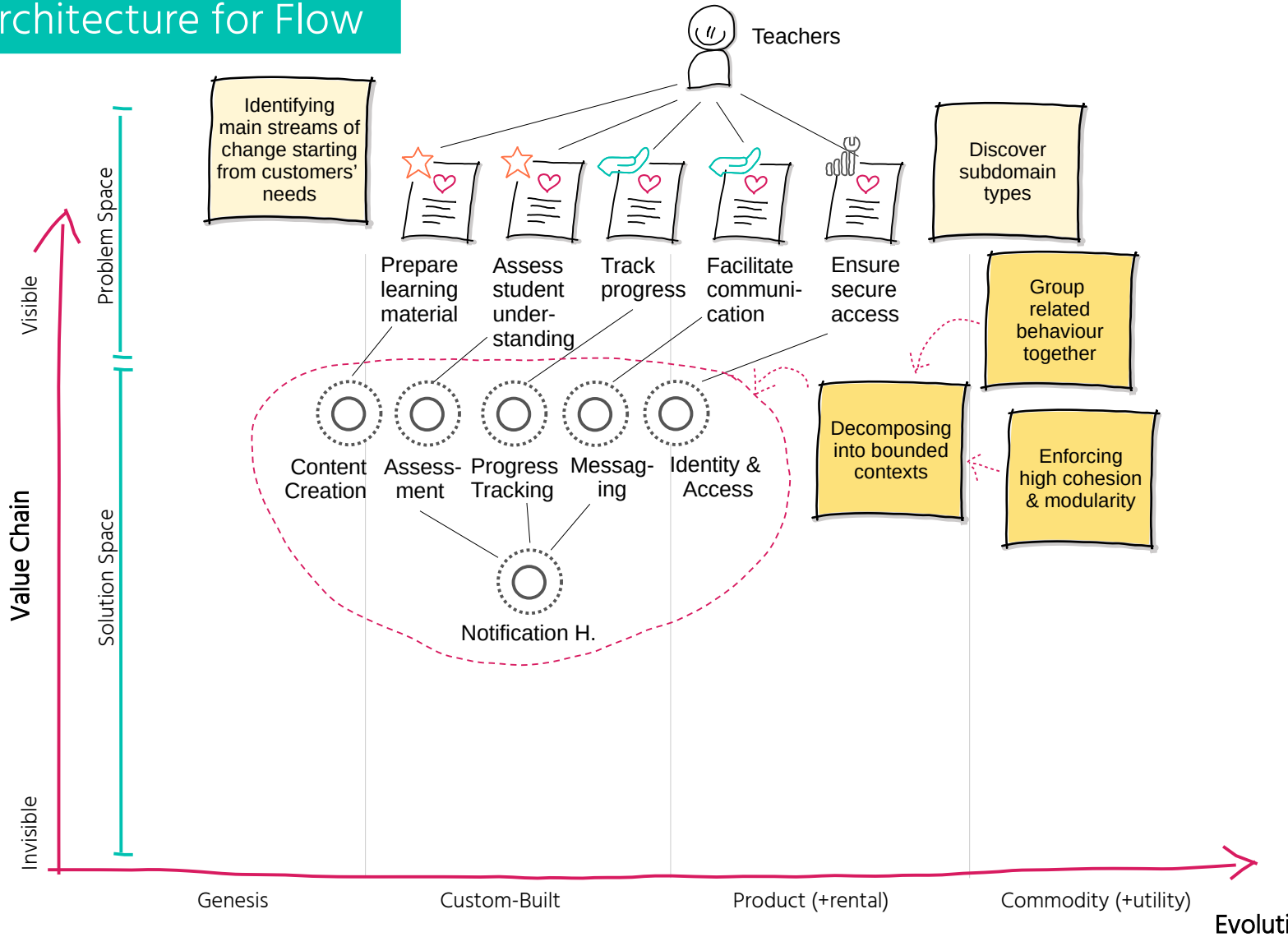

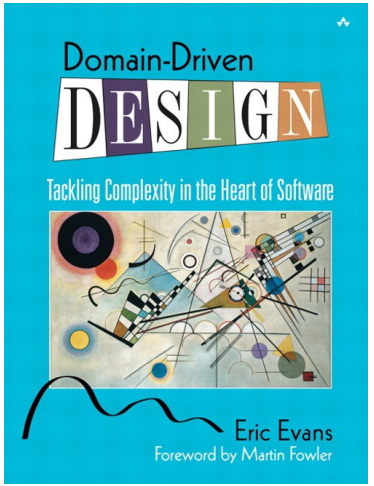

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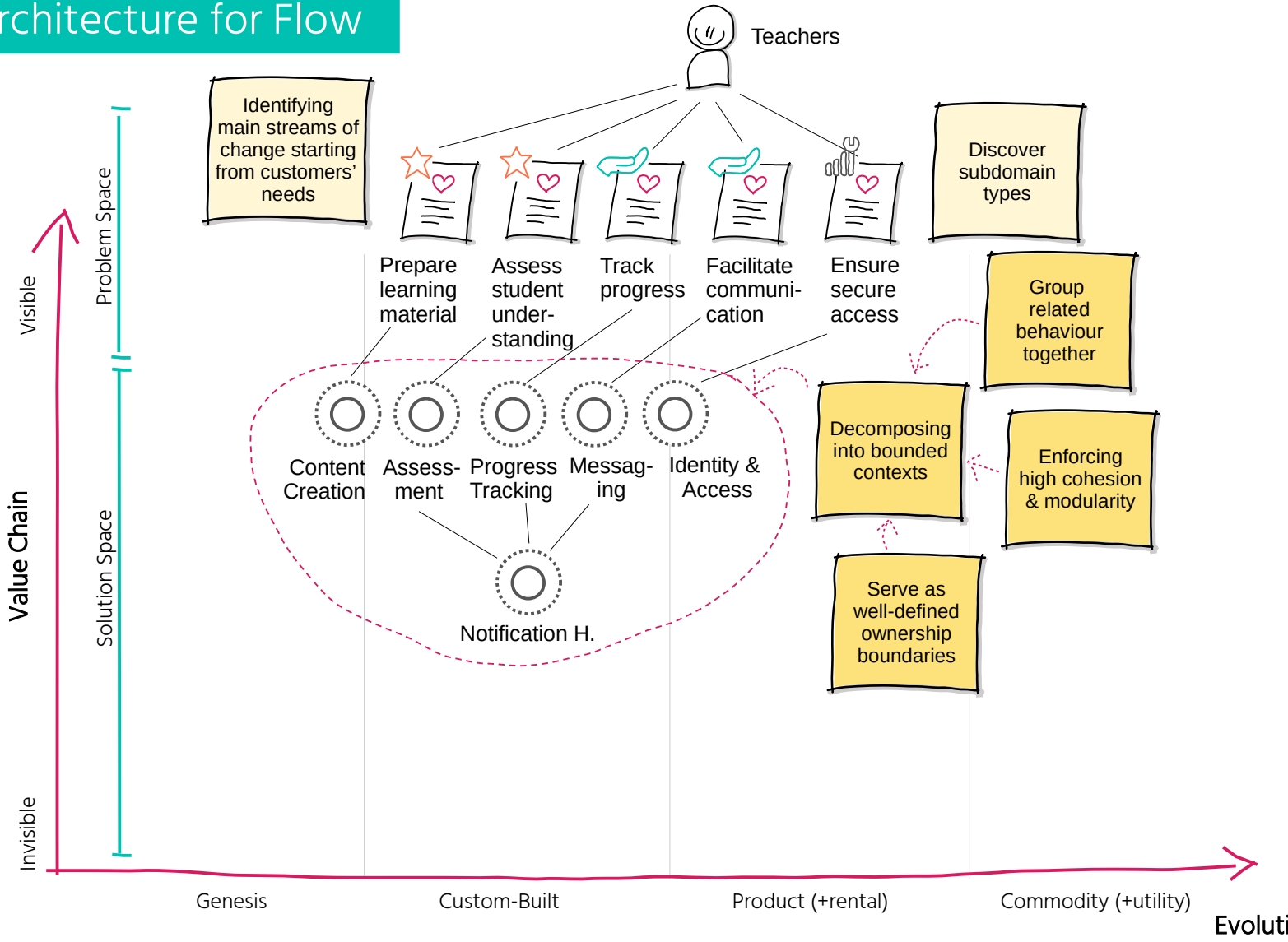
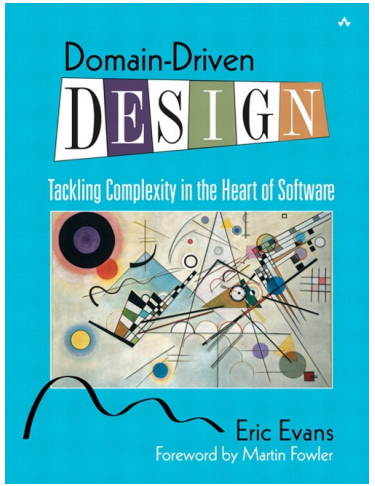
Architecture for Flow





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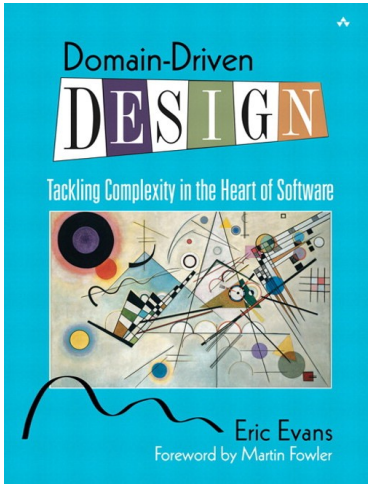


Identifying main streams of change starting from customers' needs

Teachers

Prepare learning material

Assess student under-standing

Track progress

Facilitate communi-cation

Ensure secure access

Discover subdomain types

Content Creation

Assess-ment

Progress Tracking

Messag-ing

Identity & Access

Notification H.

Group related behaviour together

Decomposing into bounded contexts

Enforcing high cohesion & modularity

Serve as well-defined ownership boundaries

Domain Experts

Development Teams

Available Techniques:
- EventStorming
- Domain Storytelling
- Example Mapping
- Userstory Mapping
- etc.

Problem Space

Solution Space

Visible

Invisible

Value Chain

Genesis

Custom-Built

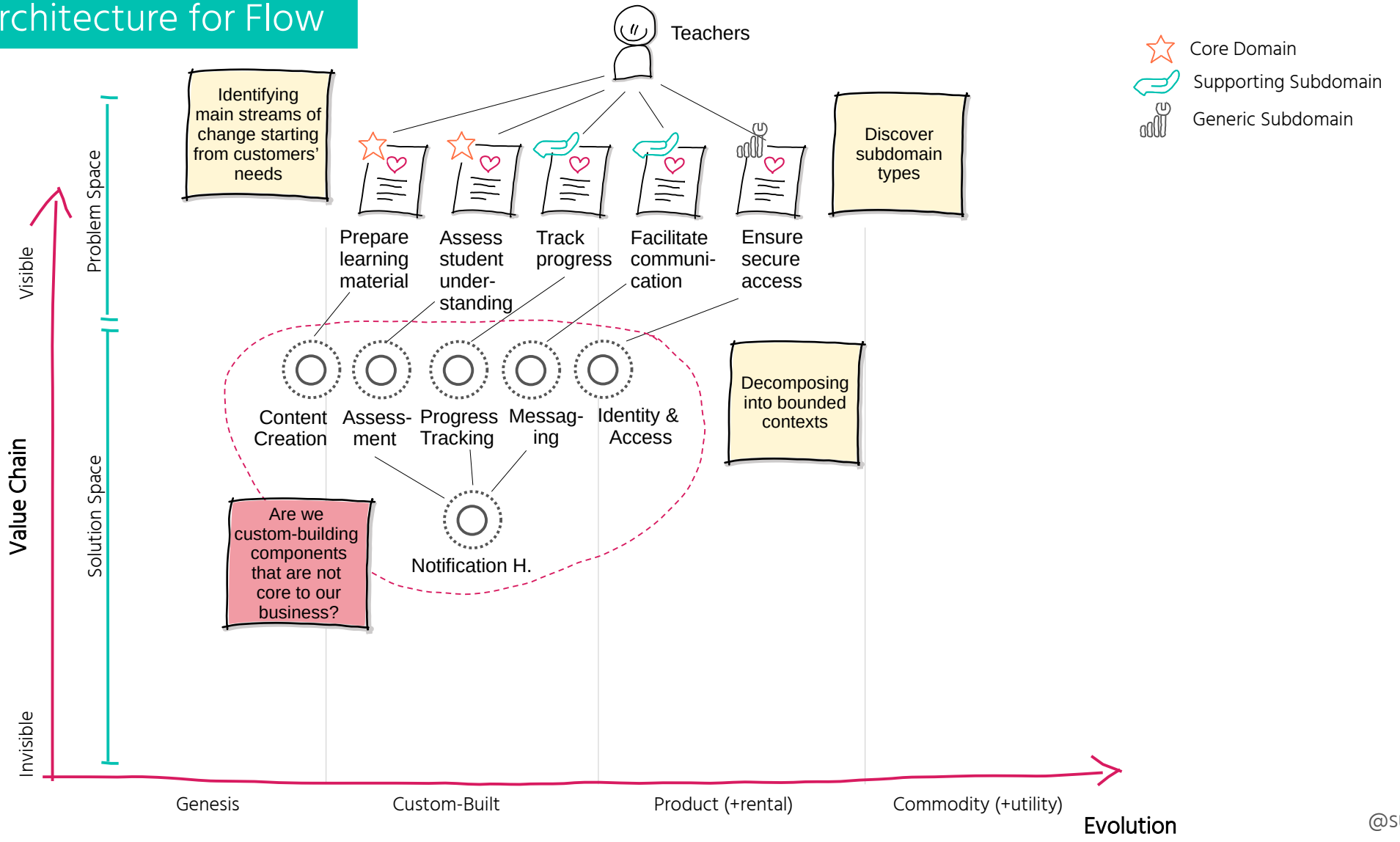
Product (+rental)

Commodity (+utility)

Evolution

@suksr

Architecture for Flow



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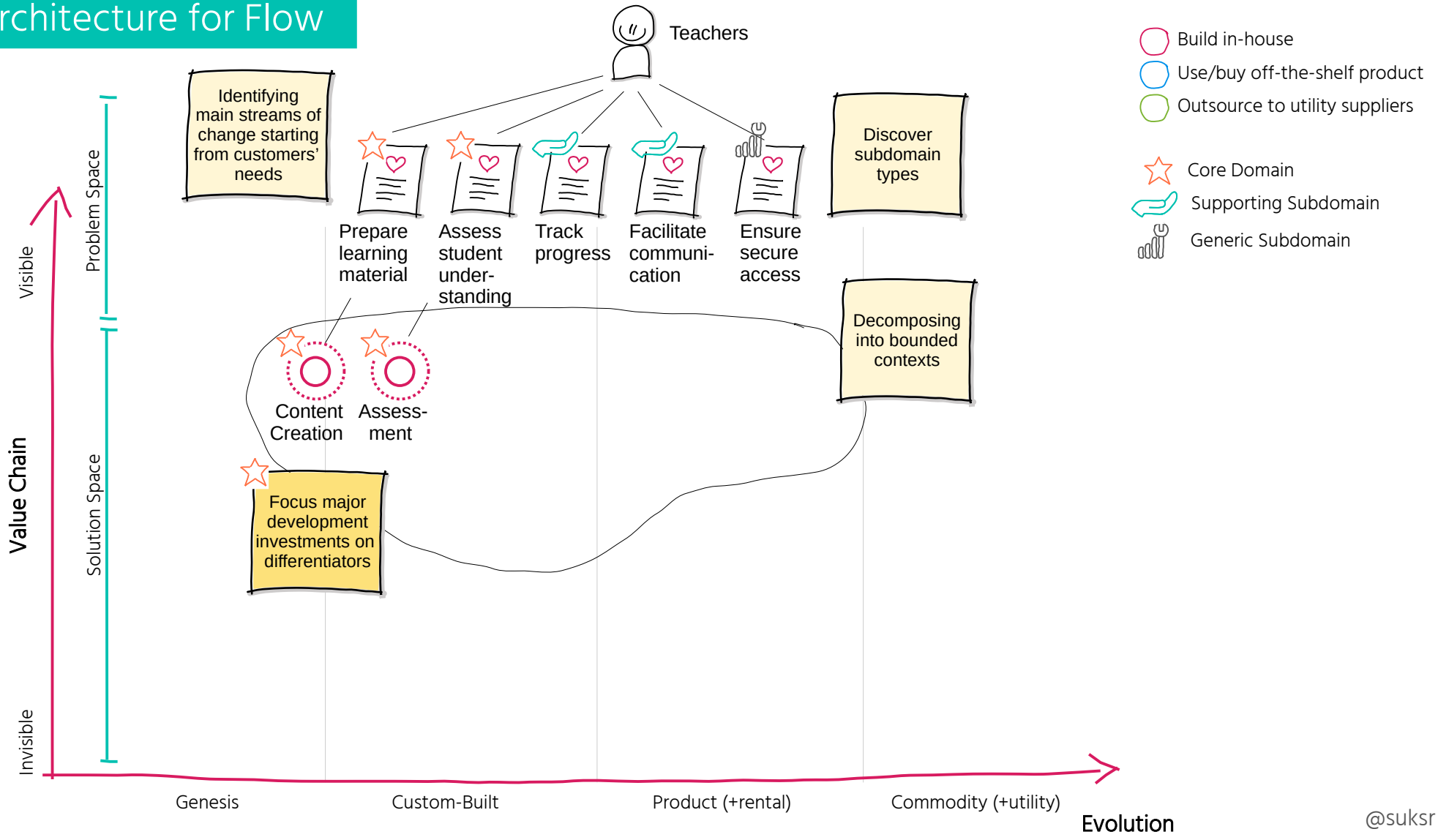

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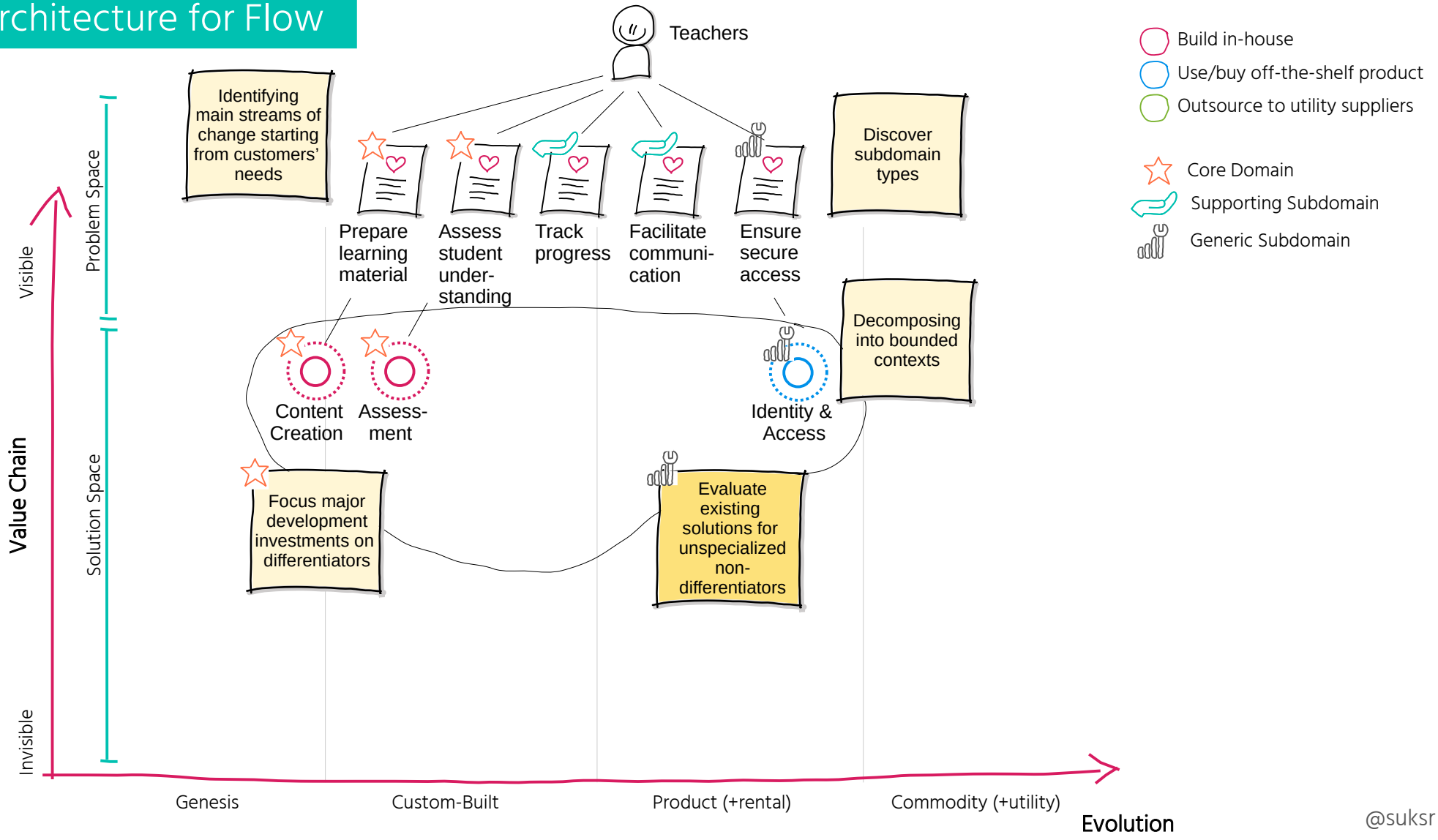

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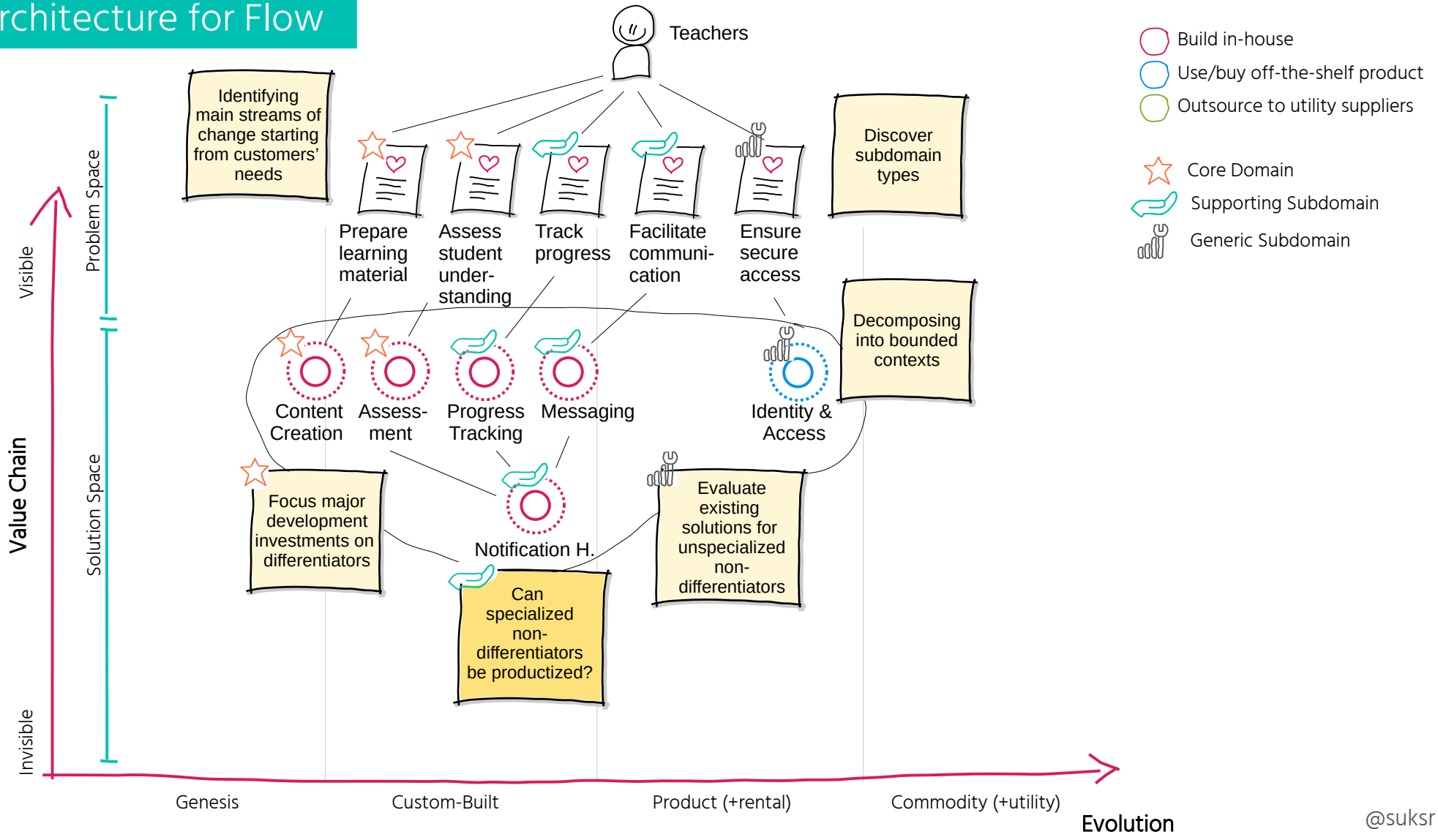

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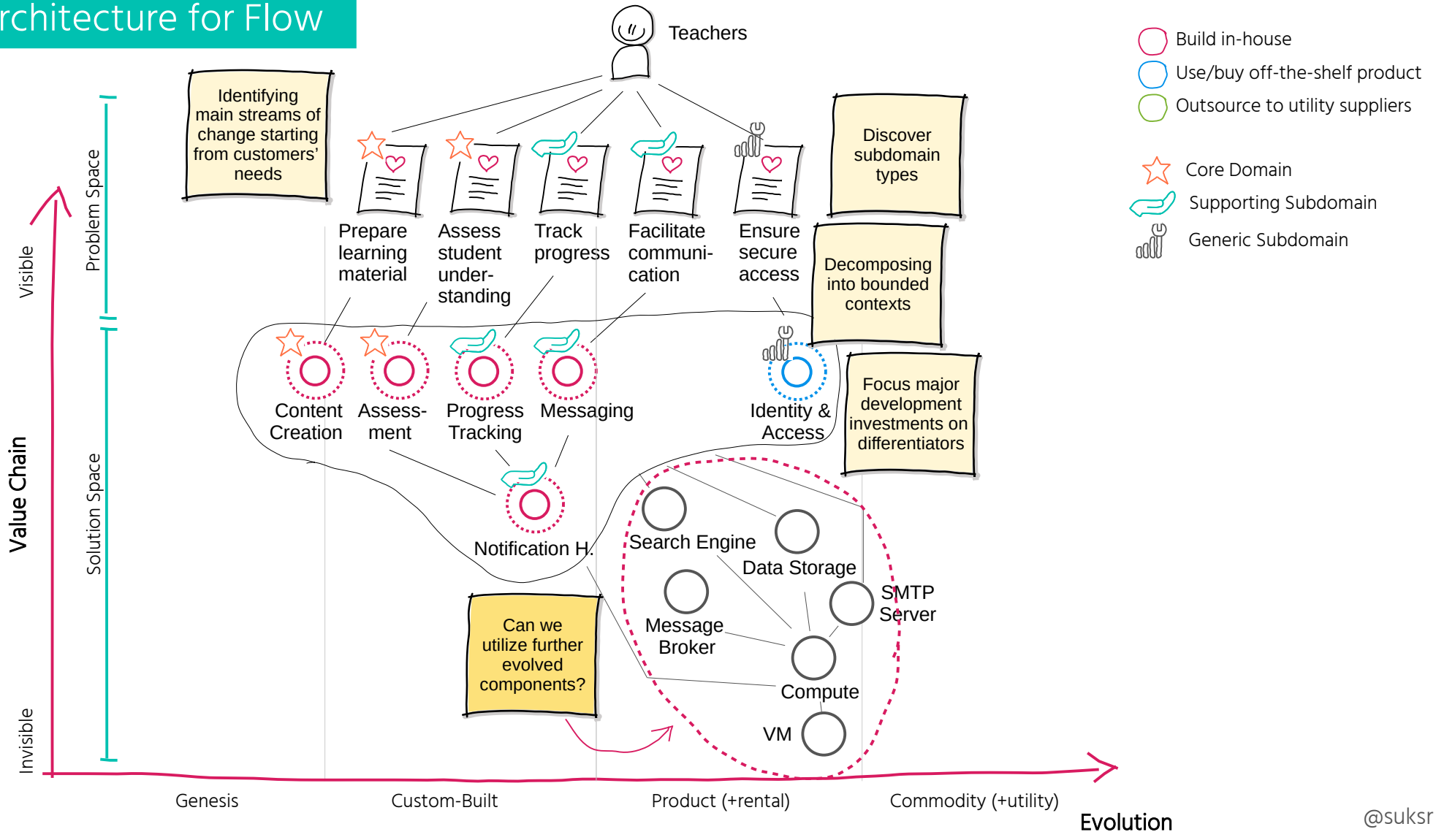

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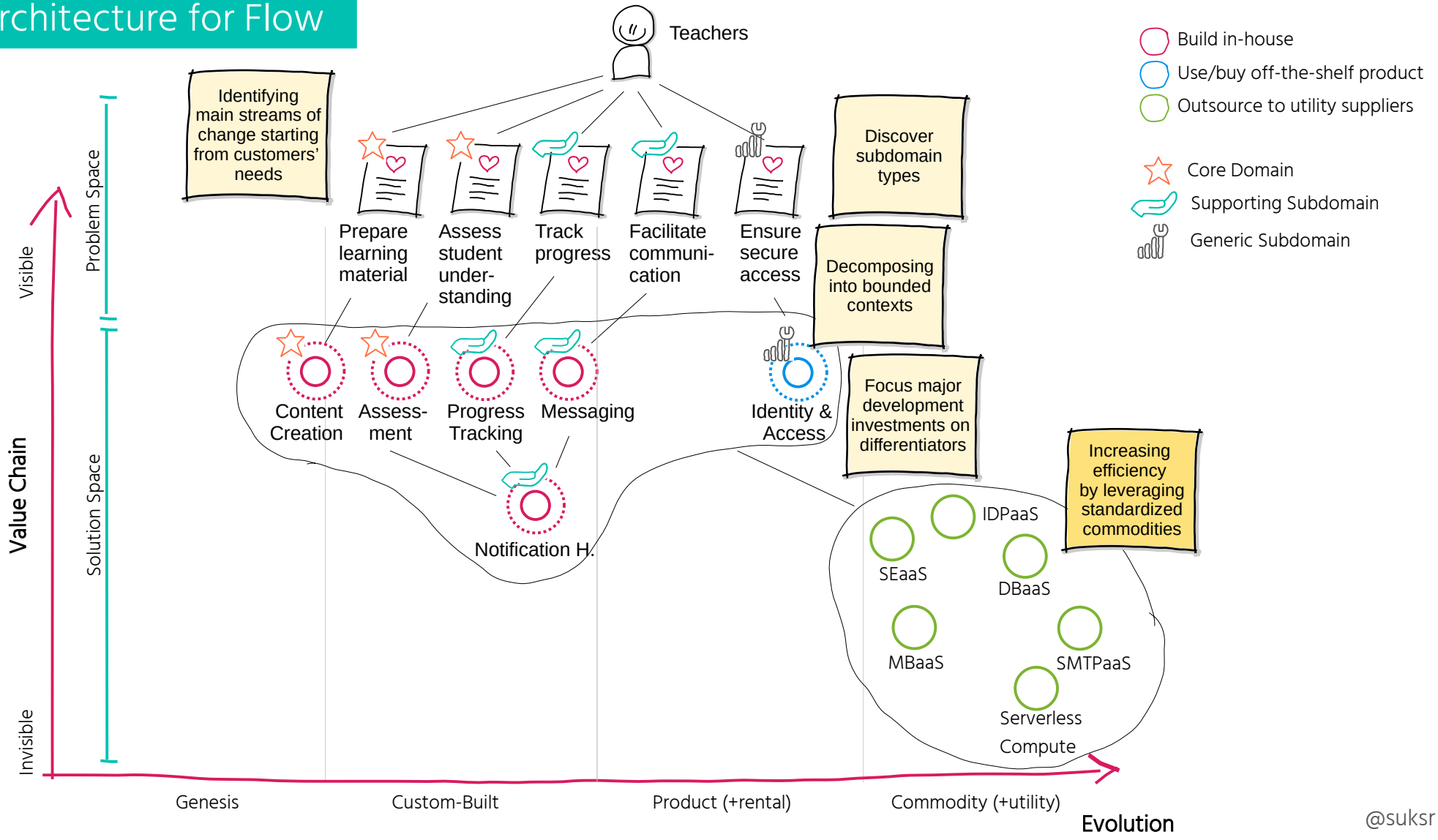

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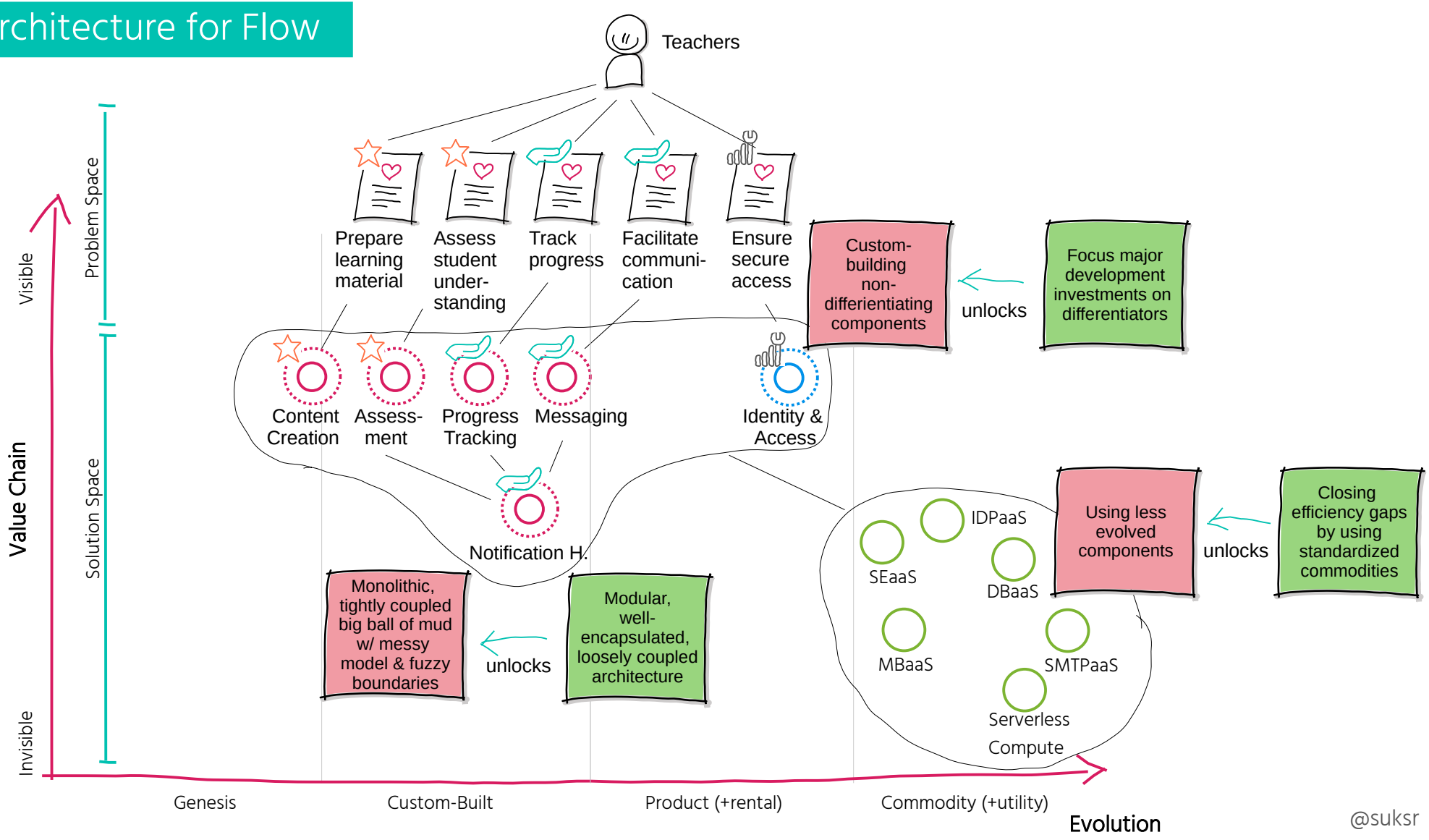

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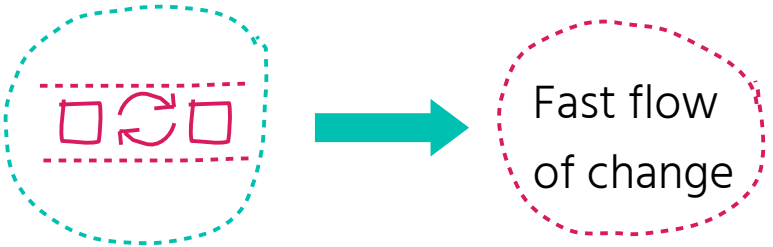
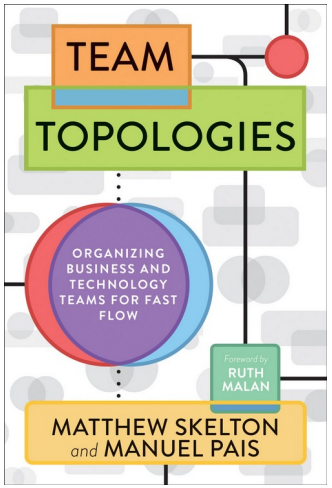
Four Team Types of Team Topologies



Stream-aligned team



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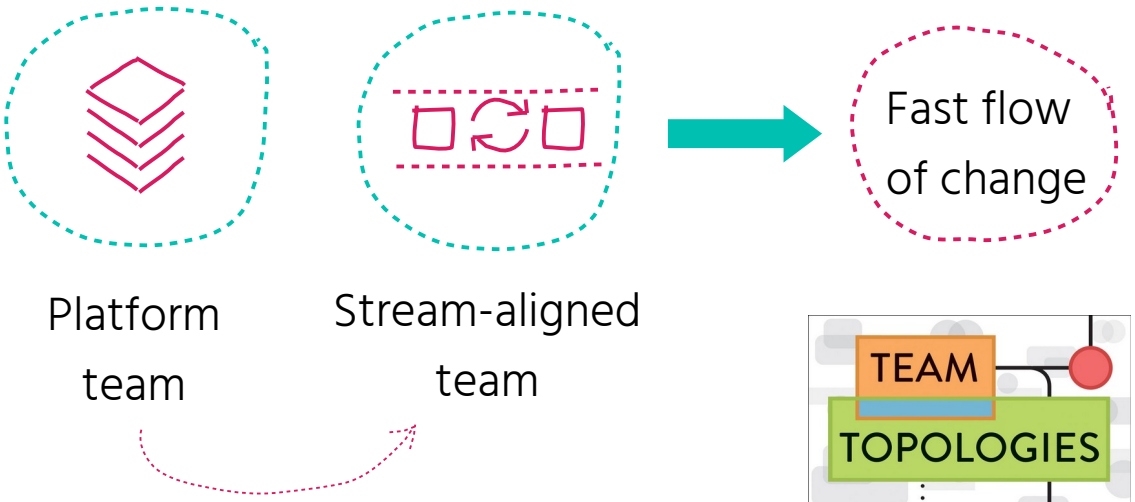

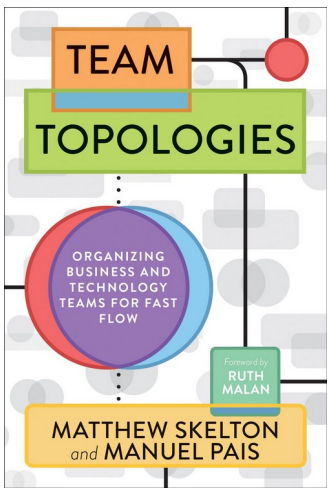

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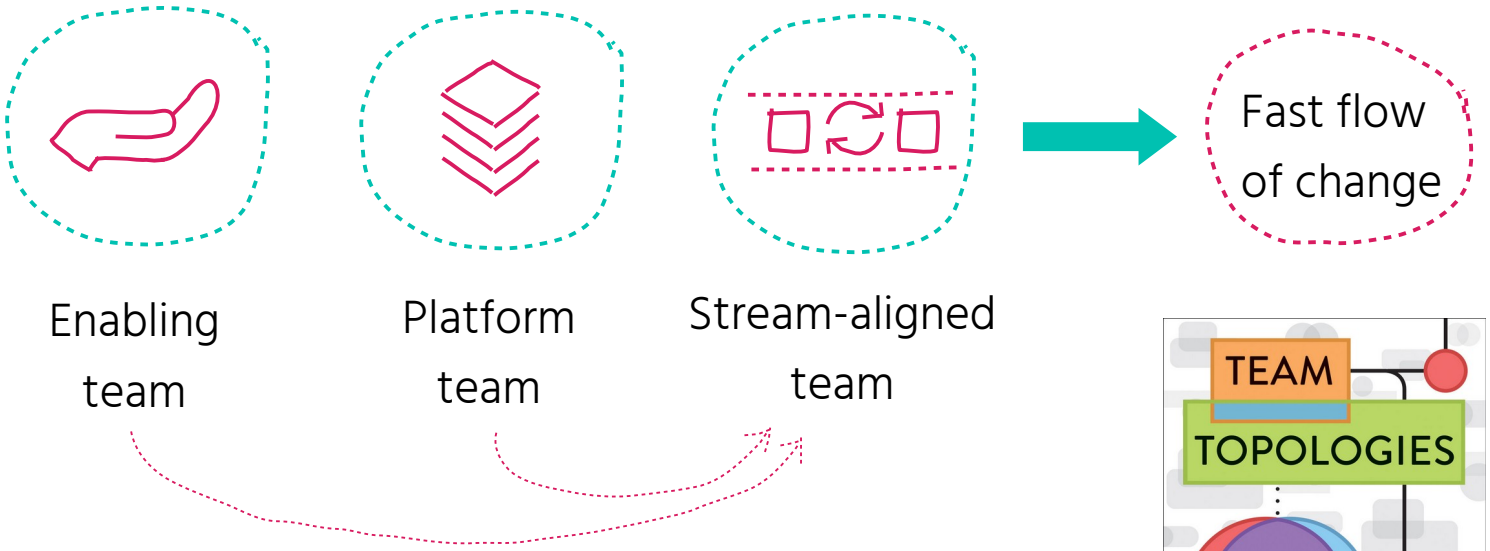

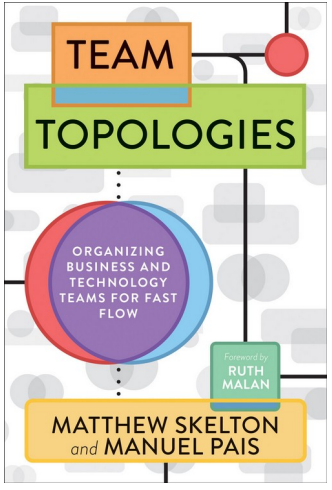

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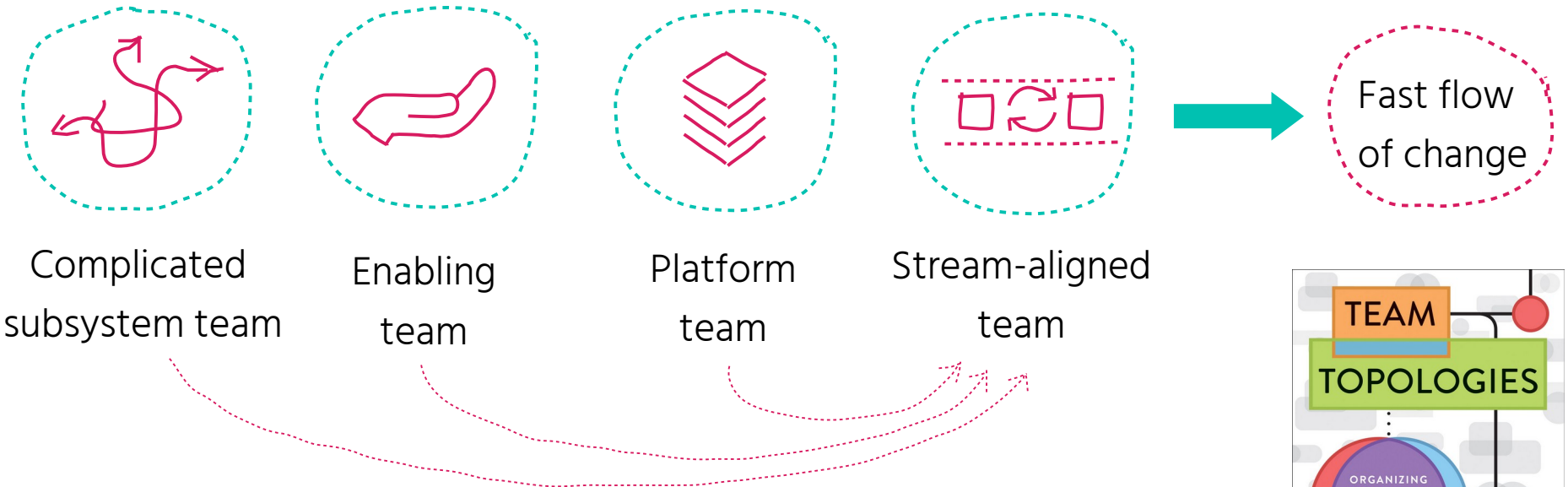

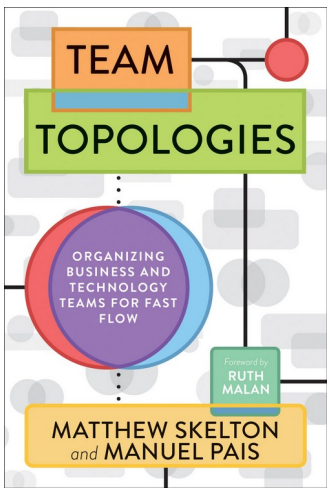

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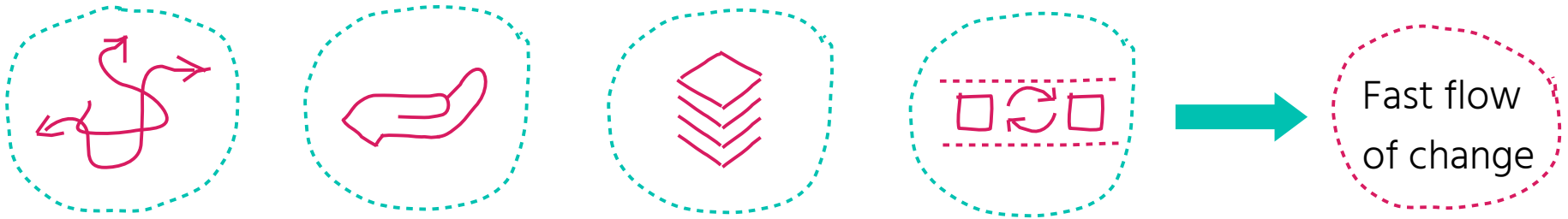


Complicated subsystem team

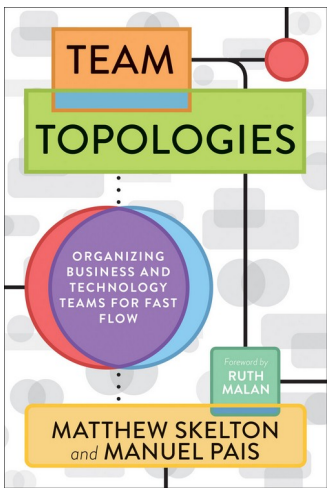
Enabling team

Platform team

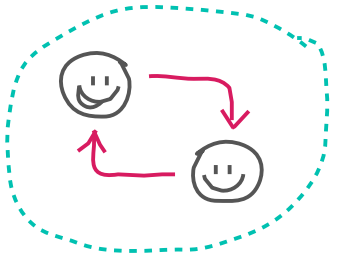
Stream-aligned team

Increasing autonomy

Reducing cognitive load

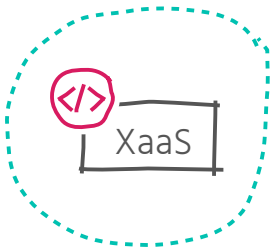


Three Interaction Modes



Collaboration

Rapid discovery



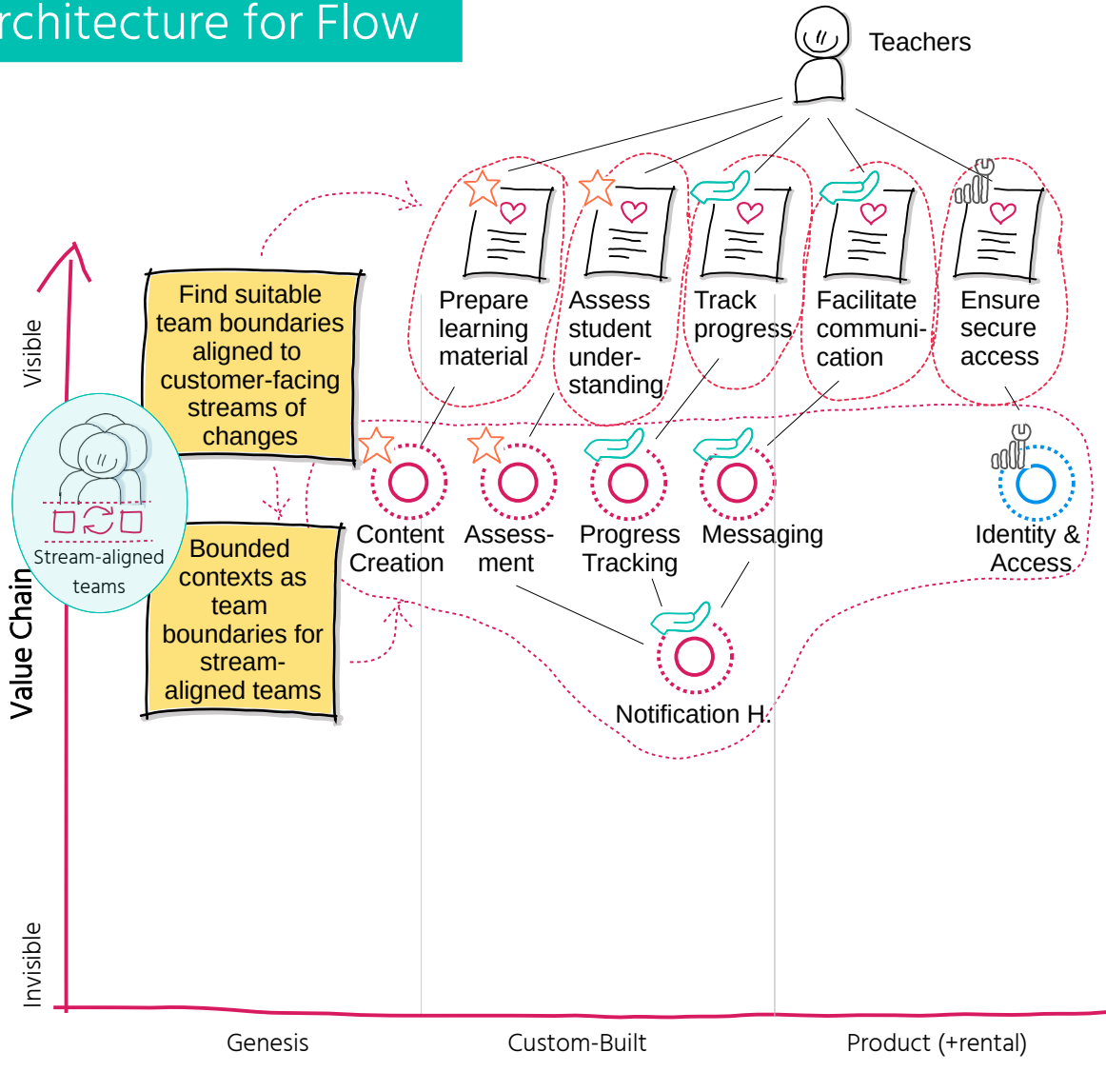
X-as-a-Service

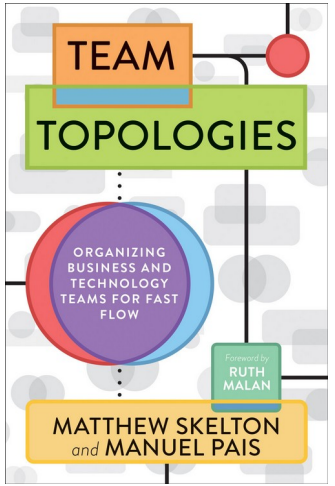
Predictable delivery

Facilitating

Active help

Architecture for Flow





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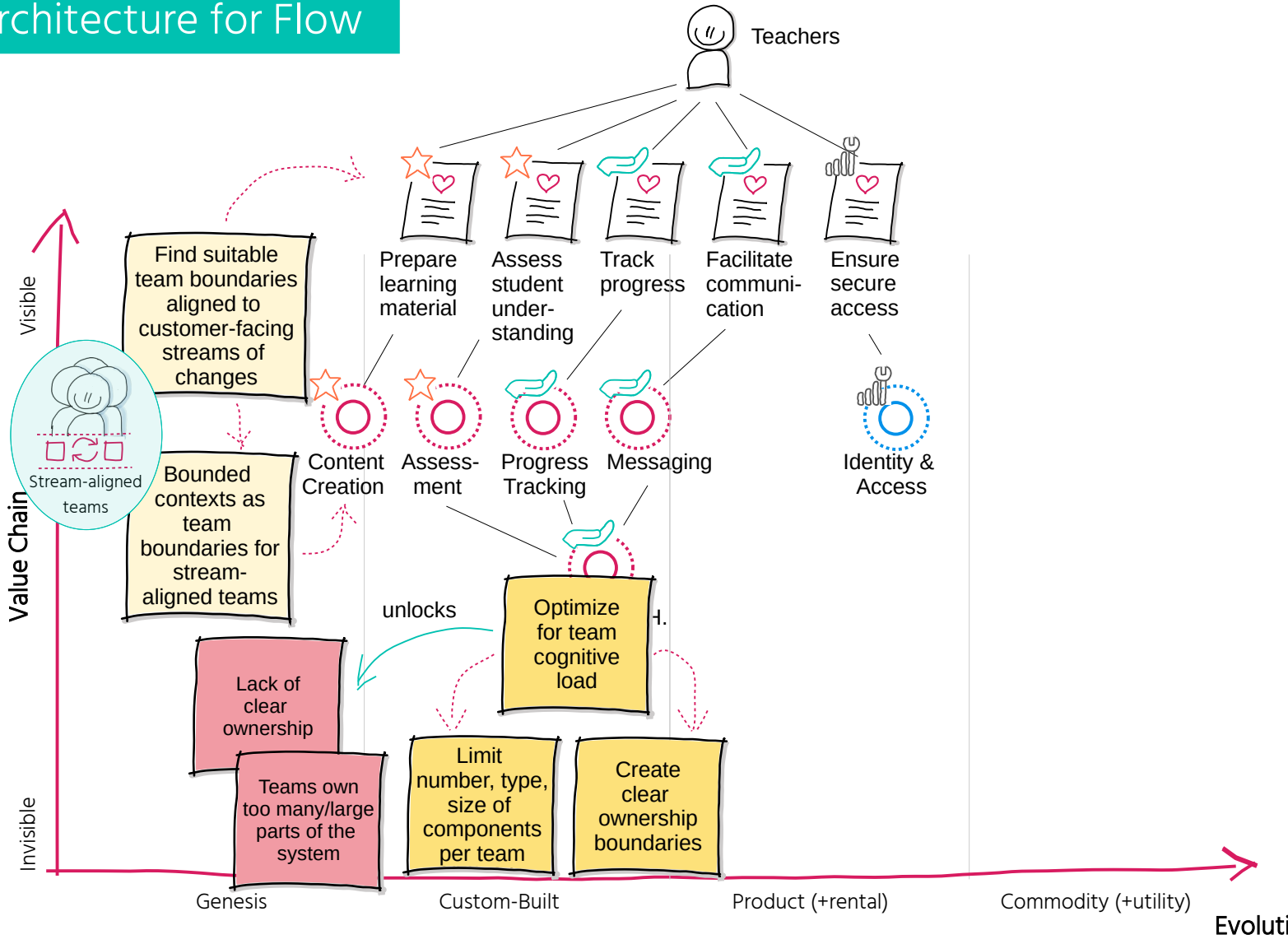

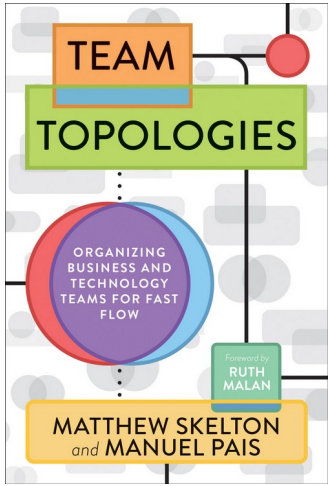

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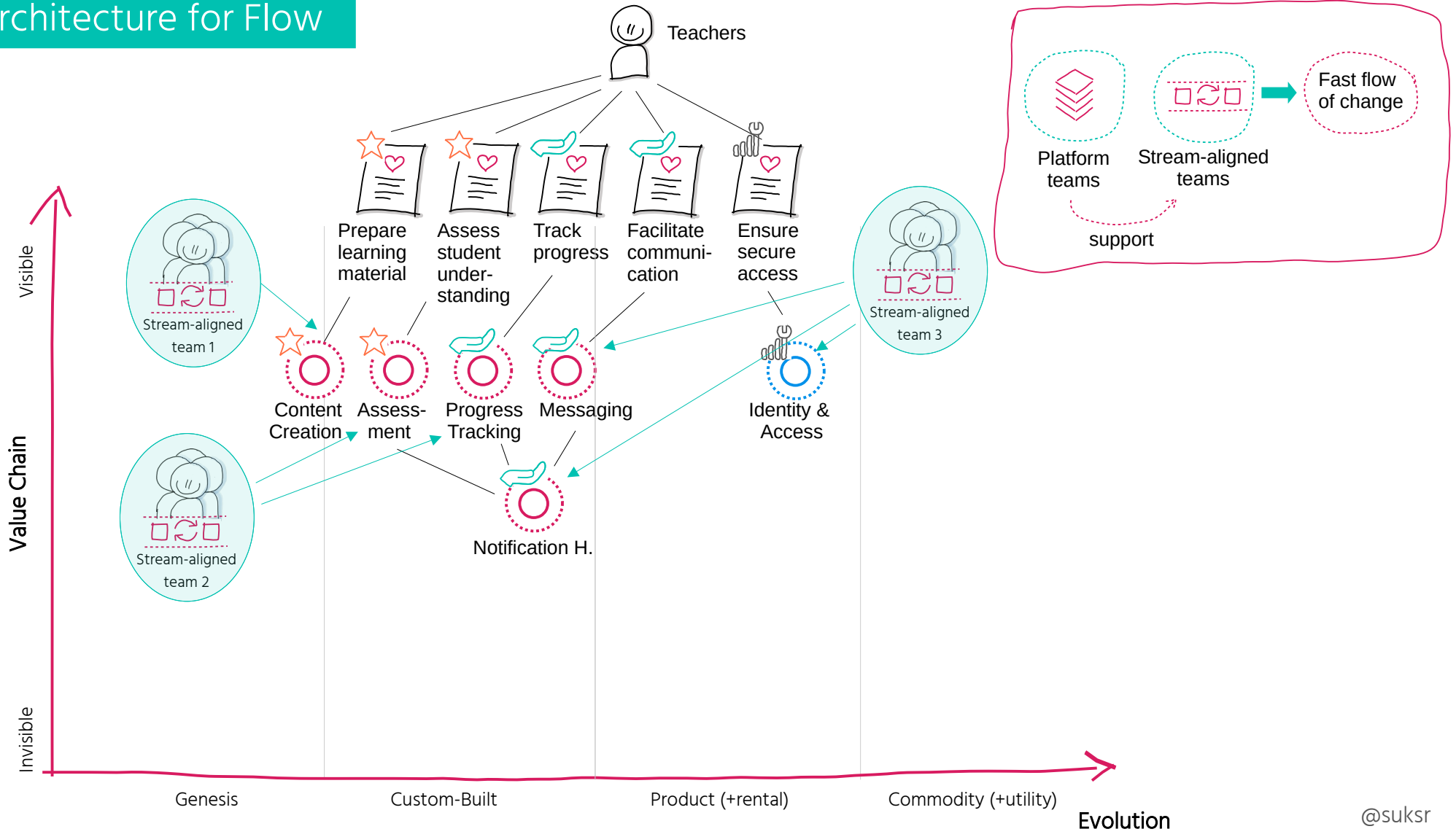

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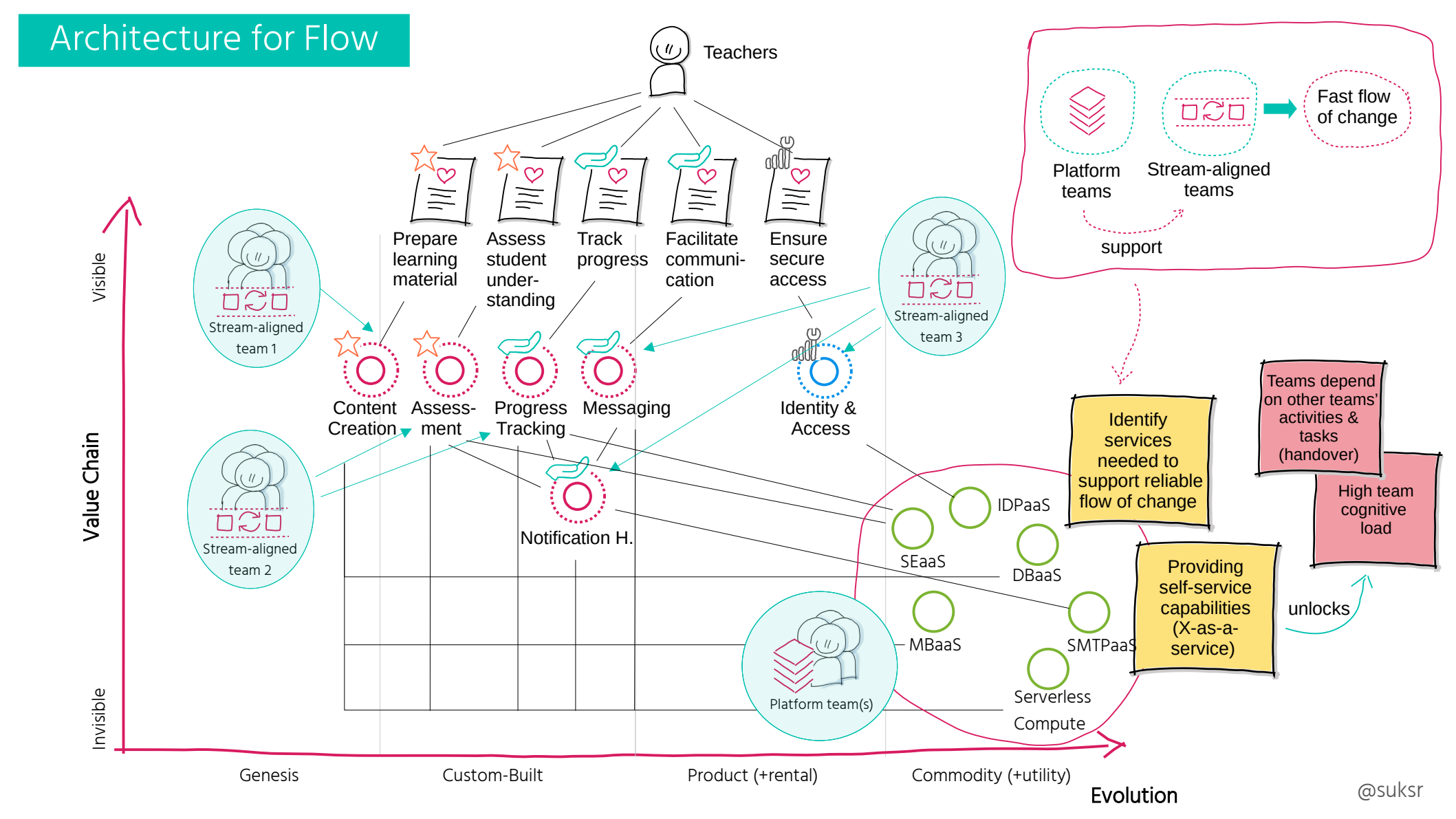

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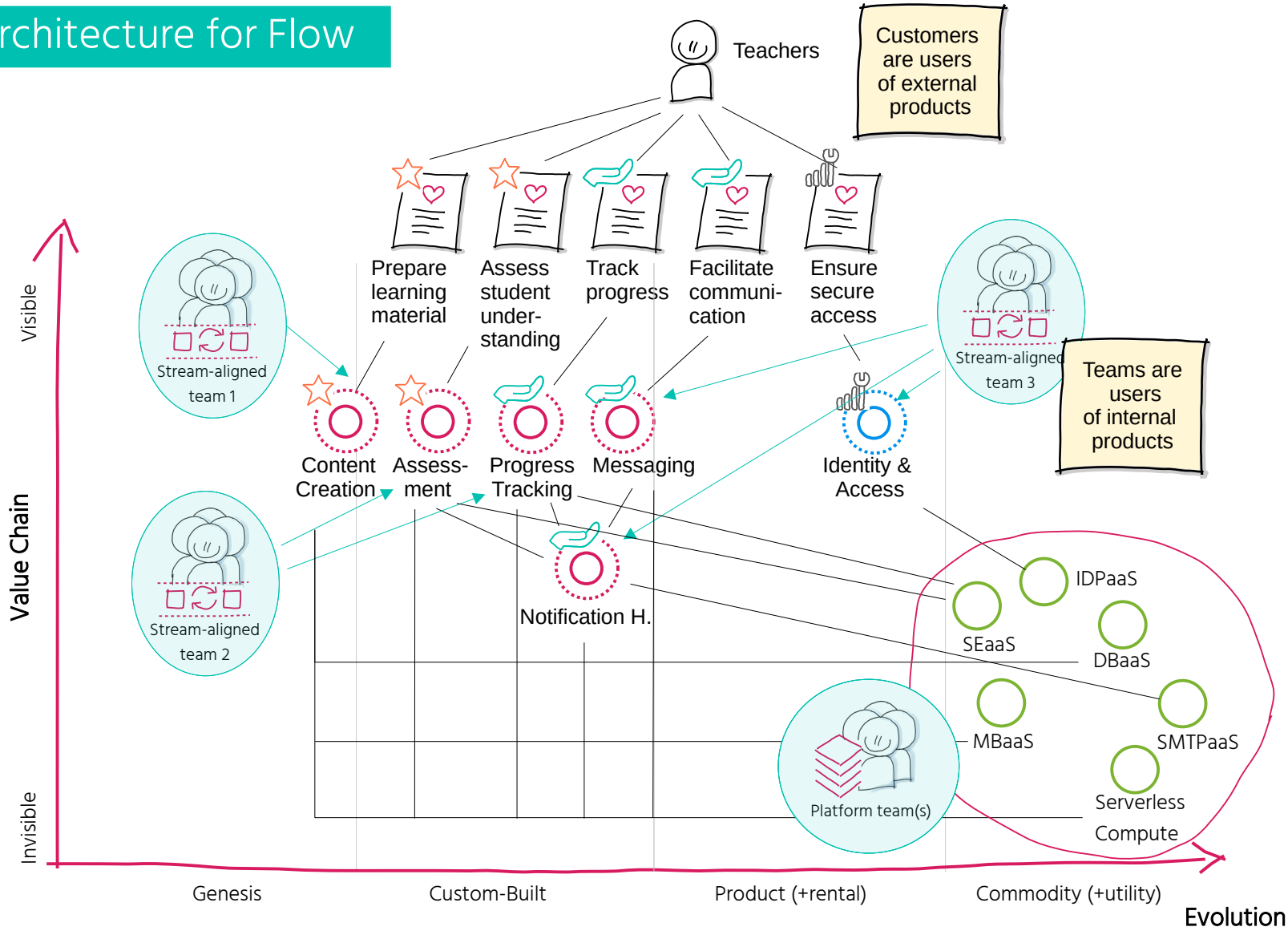

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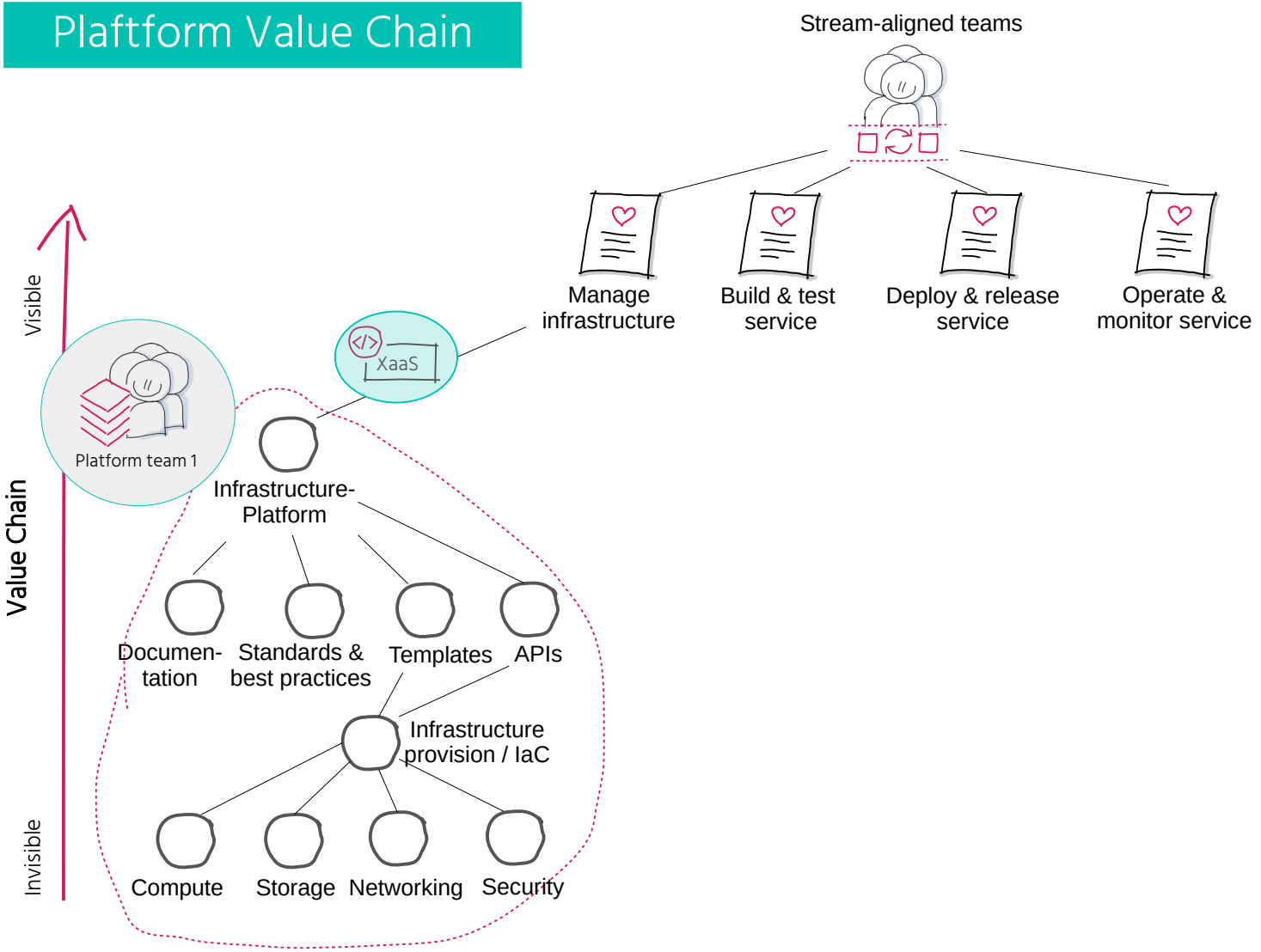
Plaftform Value Chain



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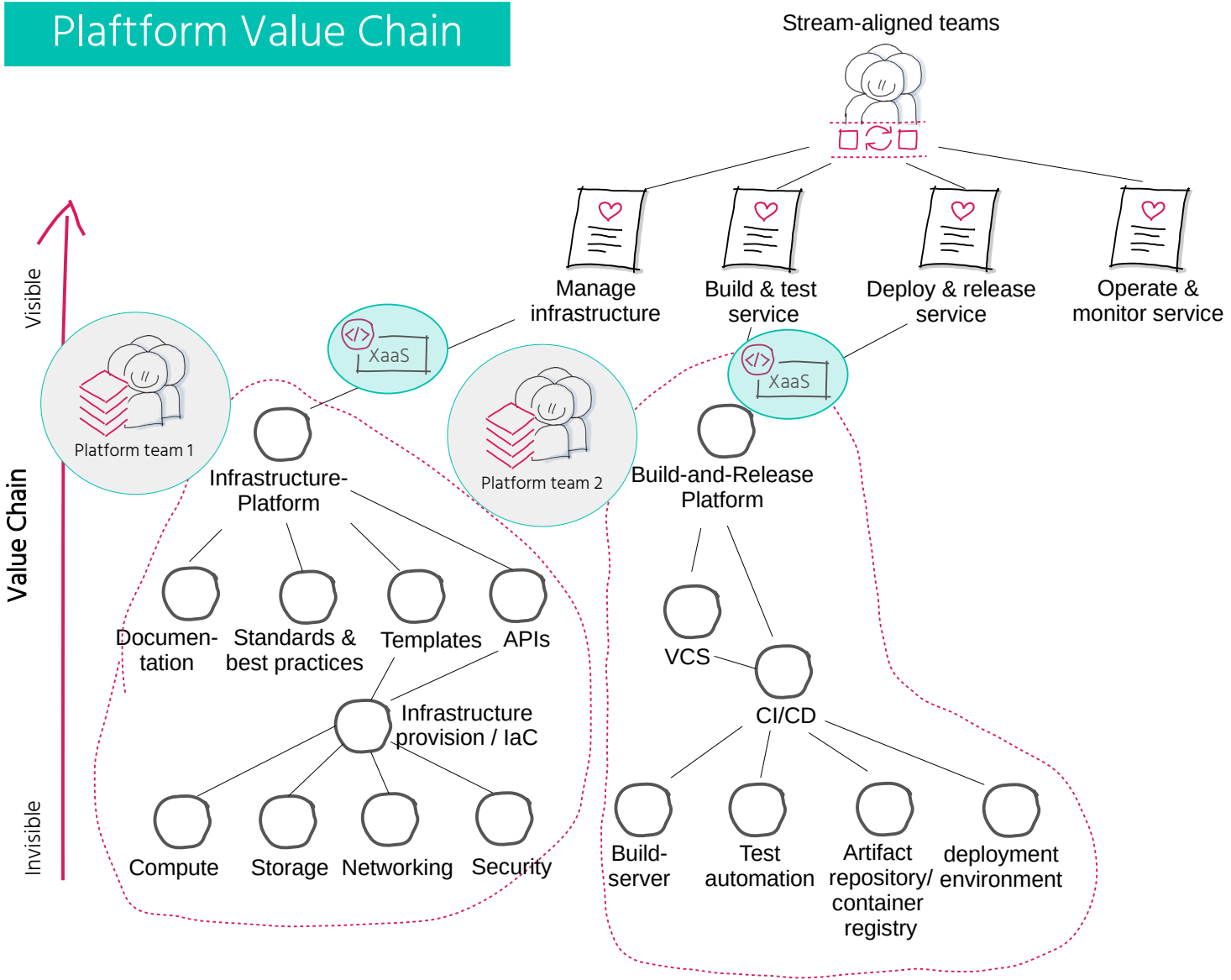

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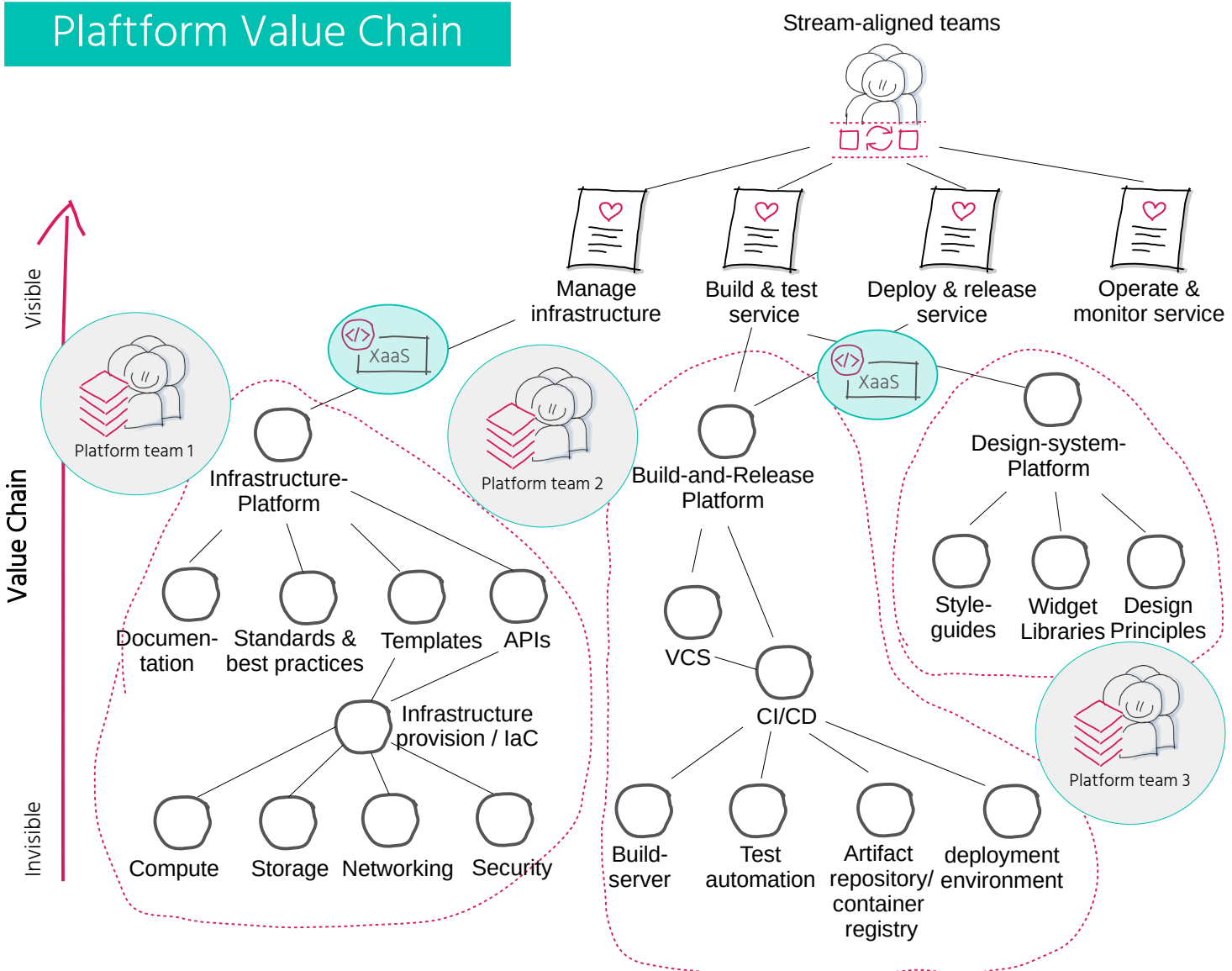

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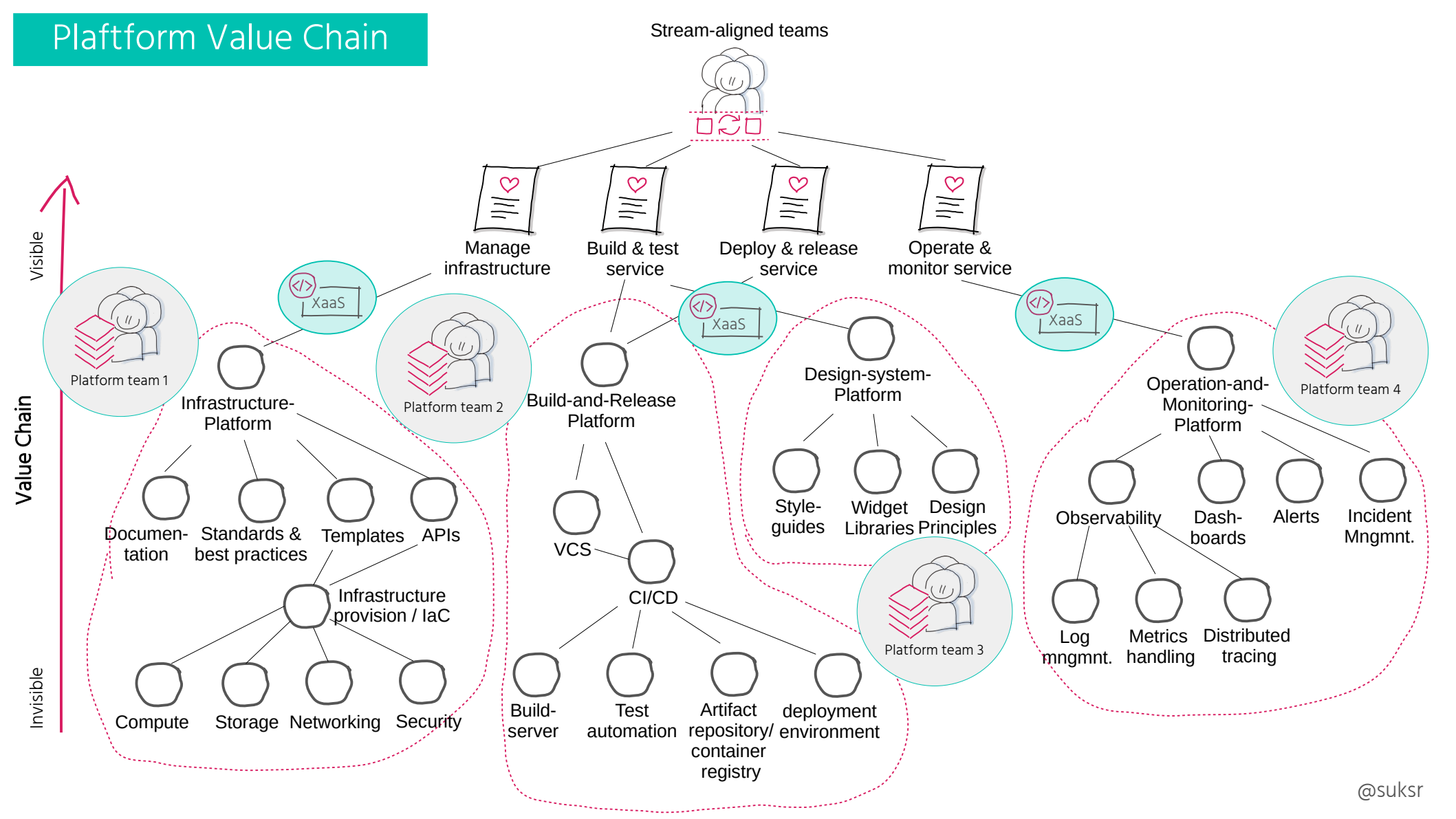

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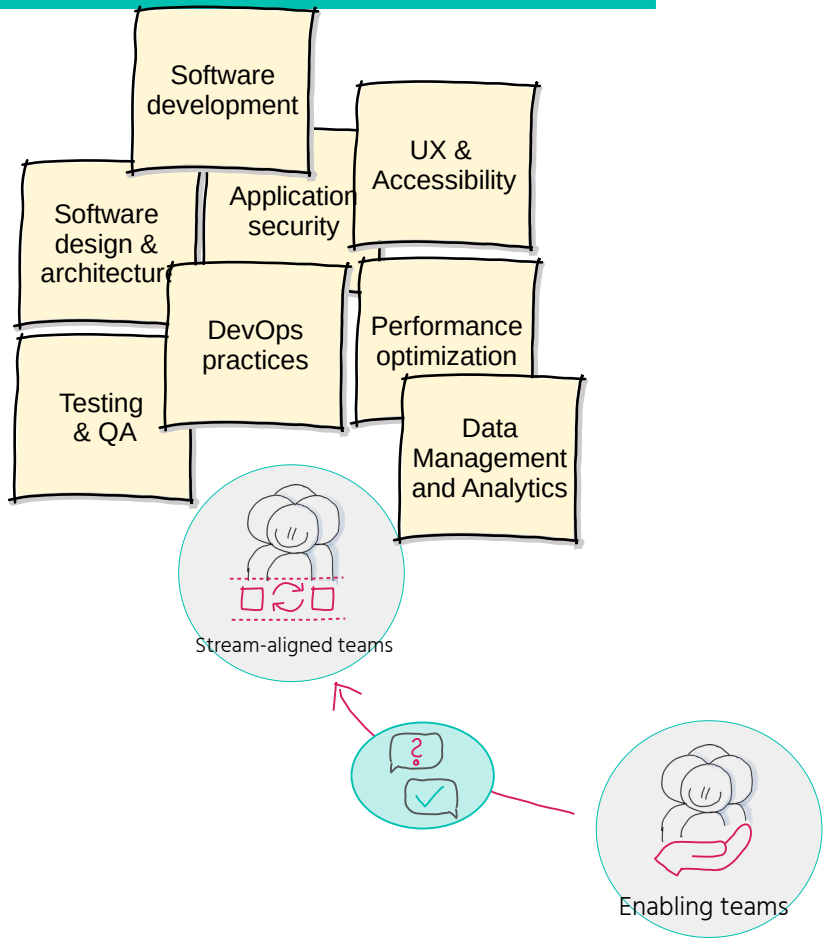
Upskilling Teams on Missing Capabilities



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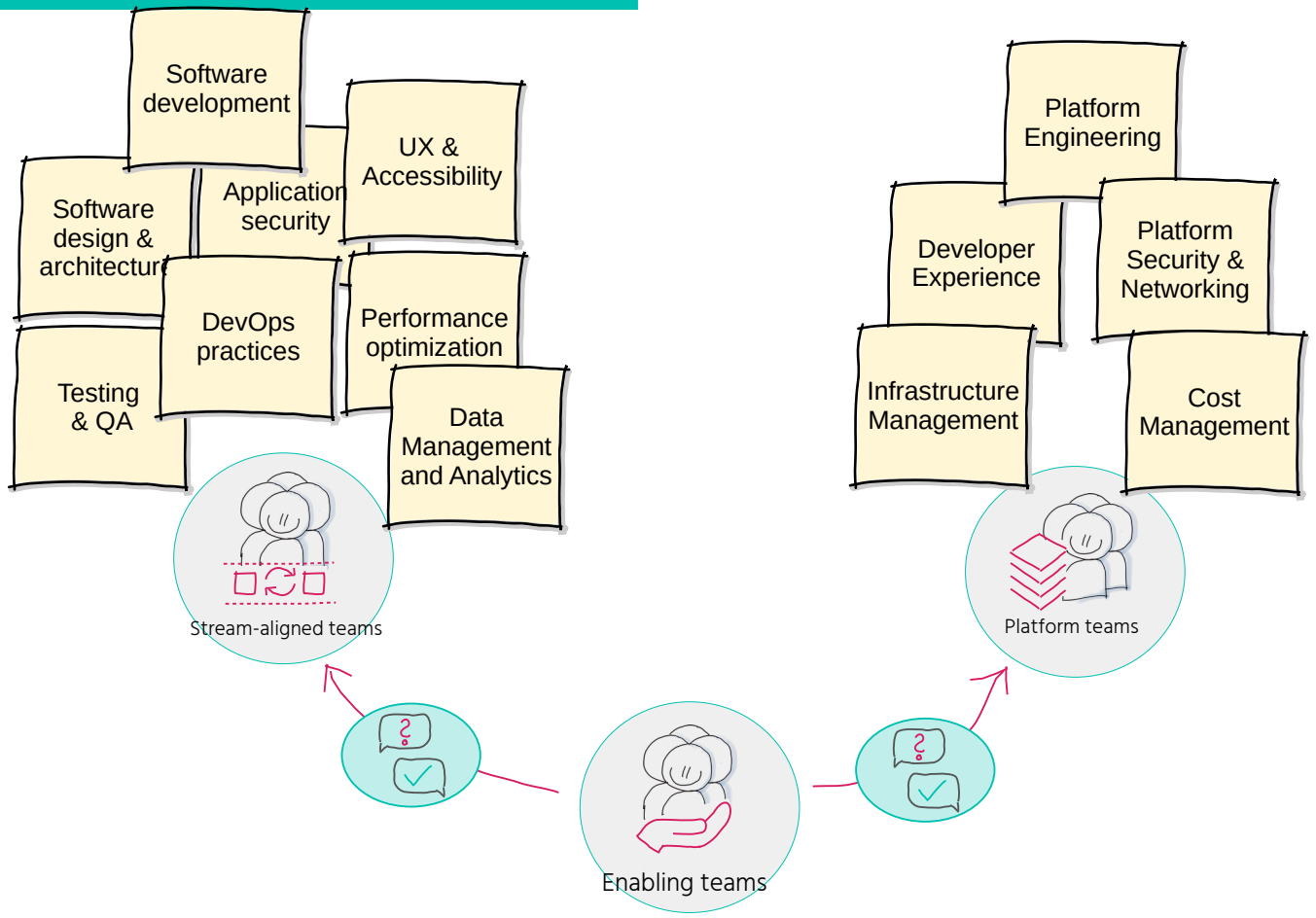

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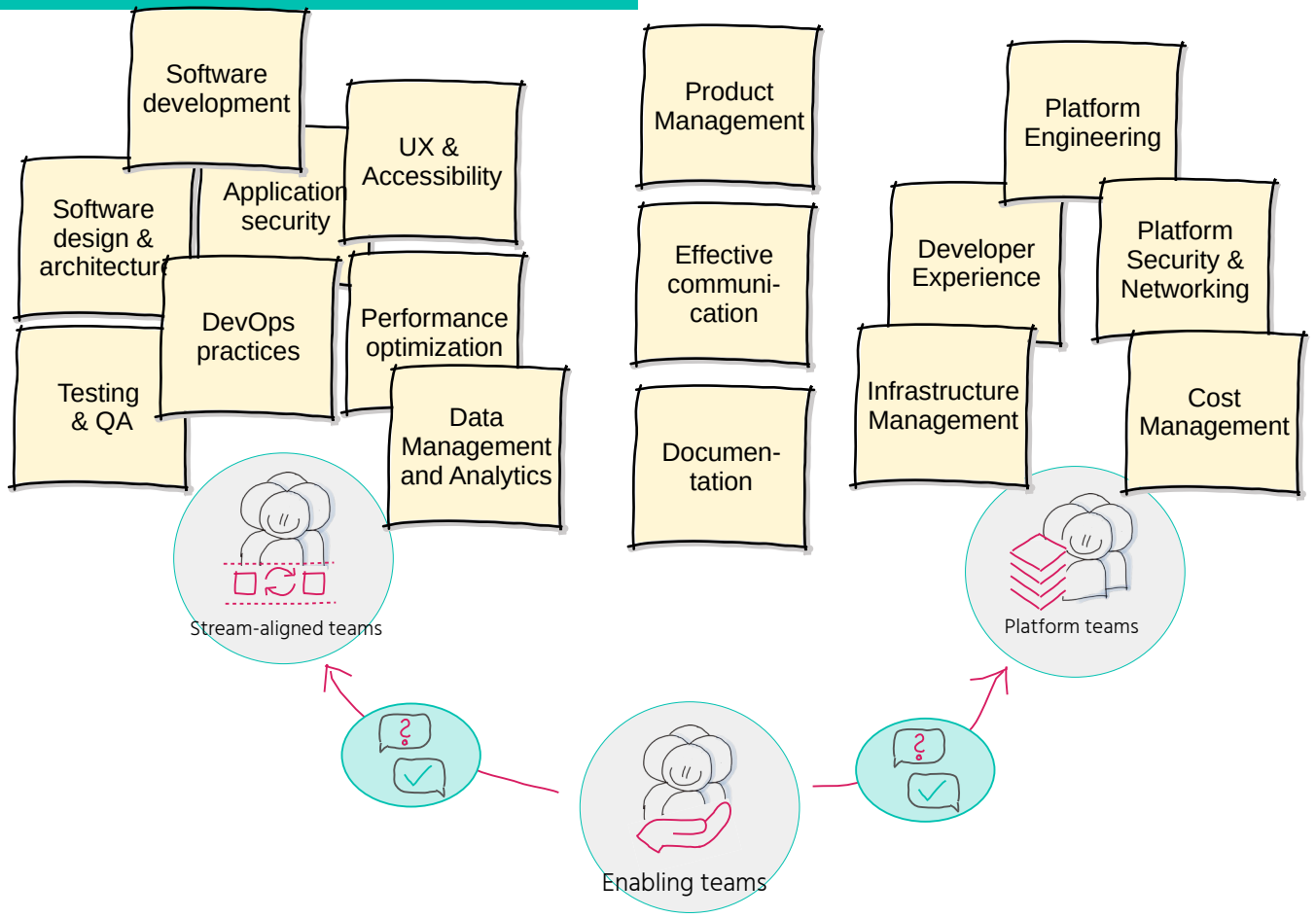

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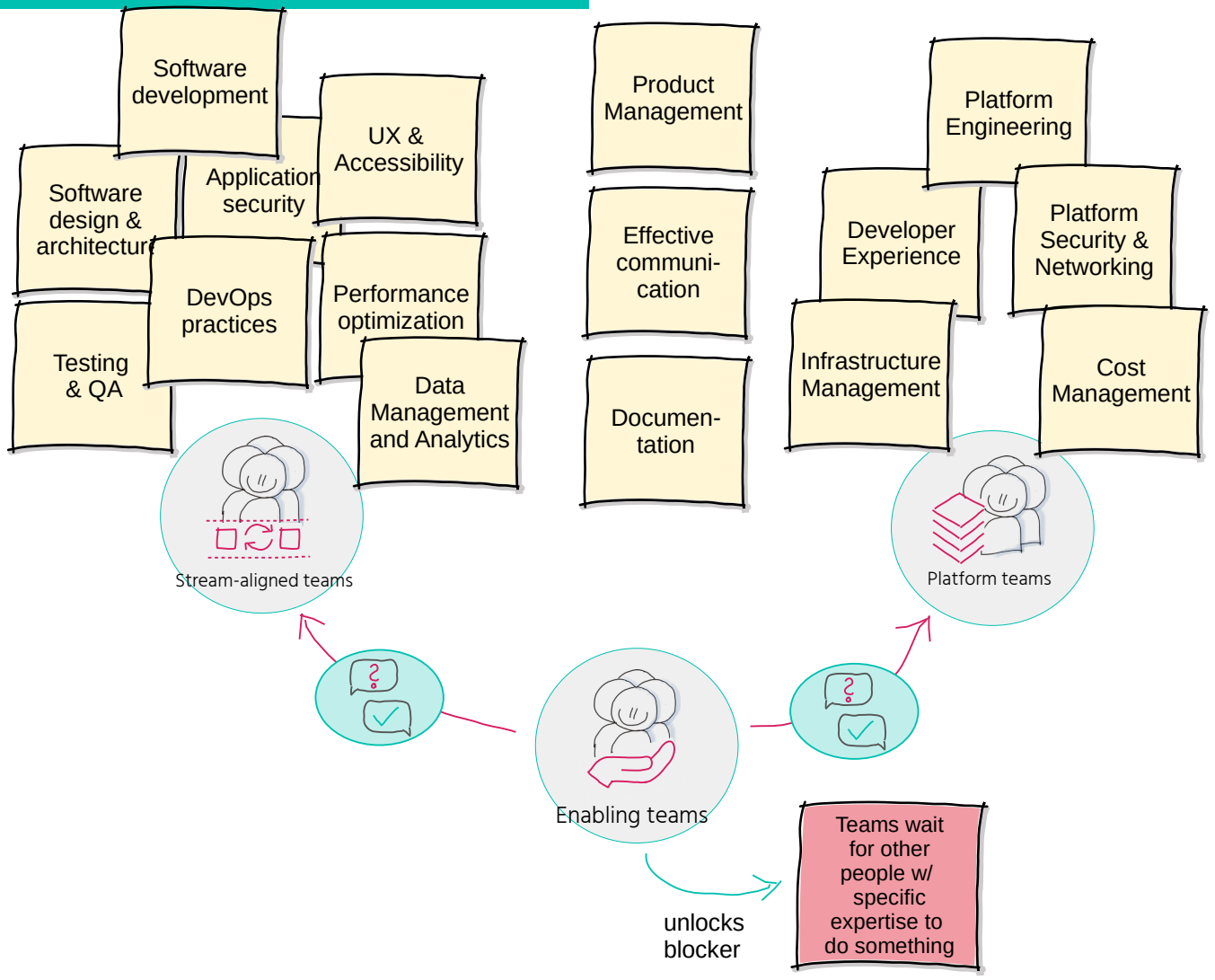
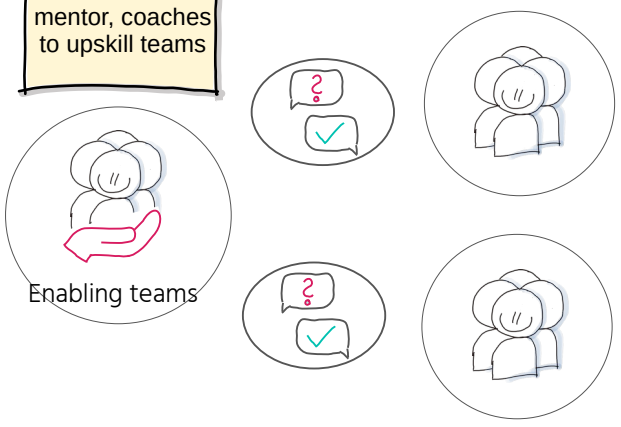


Continuous Shared Learning & Experimentation

Adaptive to complex situations w/ unknown unknowns

Enabling teams as internal mentor, coaches to upskill teams



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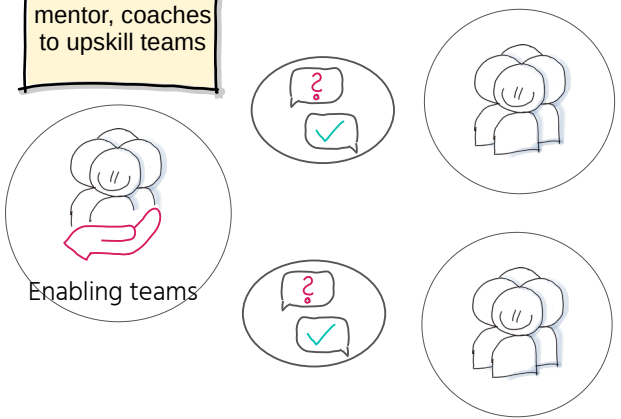
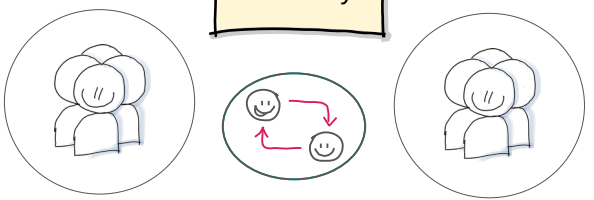
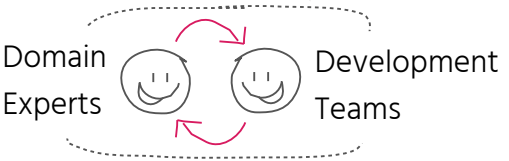


Collaboration for rapid discovery



Collaboration for gaining domain knowledge



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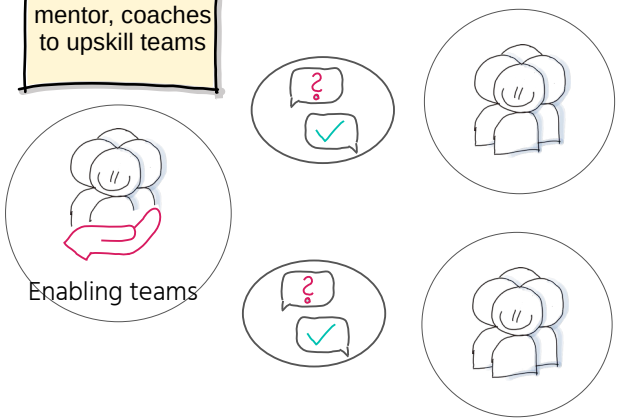

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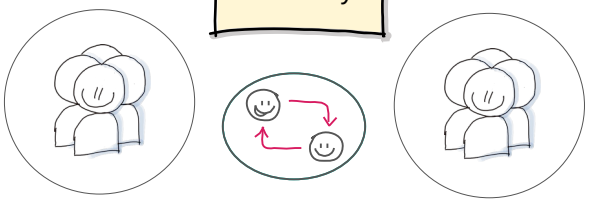

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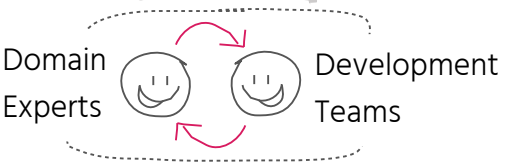
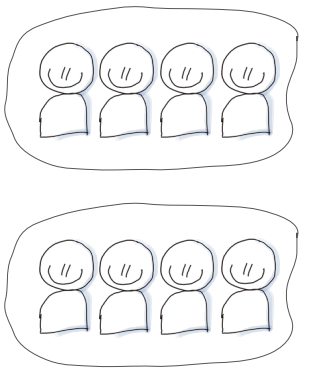


Communities of Practice

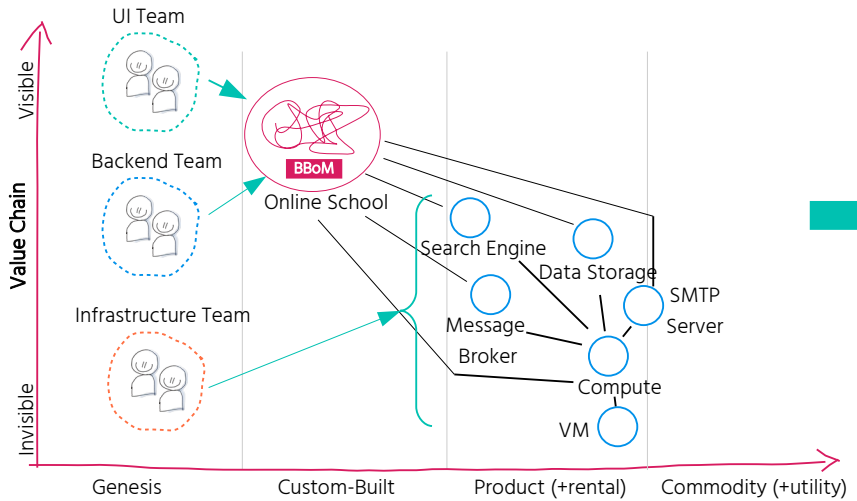


Unlocking Blockers to Flow

Monolithic, tightly coupled big ball of mud w/ messy model & fuzzy boundaries

Custom-building non-differientiating components

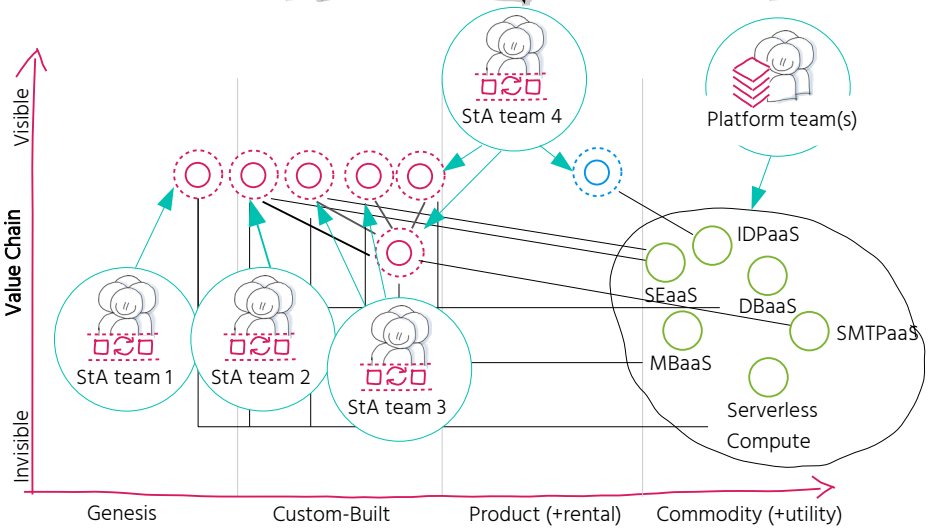
Using less evolved components



Modular, well-encapsulated, loosely coupled architecture w/ bounded contexts

Focus major development investments on differentiators w/ discovered subdomain types

Closing efficiency gaps by using standardized commodities



Lack of clear ownership

Teams own too many/large parts of the system

Teams depend on other teams' activities & tasks (handover)

Teams wait for other people w/ specific expertise to do something

Bounded contexts serve as well-defined ownership boundaries

Optimizing for team cognitive load

Cross-functional, autonomous stream-aligned teams & platform teams providing self-service services

Enabling teams as internal mentor, coaches to upskill teams

Architecture for Flow Canvas

As-Is | To-Be

Analyzing Current Teams	Assessing Flow of Change	Visualising Current Landscape	Categorizing Problem Space	Modularizing Solution Space	Visualising Future Landscape	Deriving Future Team Organization

START

AS-IS

1

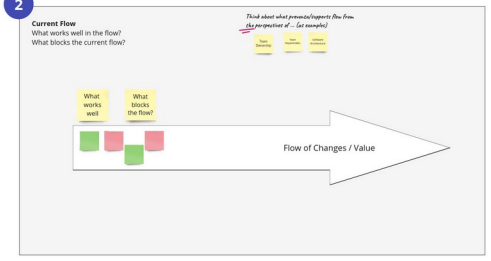
Current Teams & Ways of Working

What are the current teams (structure)?
What parts/modules of the system do they own?
What are their team sizes?
What are the current team dependencies?
What are the current team interaction modes (PR, inner source, weekly/monthly cross-team meetings, etc)?
What are their current practices? (e.g. kanban, scrum, planning techniques, etc.)

2

Current Flow

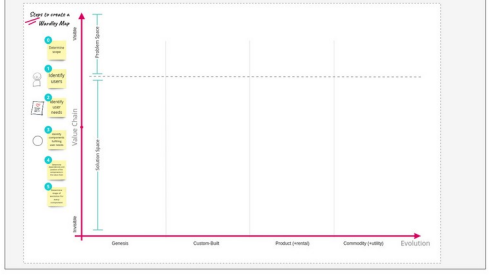
What works well in the flow?
What blocks the current flow?



3

Current Business Landscape

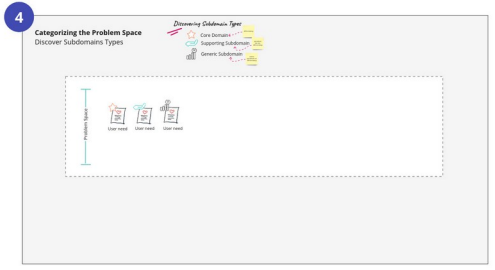
Visualising the business landscape with Wardley Maps



4

Categorizing the Problem Space

Discover Subdomains Types



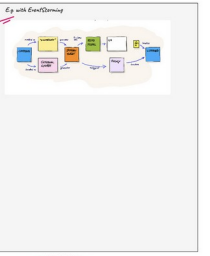
INNOVATION!

TO-BE

5

Modularity in the Solution Space

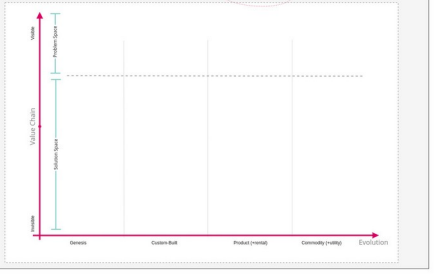
Decomposing solution space into bounded contexts (design decisions)



6

Future Business Landscape & Bounded Contexts

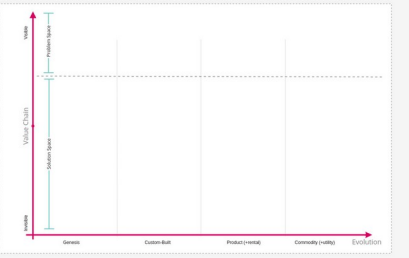
Visualising the future business landscape with Wardley Maps



7

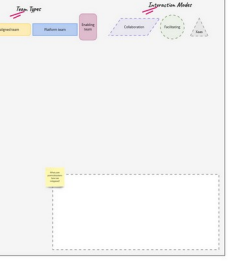
Future Team Ownership Boundaries

Identifying future team ownership boundaries



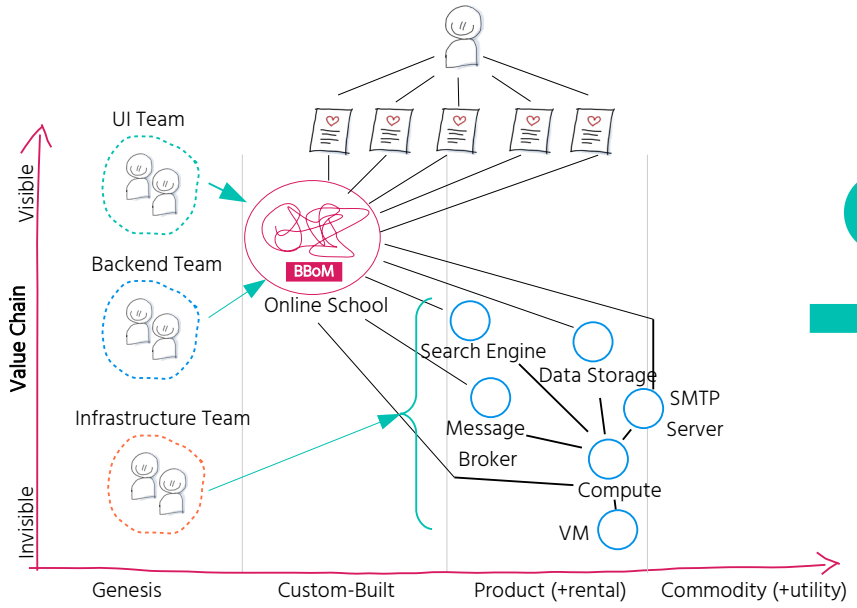
8

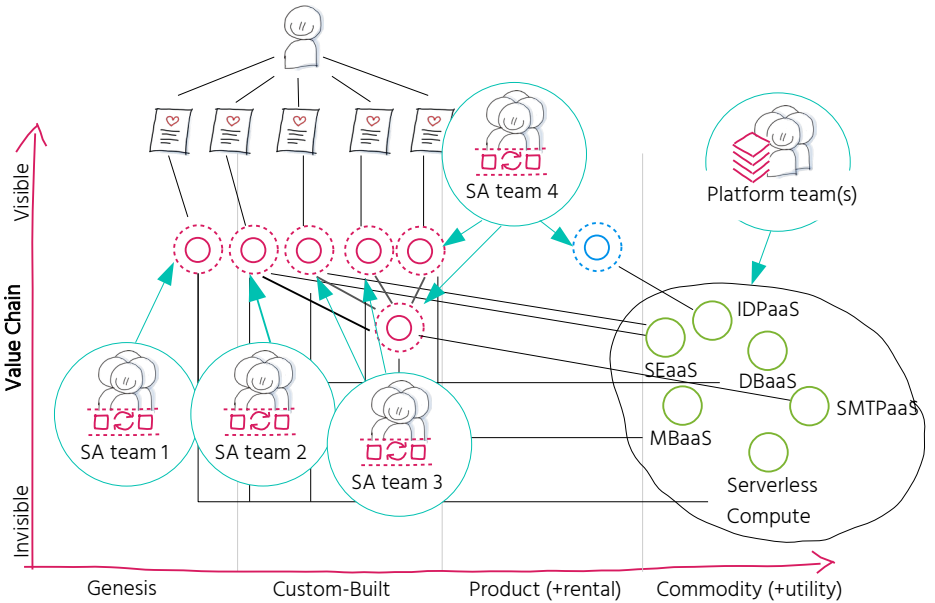
Future Team Constellation & Interaction Modes



@suksr

How to transition?





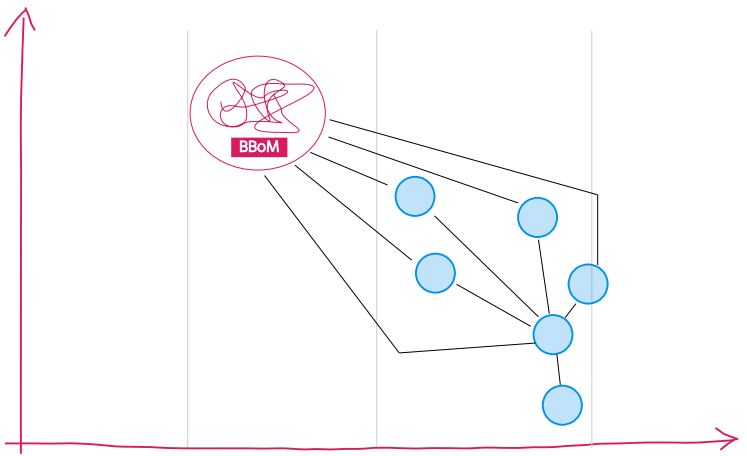
Next Steps: Reverse Conway Maneuver

Restructure the organisation to achieve the desired architecture

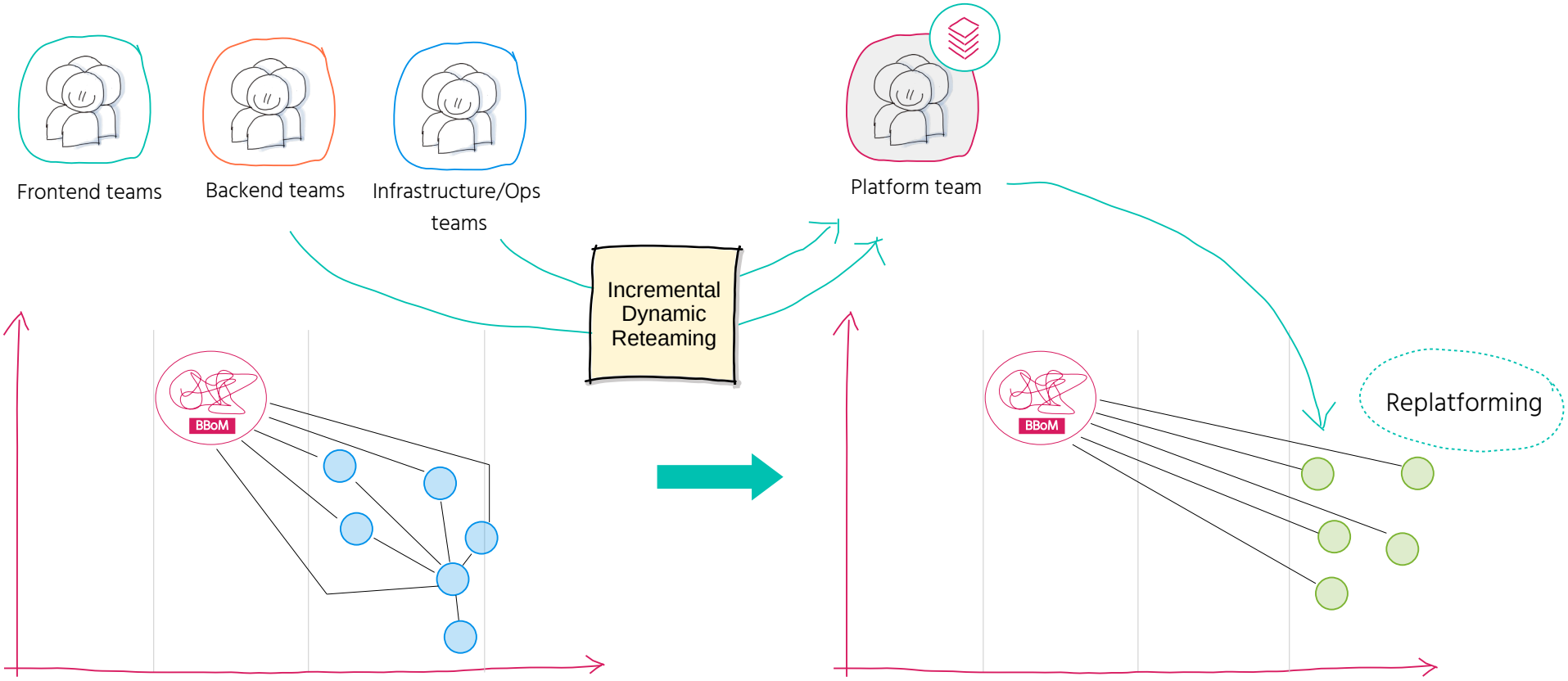
Frontend teams

Backend teams

Infrastructure/Ops teams



Next Steps: Reverse Conway Maneuver



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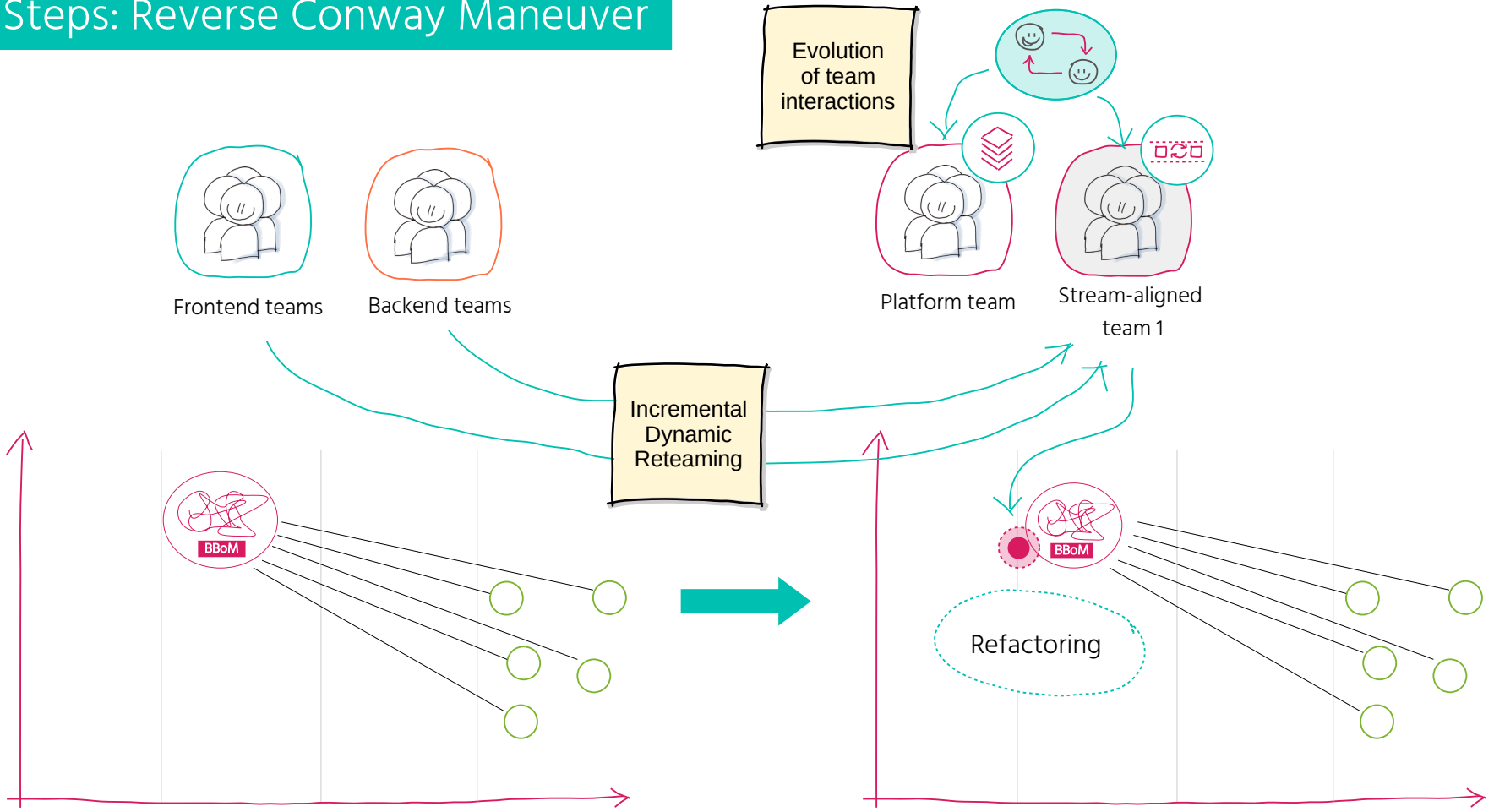

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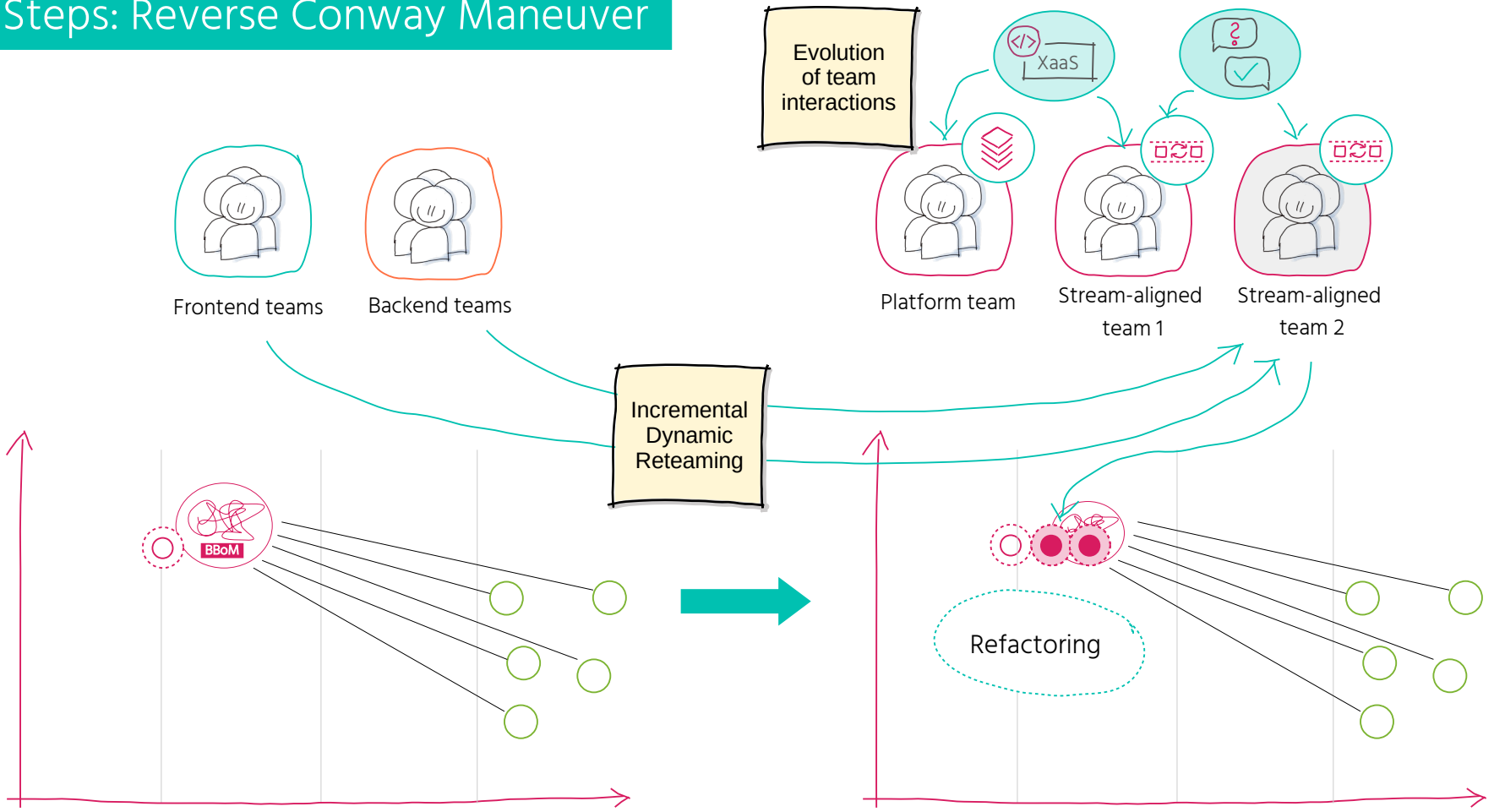

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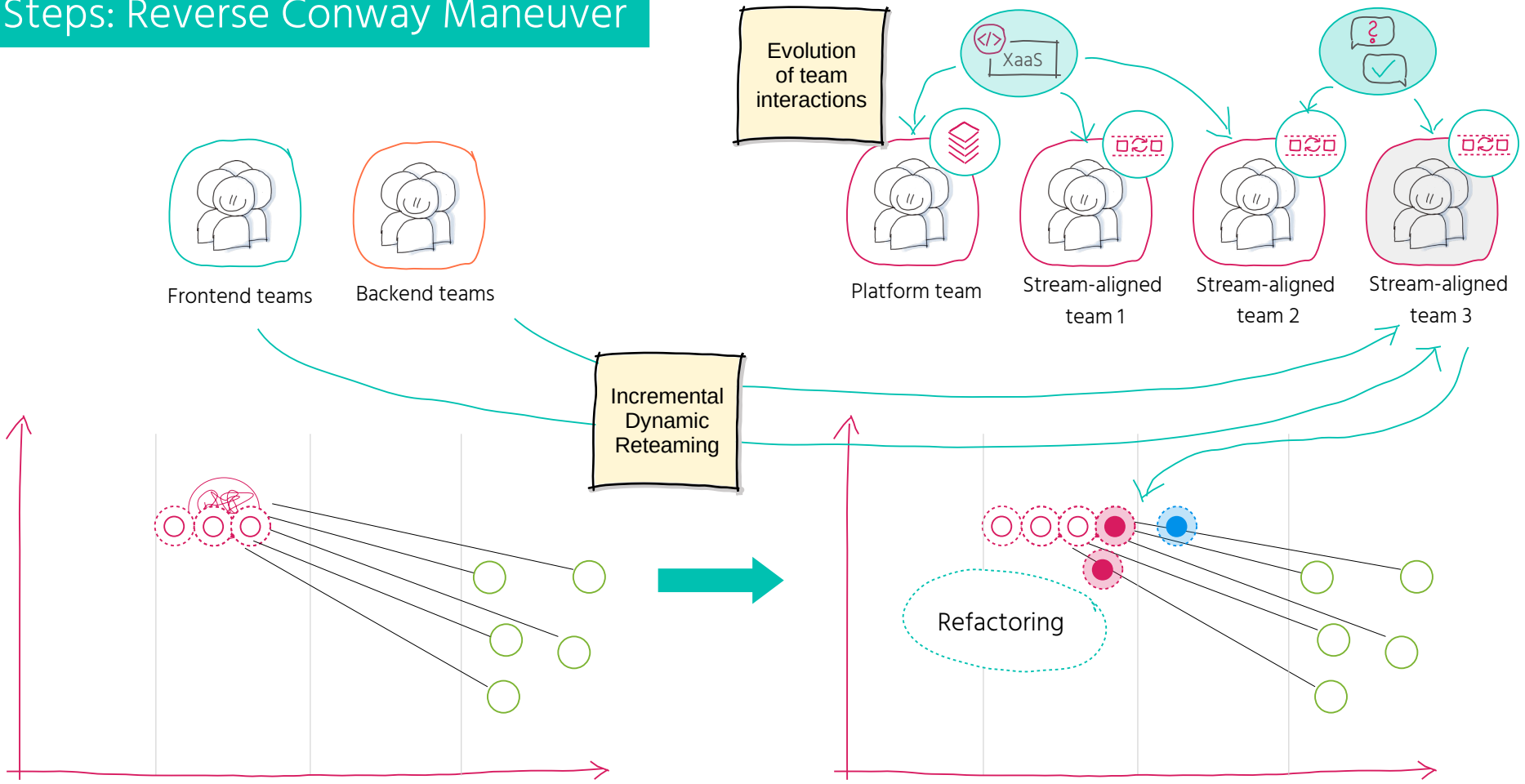
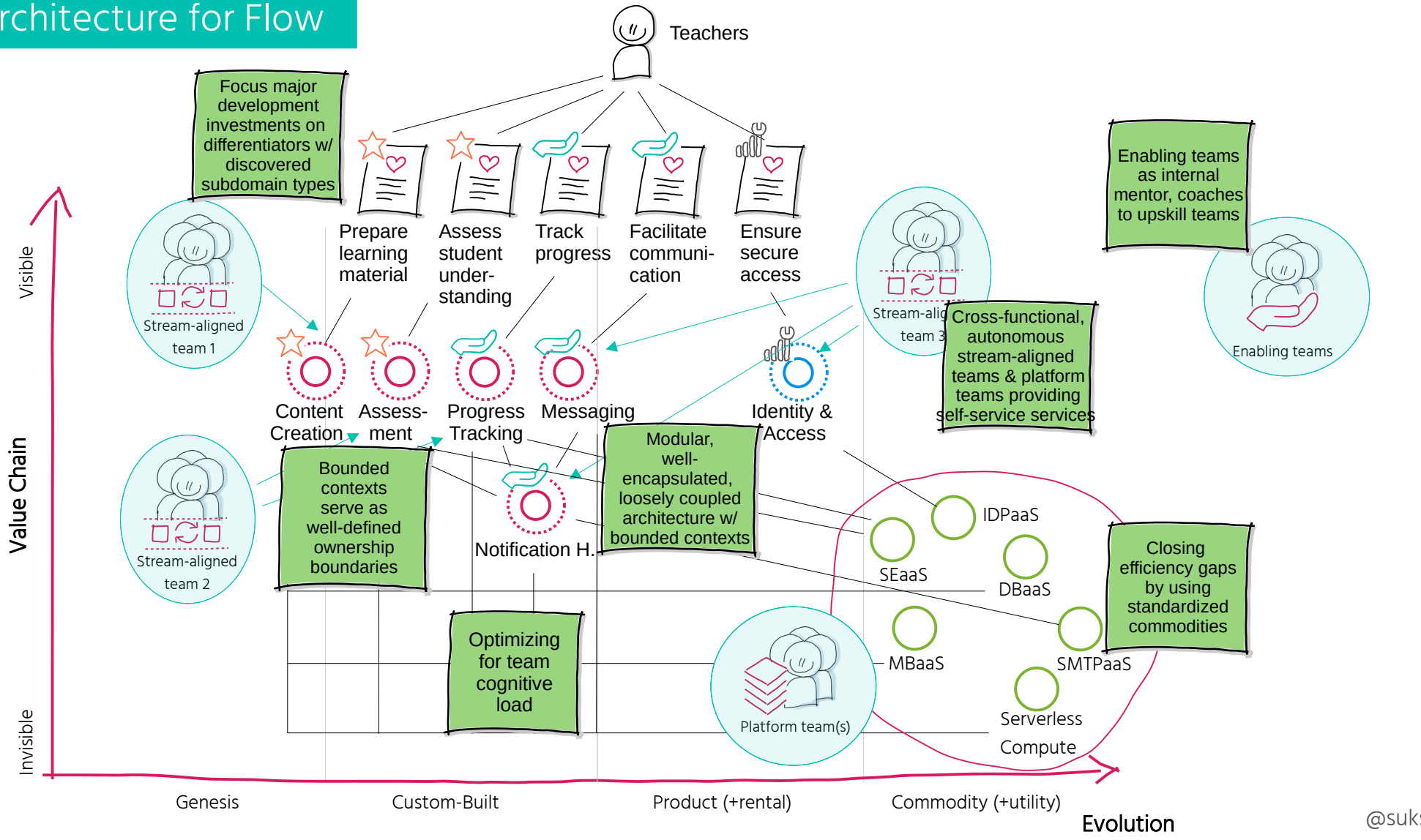


Architecture for Flow



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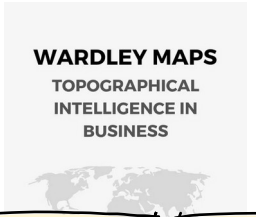
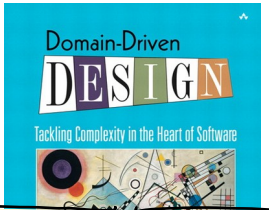
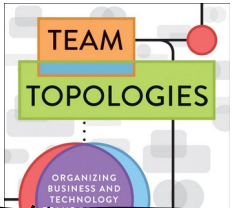
Summary







Generate value aligned to user needs

Unlock blockers to flow

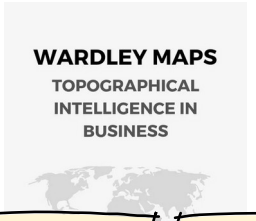
Focus major development investments on differentiators

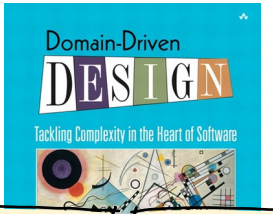
Close potential efficiency gaps

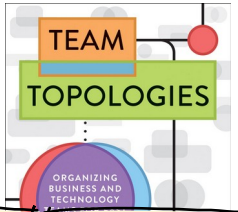
Align teams & evolve team interaction to system & strategy

Estabilsh learning organisation

Summary







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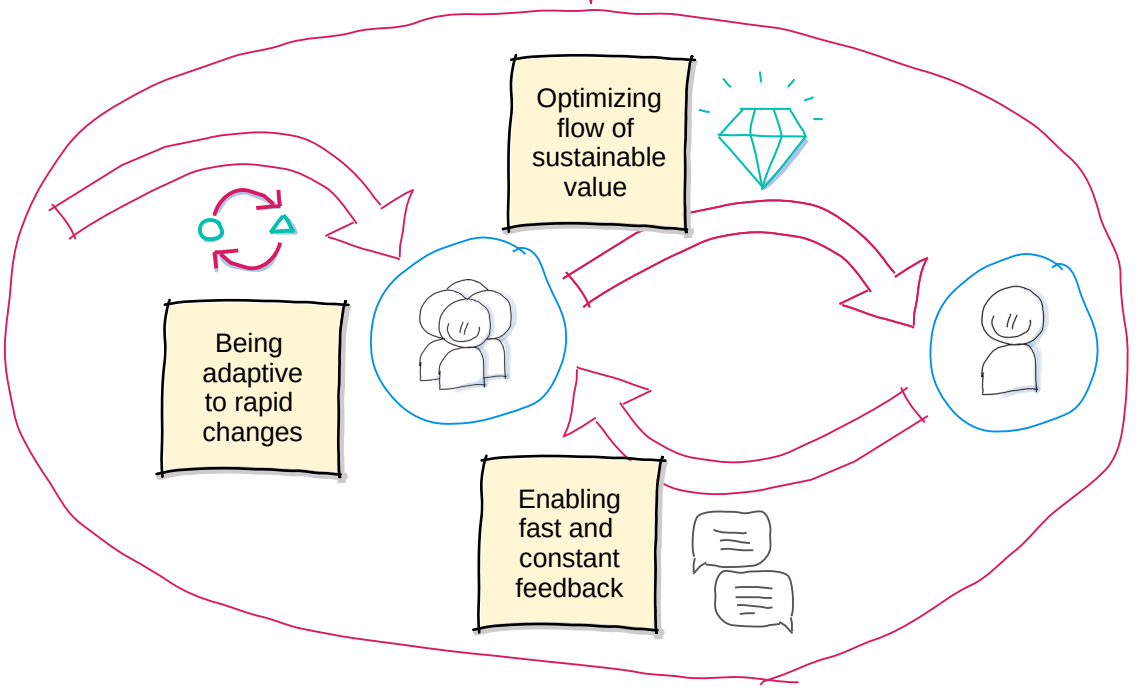
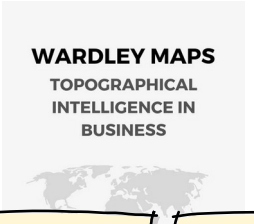
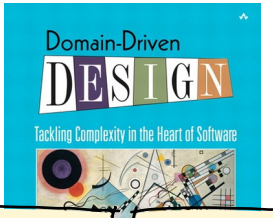
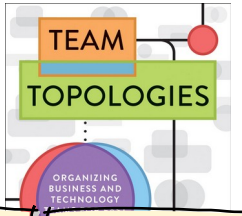


Summary







Generate value aligned to user needs

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Estabilsh learning organisation

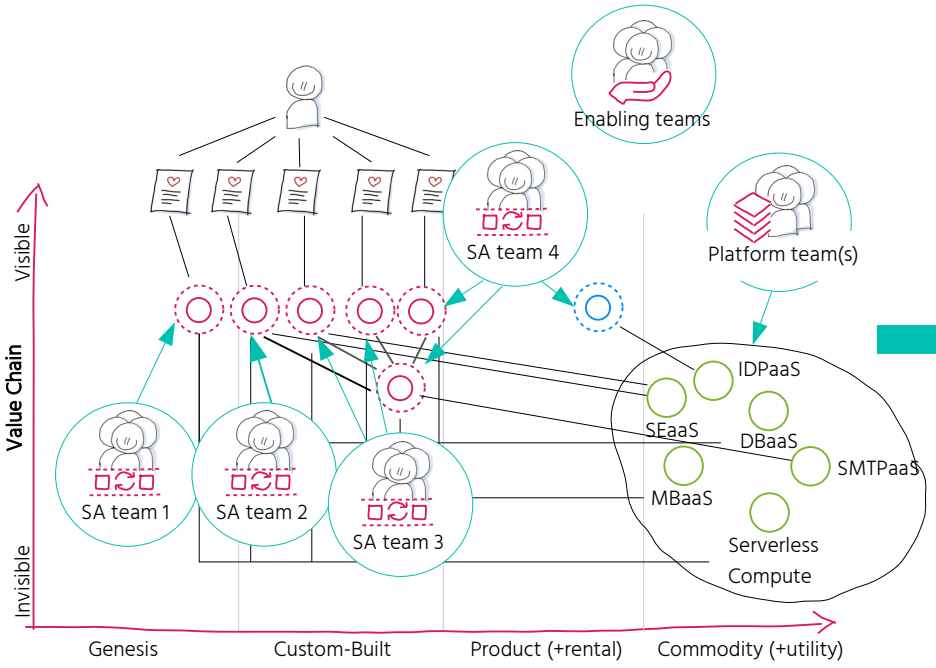
Optimizing flow of sustainable value

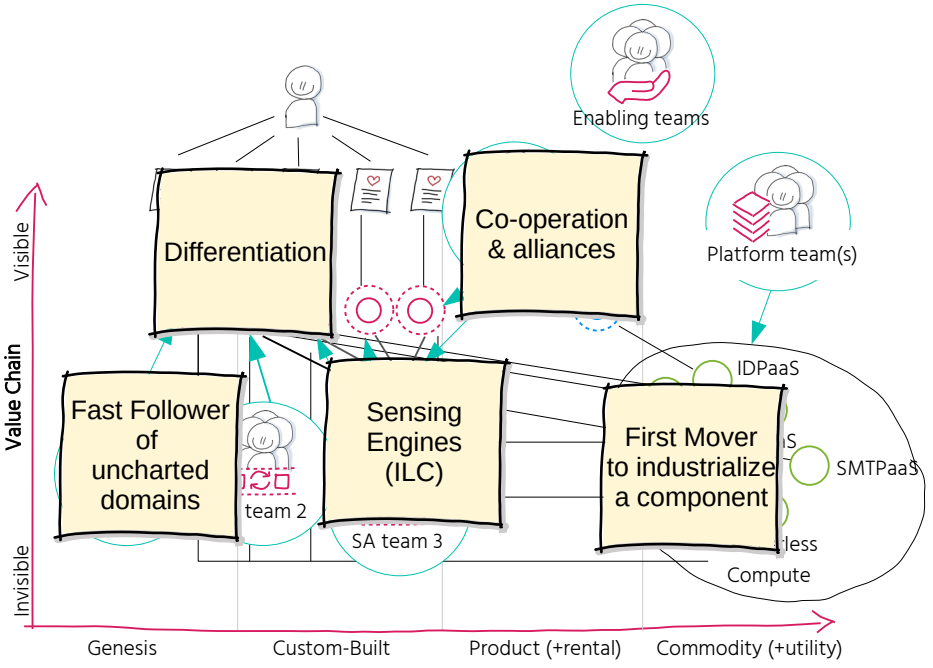
Being adaptive to rapid changes

Enabling fast and constant feedback

Building the right thing right

Looking Ahead

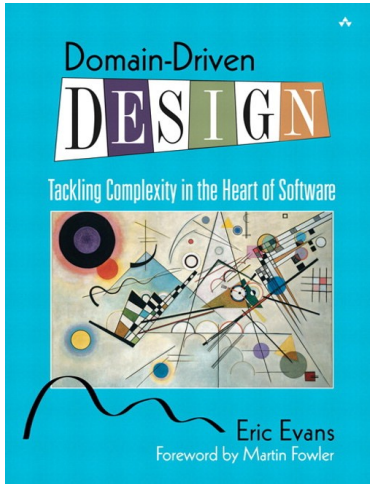


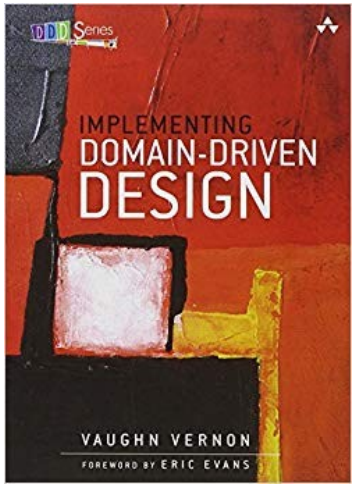


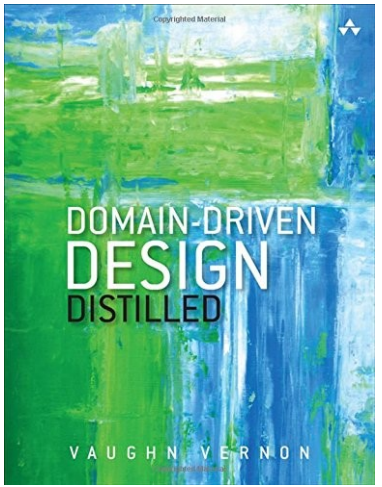
Responsive to change introduced by others

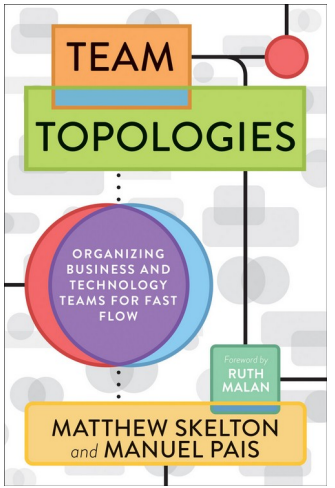
Leading future change introduced by us

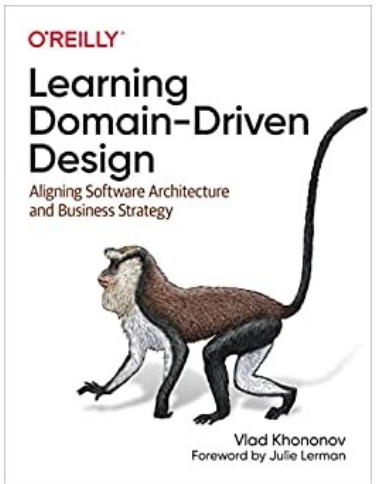
Some References

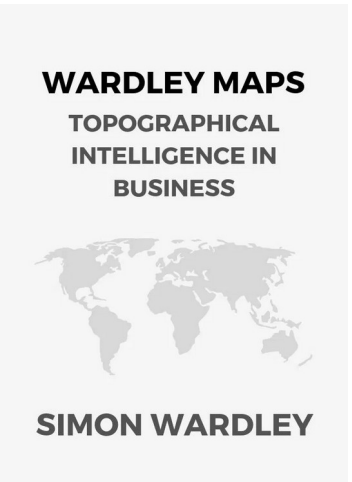


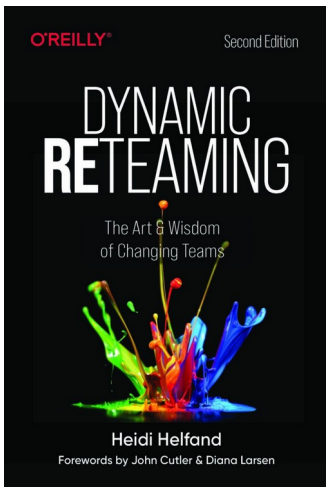






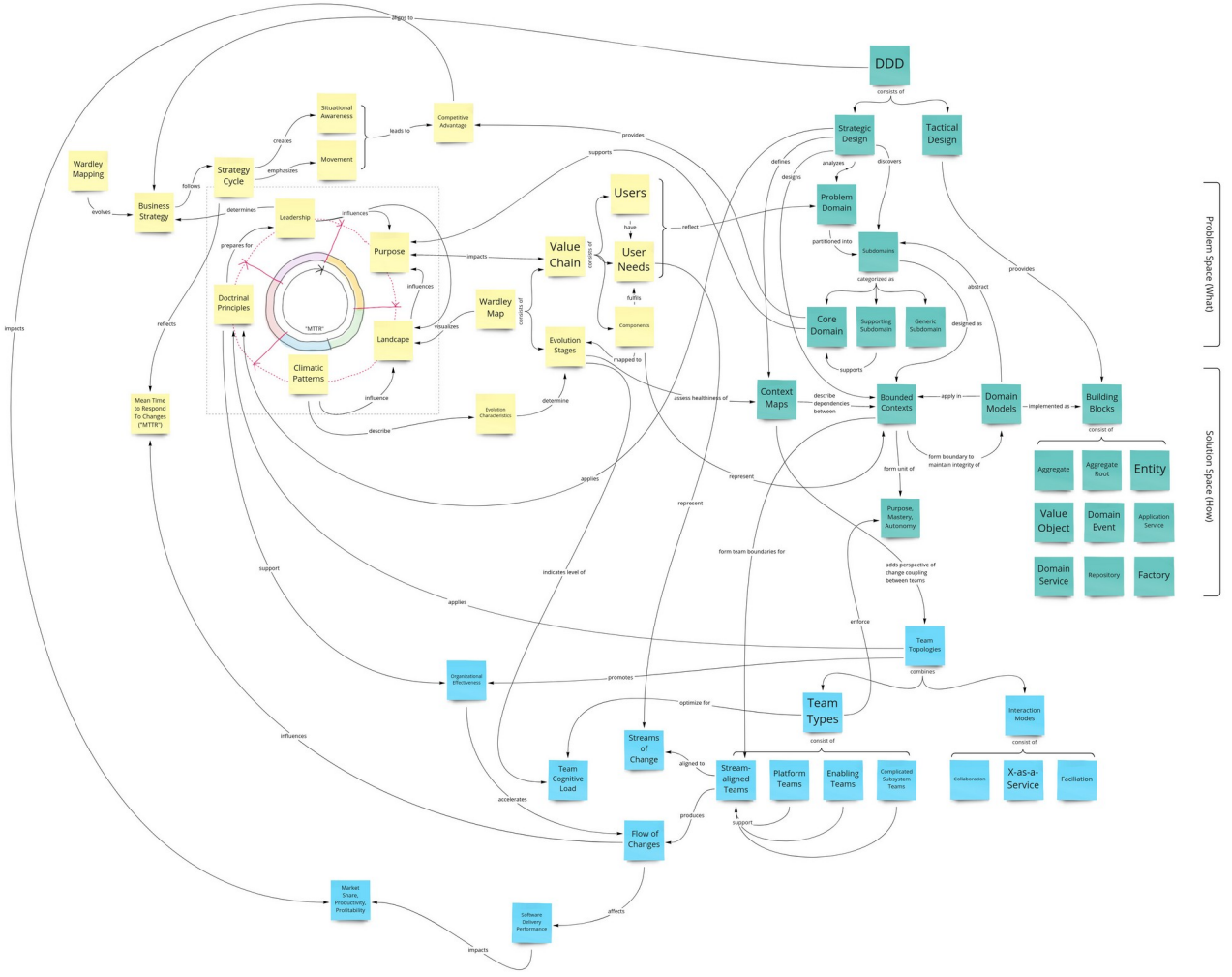


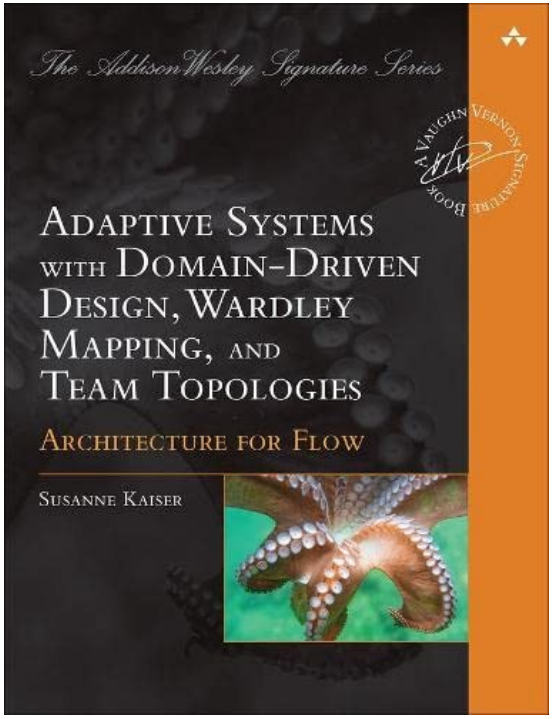




https://medium.com/wardleymaps
https://learnwardleymapping.com/
https://github.com/wardley-maps-community/awesome-wardley-maps
https://github.com/ddd-crew
https://www.dddheuristics.com

If you are interested in more details ...





THANK YOU

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