

Adaptive Socio-Technical Systems w/ Architecture for Flow

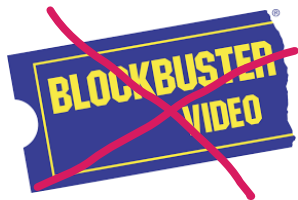
Susanne Kaiser
Independent Tech Consultant
@suksr

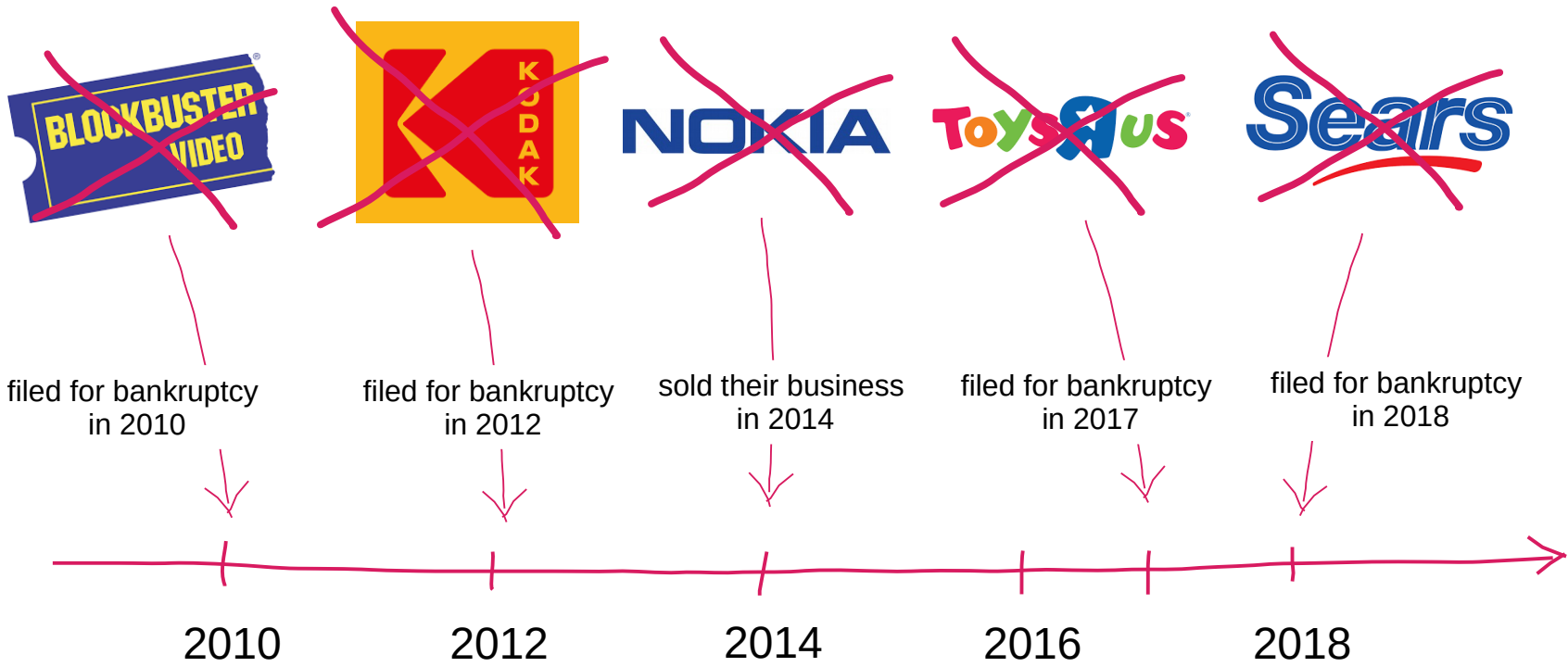
What do these companies have in common ?

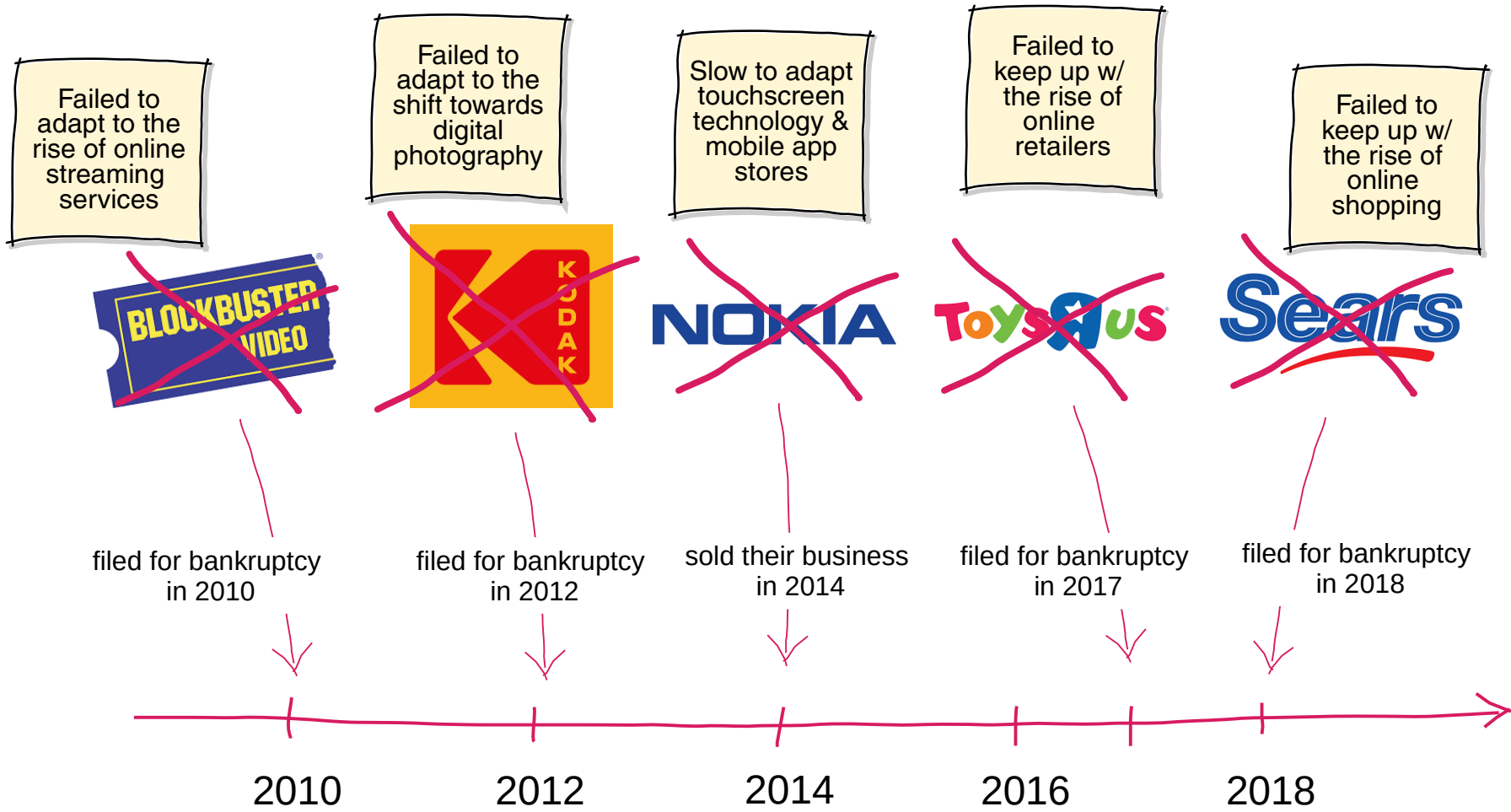


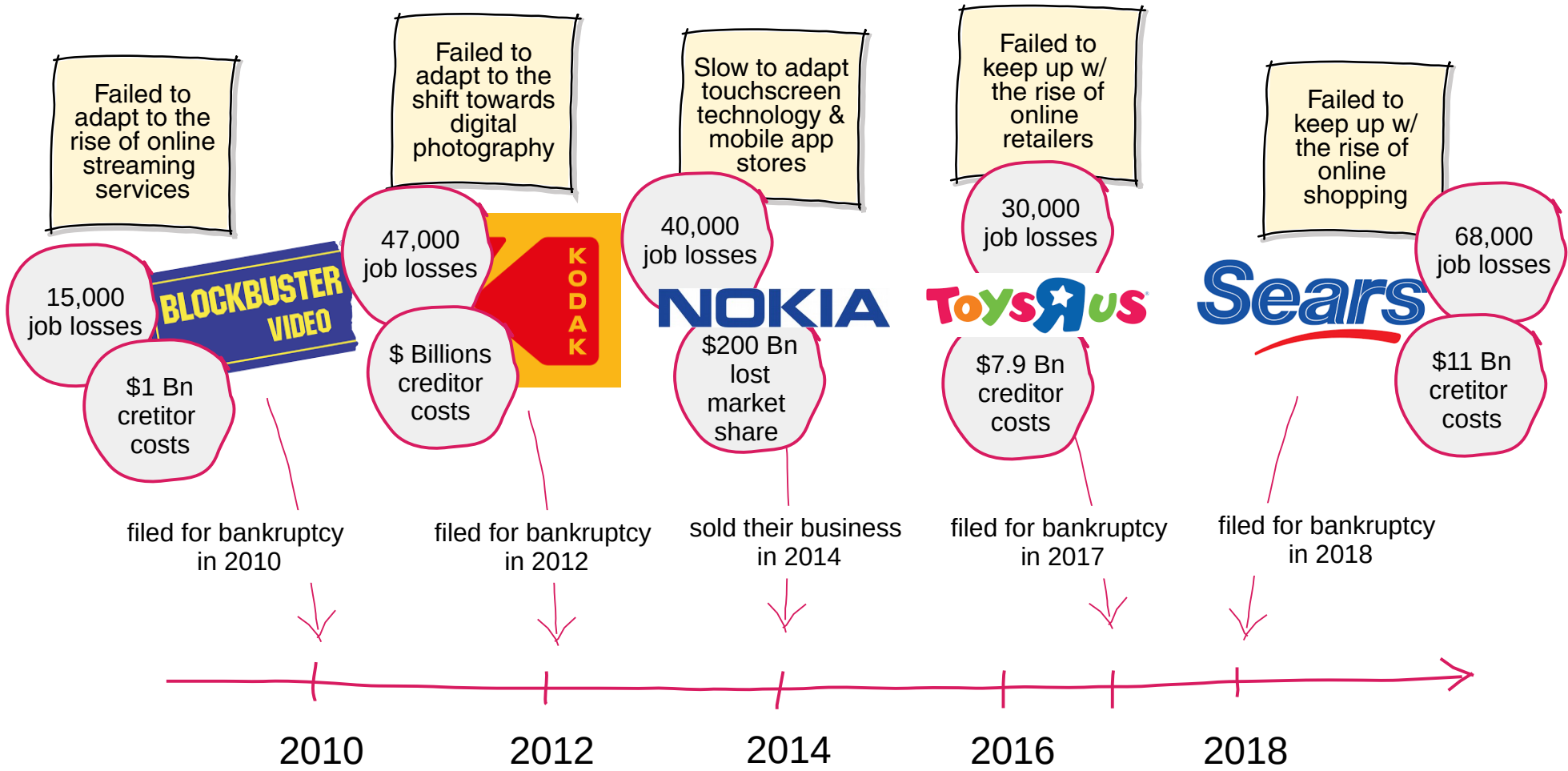
NOKIA











~200,000

job losses

~\$220 Bn

of costs for
creditors incl.
lost revenue,
market share

Failure to Adapt to Changing Circumstances

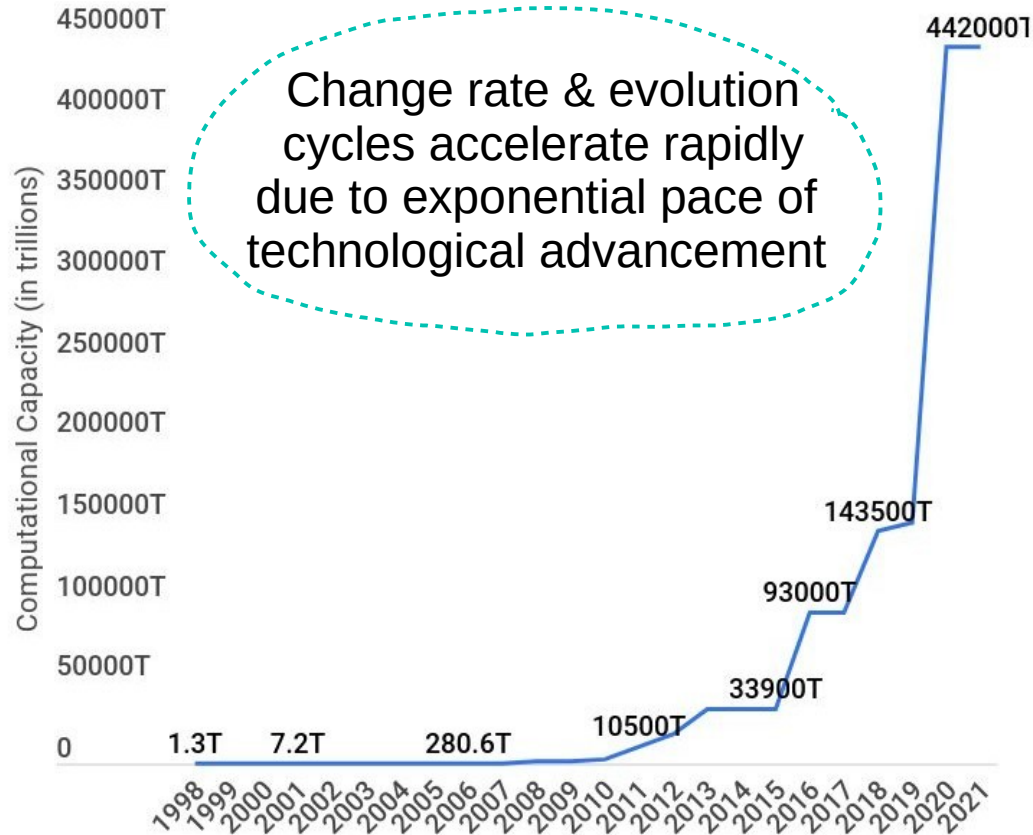
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graph TD; A[Failure to Adapt to Changing Circumstances] --> B[~200,000 job losses]; A --> C[~$220 Bn of costs for creditors incl. lost revenue, market share];
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~200,000
job losses

~\$220 Bn
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“The Only Thing That is Constant is Change” - Heraclitus

SUPERCOMPUTER COMPUTATIONAL CAPACITY OVER TIME



Change rate & evolution cycles accelerate rapidly due to exponential pace of technological advancement

Organizations have to continuously adapt and evolve to remain competitive

Source: <https://www.zipppia.com/advice/how-fast-is-technology-advancing/>

How to design
systems that can
evolve and thrive in
the face of
constant change?

How to design systems that can evolve and thrive in the face of constant change?

Understanding the business landscape and external forces to design effective strategies

Knowing the business domain & closely align system to business needs

Aligning teams and evolving their interactions to the system & strategy

How to design systems that can evolve and thrive in the face of constant change?

Understanding the business landscape and external forces to design effective strategies

Wardley Mapping

Knowing the business domain & closely align system to business needs

Domain-Driven Design

Aligning teams and evolving their interactions to the system & strategy

Team Topologies

Example: Online School

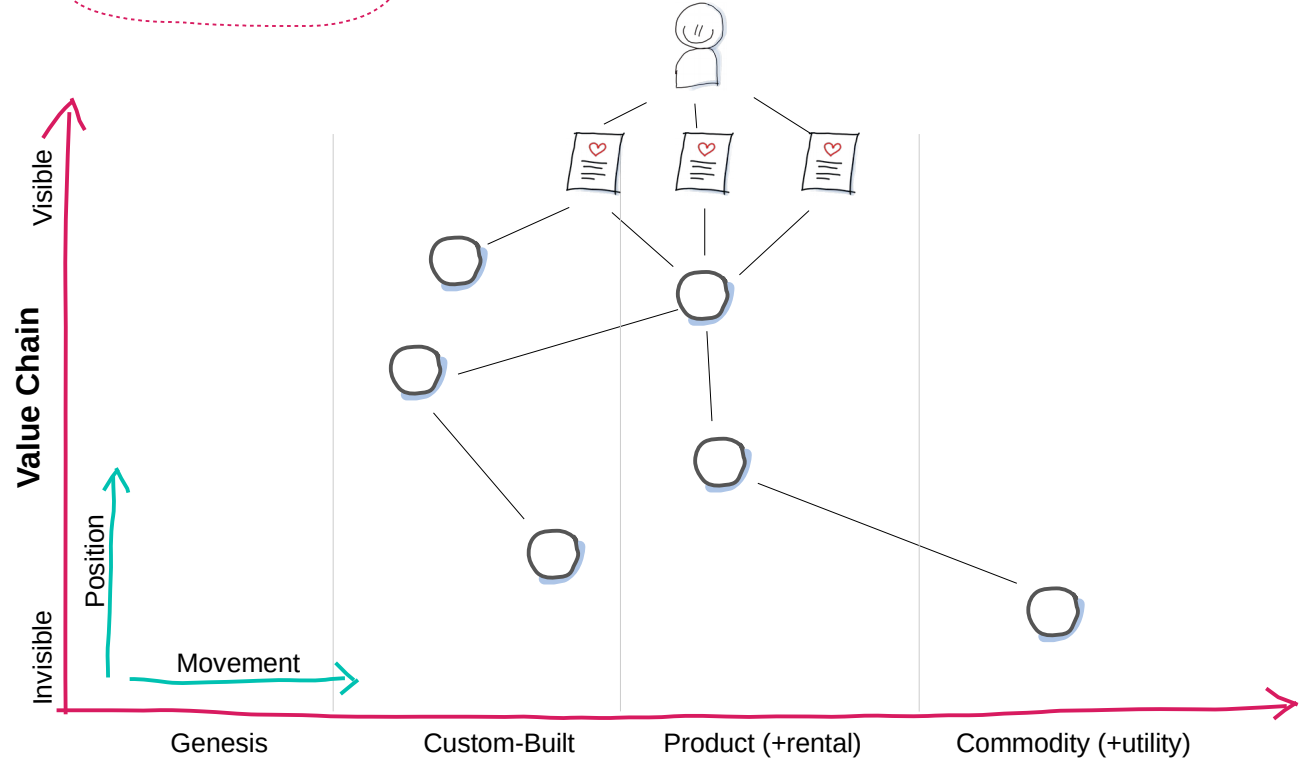
Online School



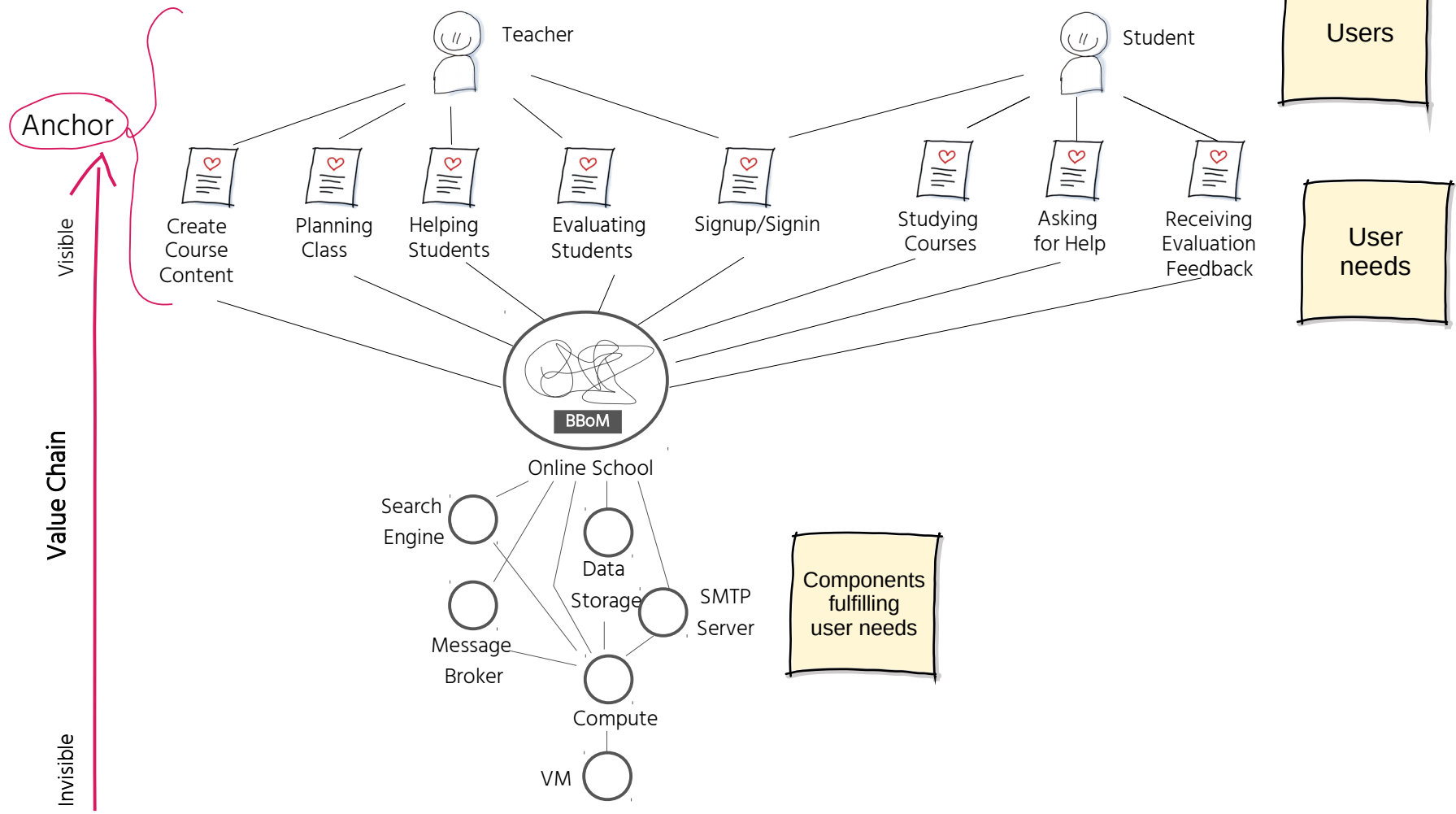
Image source: <https://www.food-management.com>

Understanding
the business
landscape

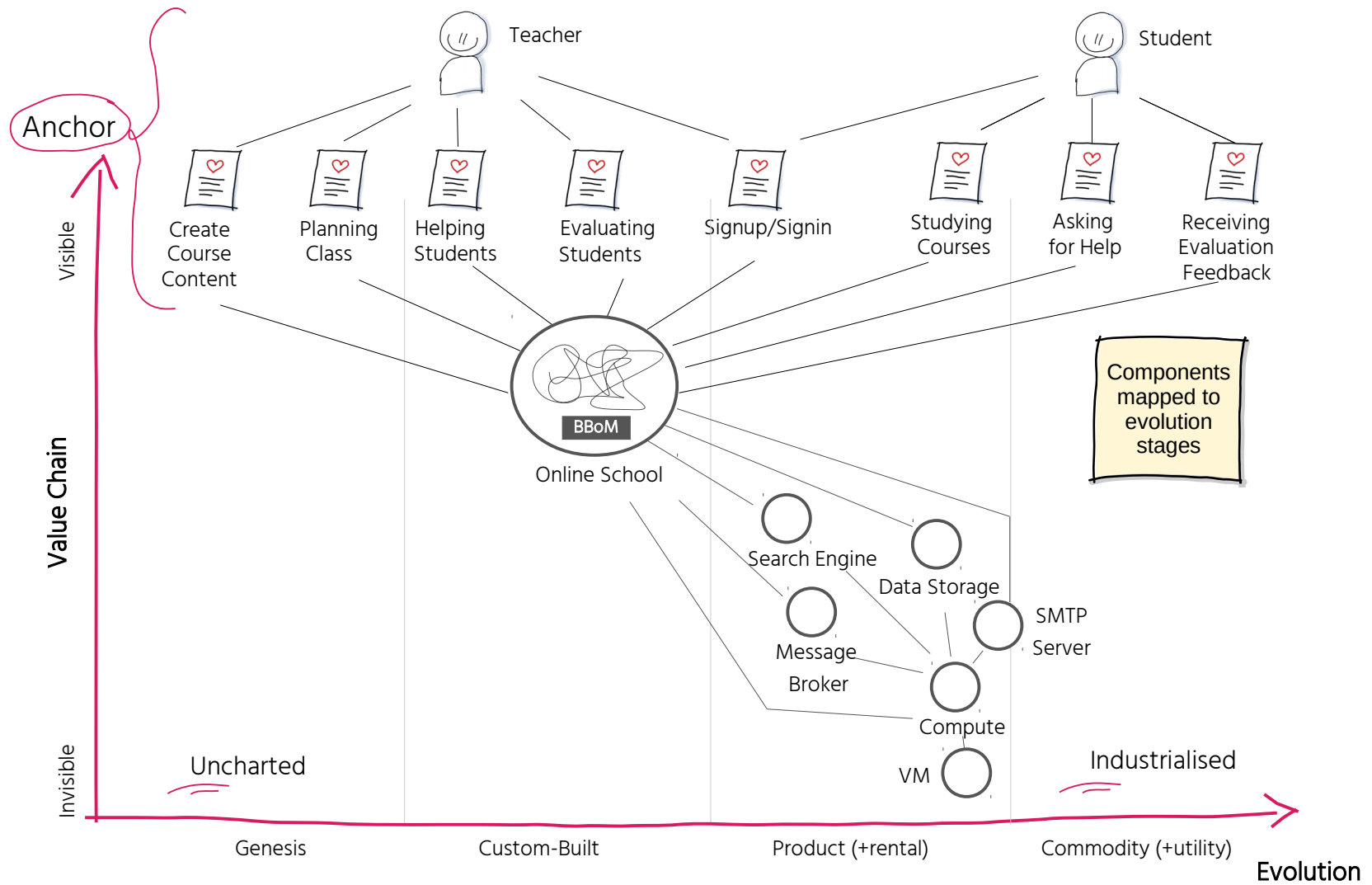
Wardley Map



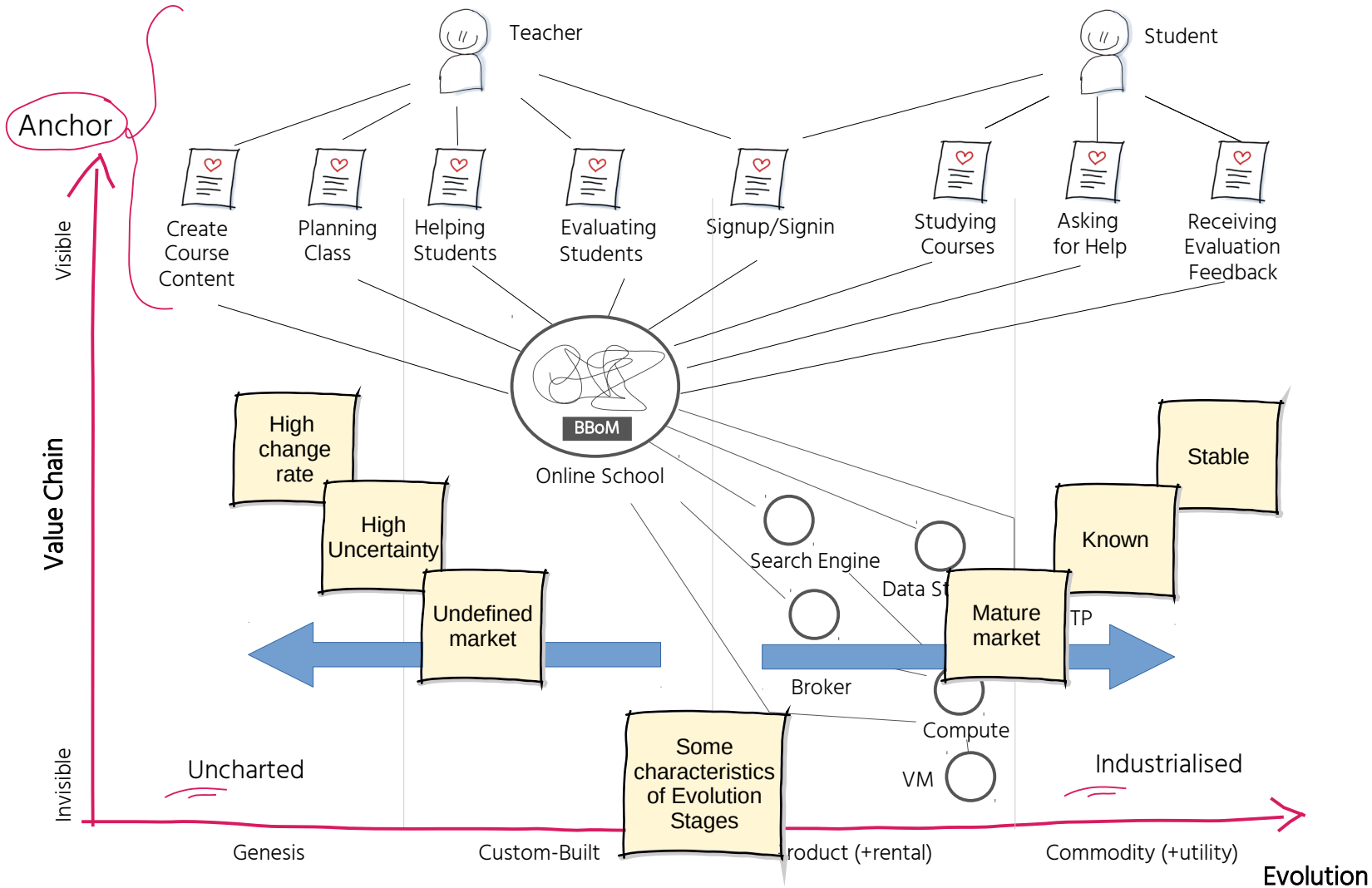
The Landscape of the Current State



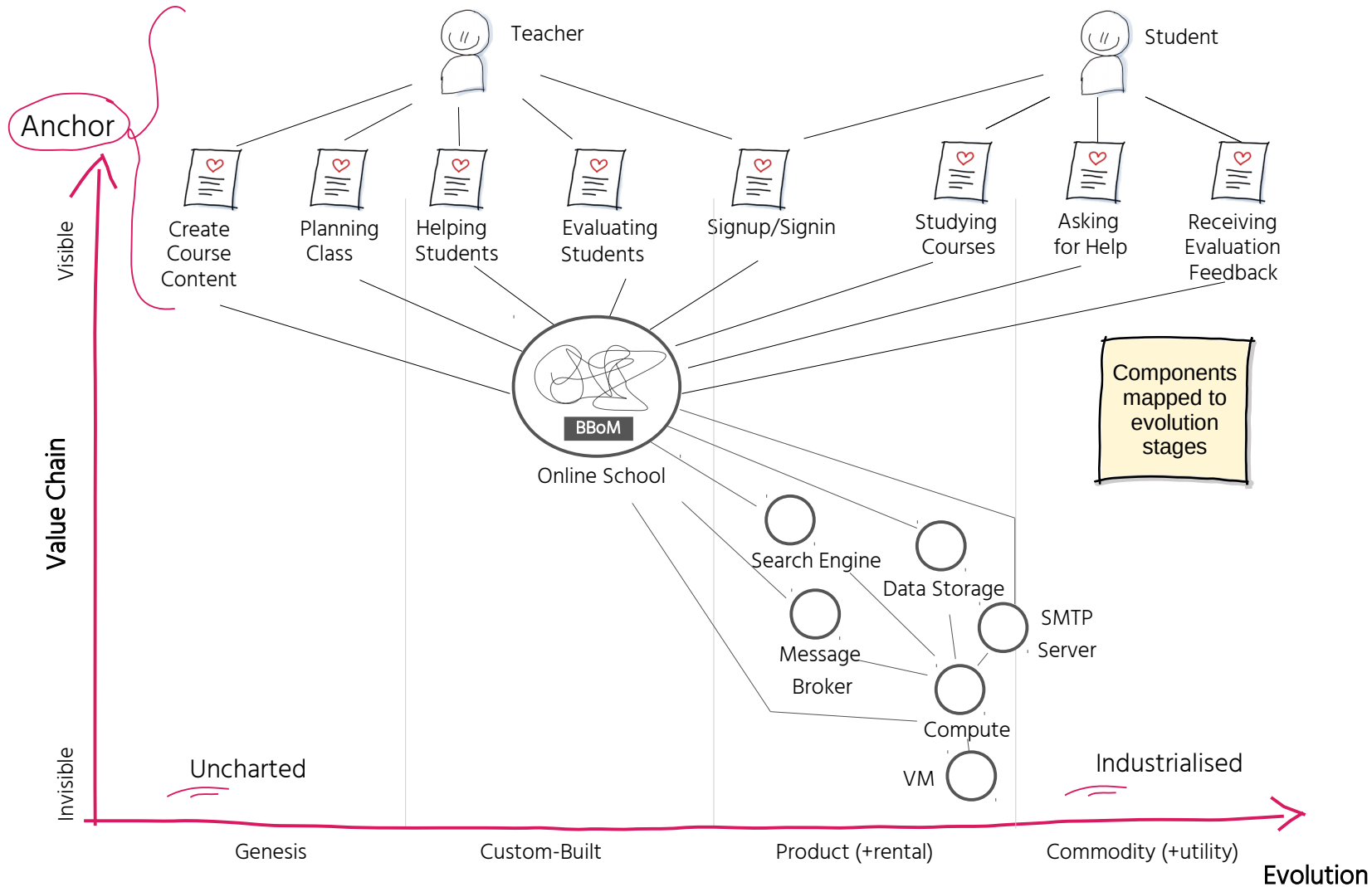
The Landscape of the Current State



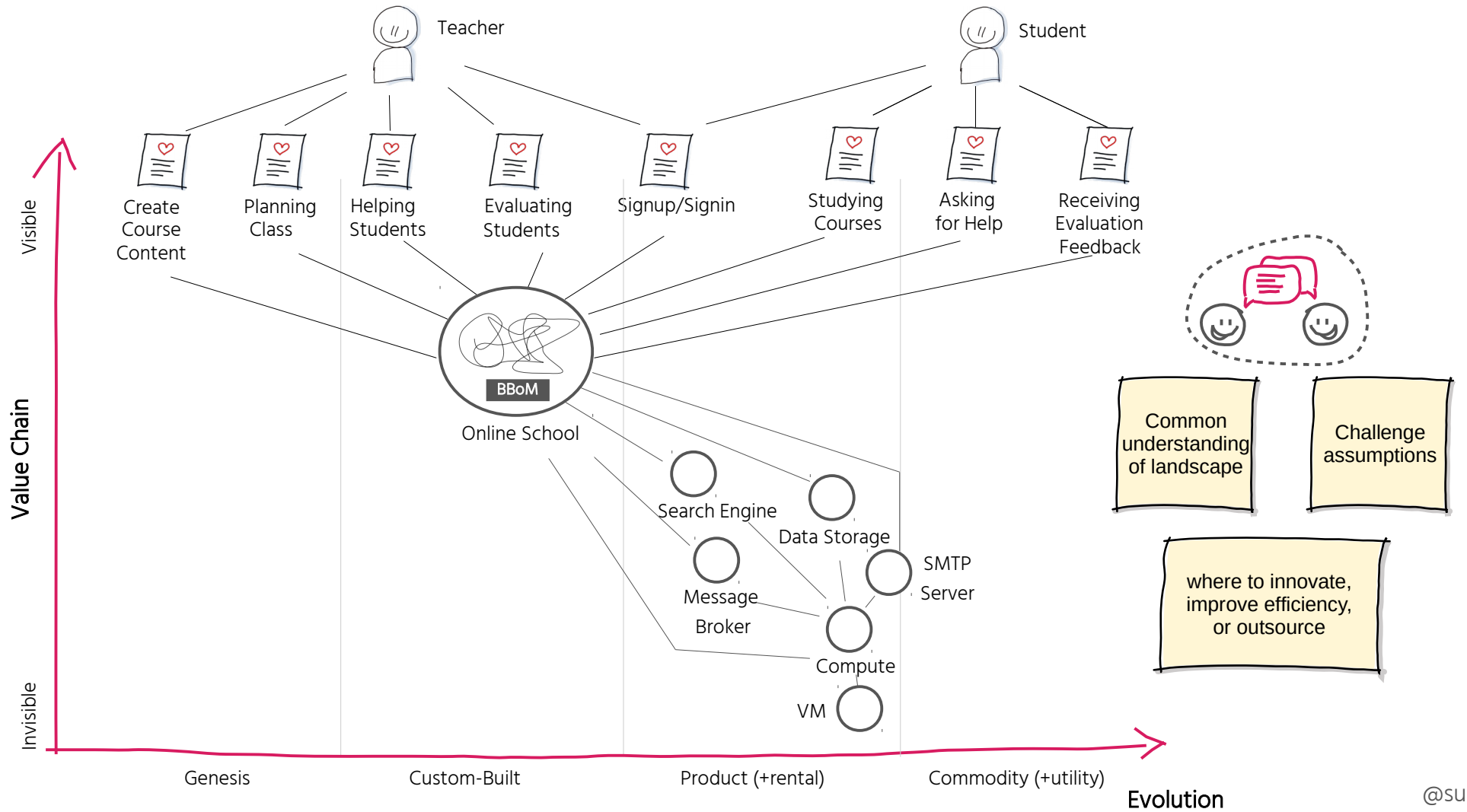
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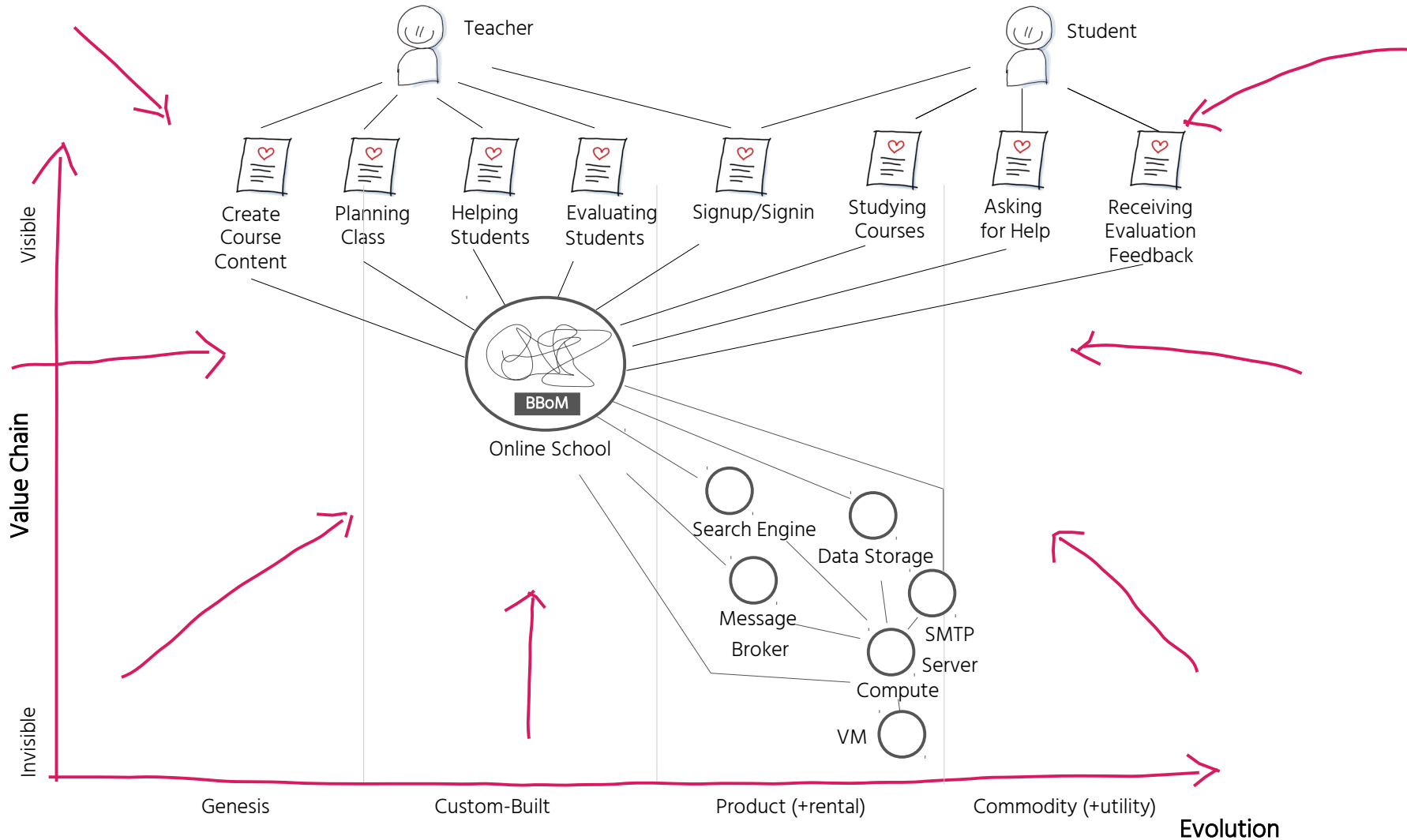
The Landscape of the Current State



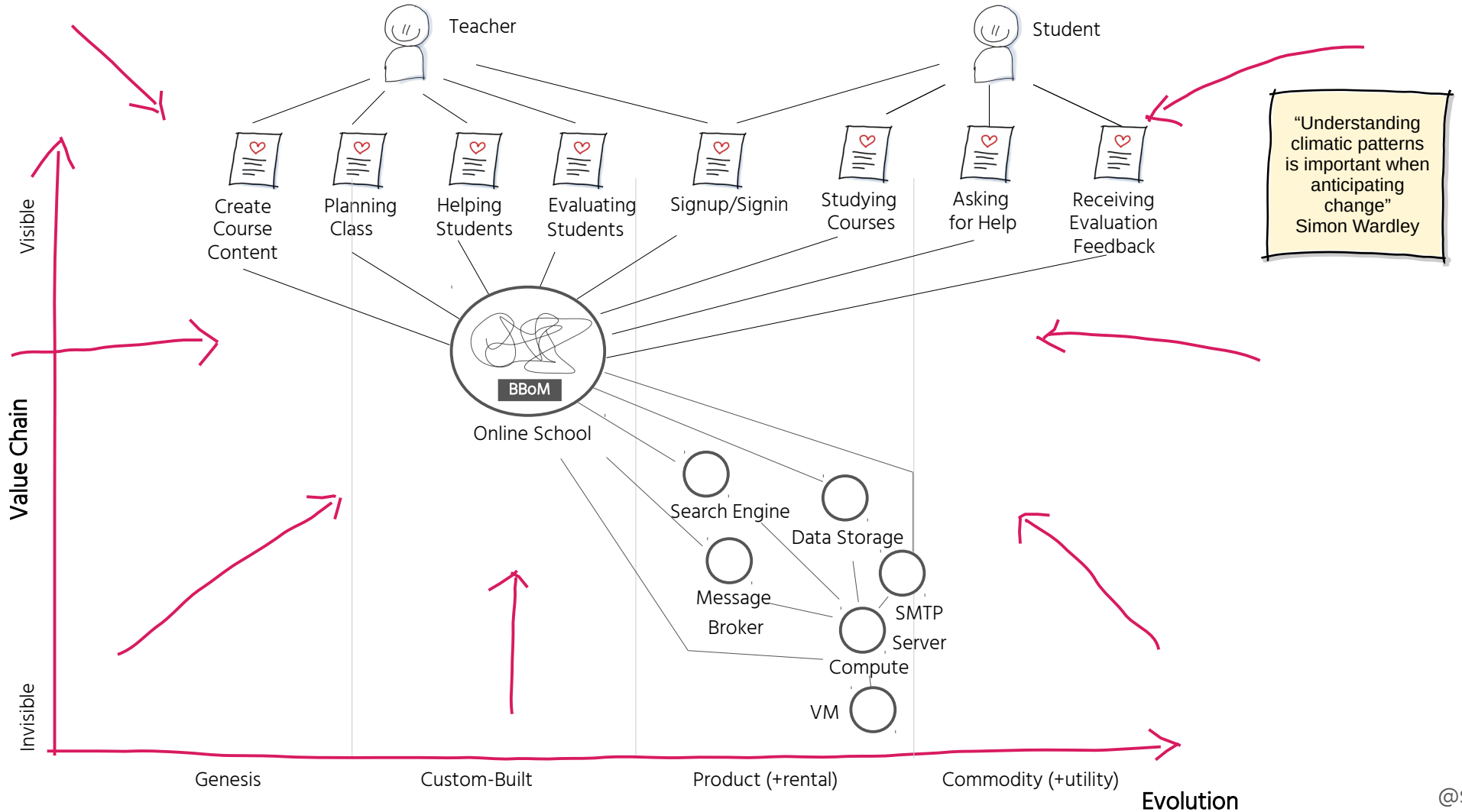
The Landscape of the Current State



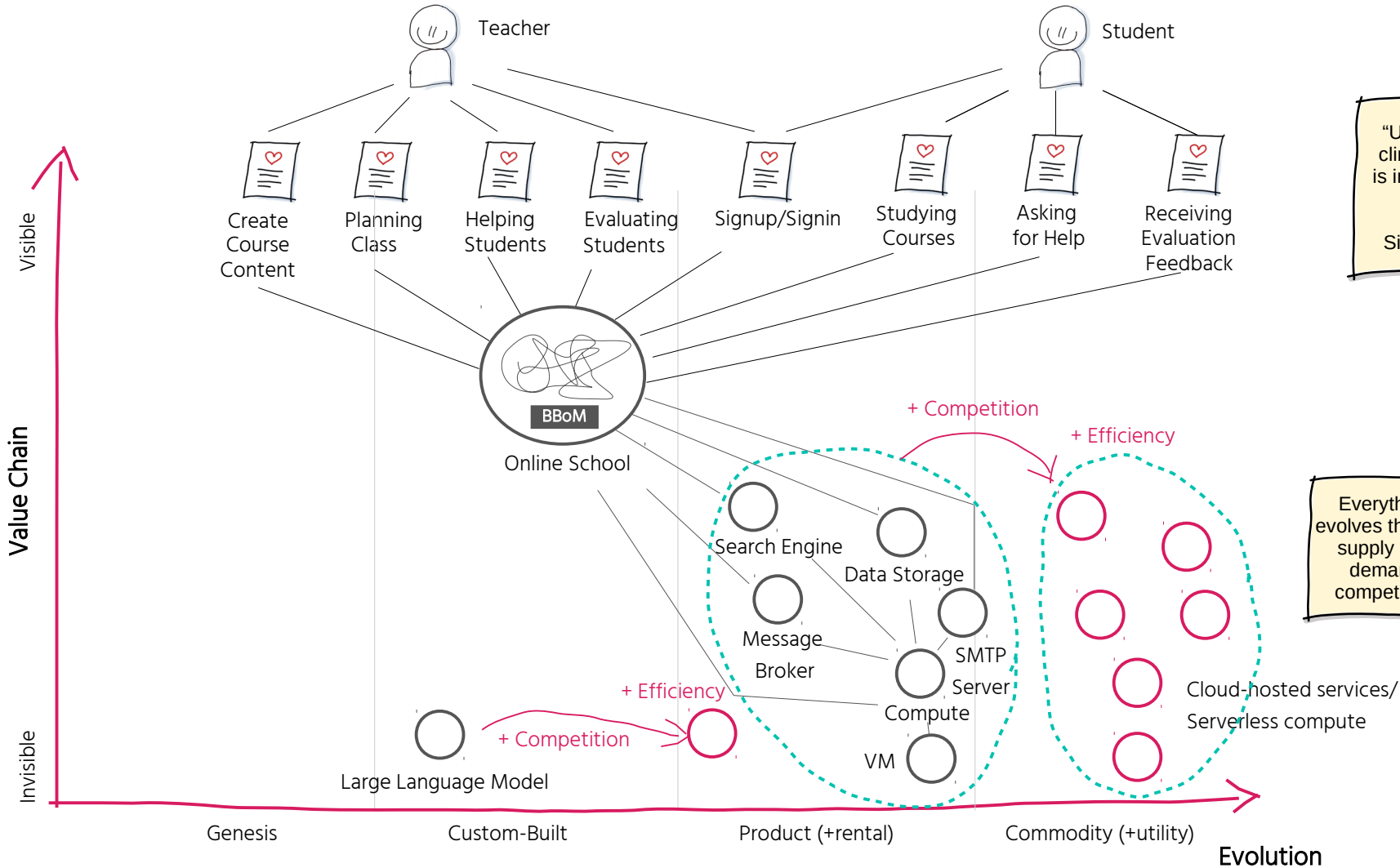
External Forces Impacting the Landscape: Climatic Patterns



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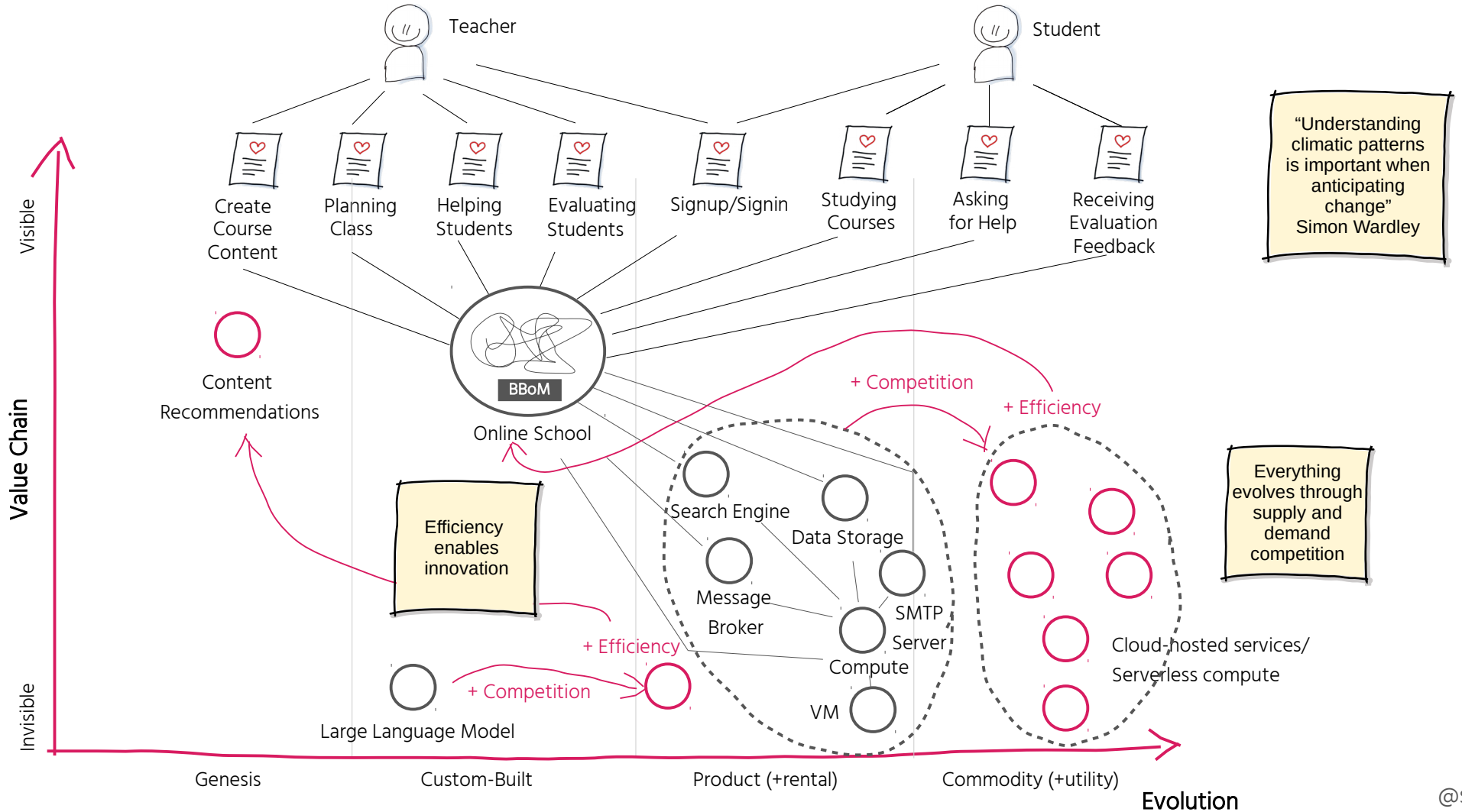
External Forces Impacting the Landscape: Climatic Patterns



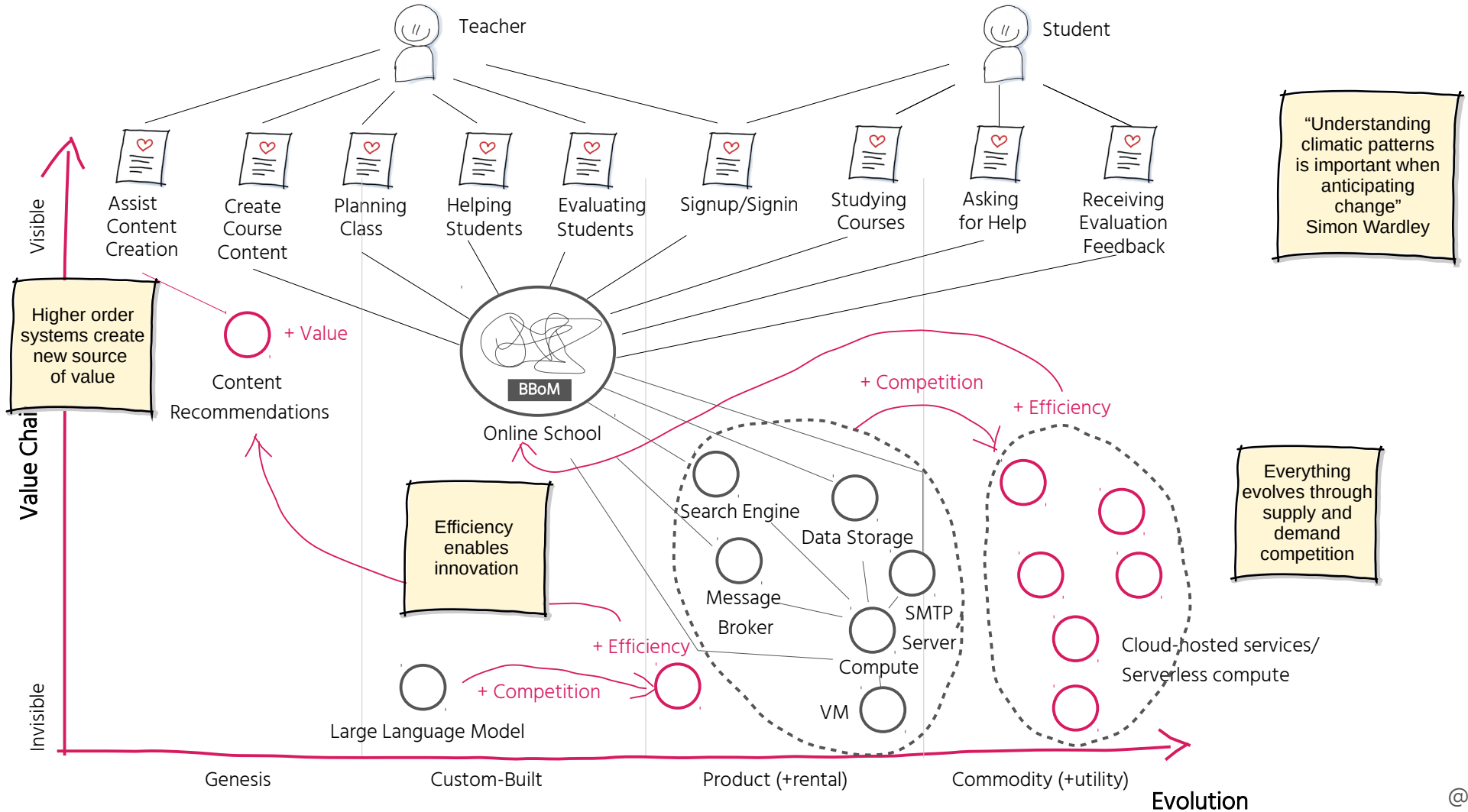
“Understanding climatic patterns is important when anticipating change”
Simon Wardley

Everything evolves through supply and demand competition

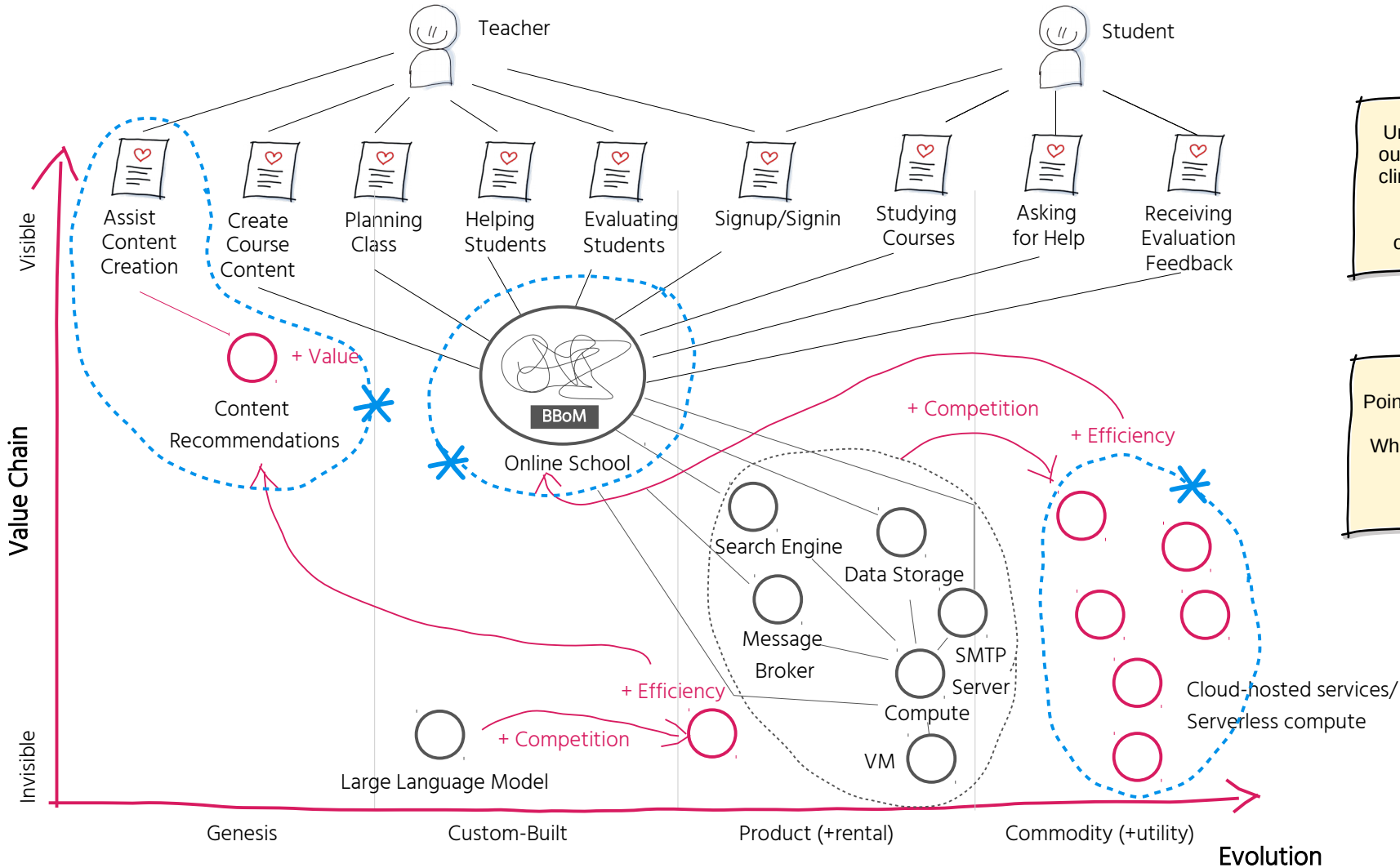
External Forces Impacting the Landscape: Climatic Patterns



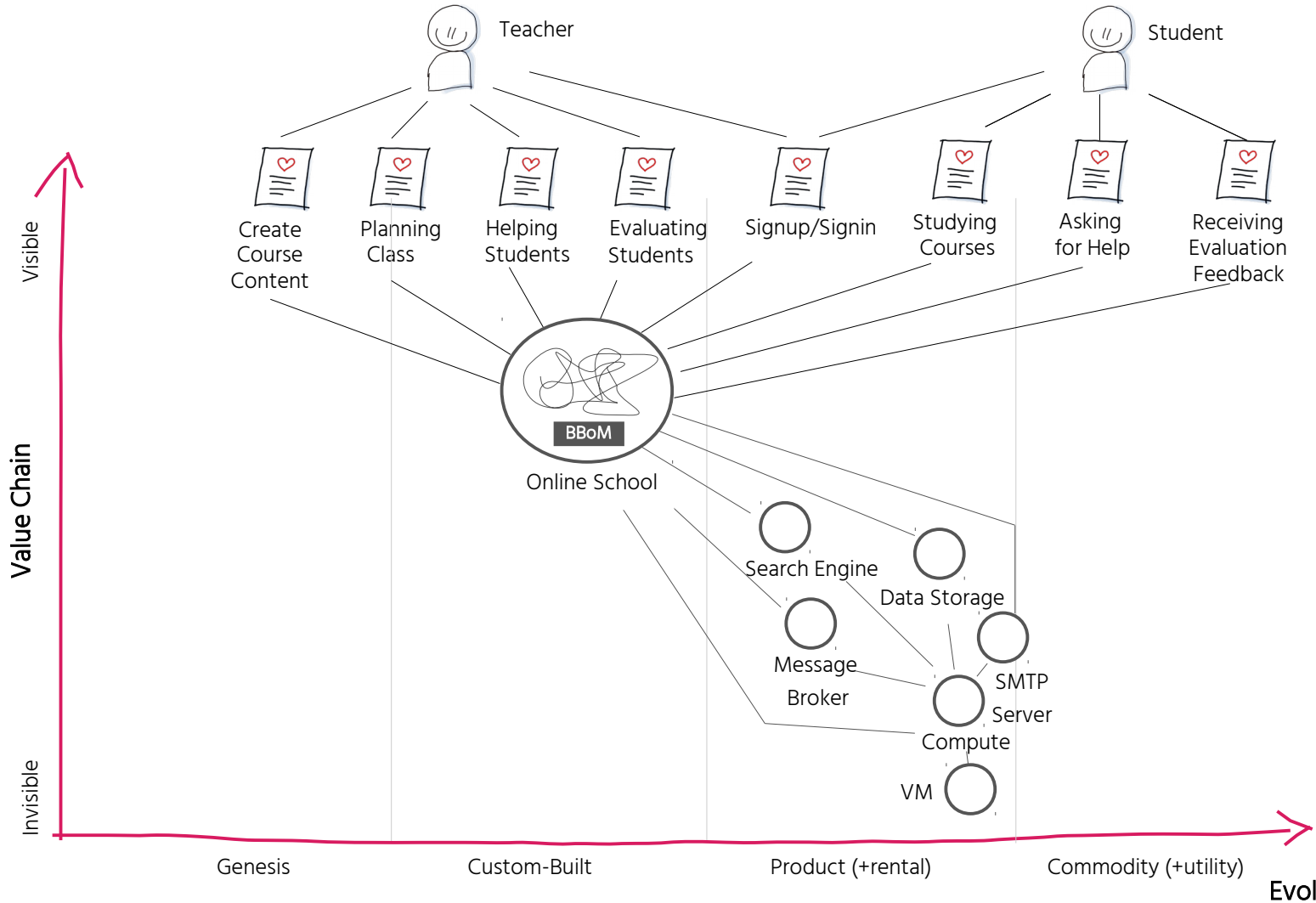
External Forces Impacting the Landscape: Climatic Patterns



Understanding Landscape & Climatic Patterns

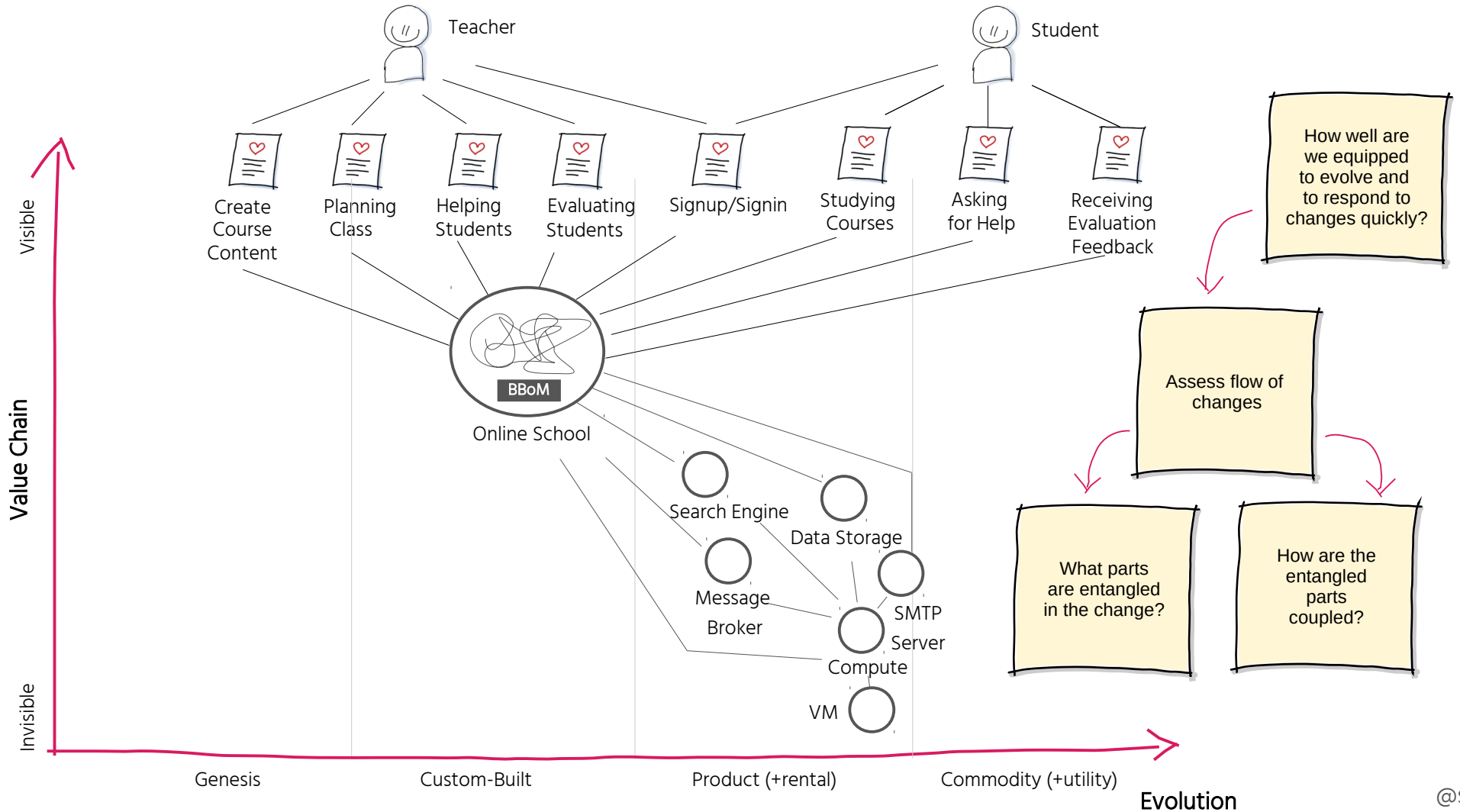


Assessing Responsiveness to Change

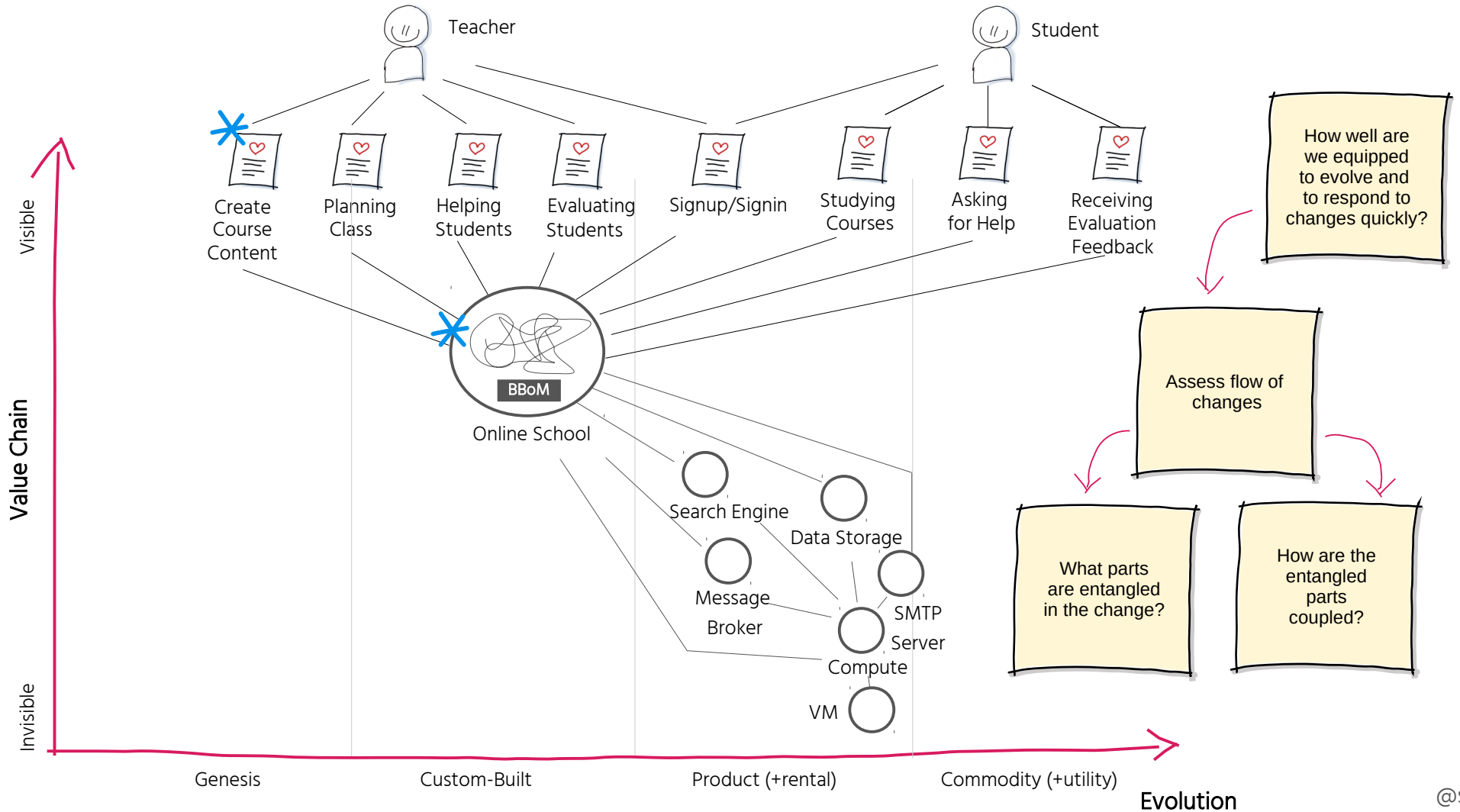


How well are we equipped to evolve and to respond to changes quickly?

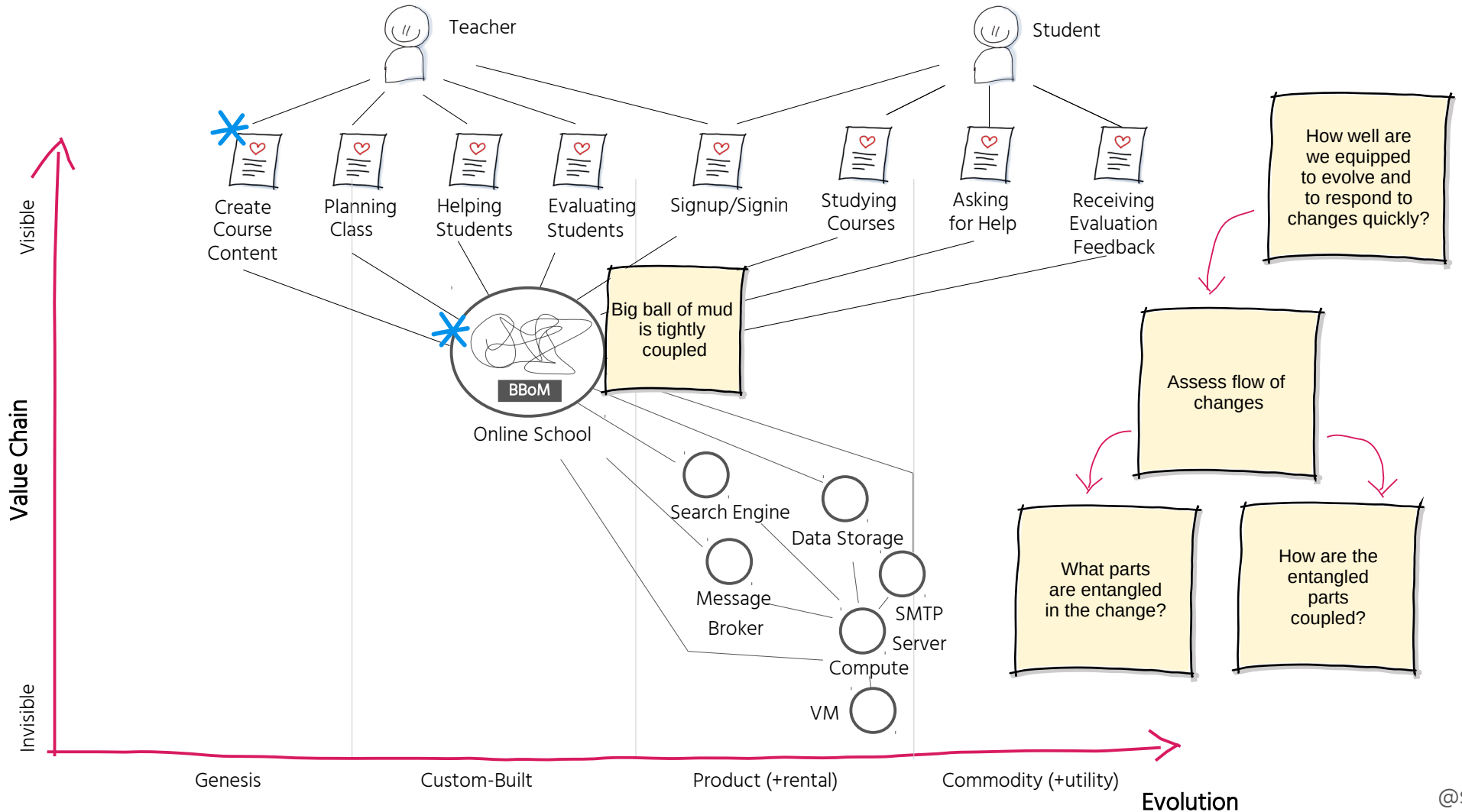
Assessing Responsiveness to Change



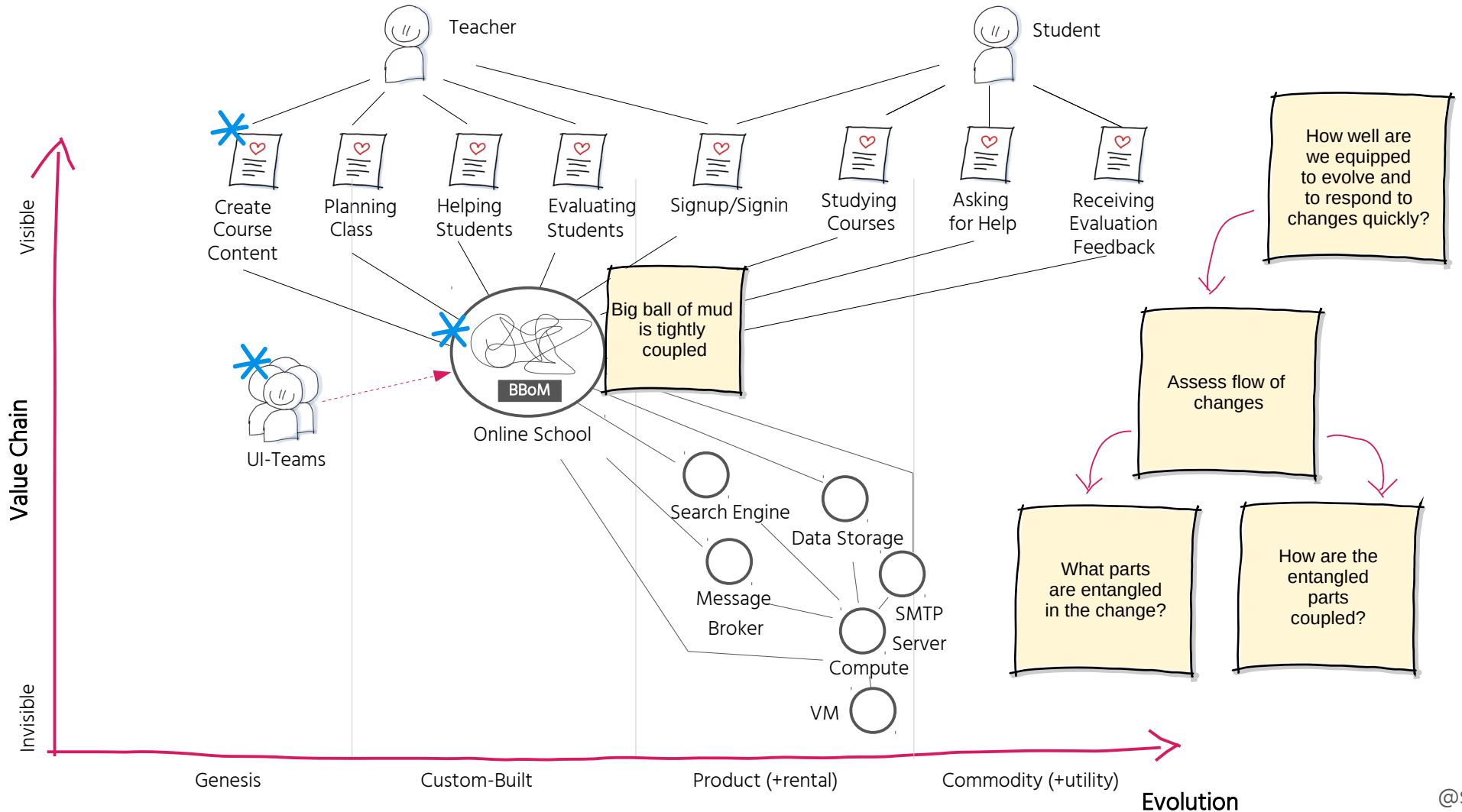
Assessing Responsiveness to Change



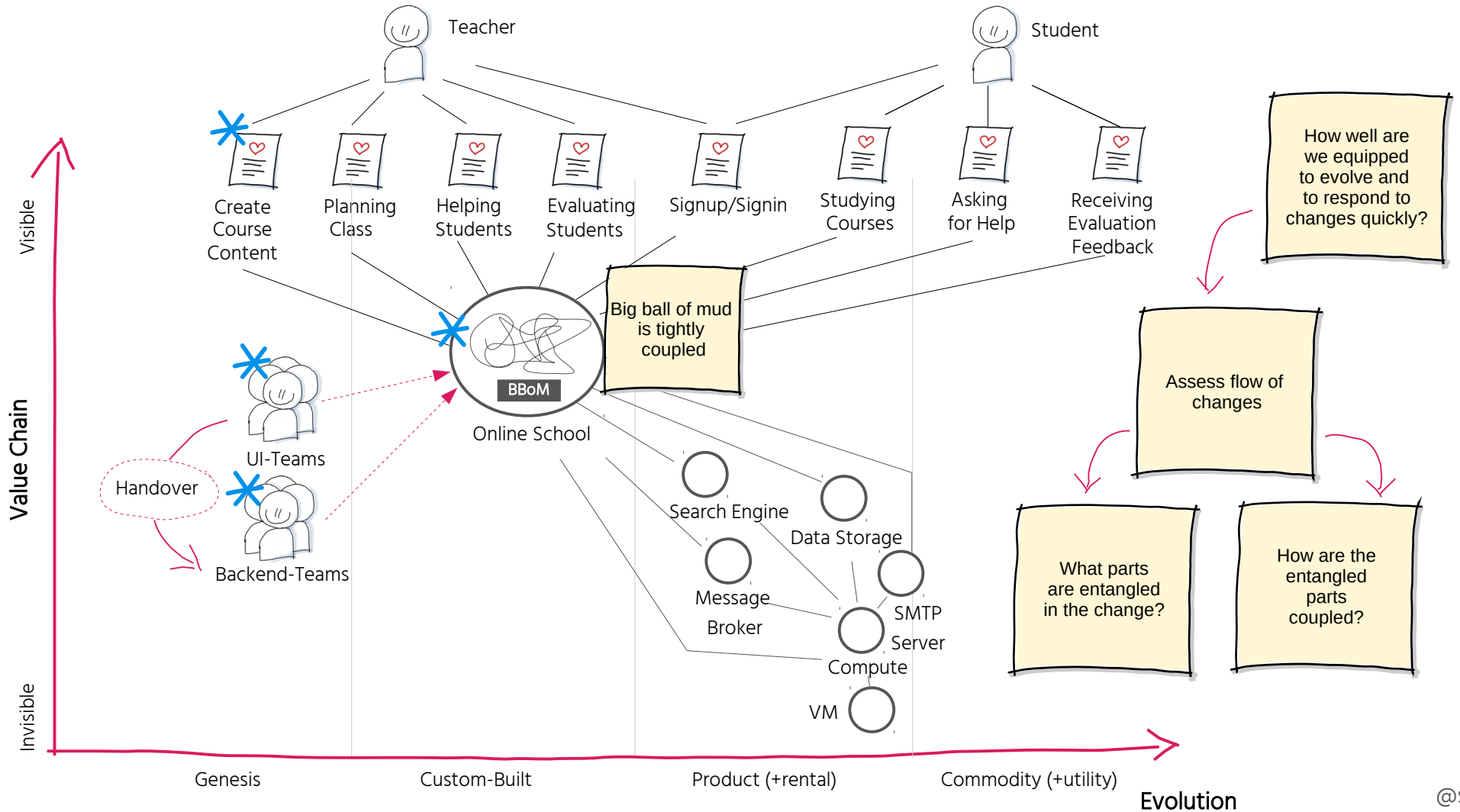
Assessing Responsiveness to Change



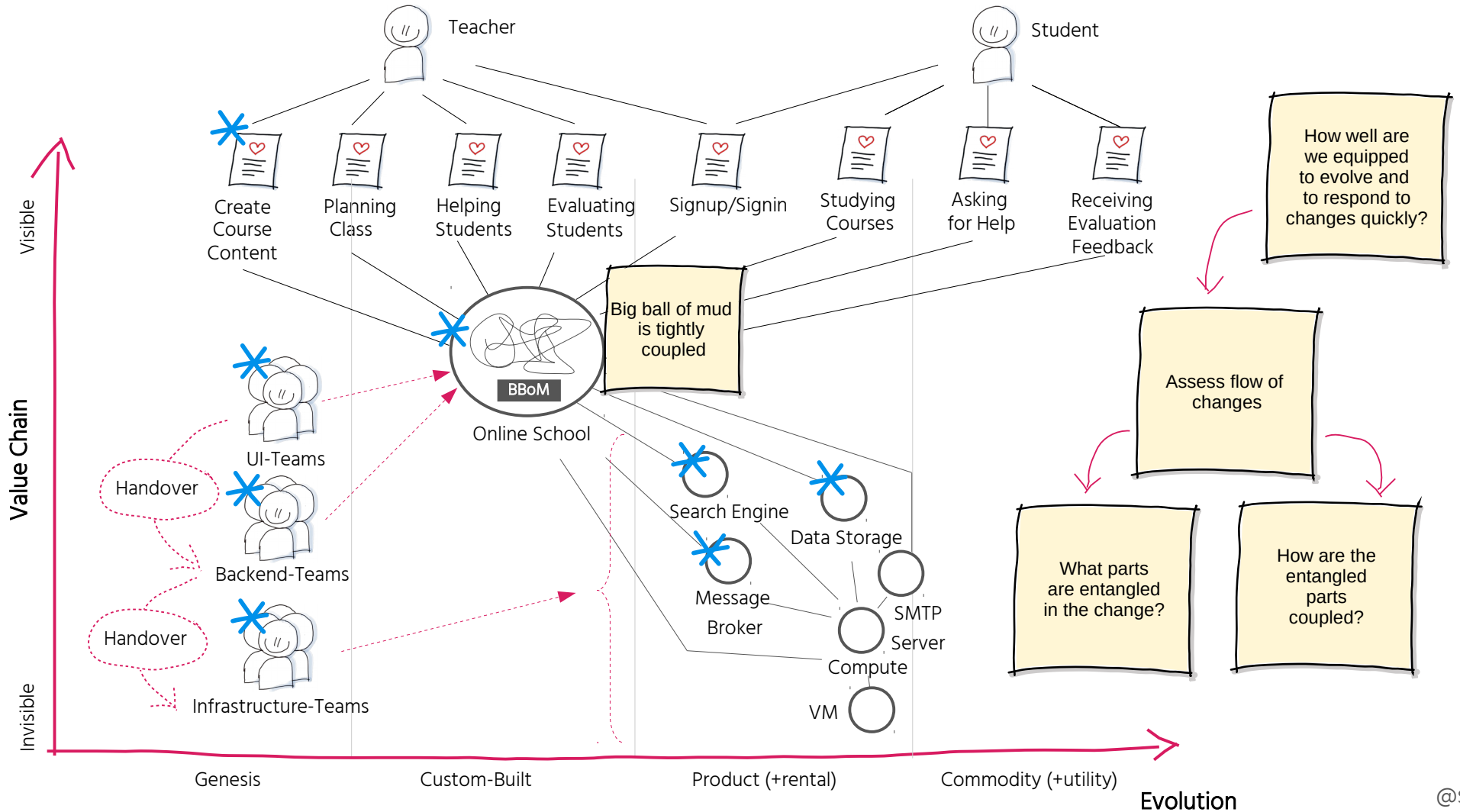
Assessing Responsiveness to Change



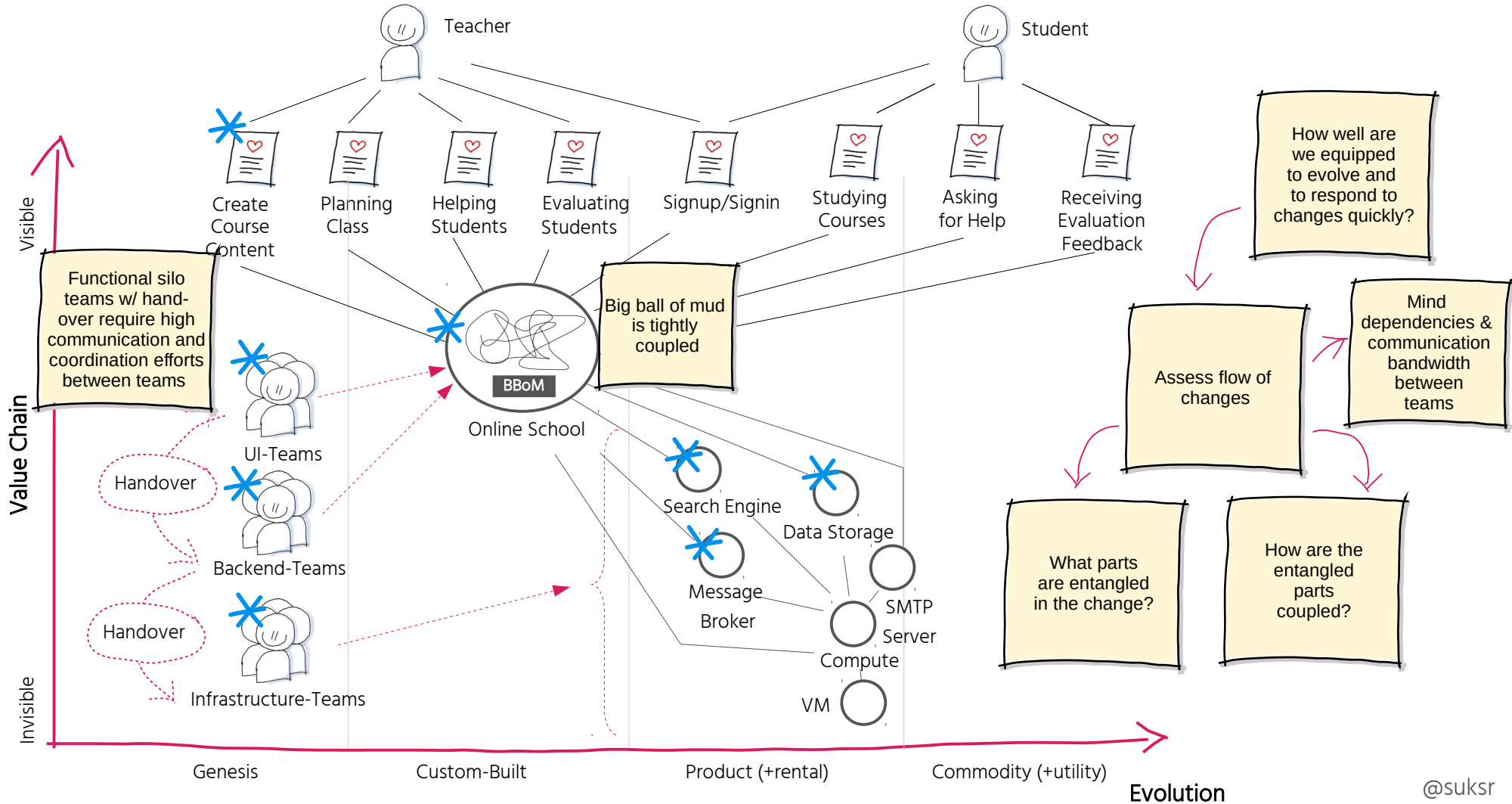
Assessing Responsiveness to Change



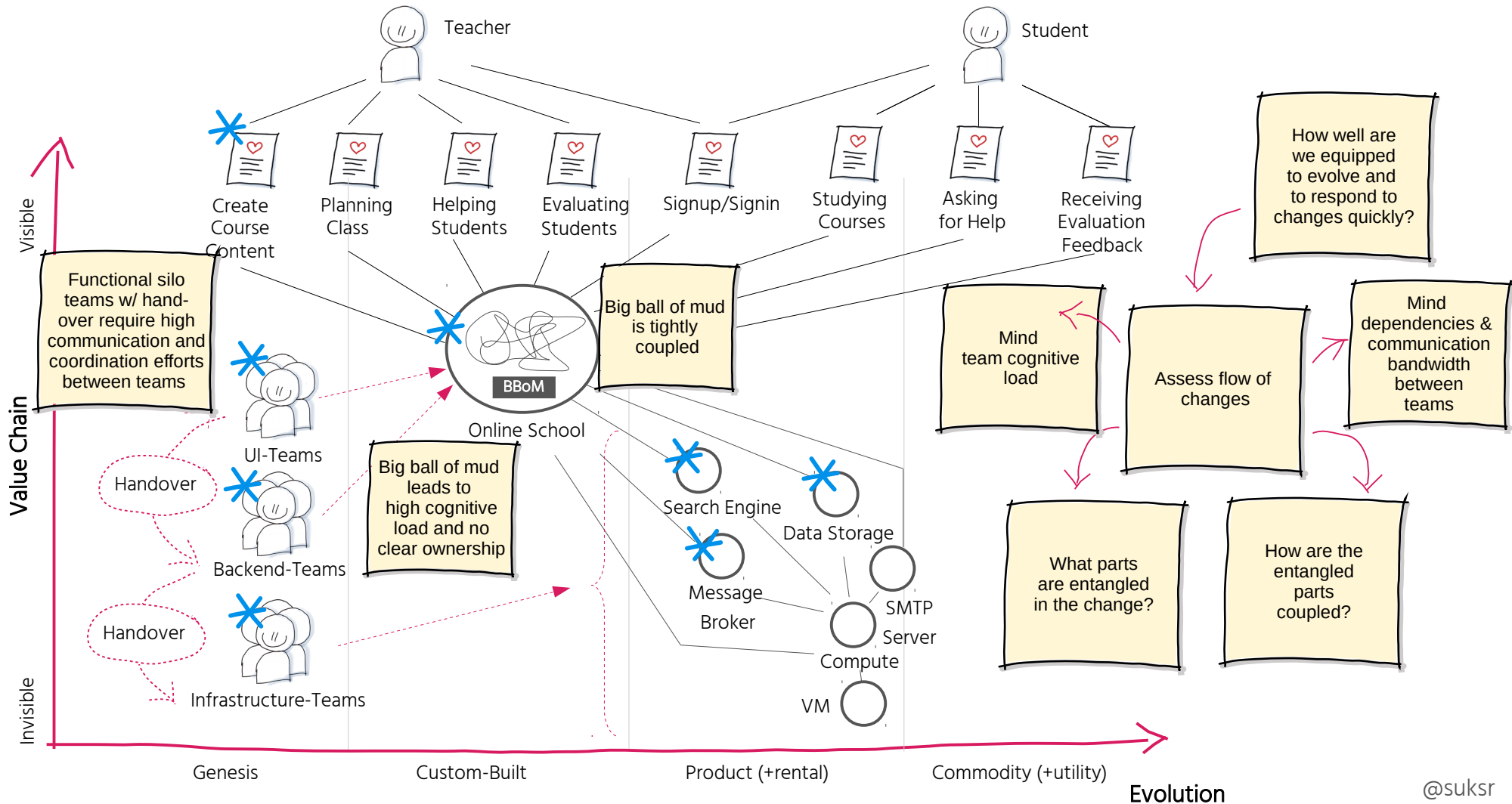
Assessing Responsiveness to Change



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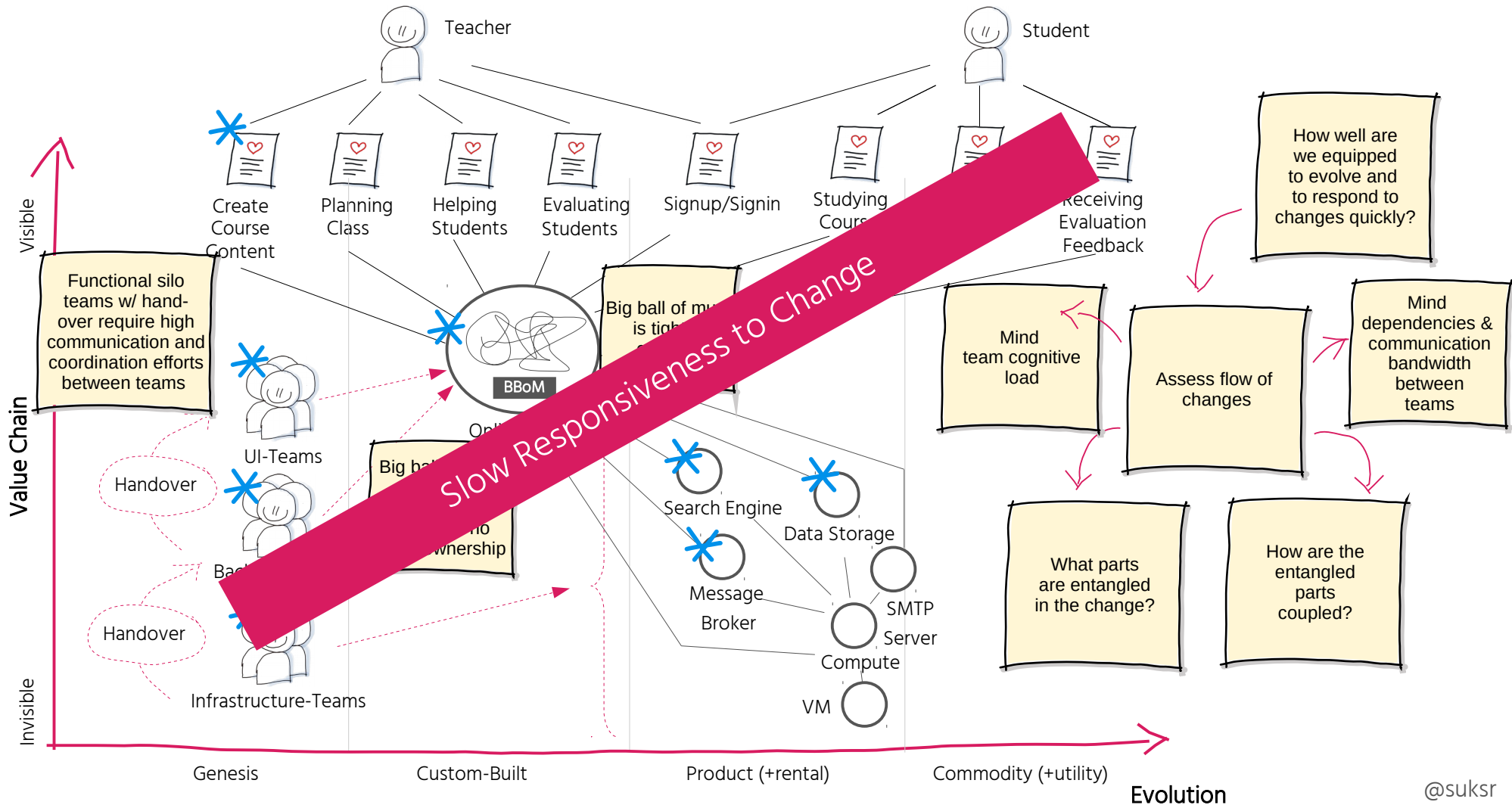
Assessing Responsiveness to Change

Doctrinal Principles

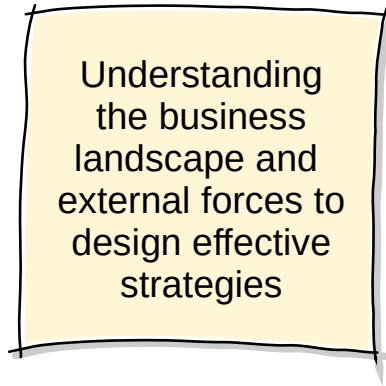
Category	Wardley's Doctrine (universally useful patterns that a user can apply)			
Phase I	Know your users <i>(e.g. customers, shareholders, regulators, staff)</i>	Use a systematic mechanism of learning <i>(a bias towards data)</i>	Focus on high situational awareness <i>(understand what is being considered)</i>	Use a common language <i>(necessary for collaboration)</i>
	Challenge assumptions <i>(speak up and question)</i>	Focus on user needs	Remove bias and duplication	Think small <i>(as in know the details)</i>
	Use appropriate methods <i>(e.g. agile vs lean vs six sigma)</i>			
Phase II	Be transparent <i>(a bias towards open)</i>	Move fast <i>(an imperfect plan executed today is better than a perfect plan executed tomorrow)</i>	Be pragmatic <i>(it doesn't matter if the cat is black or white as long as it catches mice)</i>	Think fast, inexpensive, restrained and elegant <i>(FIRE, formerly FIST)</i>
	Focus on the outcome not a contract <i>(e.g. worth based development)</i>	Use appropriate tools <i>(e.g. mapping, financial models)</i>	Manage inertia <i>(e.g. existing practice, political capital, previous investment)</i>	Effectiveness over efficiency
	Think aptitude and attitude	Think small <i>(as in teams)</i>	Use standards where appropriate	Manage failure
	Strategy is iterative not linear <i>(fast reactive cycles)</i>	A bias towards action <i>(learn by playing the game)</i>	Distribute power and decision making	
Phase III	Provide purpose, mastery & autonomy	Set exceptional standards <i>(great is just not good enough)</i>	Commit to the direction, be adaptive along the path <i>(crossing the river by feeling the stones)</i>	A bias towards the new <i>(be curious, take appropriate risks)</i>
	Do better with less <i>(continual improvement)</i>	Optimise flow <i>(remove bottlenecks)</i>	Think big <i>(inspire others, provide direction)</i>	Be humble <i>(listen, be selfless, have fortitude)</i>
	Be the owner <i>(take responsibility)</i>	Strategy is complex <i>(there will be uncertainty)</i>	Seek the best	
Phase IV	Exploit the landscape	There is no core <i>(everything is transient)</i>	Listen to your ecosystems <i>(acts as future sensing engines)</i>	There is no one culture <i>(e.g. pioneers, settlers and town planners)</i>
	Design for constant evolution			

Source: https://wardleypedia.org/mediawiki/index.php/Doctrine_Patterns

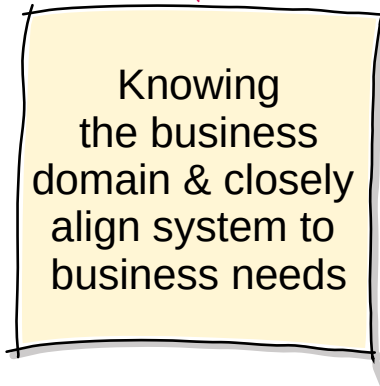
Assessing Responsiveness to Change



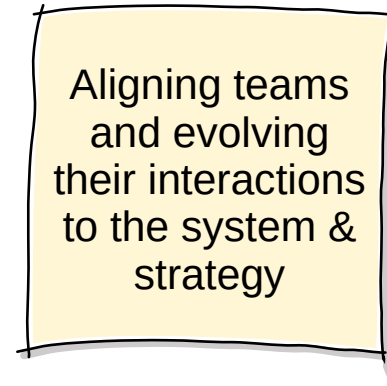
How to design systems that can evolve and thrive in the face of constant change?



Wardley Mapping

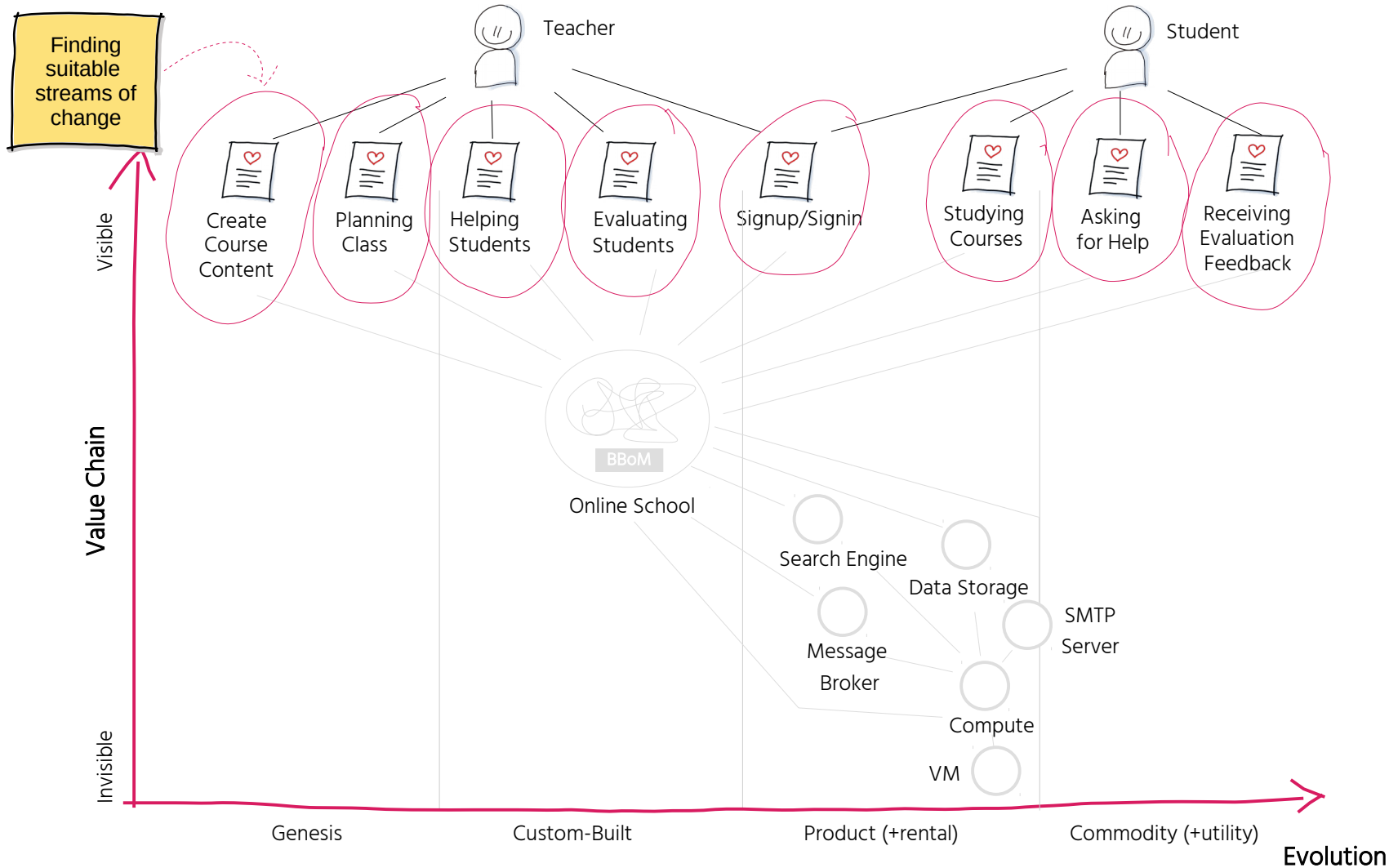


Domain-Driven Design

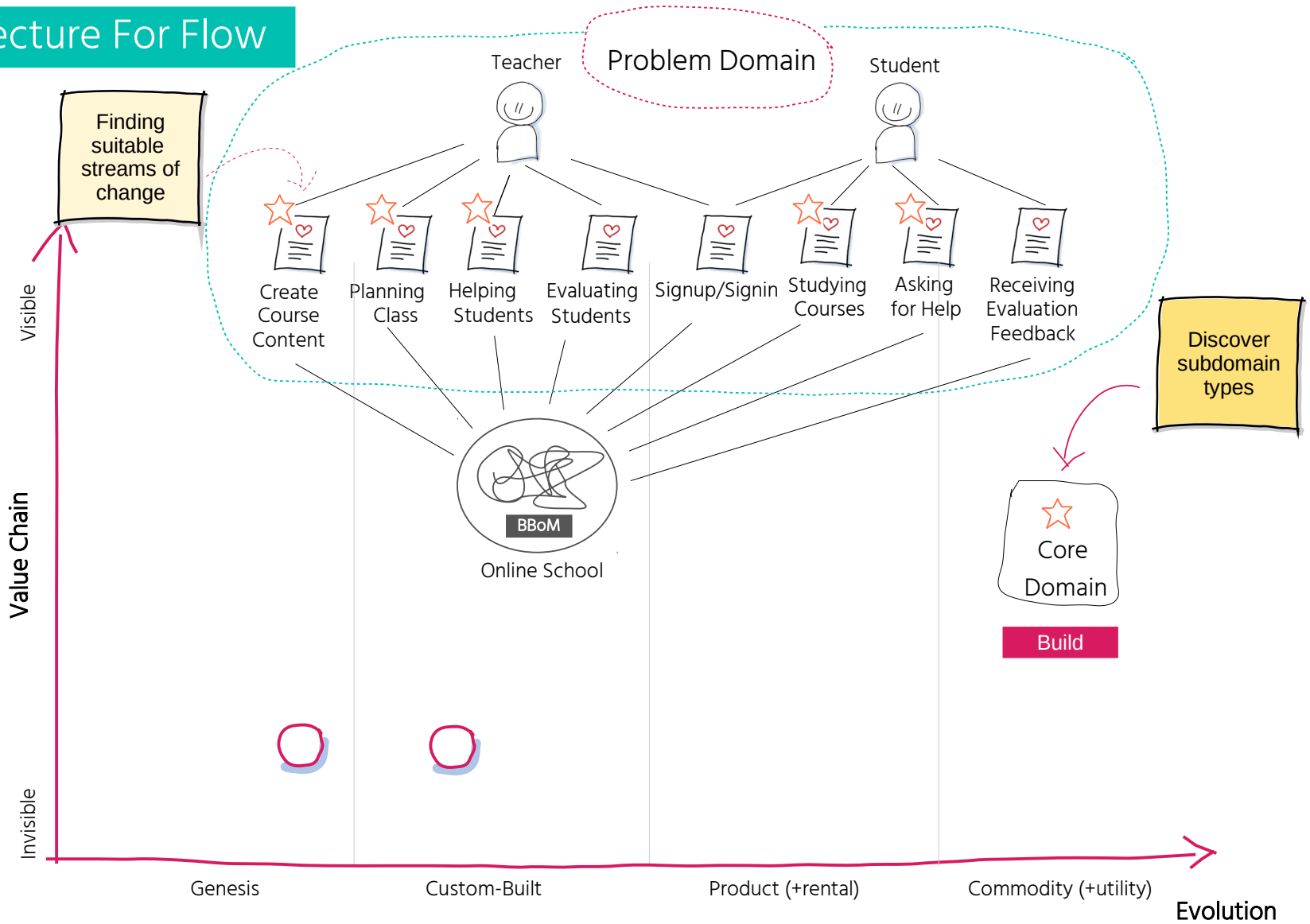


Team Topologies

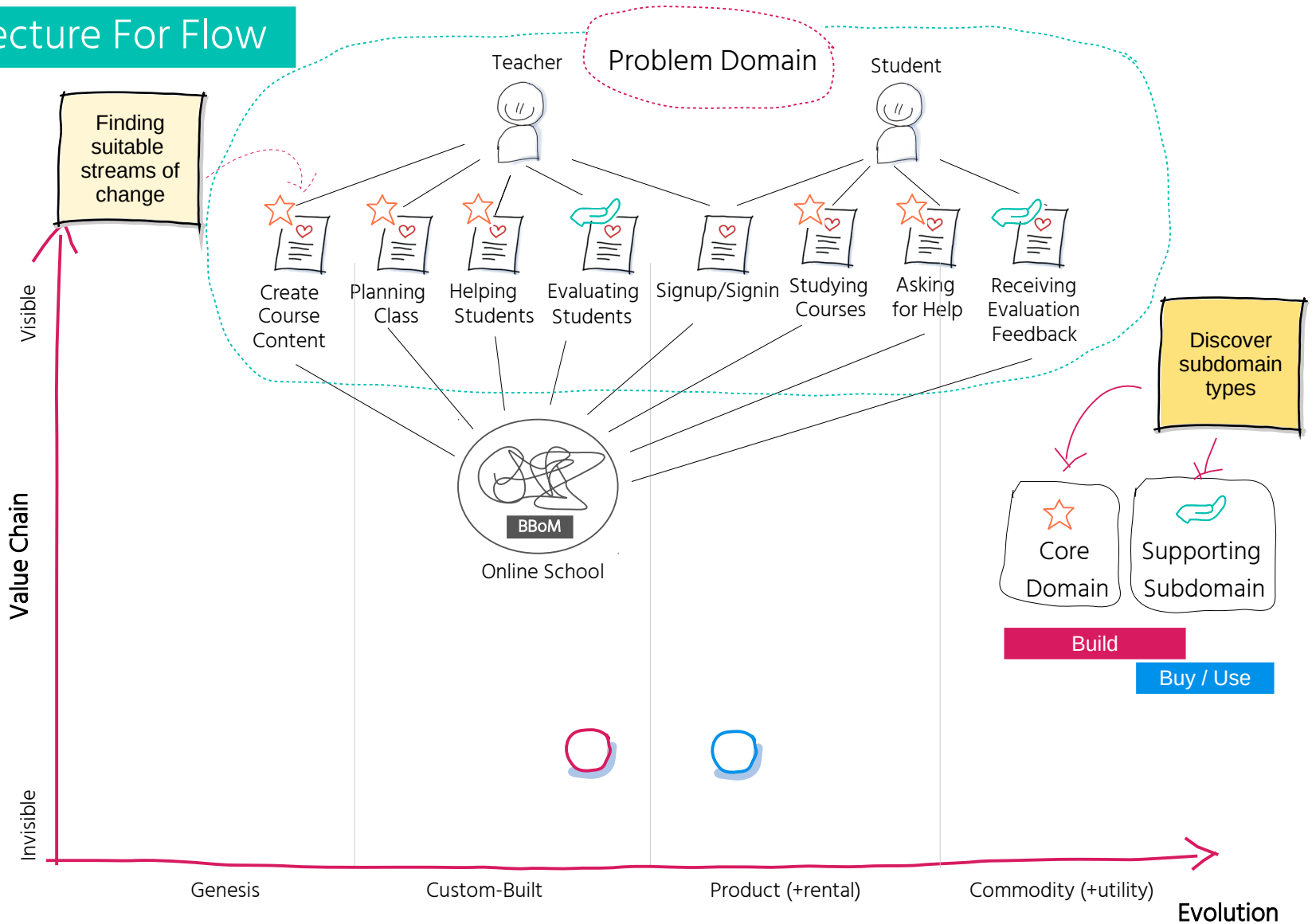
Architecture For Flow



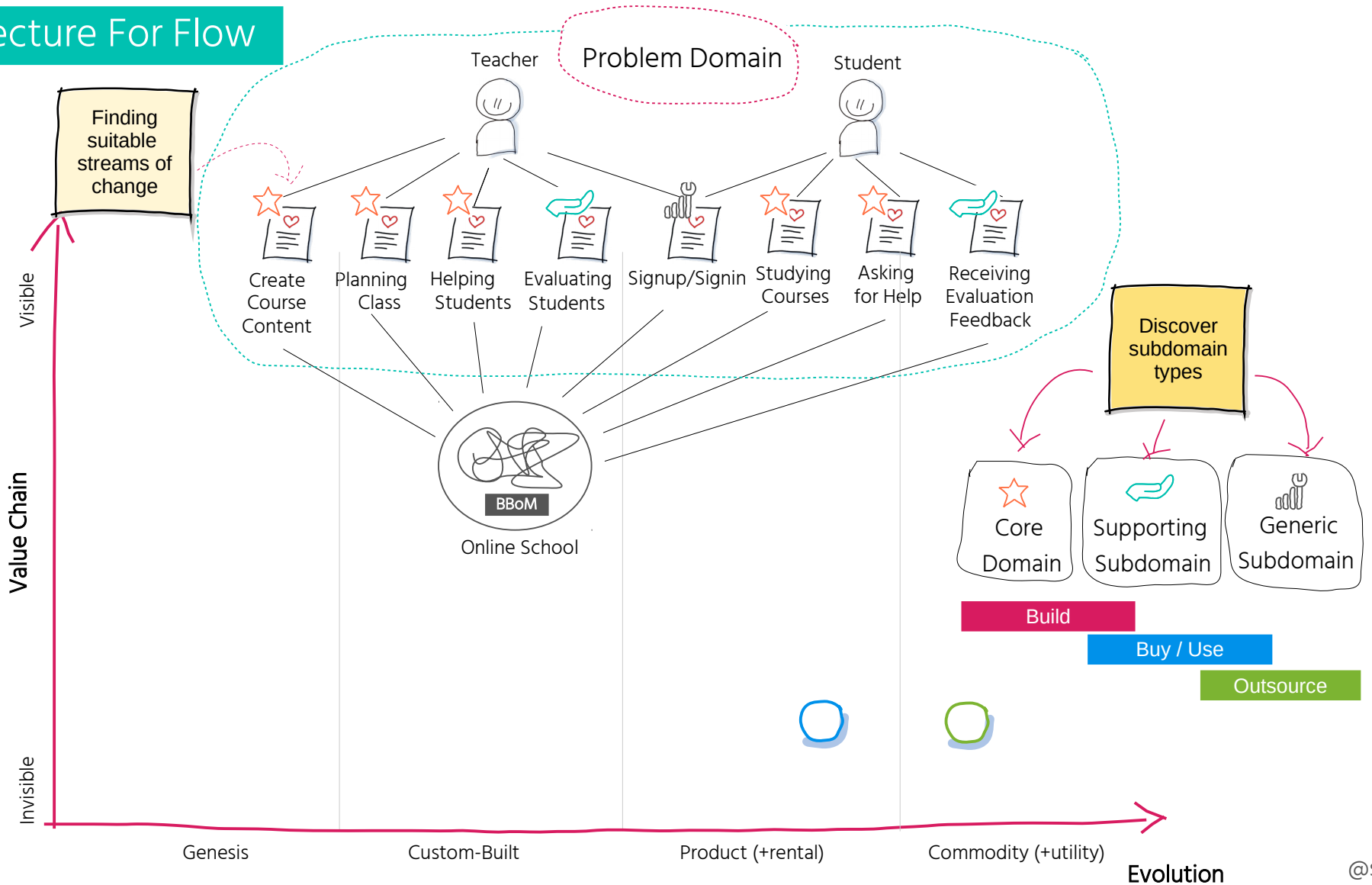
Architecture For Flow



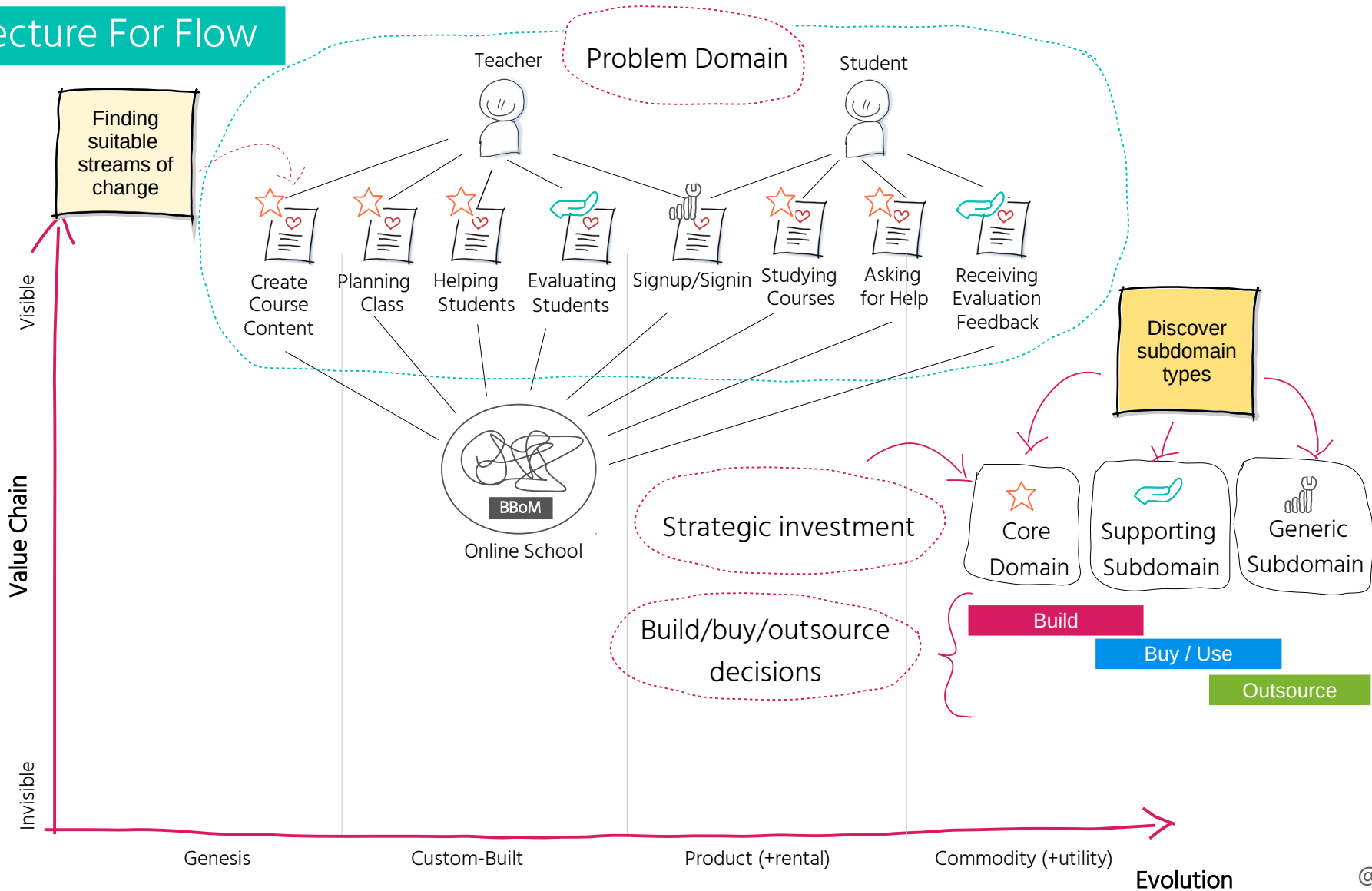
Architecture For Flow



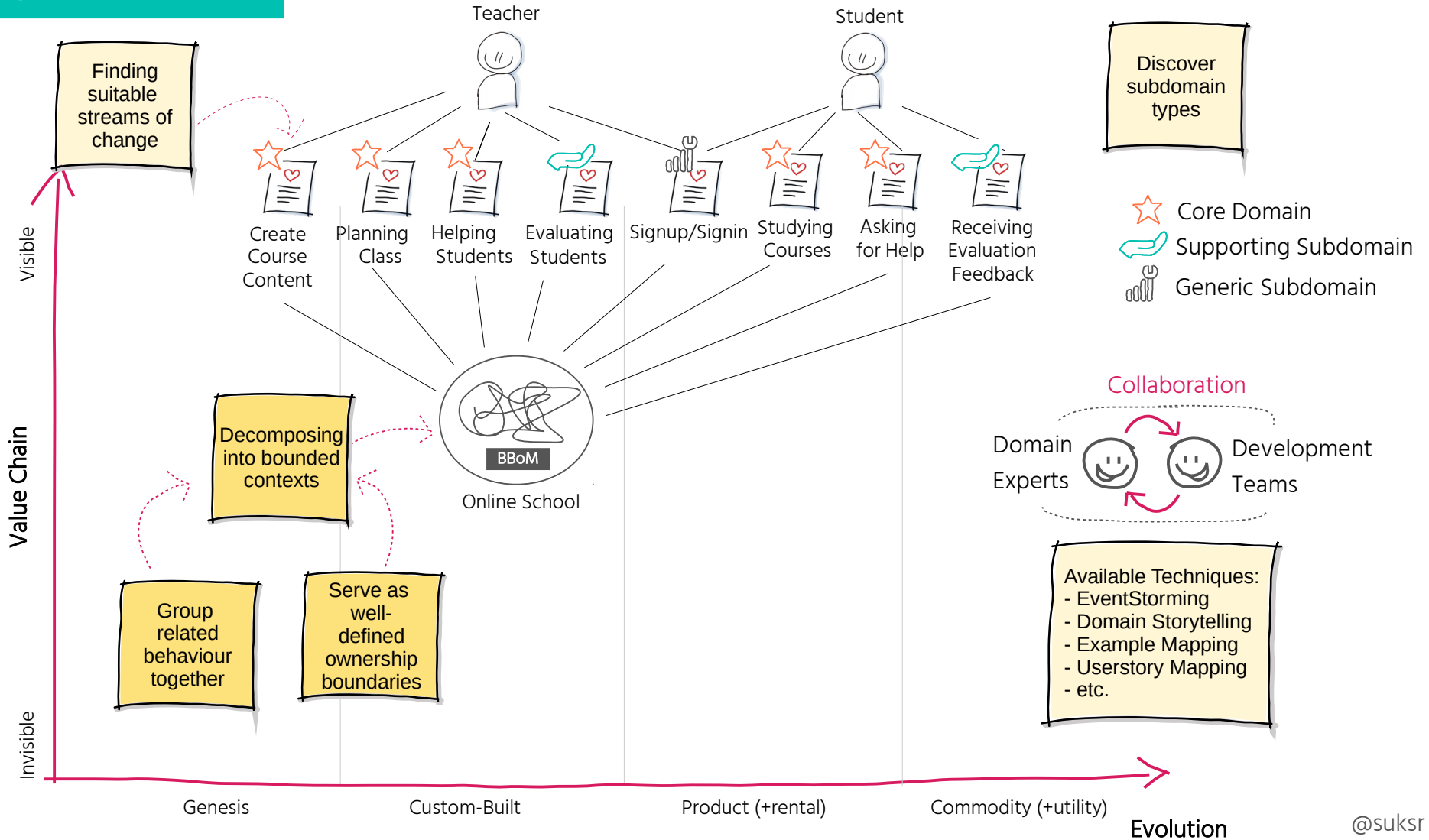
Architecture For Flow



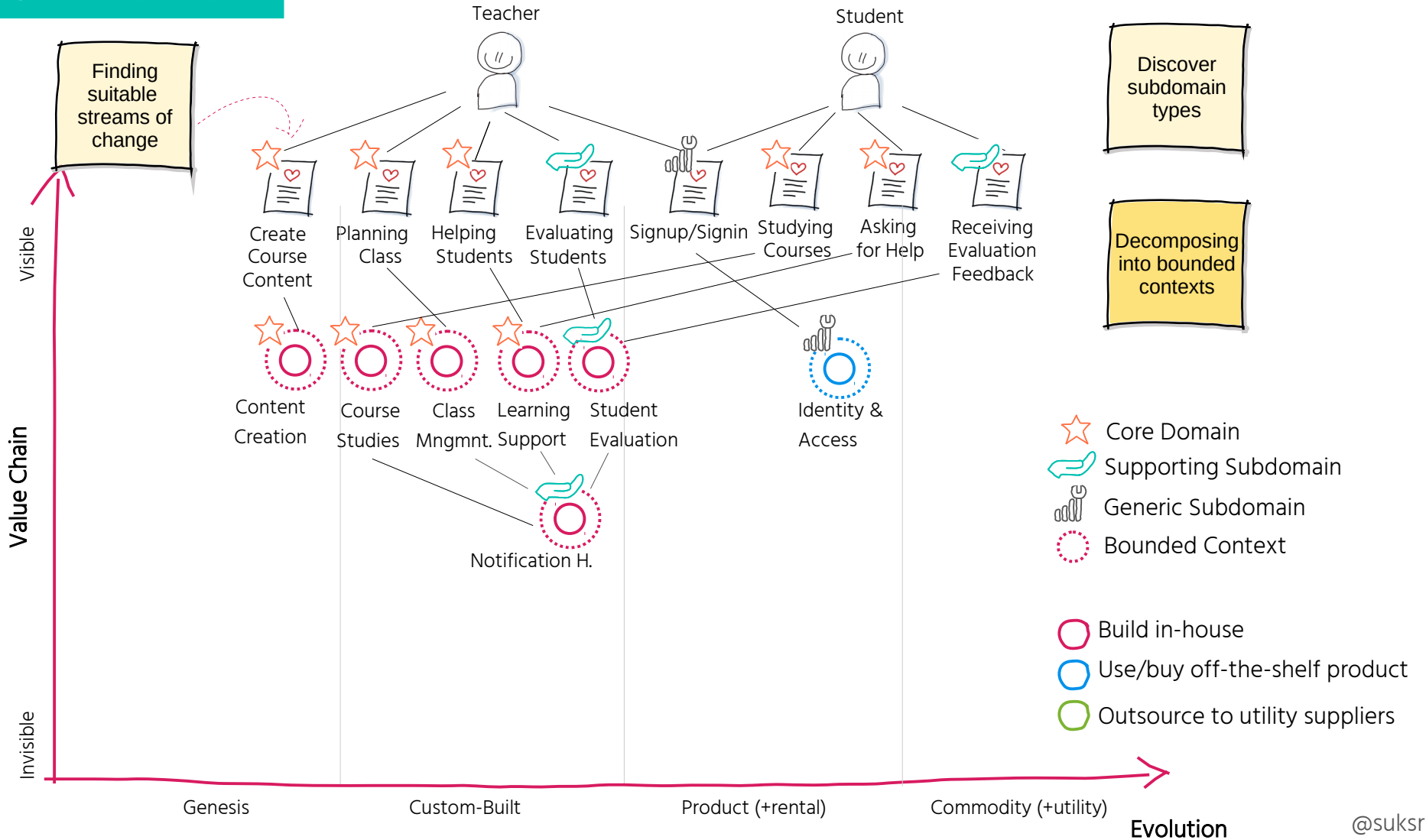
Architecture For Flow



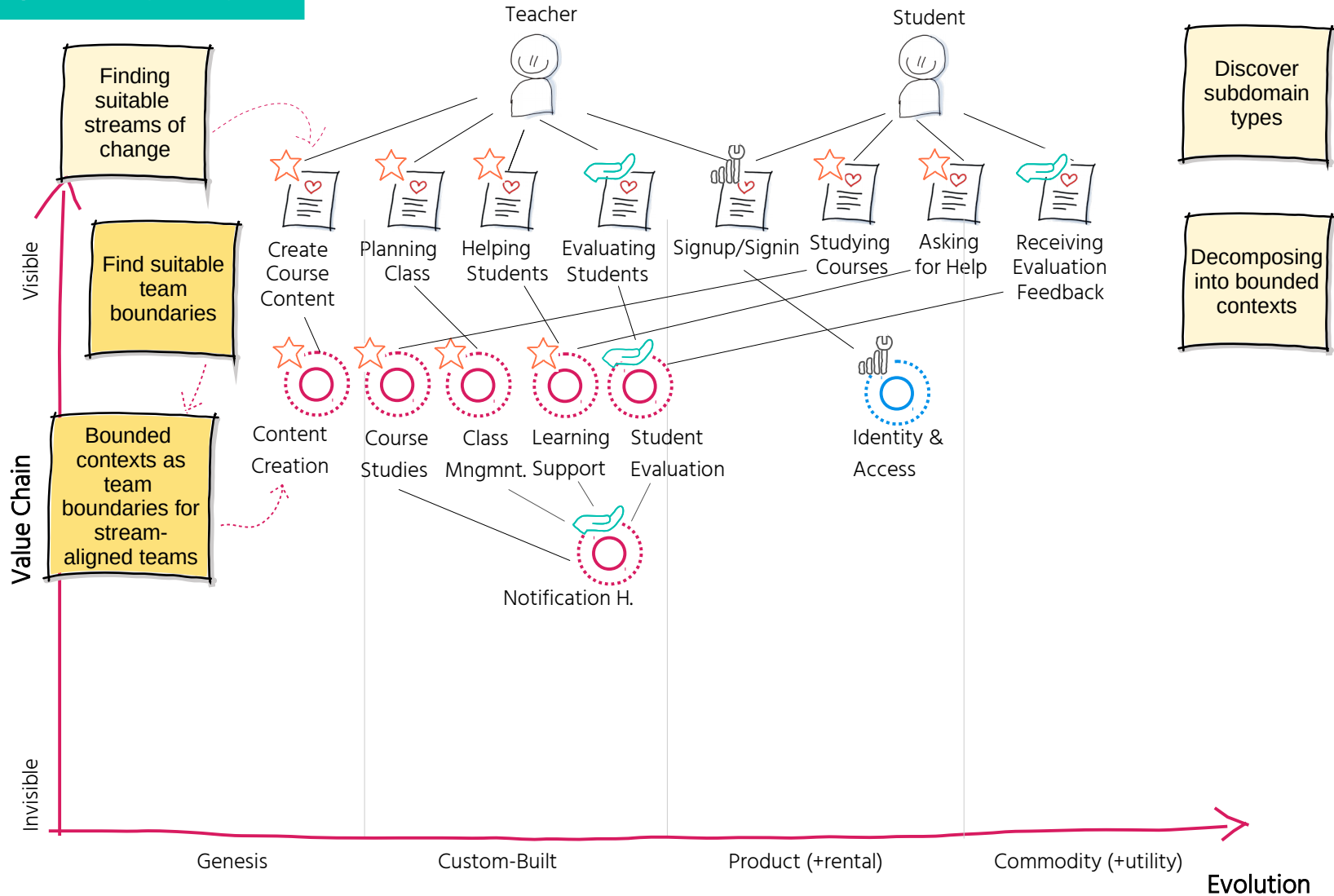
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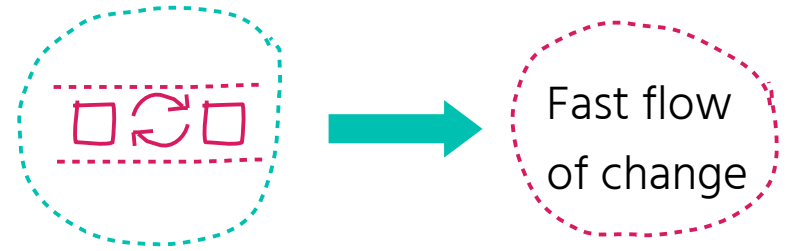
Architecture For Flow



Architecture For Flow



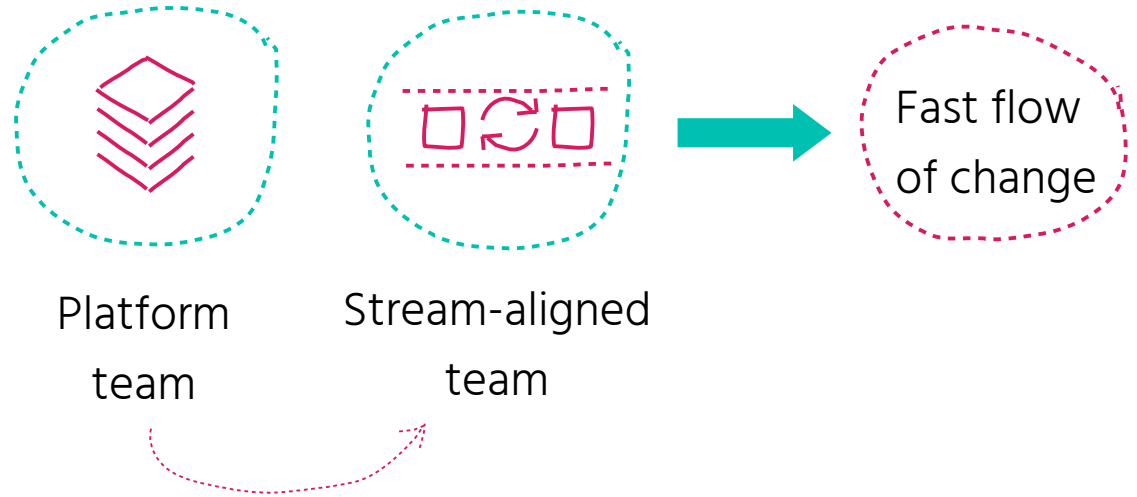
Four Team Types of Team Topologies



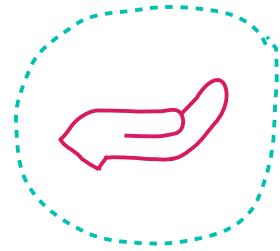
Stream-aligned
team

Fast flow
of change

Four Team Types of Team Topologies



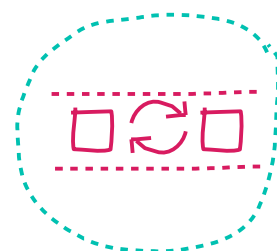
Four Team Types of Team Topologies



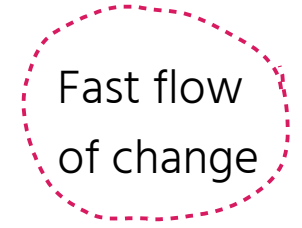
Enabling
team



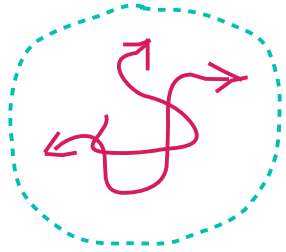
Platform
team



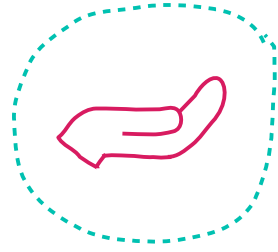
Stream-aligned
team



Four Team Types of Team Topologies



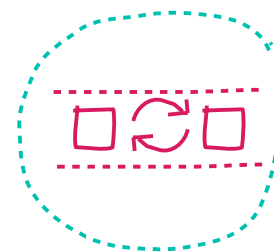
Complicated
subsystem team



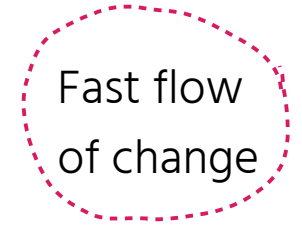
Enabling
team



Platform
team



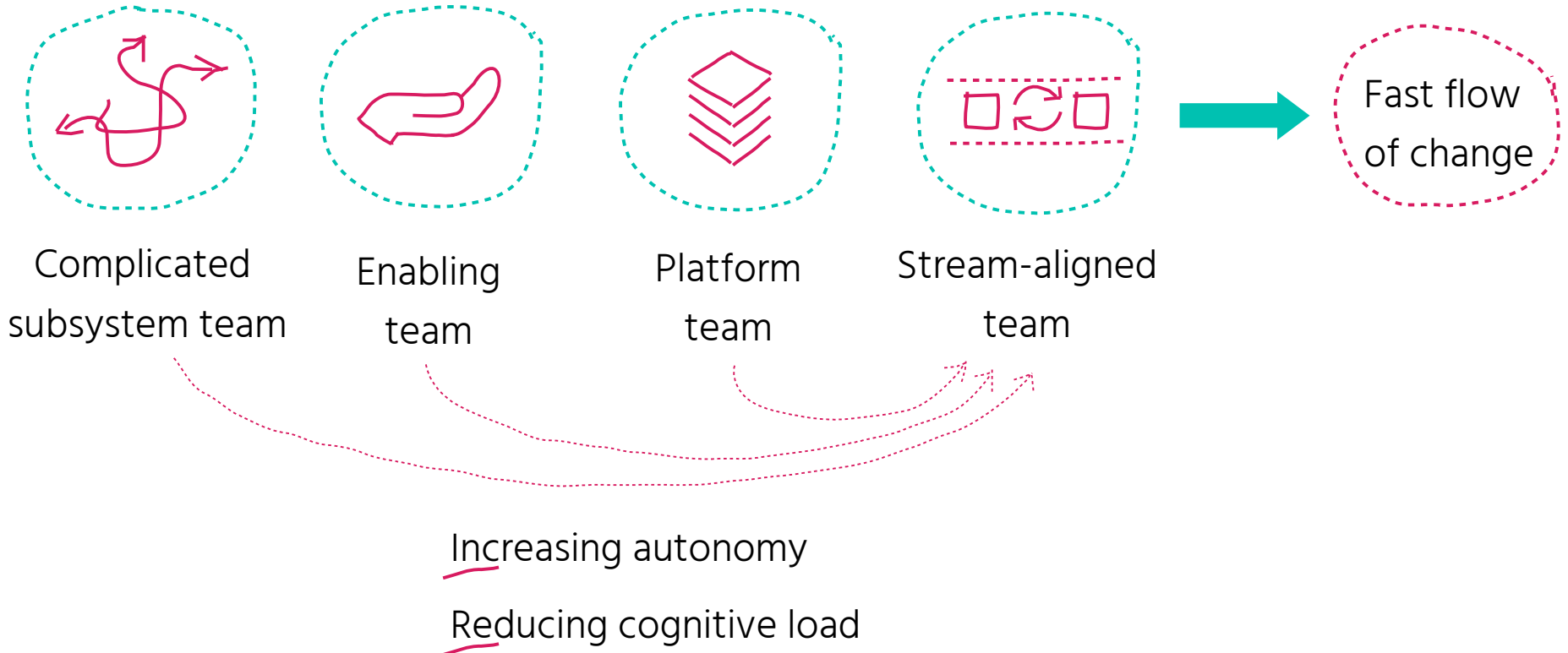
Stream-aligned
team



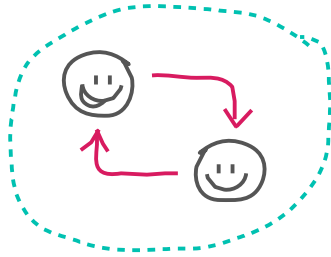
Fast flow
of change



Four Team Types of Team Topologies



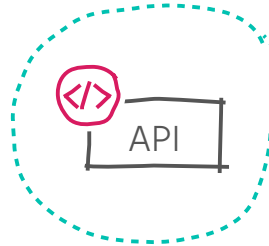
Three Interaction Modes



Collaboration



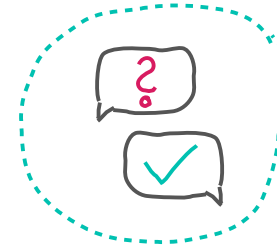
Rapid discovery



X-as-a-Service



Predictable
delivery

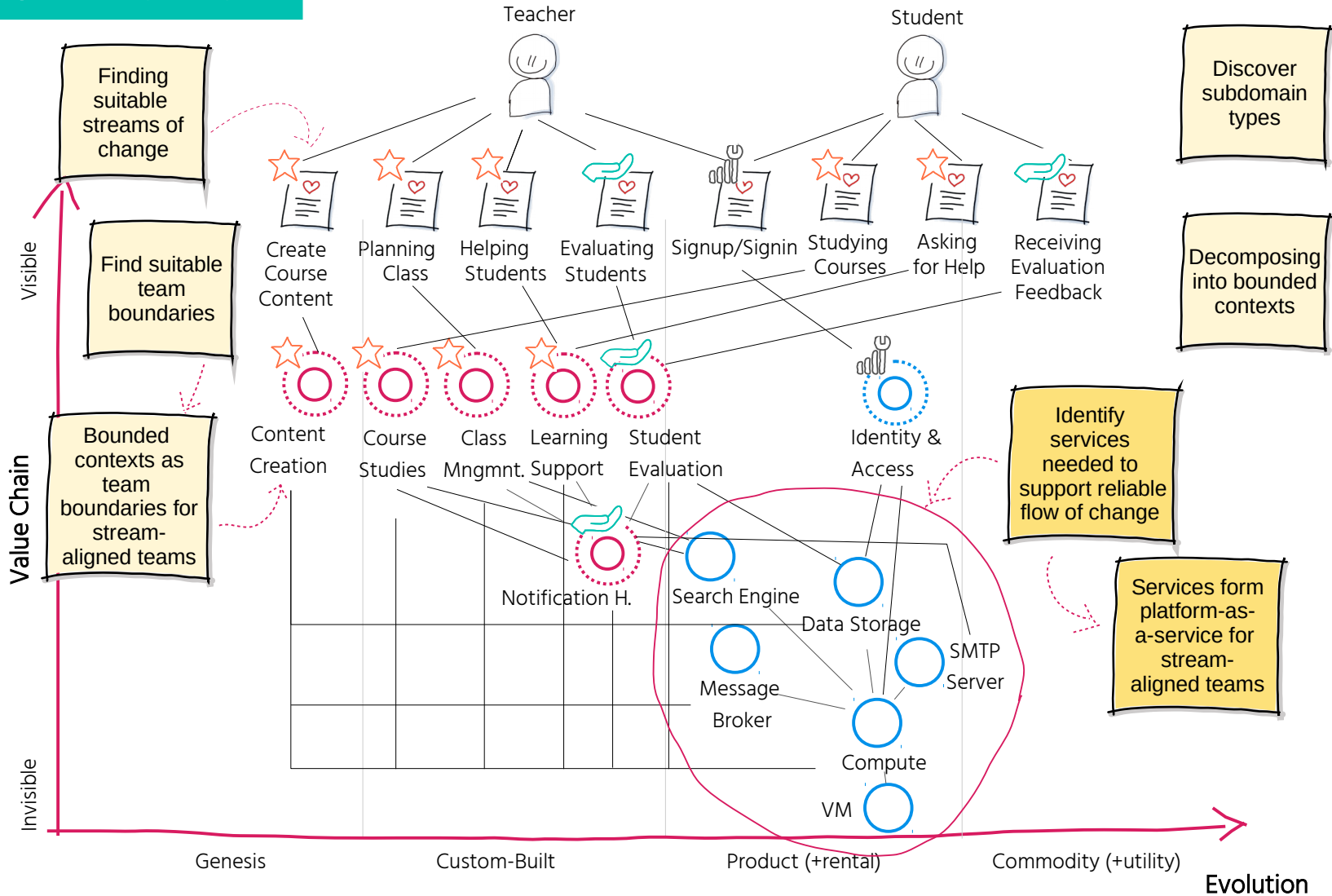


Facilitating

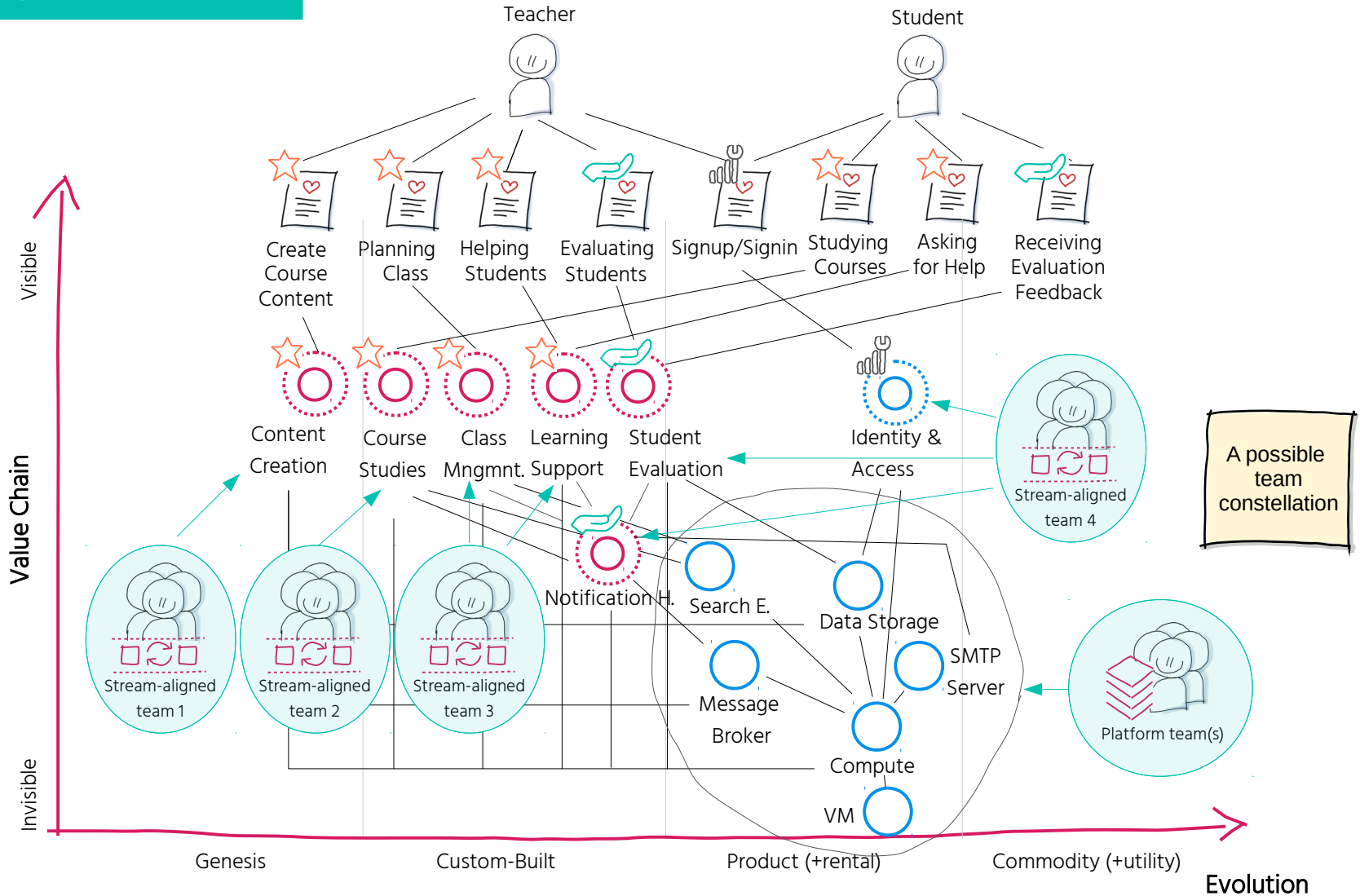


Active help

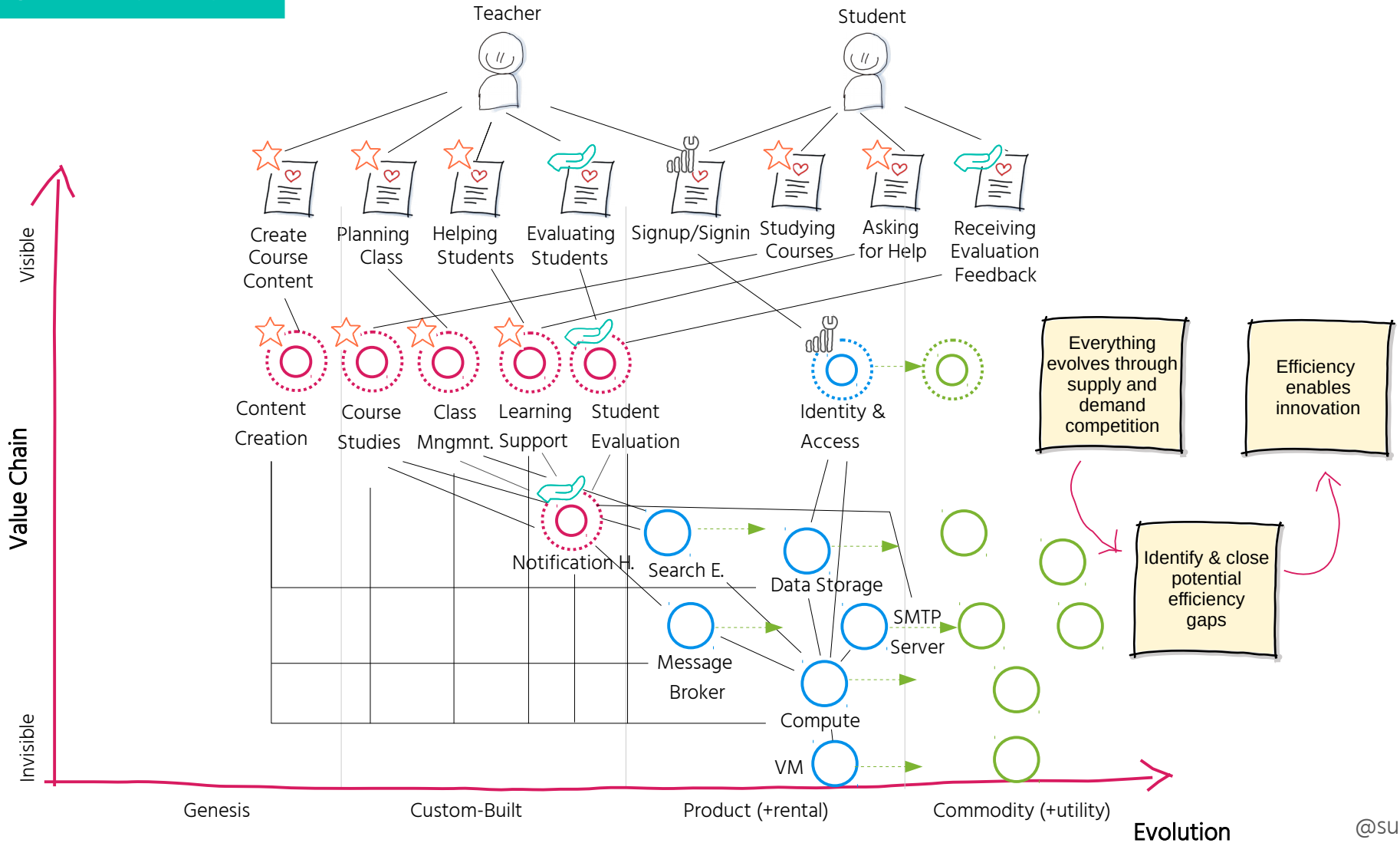
Architecture For Flow



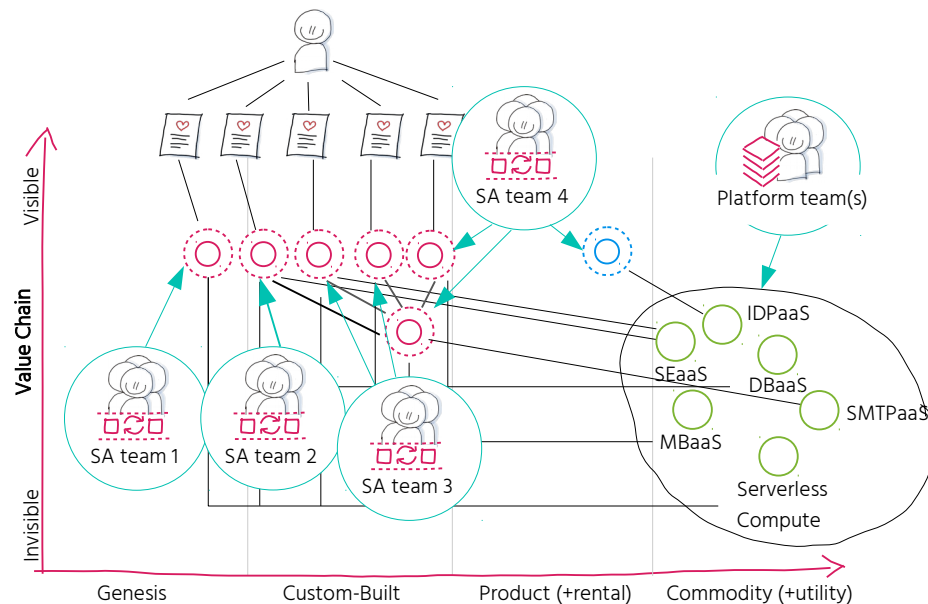
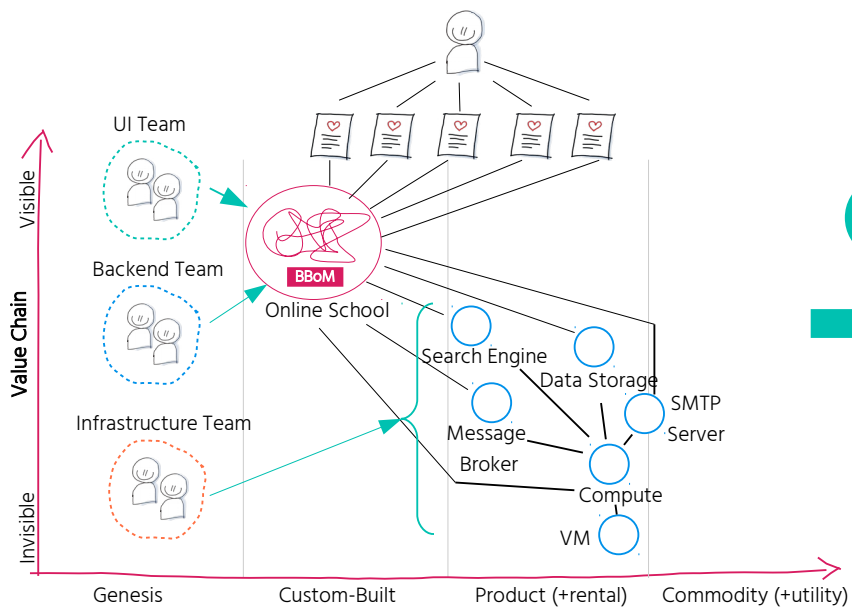
Architecture For Flow



Architecture For Flow



How to transition?



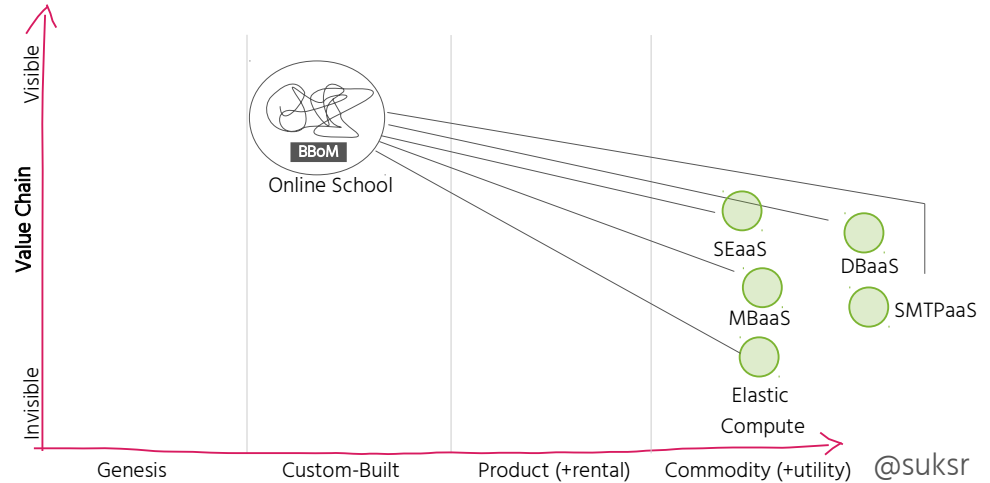
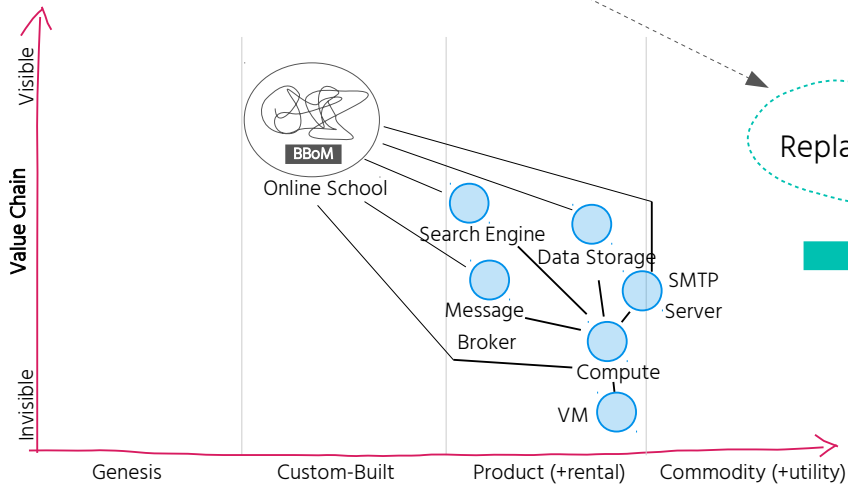
Evolution of Team Topologies



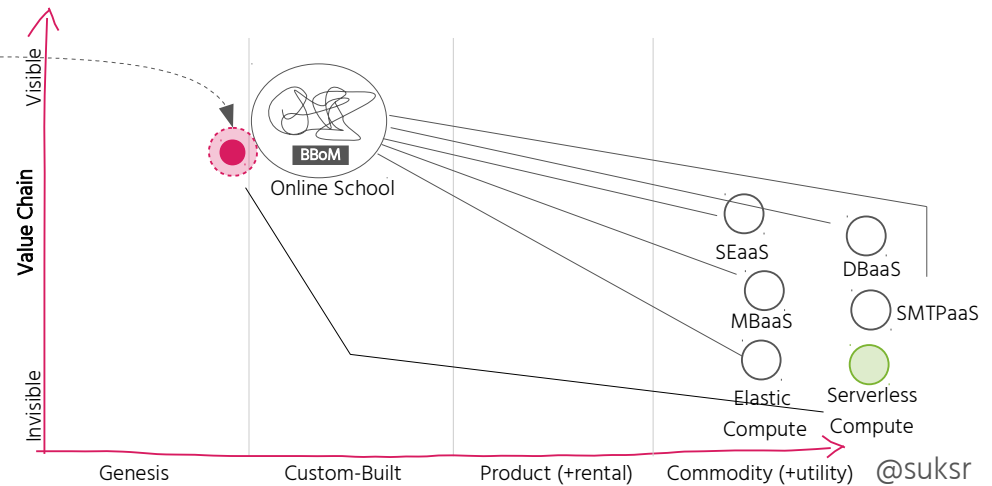
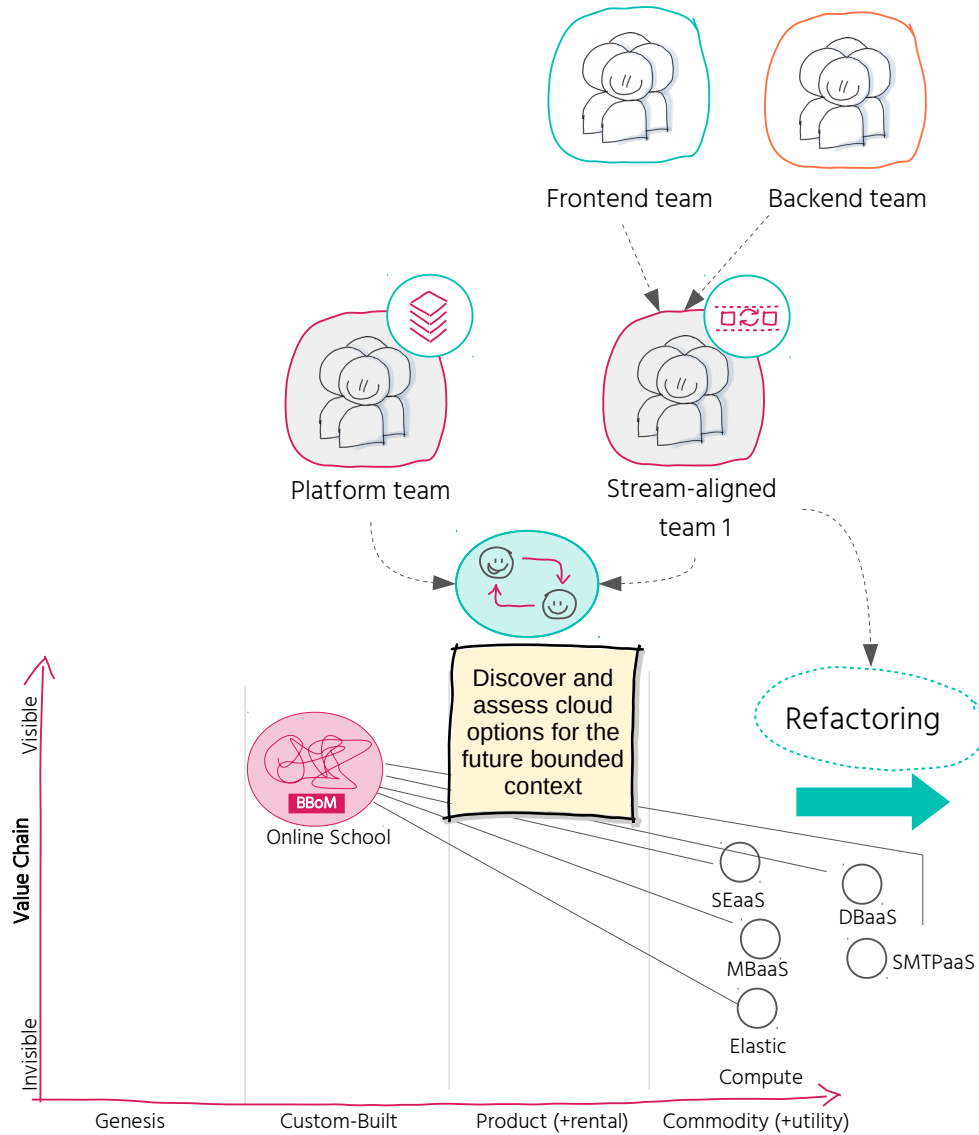
Frontend team Backend team Infrastructure team



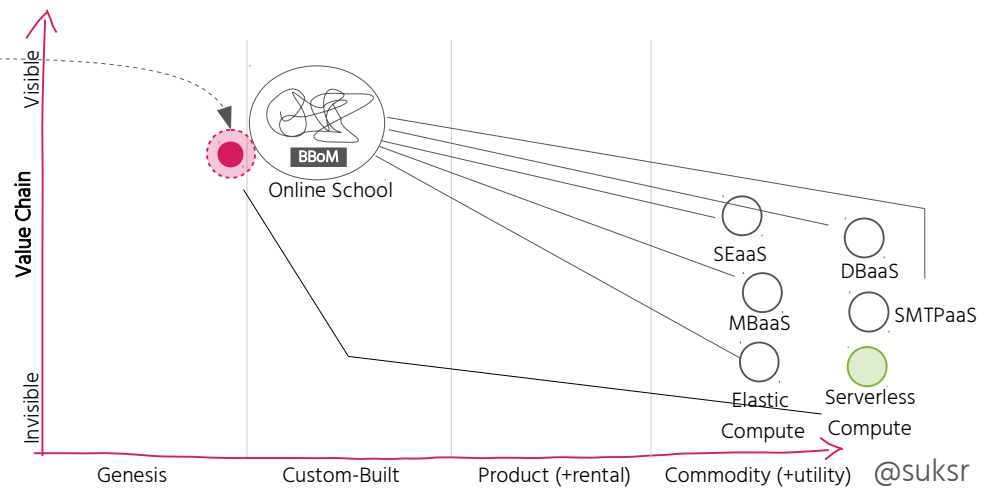
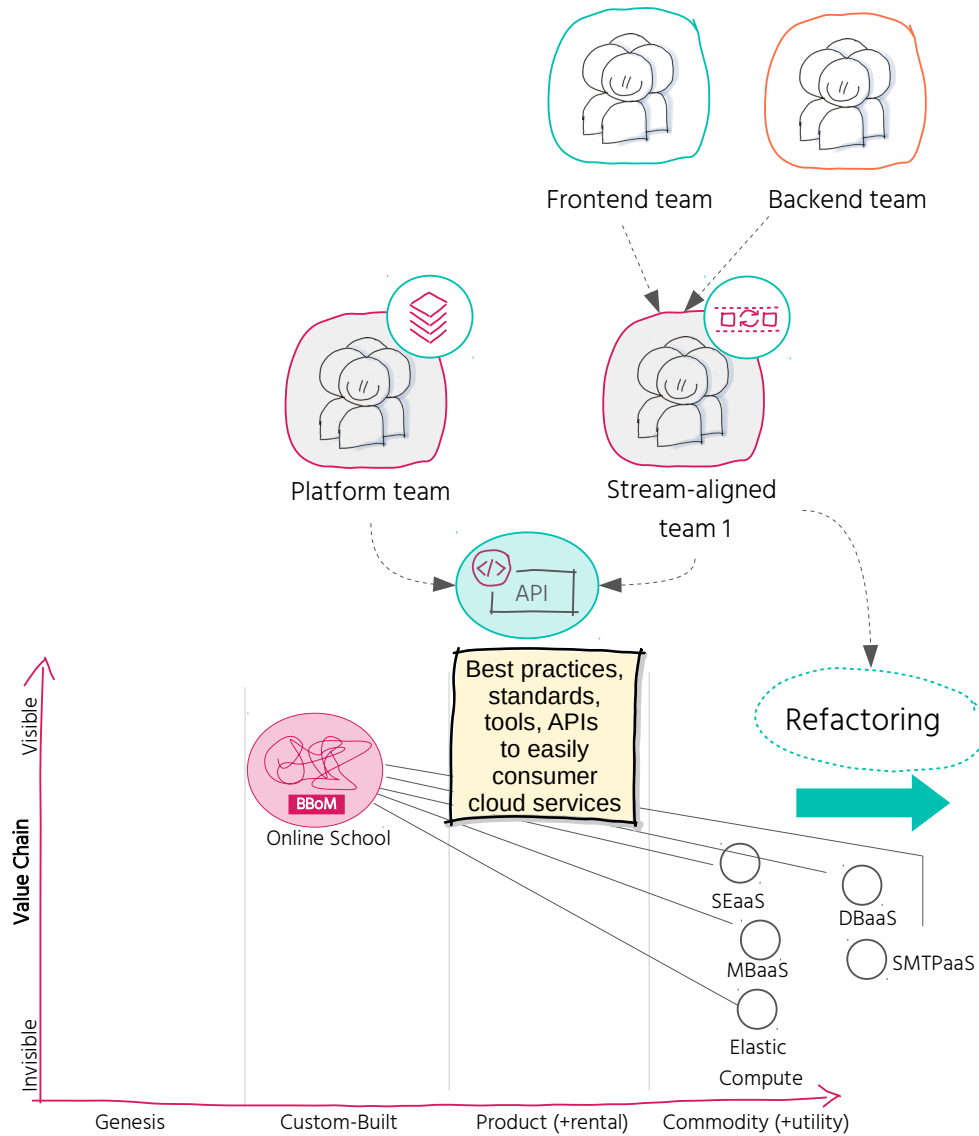
Platform team



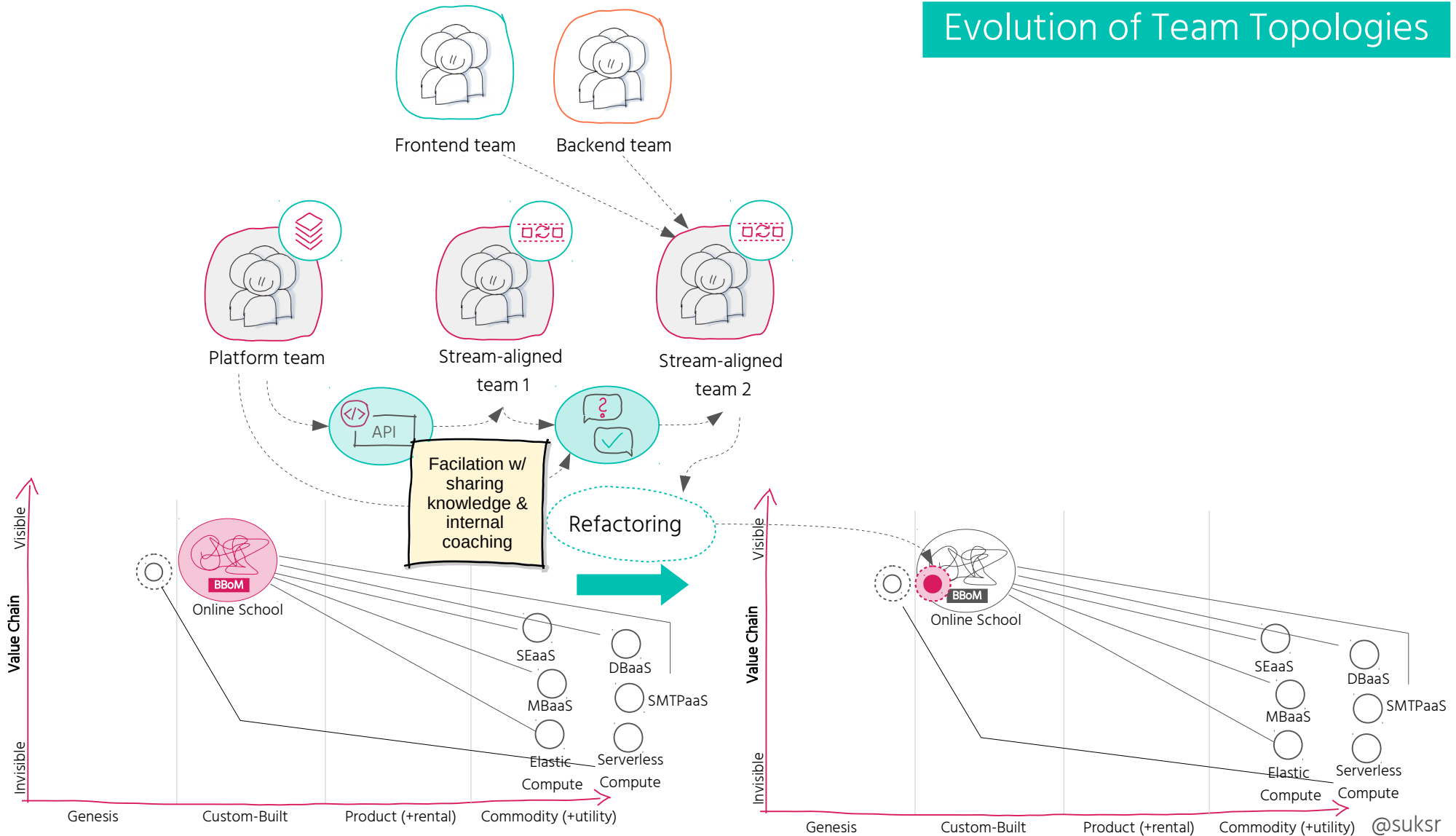
Evolution of Team Topologies



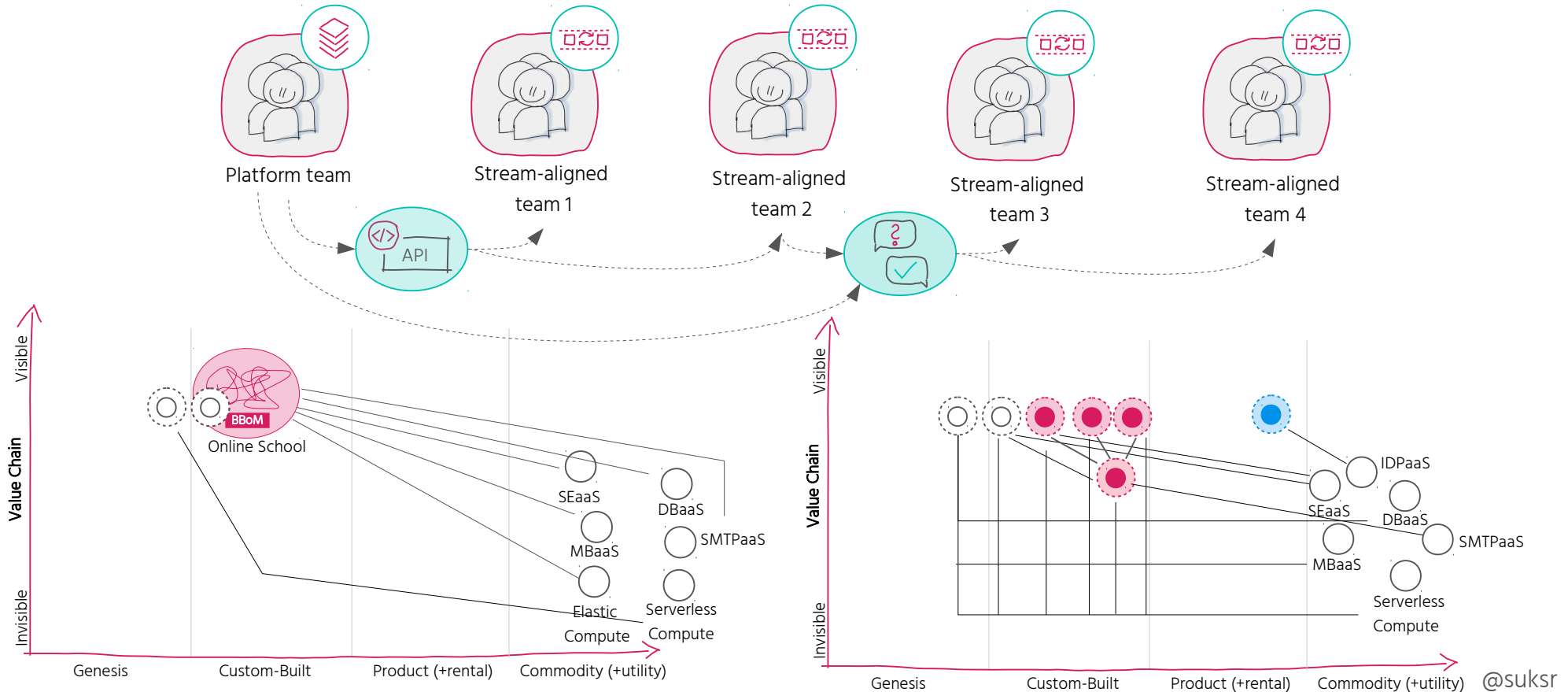
Evolution of Team Topologies

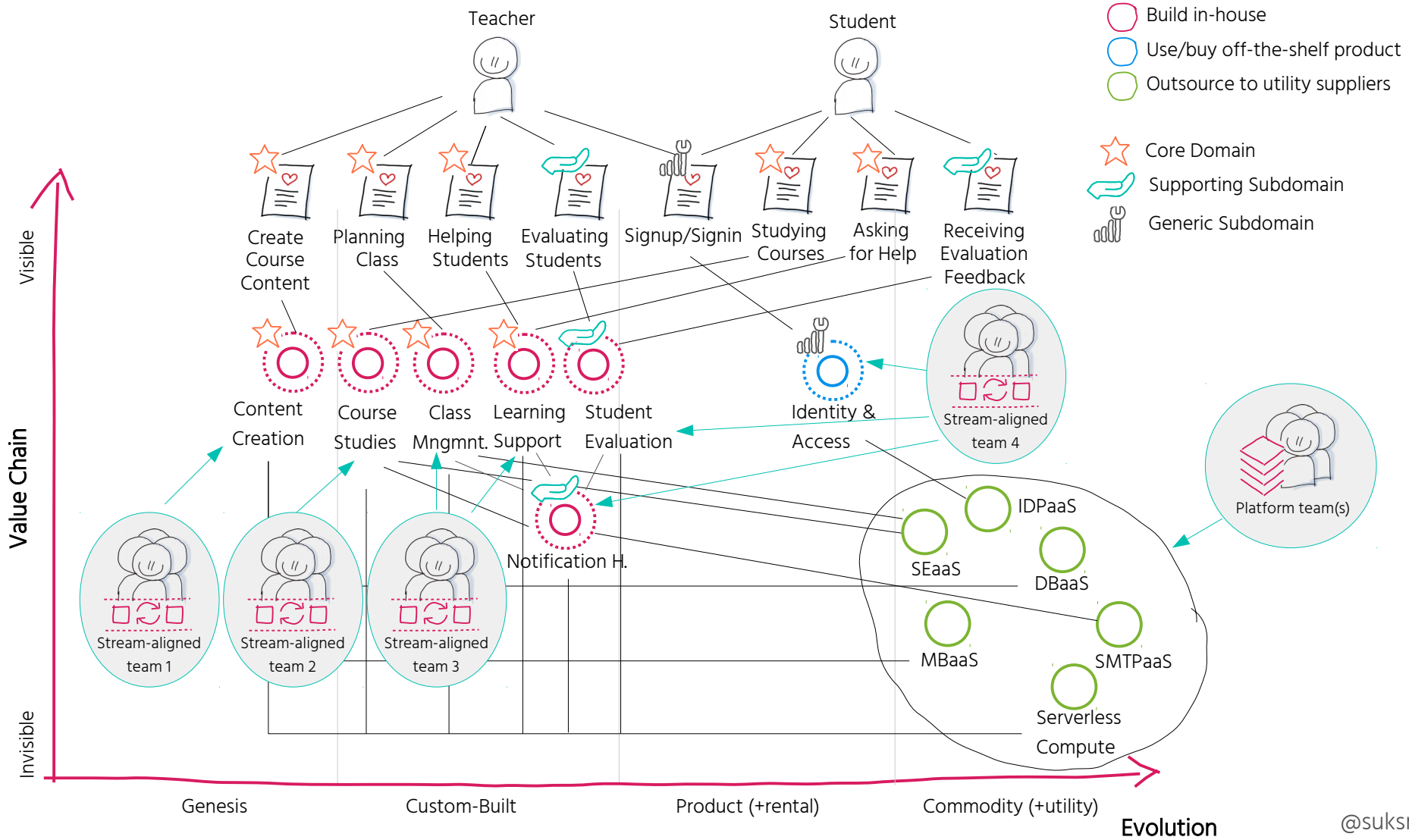


Evolution of Team Topologies

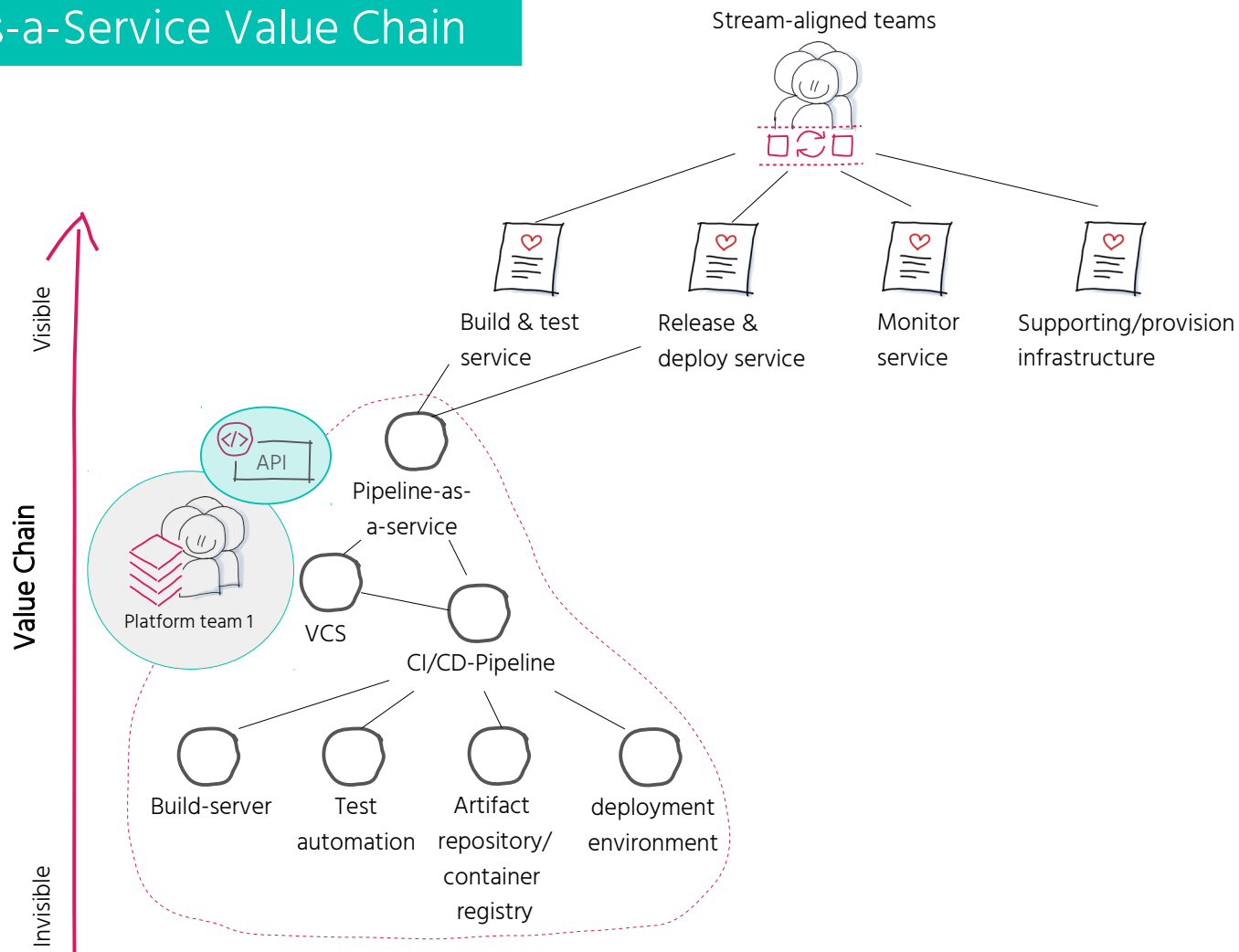


Evolution of Team Topologies

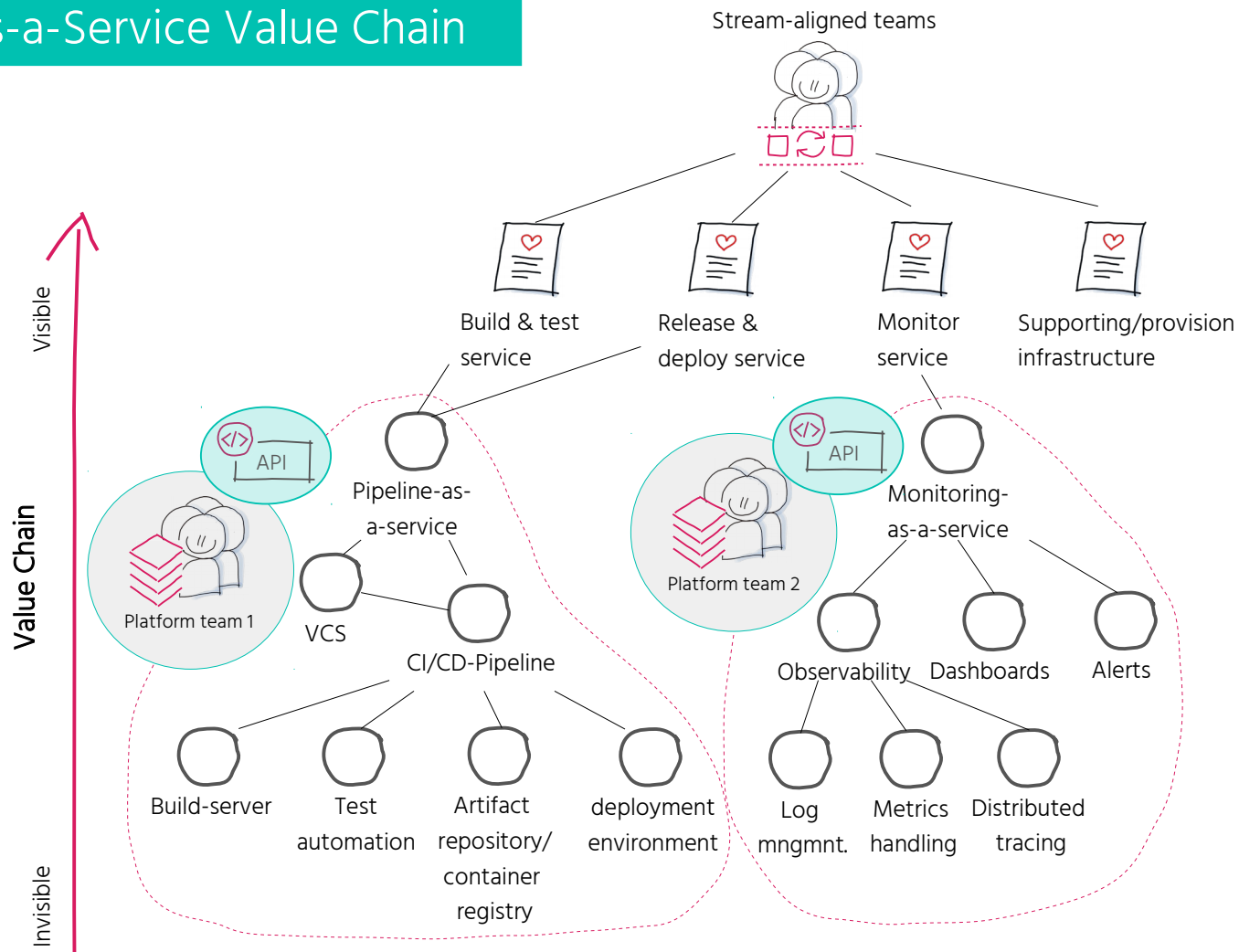




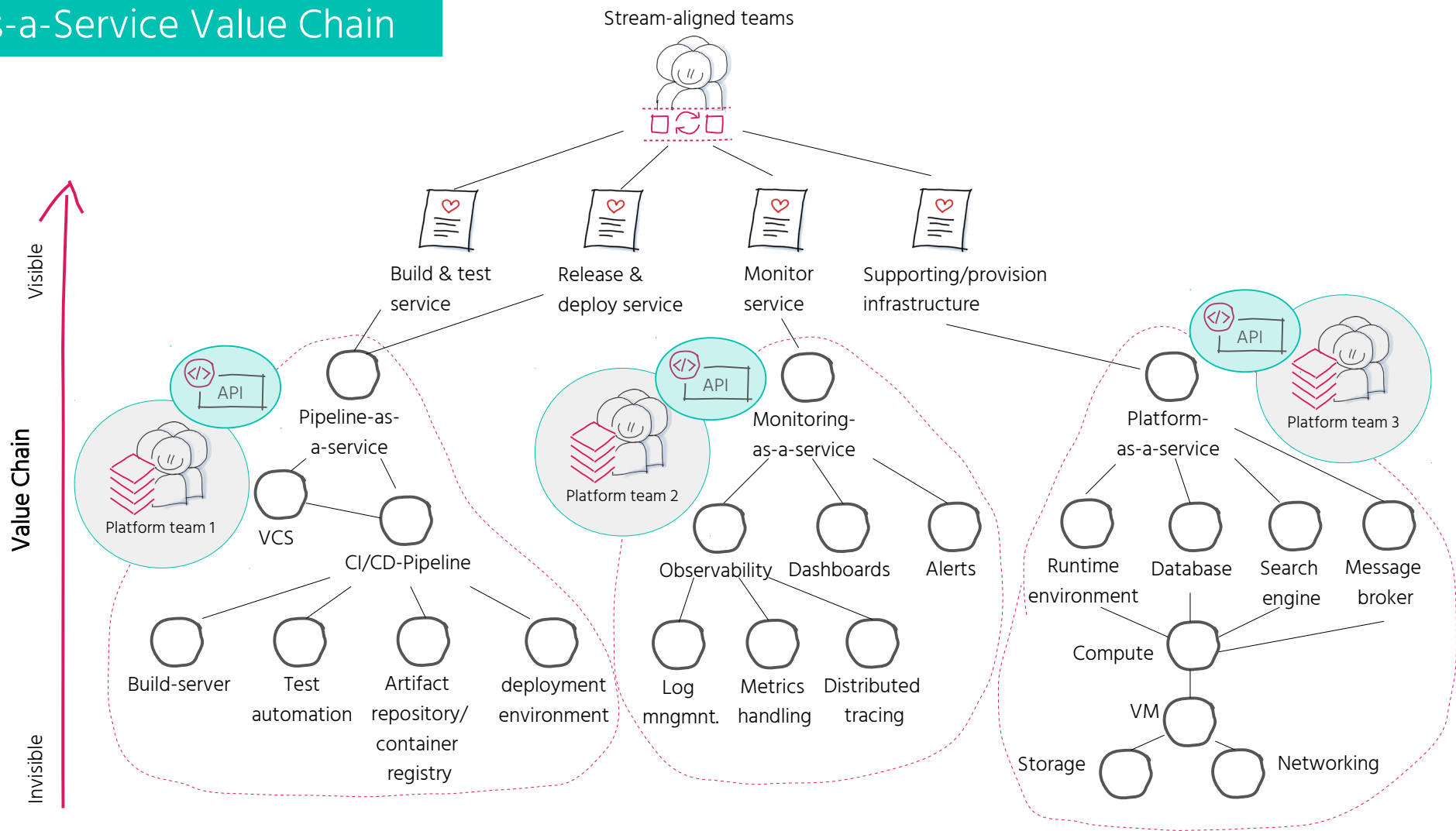
X-as-a-Service Value Chain



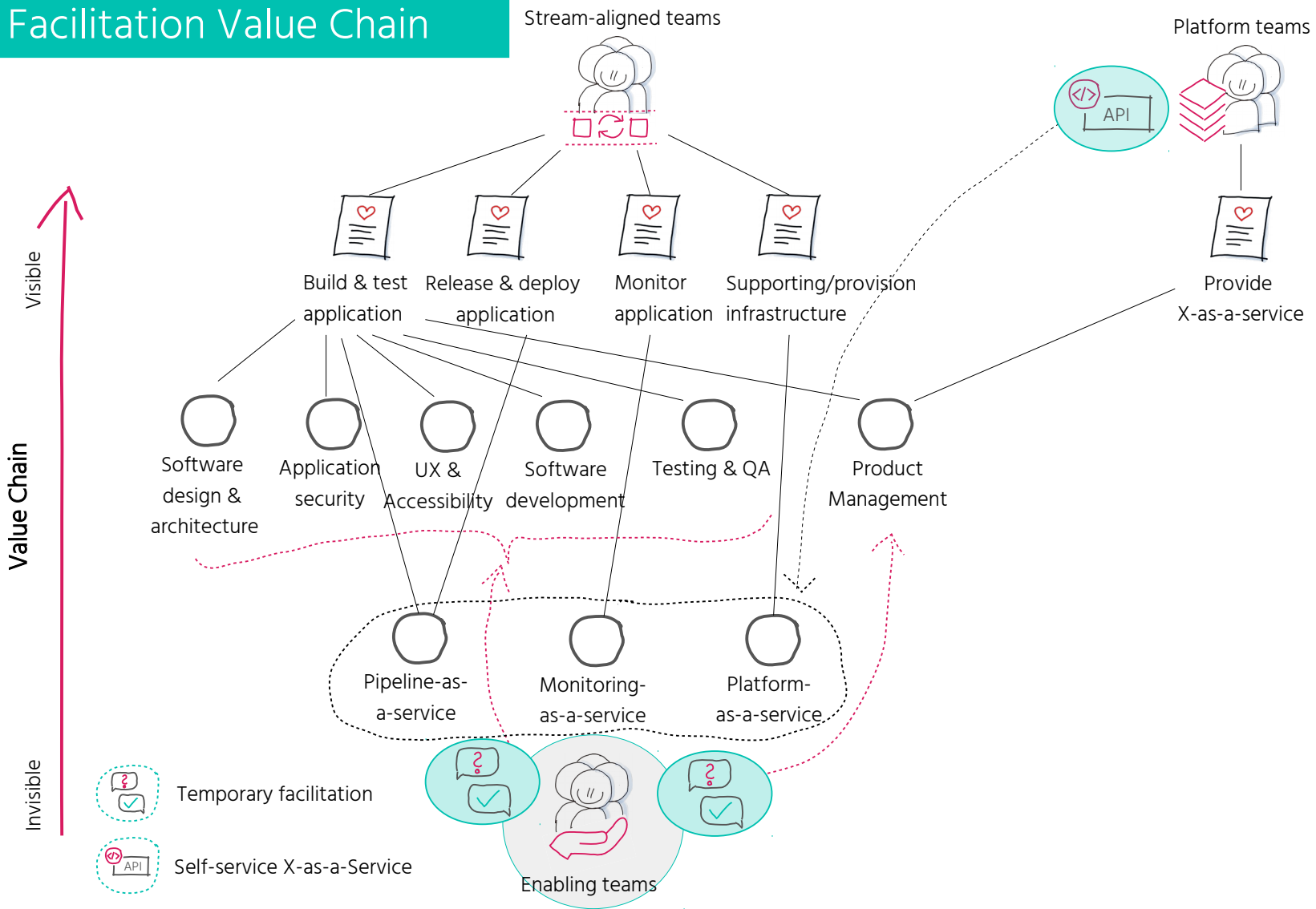
X-as-a-Service Value Chain



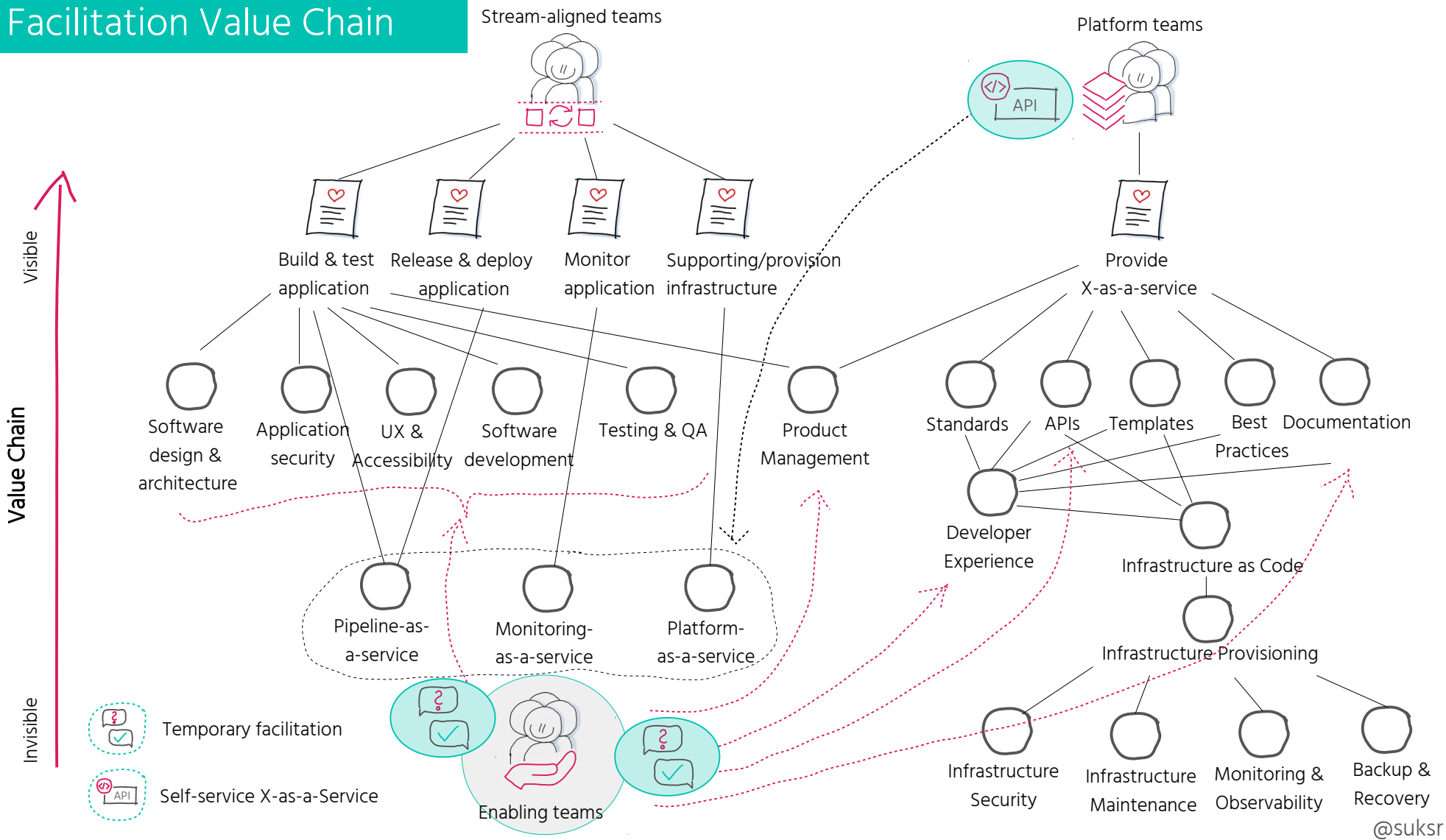
X-as-a-Service Value Chain



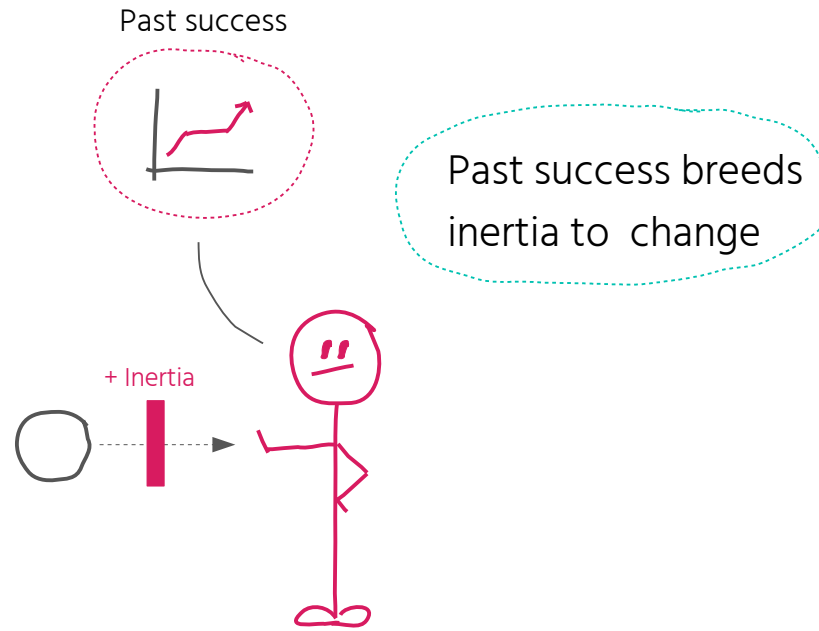
Facilitation Value Chain



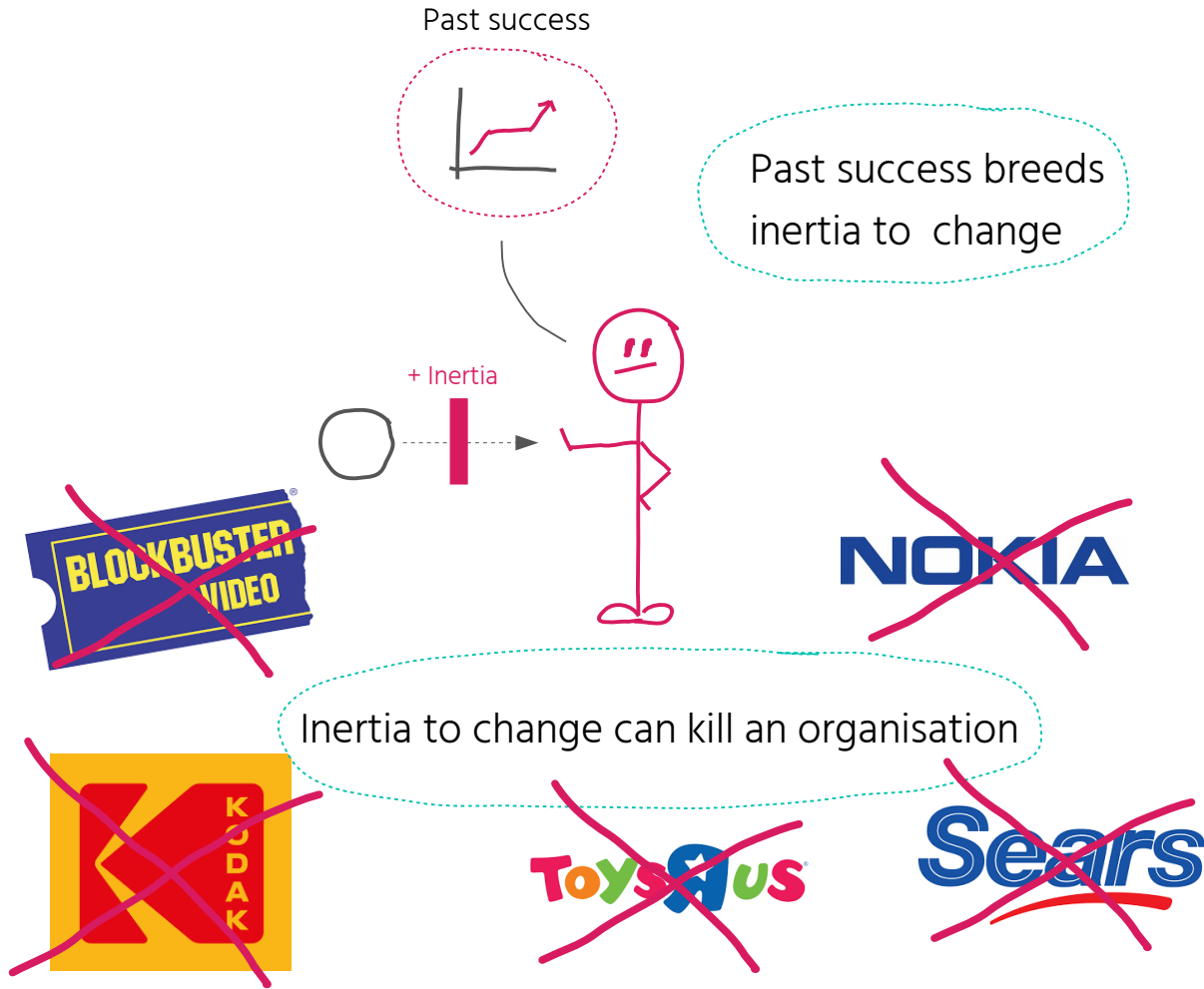
Facilitation Value Chain

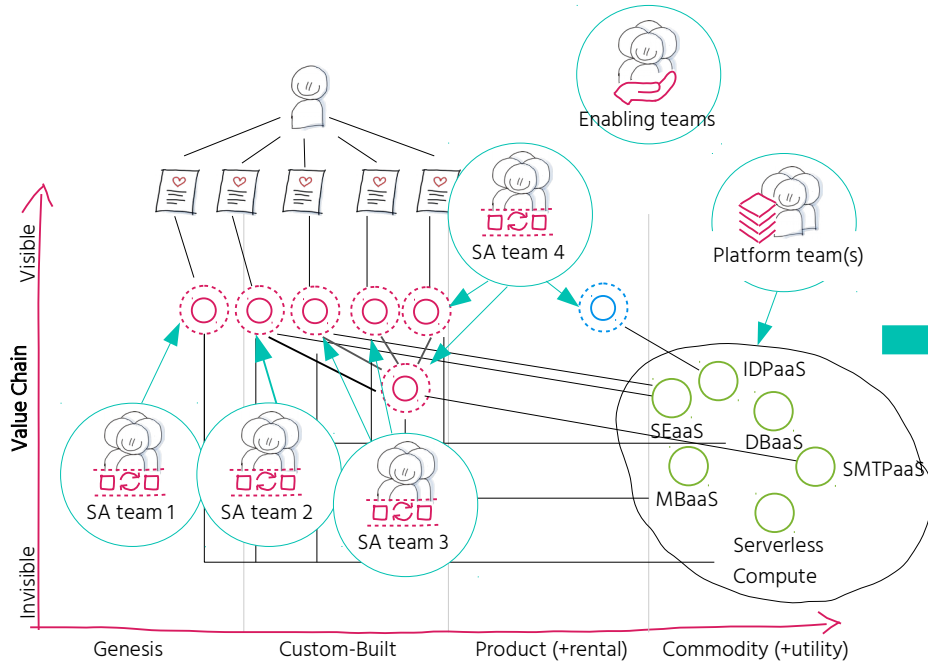


But we are successful, why should we change?

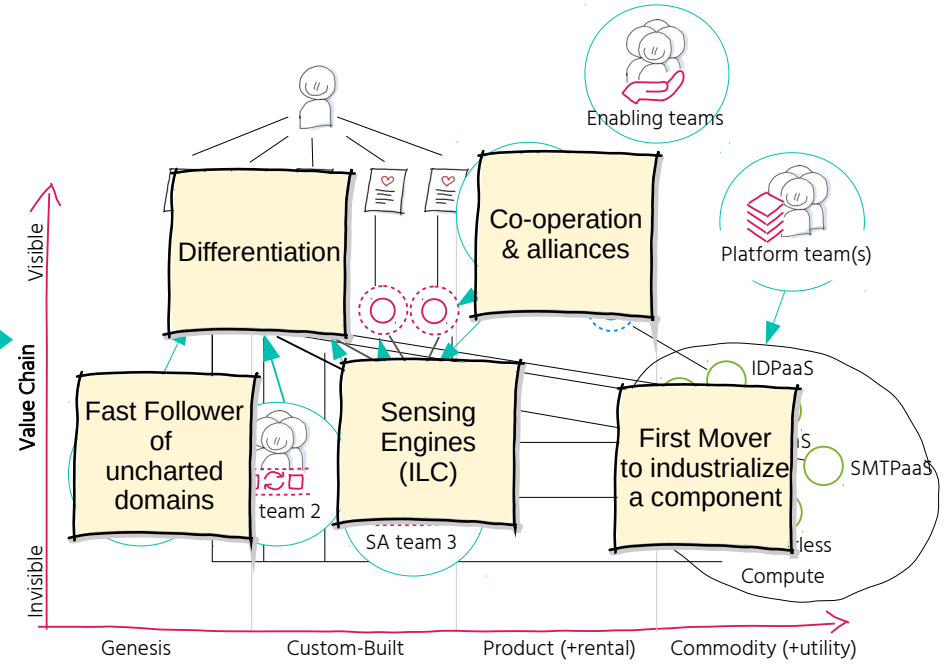


But we are successful, why should we change?





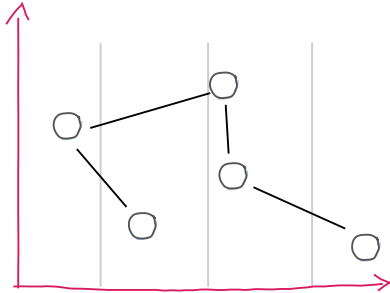
Responsive to Change



Leading future Change

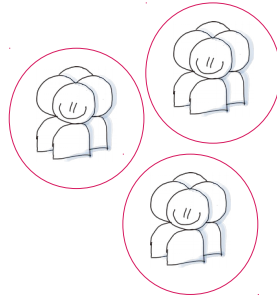
Start small

You could start with ...

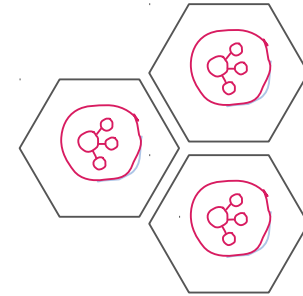


... a Wardley Map

to understand your competitive landscape, and use the map as a foundation for future discussions



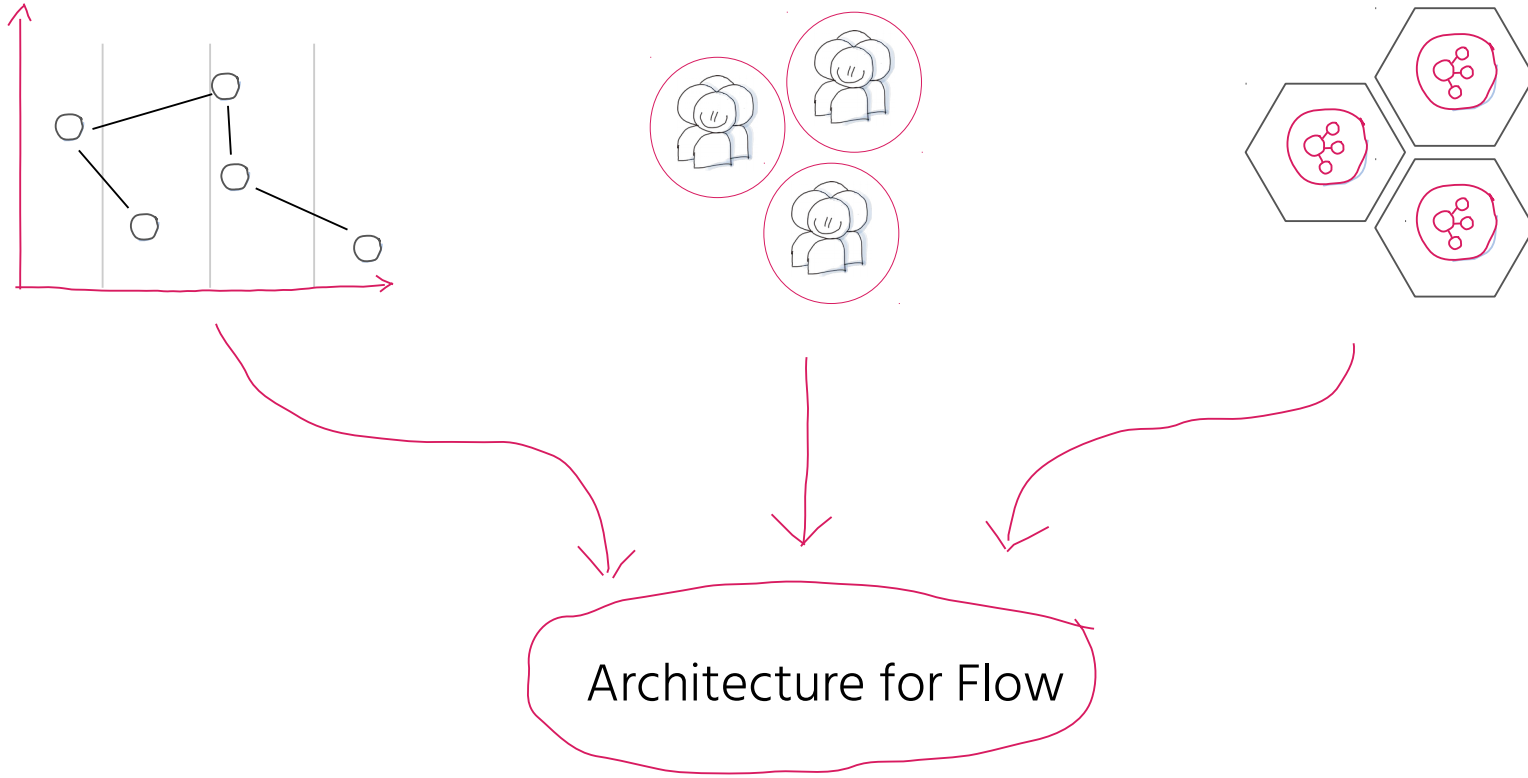
... or your current teams and analyse their current cognitive load and bottlenecks



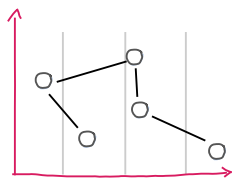
... or identifying suitable seams for modularisation with subdomains & bounded contexts

Start small

And their paths eventually cross ...



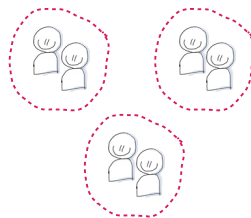
Key Takeaways



Wardley Mapping



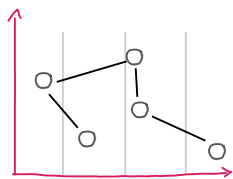
Domain-Driven Design



Team Topologies

- Understanding the landscape an organization is operating & competing in including the external forces acting on the landscape
- Anticipate changes and identifying potential points to invest
- Gaining domain knowledge & discovering the core
- Knowing what components to build, buy/use, or outsource
- Leveraging modularity w/ bounded contexts as well-defined ownership boundaries

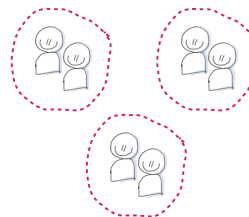
Key Takeaways



Wardley Mapping



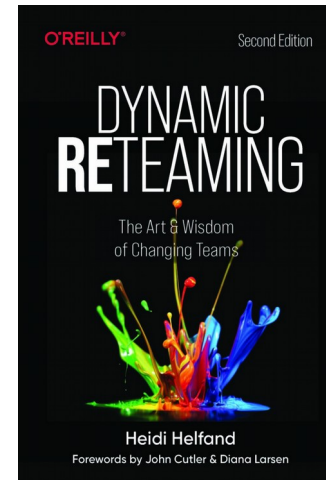
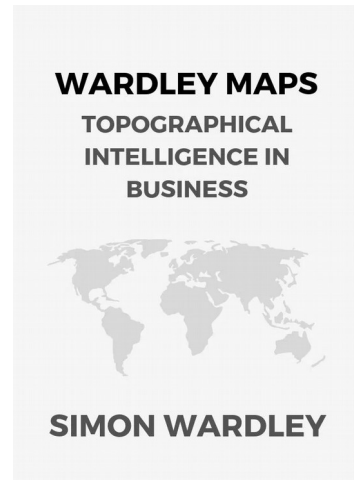
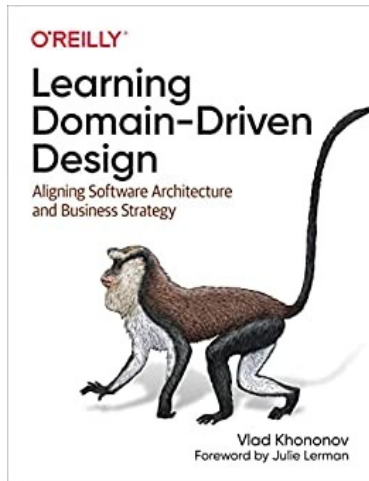
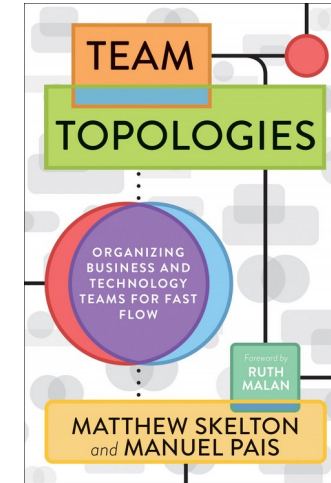
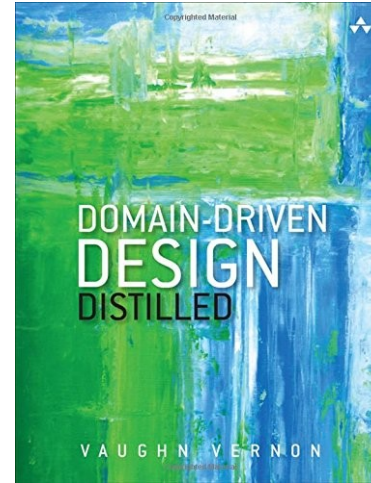
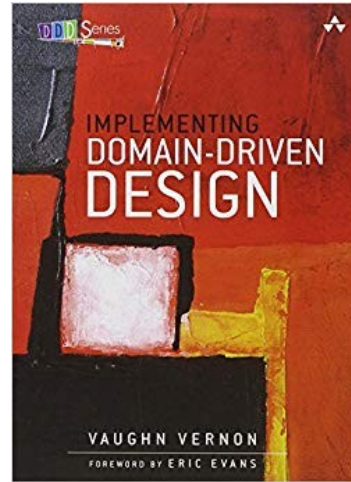
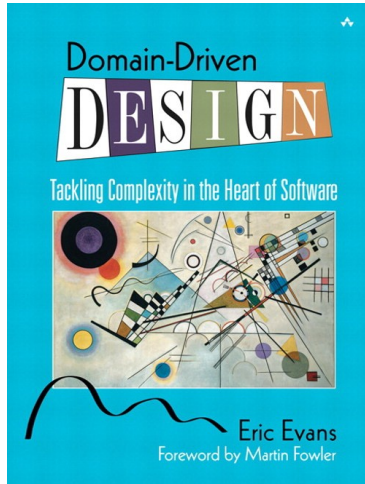
Domain-Driven Design



Team Topologies

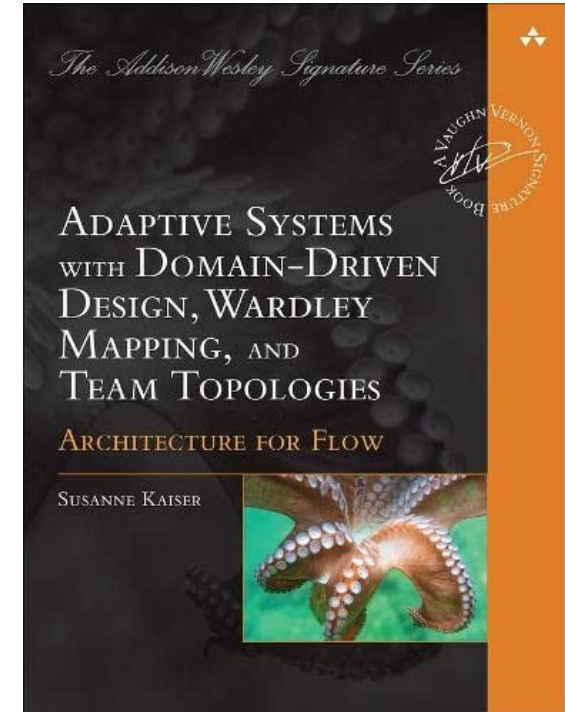
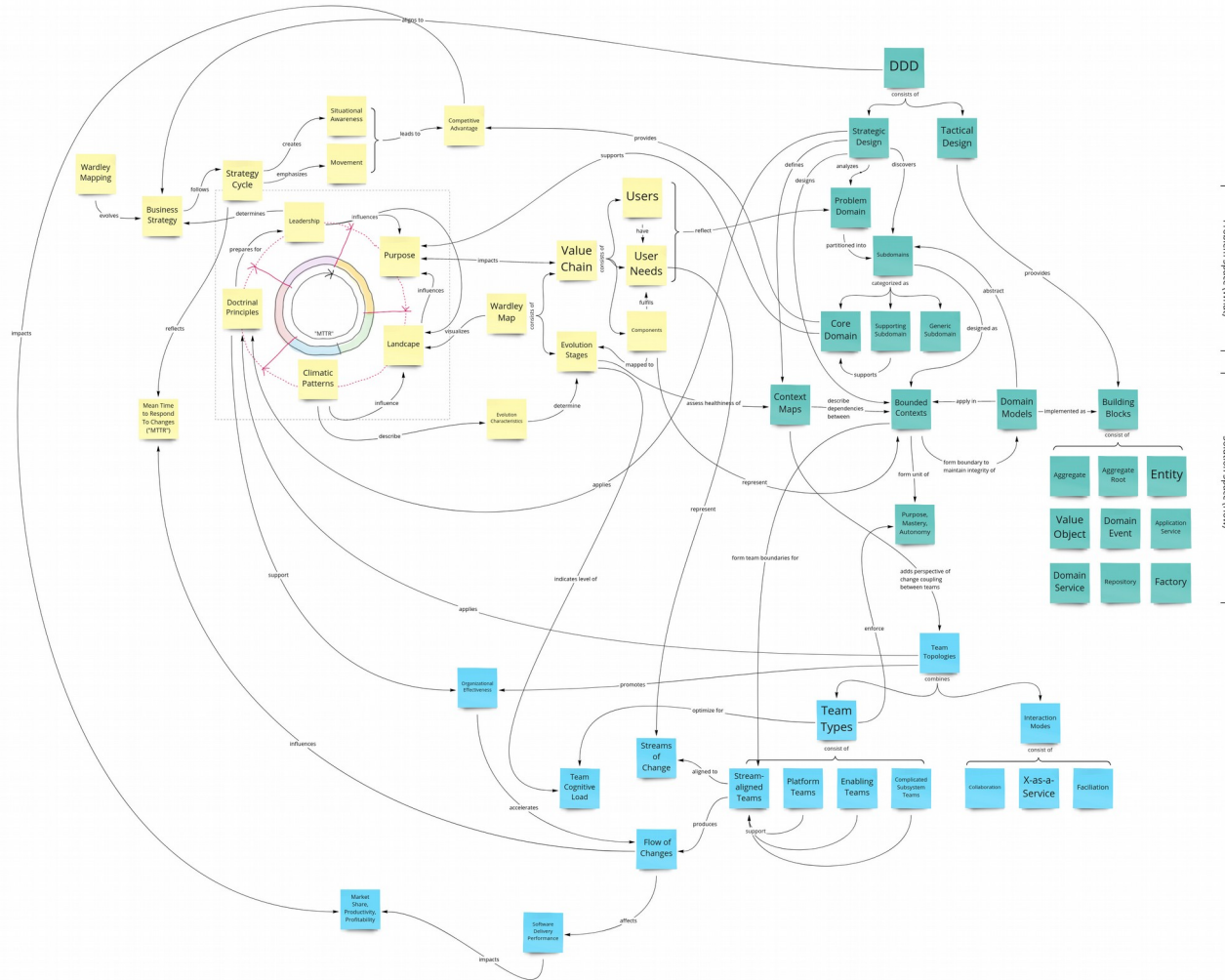
- Understanding the landscape an organization is operating & competing in including the external forces acting on the landscape
- Anticipate changes and identifying potential points to invest
- Gaining domain knowledge & discovering the core
- Knowing what components to build, buy/use, or outsource
- Leveraging modularity w/ bounded contexts as well-defined ownership boundaries
- Aligning teams and evolving their interactions to the system we build & the strategy we plan
- Identifying potential efficiency gaps
- Eliminating delivery bottlenecks & increasing software delivery performance
- Optimizing for a fast flow of change to be able to adapt, evolve and thrive in the face of constant change

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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