Supporting Organizational Efficiency and Agility Models, Languages and Software Systems

My Background, Learnings, and Vision

Andreas Leue
Sphenon GmbH, Hamburg
www.leue.net

Dagstuhl, May 8th - 13th, 2016

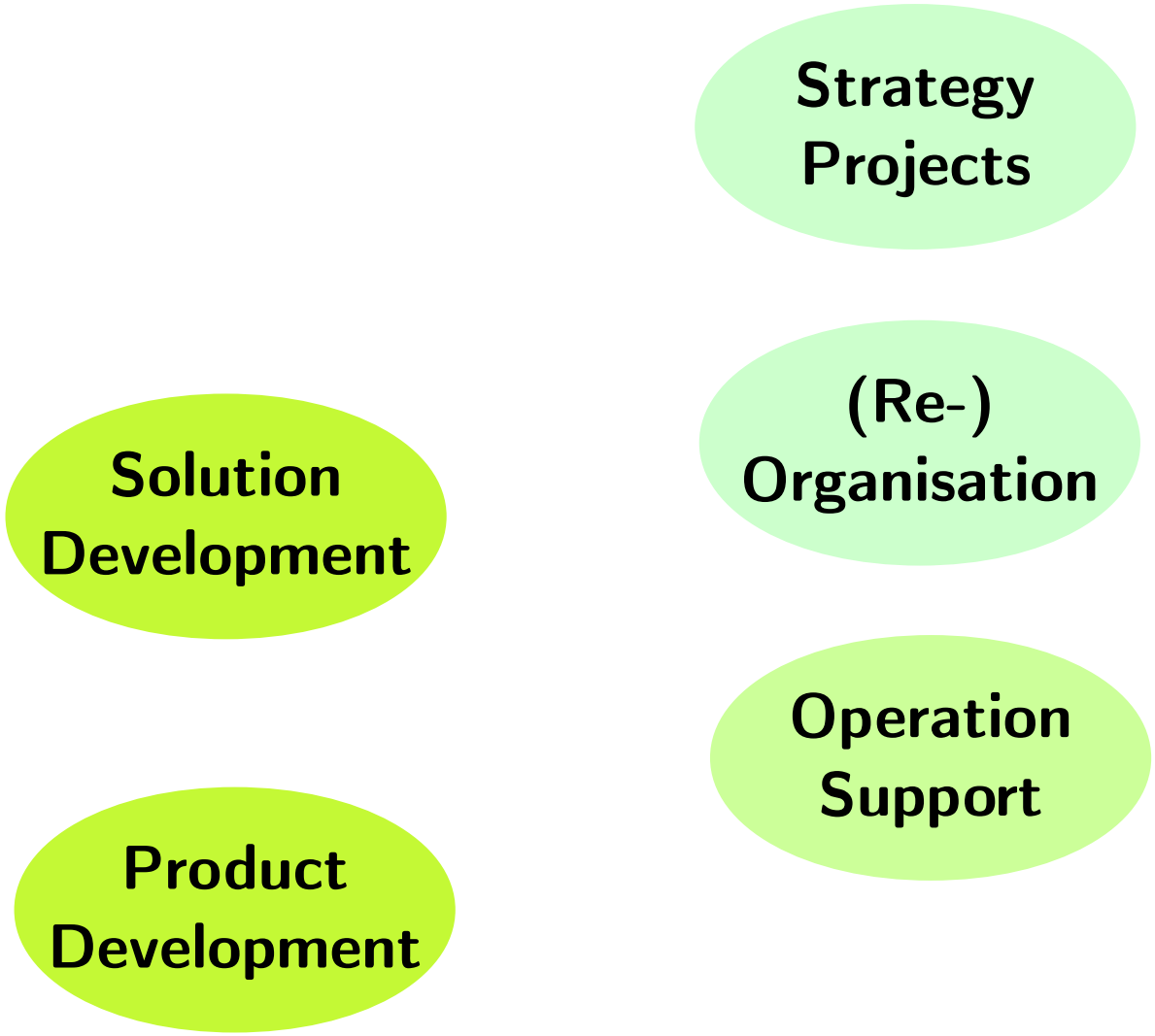
SPHENON
The Information Architects

Background

1987 - 1995
Education:
- Physics
- Computer Science

1989 - today
Solution Development:
(small/medium-sized)
- Technology Companies
  AI, OODB, Internet
- Application Companies
  Insurance, Banking, Logistics, Warehouse, Infotainment, Trade

1992 - today
Product Development:
- EM/OS
  Enterprise Model
  Operation Services



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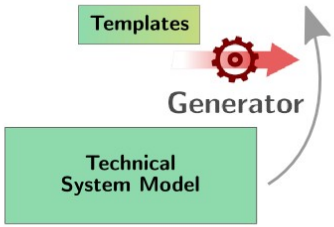

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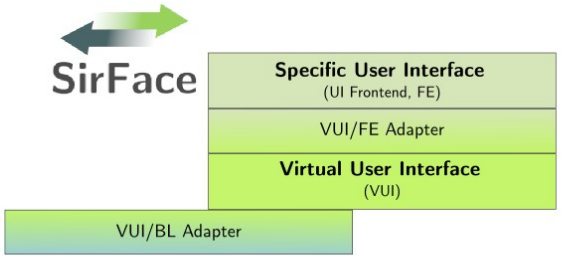

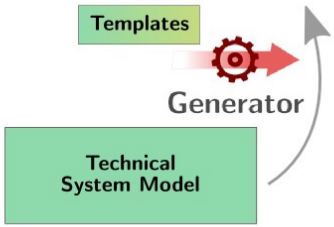

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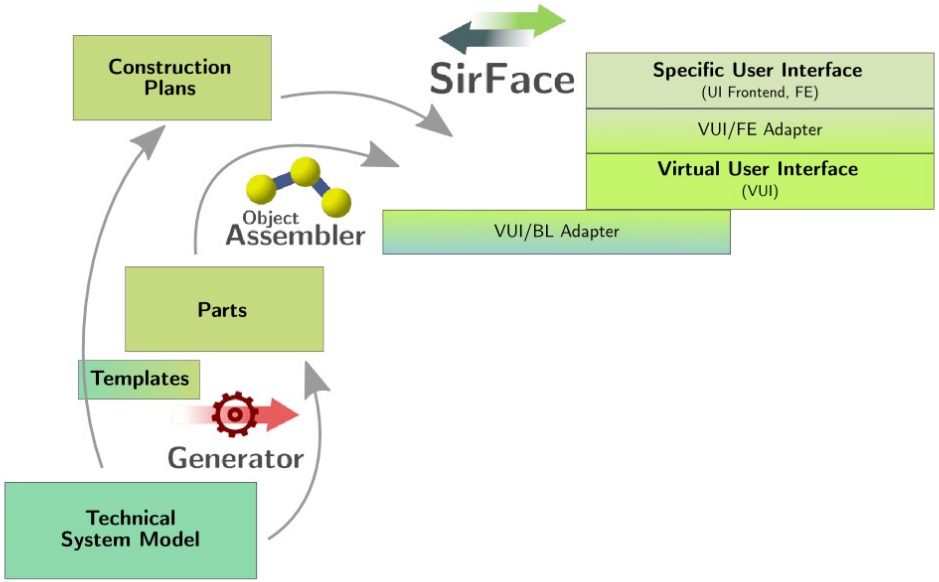

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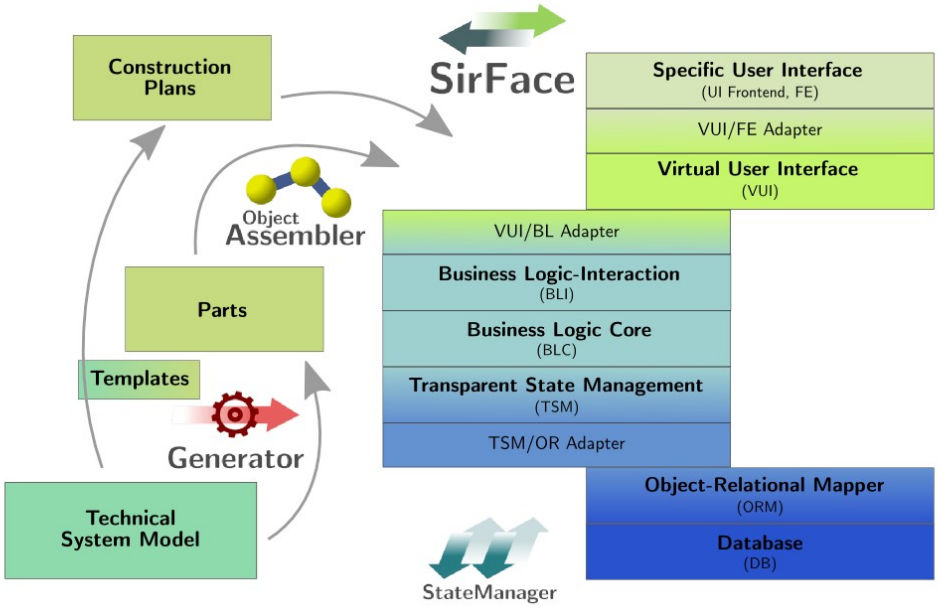

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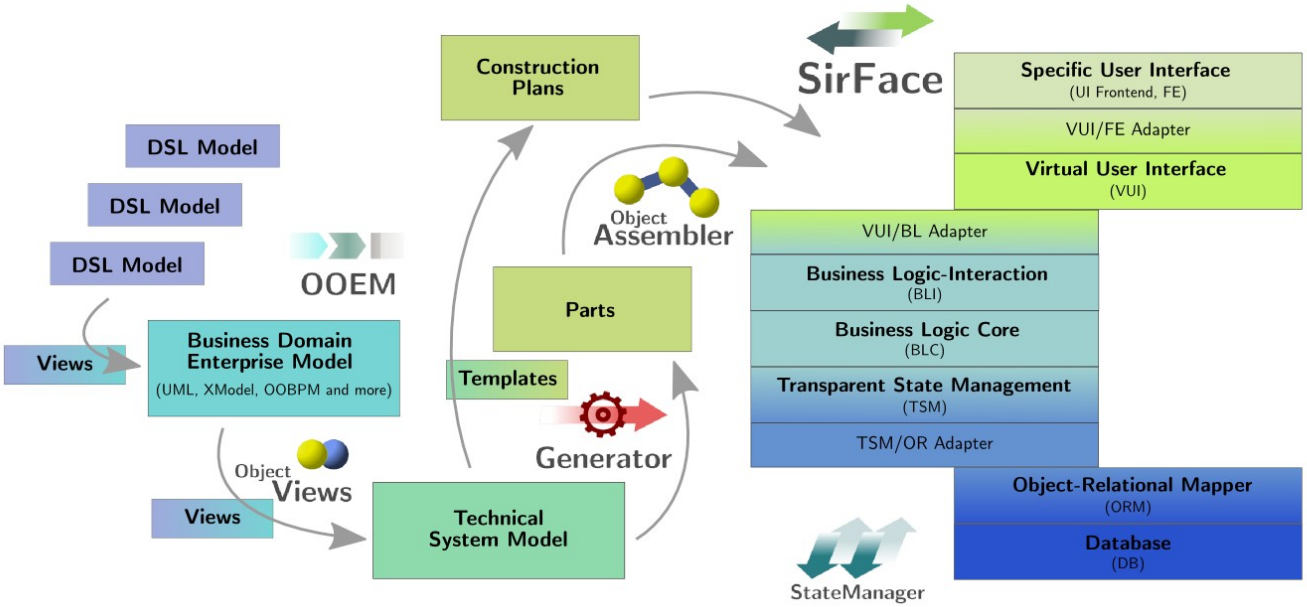

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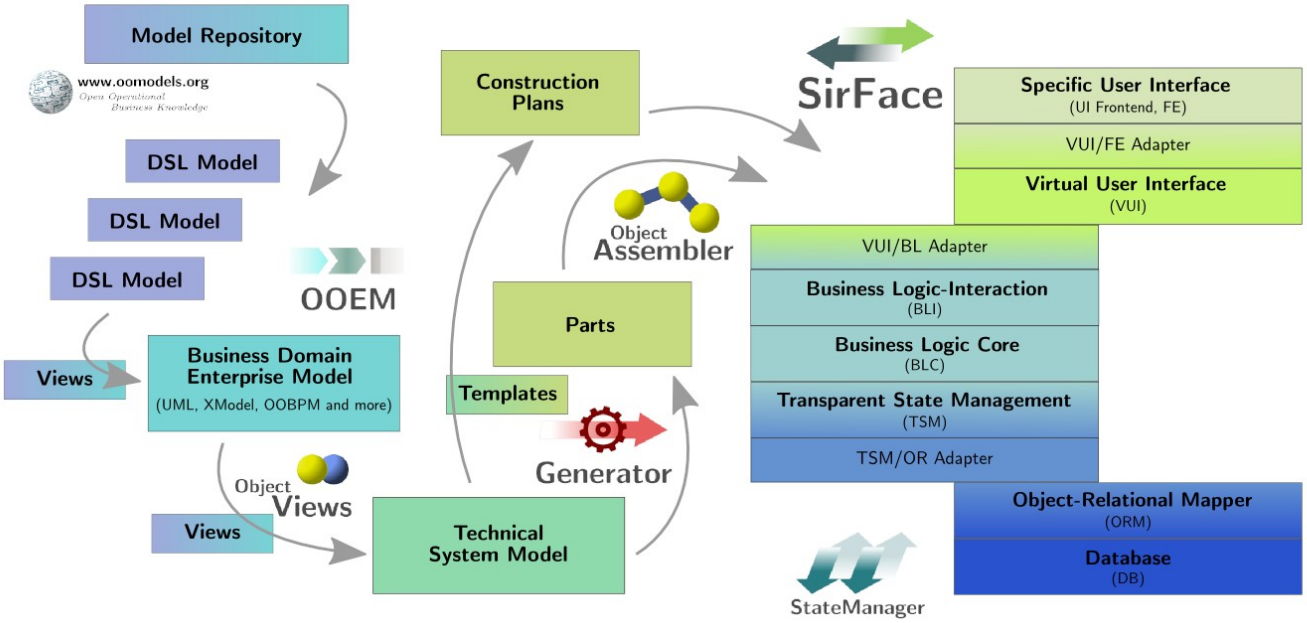

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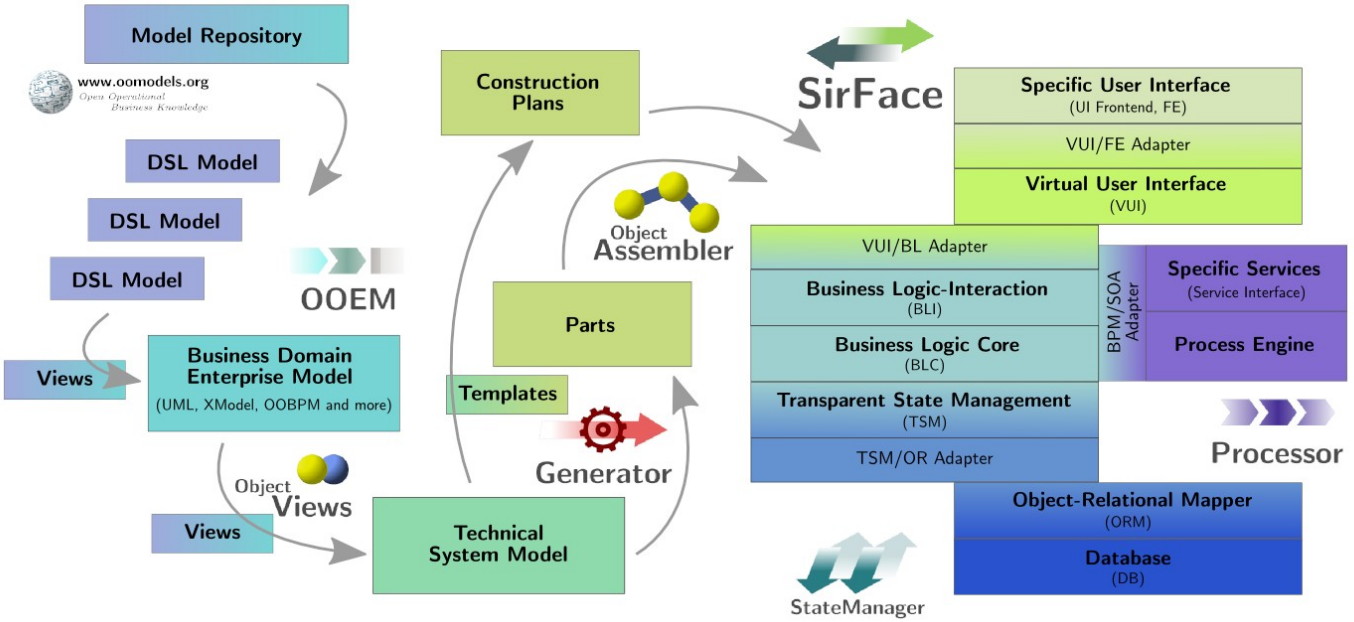

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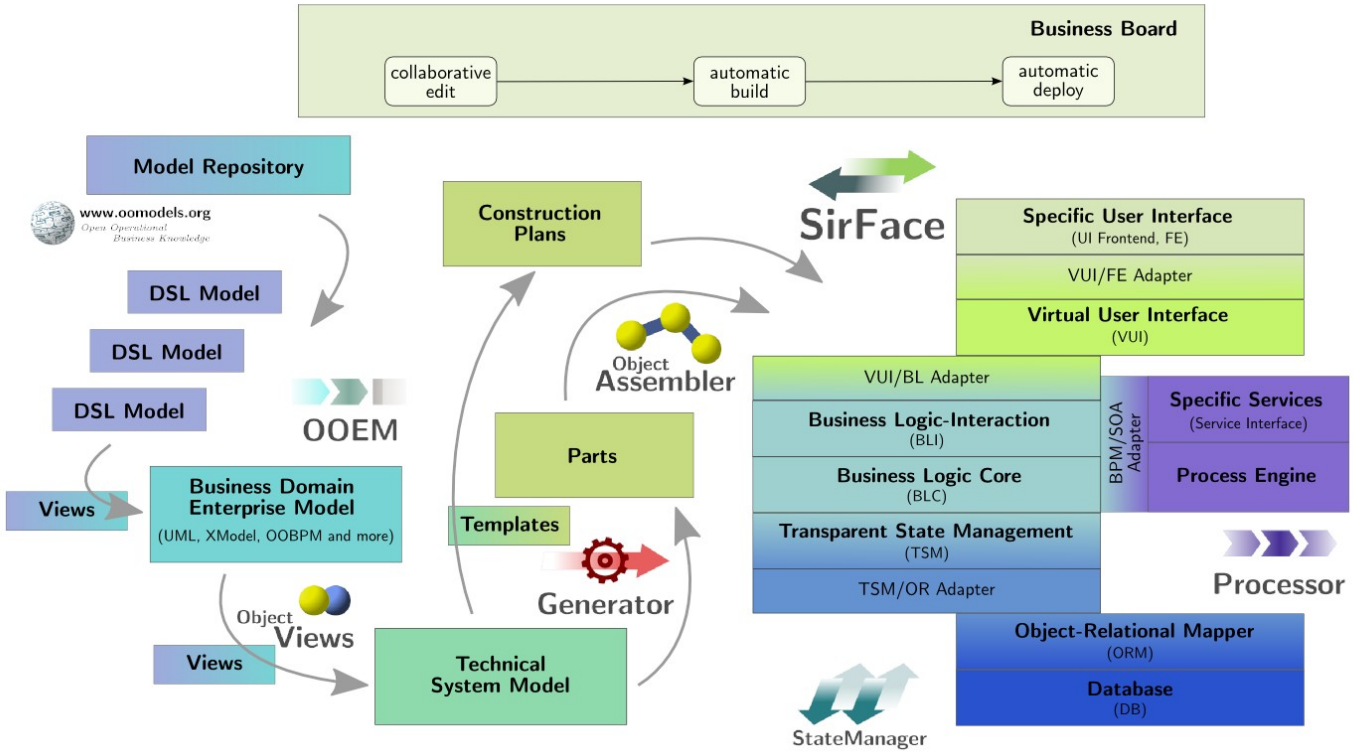

Background

2013

Service Design

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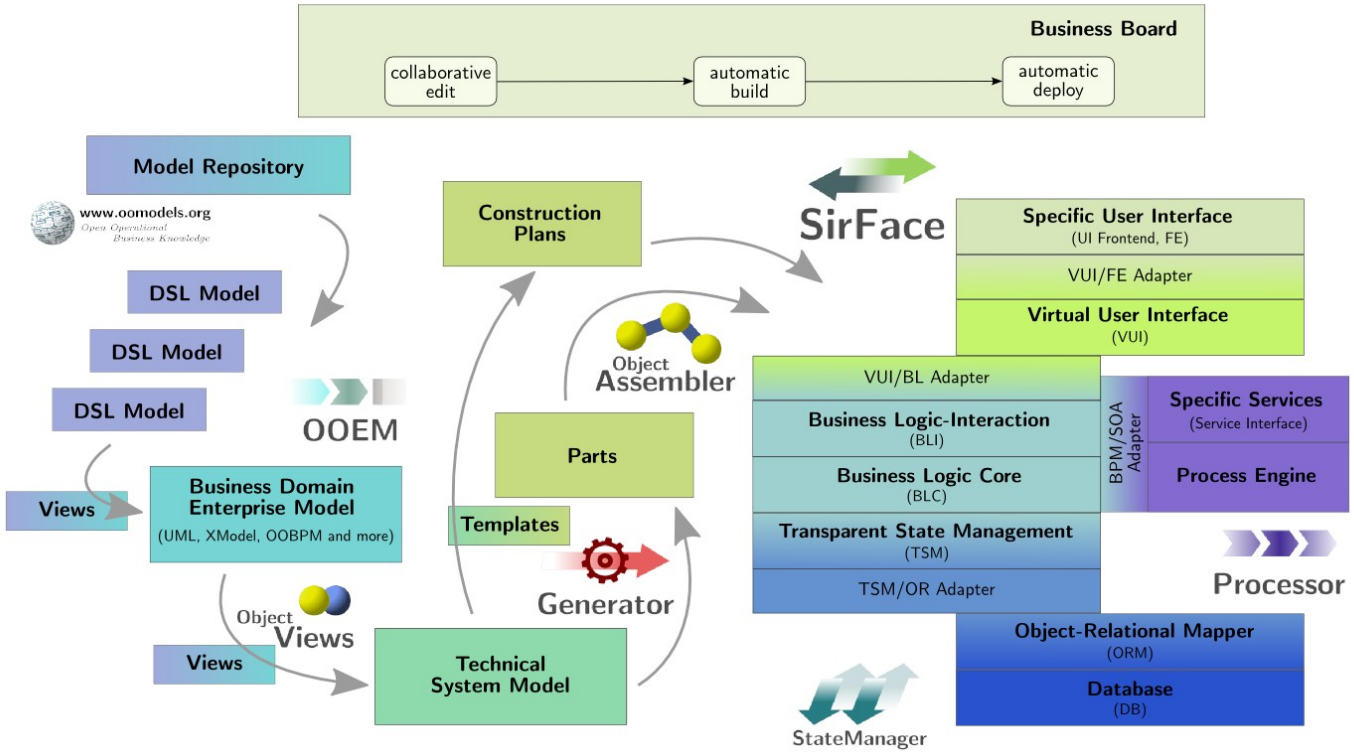

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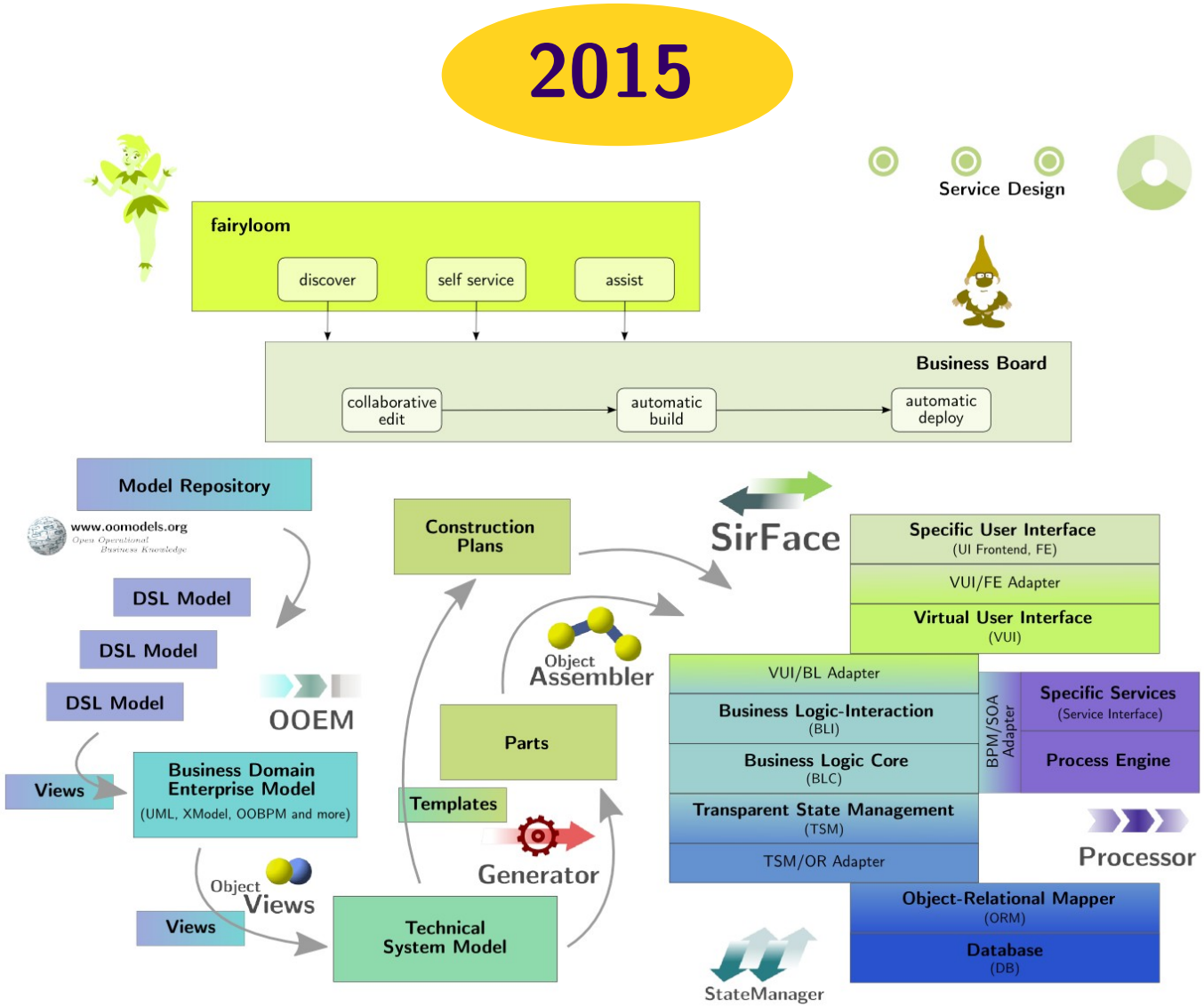
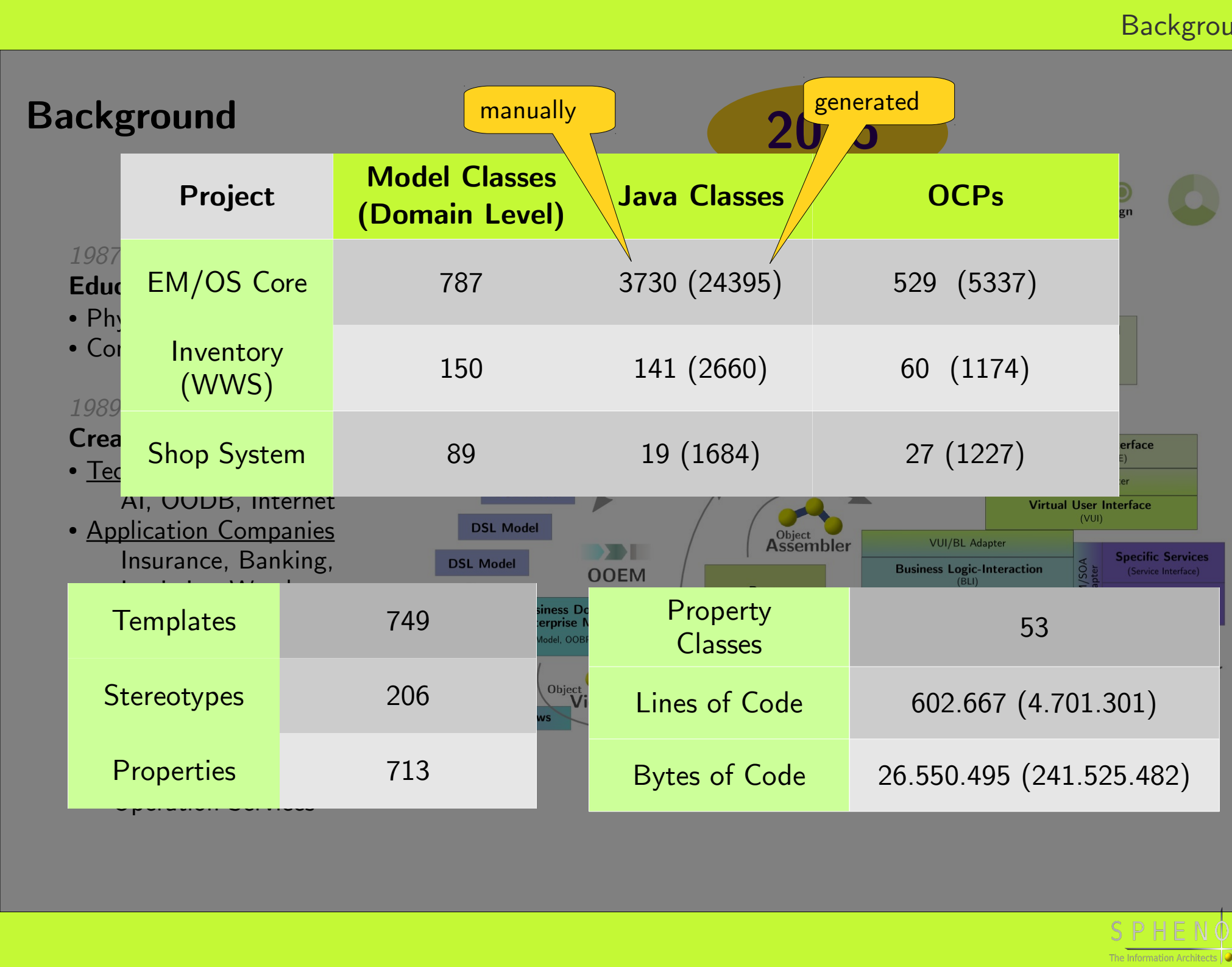


Background

manually

generated

Project	Model Classes (Domain Level)	Java Classes	OCPs
EM/OS Core	787	3730 (24395)	529 (5337)
Inventory (WWS)	150	141 (2660)	60 (1174)
Shop System	89	19 (1684)	27 (1227)



Templates	749
Stereotypes	206
Properties	713

Property Classes	53
Lines of Code	602.667 (4.701.301)
Bytes of Code	26.550.495 (241.525.482)

Questionaire: Modelling

Good Models	Purpose	Addressee
Business Model Canvas Customer Journey Canvas	Strategy Design	Management (higher level)
Classes, States, State Machines (BL, UI)	Communication (Knowledge)	Management (lower level) Domain Experts, IT Experts
	Full Stack Code Generation	Generator
Controlflow-**based** Processes	Communication (Draft)	Management (lower level) Domain Experts, IT Experts
Controlflow-**free** Processes	Full Stack Code Generation	Generator
DocBook (e.g.)	Documentation	Processed Reading: Everybody Writing: Experts
Systems IT/Enterprise Landscapes	Communication (Knowledge)	Management (lower level) Domain Experts, IT Experts
	Automated Deploy & Operation	Deployment & Monitoring Engine

fun & useful

good work

powerful, high potential

potential

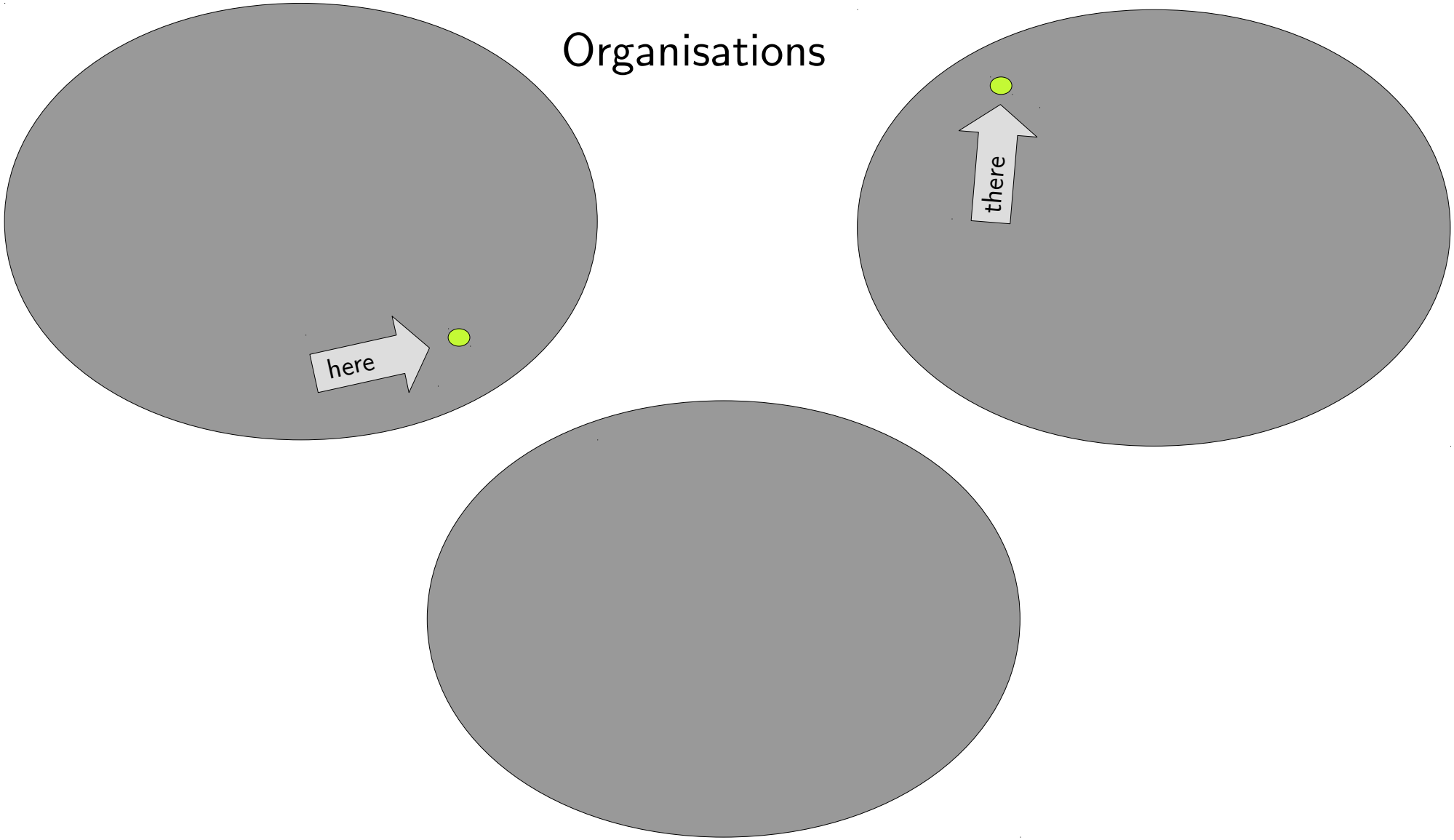
workhorse

cost saver

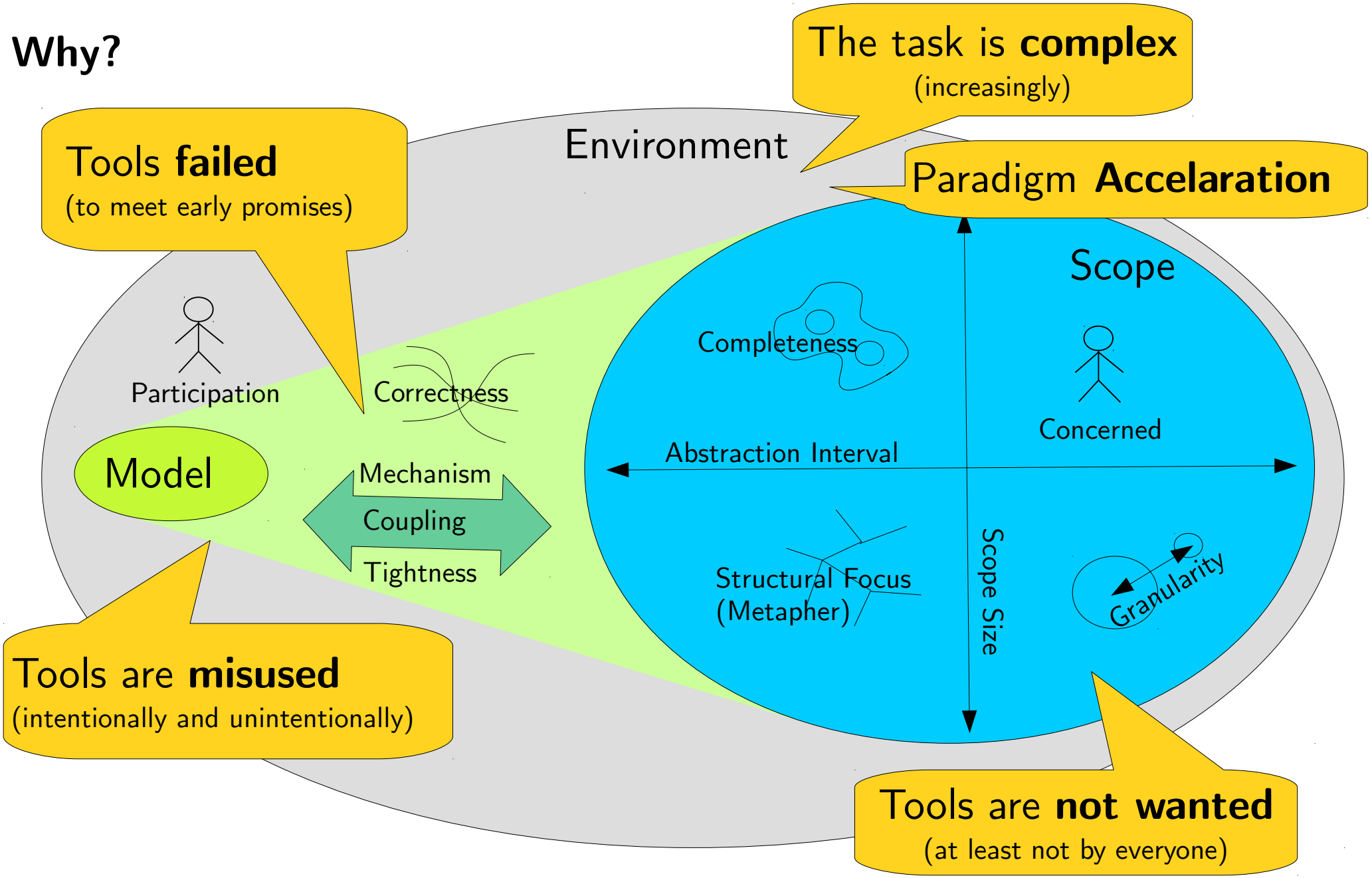
Questionaire: Decision Making

Model	Decisions
Business Model Canvas	Business Structure Business Development
Customer Journey Canvas	Product/Service Design Touchpoints, Channels
Story Maps Processes (not Workflows)	Analysis Hotspots, Priorities Organisation
System/IT Landscape	Overview Monitoring

How many?

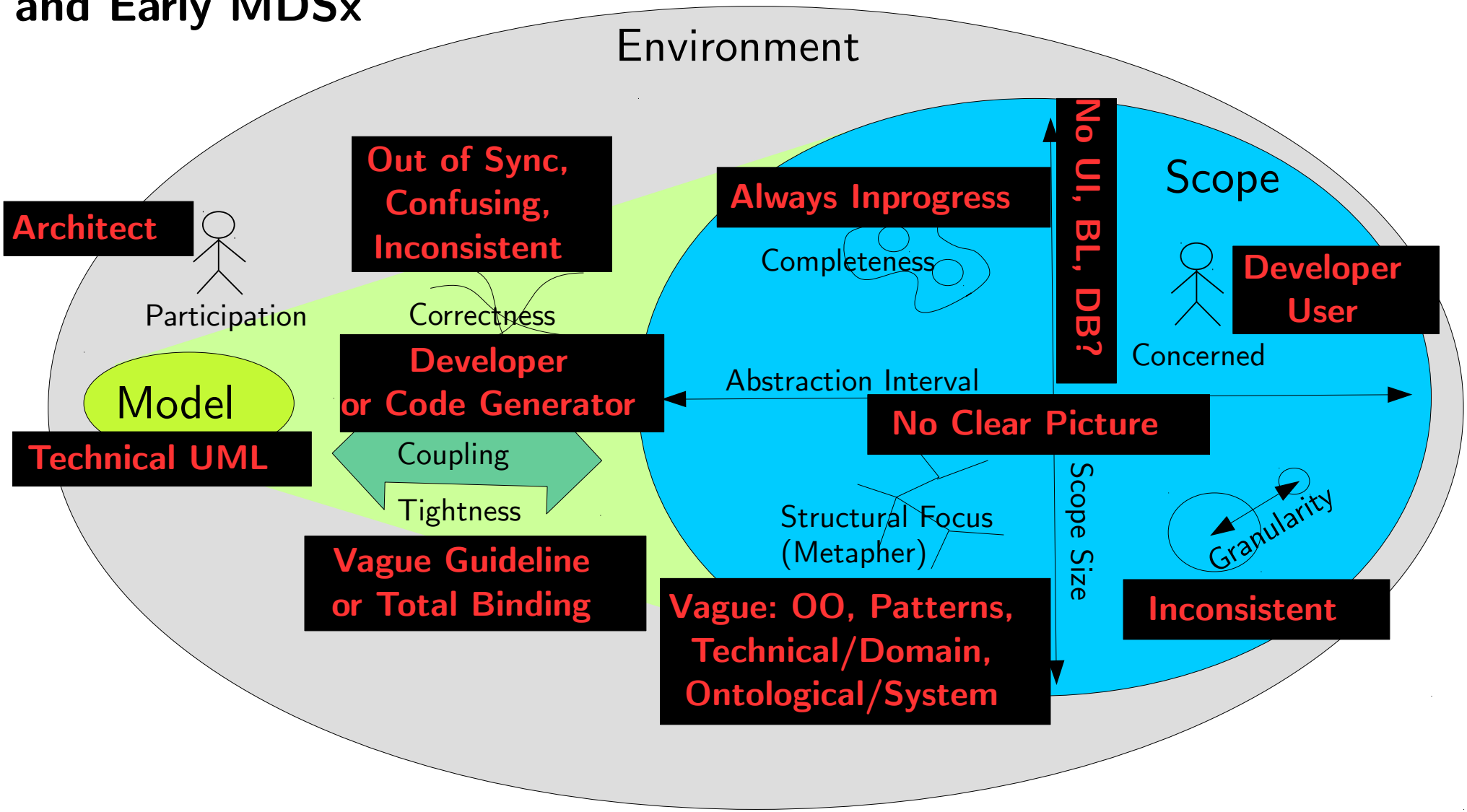


Why?

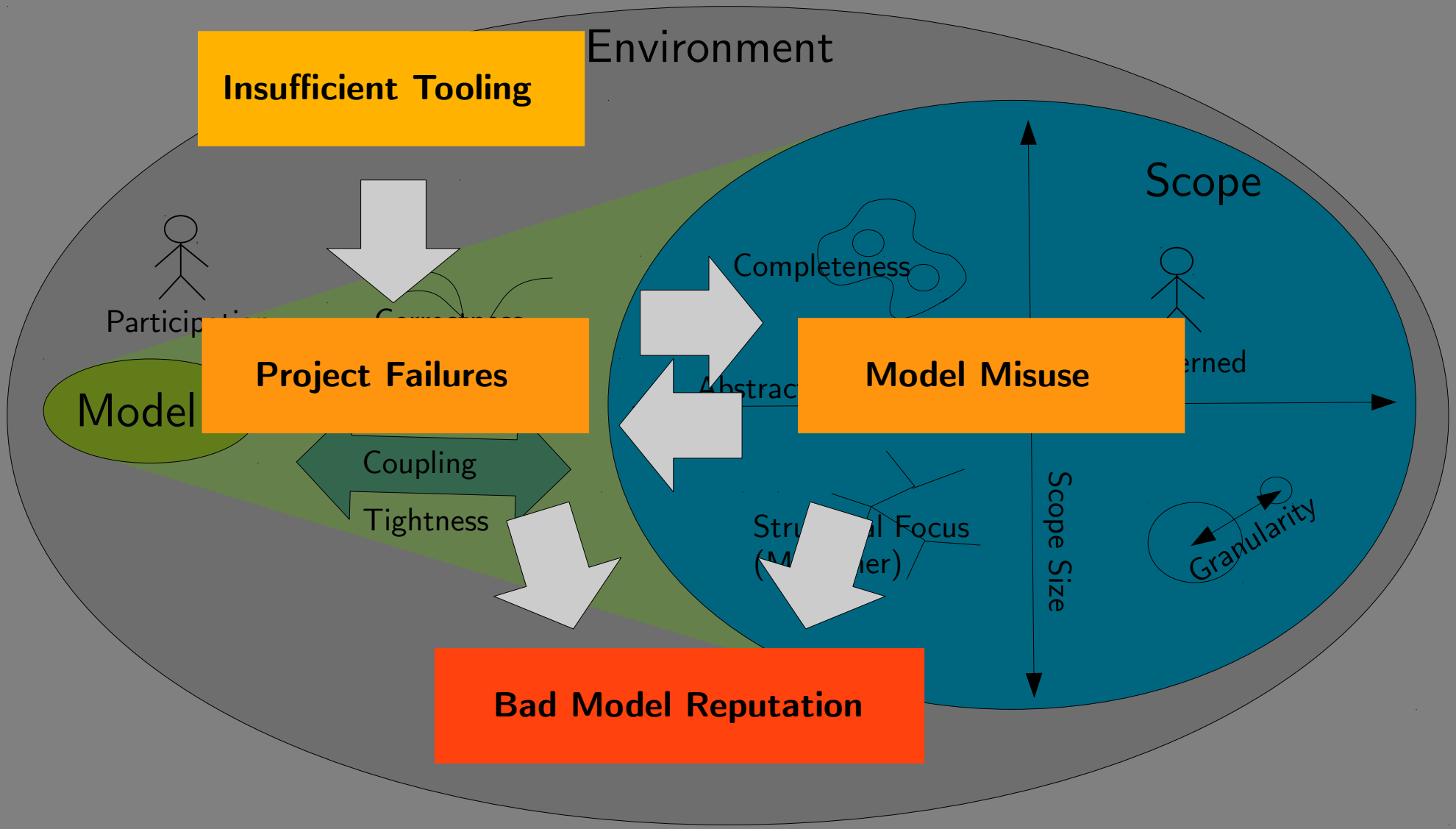

The task is **complex**
(increasingly)
Tools **failed**
(to meet early promises)
Environment
Paradigm **Accelaration**
Scope
Completeness
Participation
Correctness
Concerned
Model
Abstraction Interval
Mechanism
Coupling
Tightness
Structural Focus
(Metapher)
Scope Size
Granularity
Tools are **misused**
(intentionally and unintentionally)
Tools are **not wanted**
(at least not by everyone)

Tools failed

Case Study: Historical Waterfall Software Development and Early MDSx

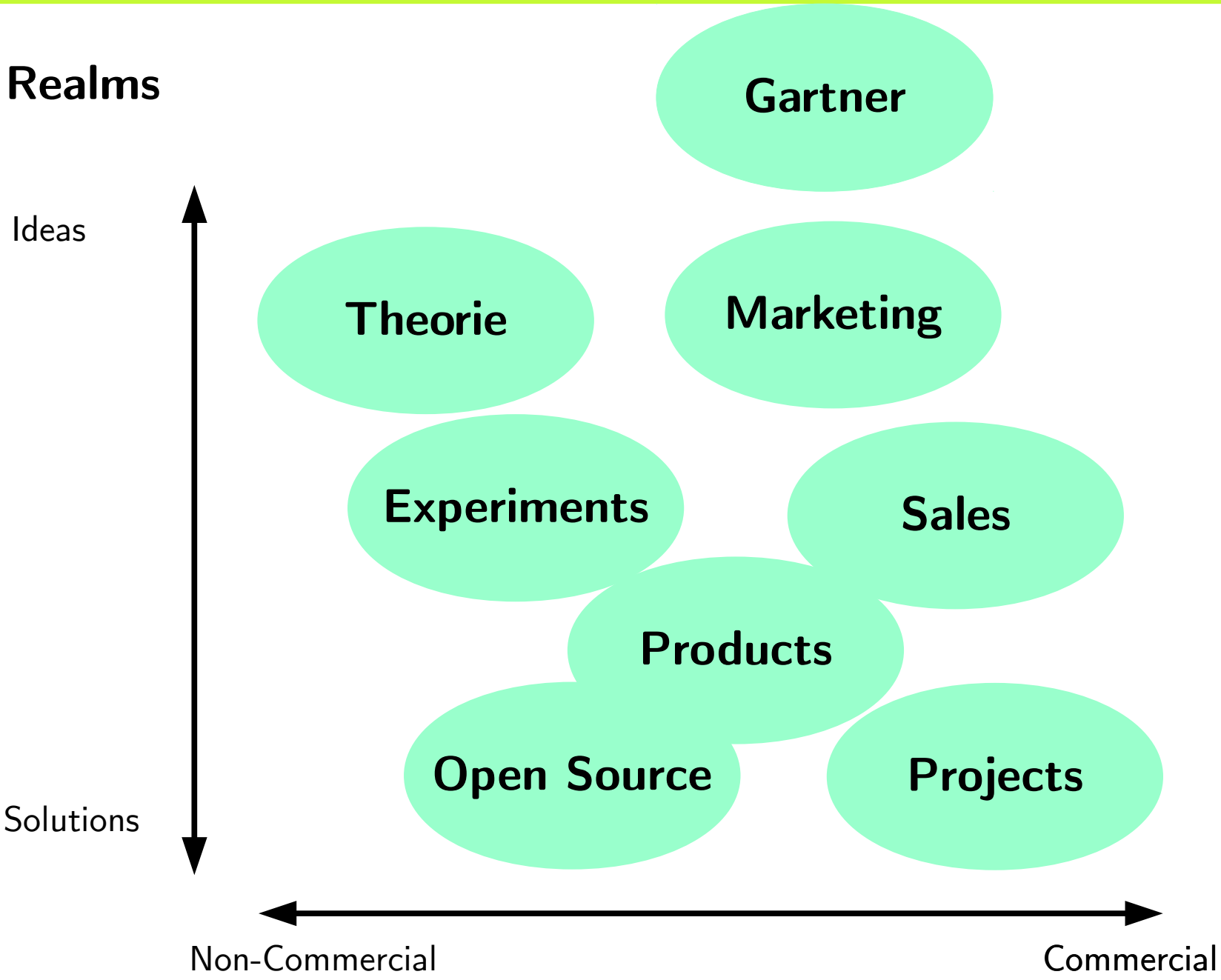


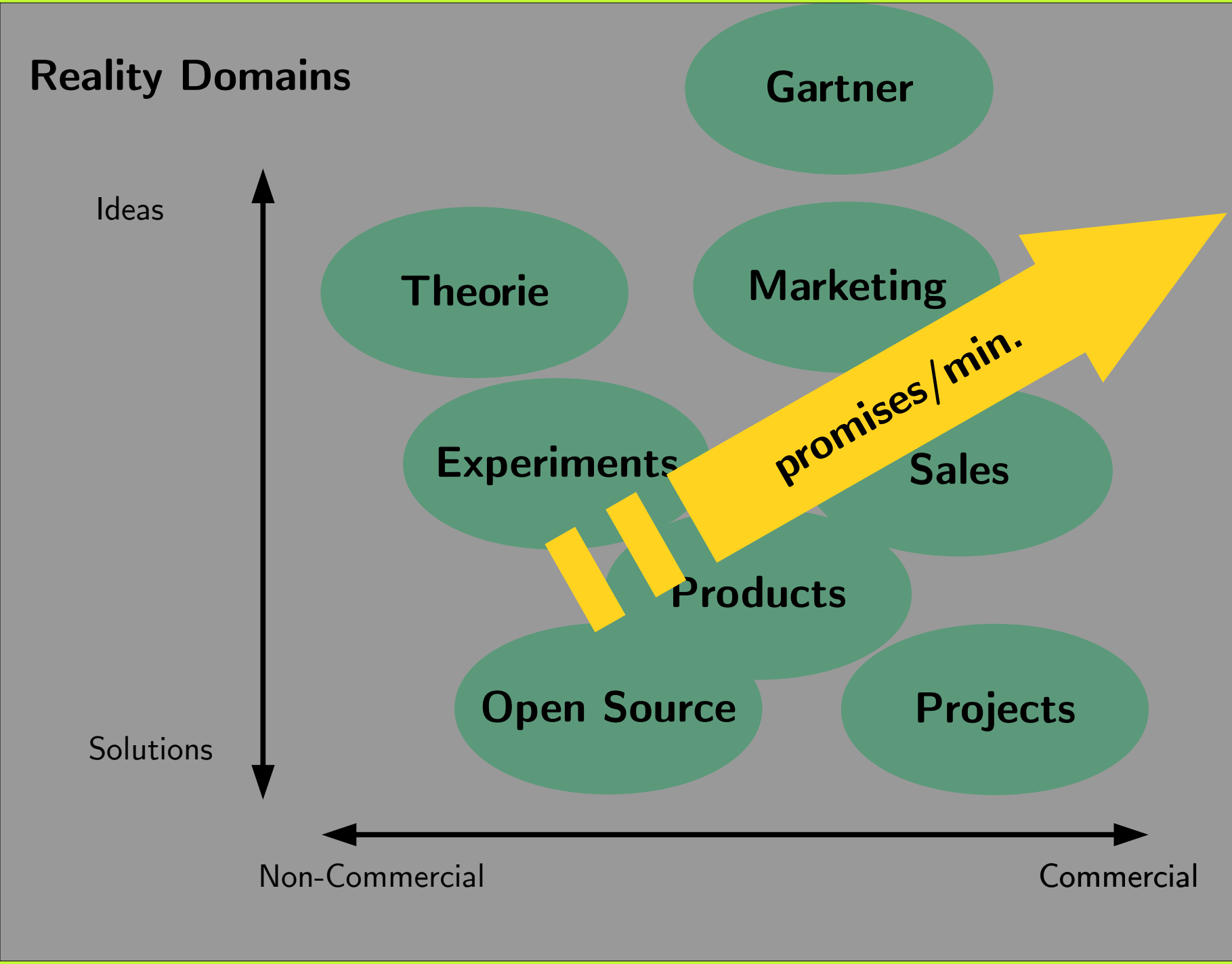
Organisational Embedding



Paradigm Accelaration

IT Realms


Gartner
Ideas
Theorie
Marketing
Experiments
Sales
Products
Open Source
Projects
Solutions
Non-Commercial
Commercial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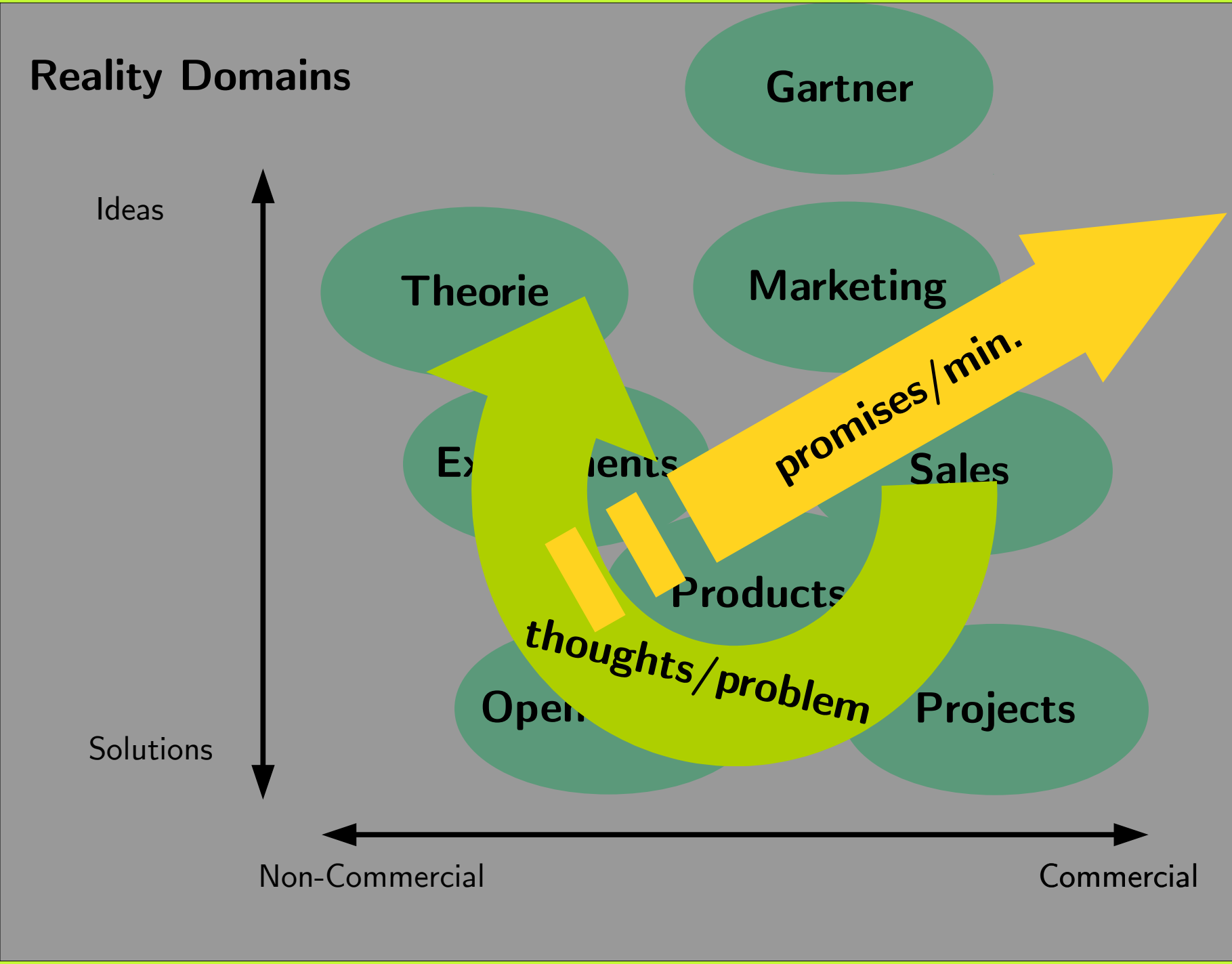
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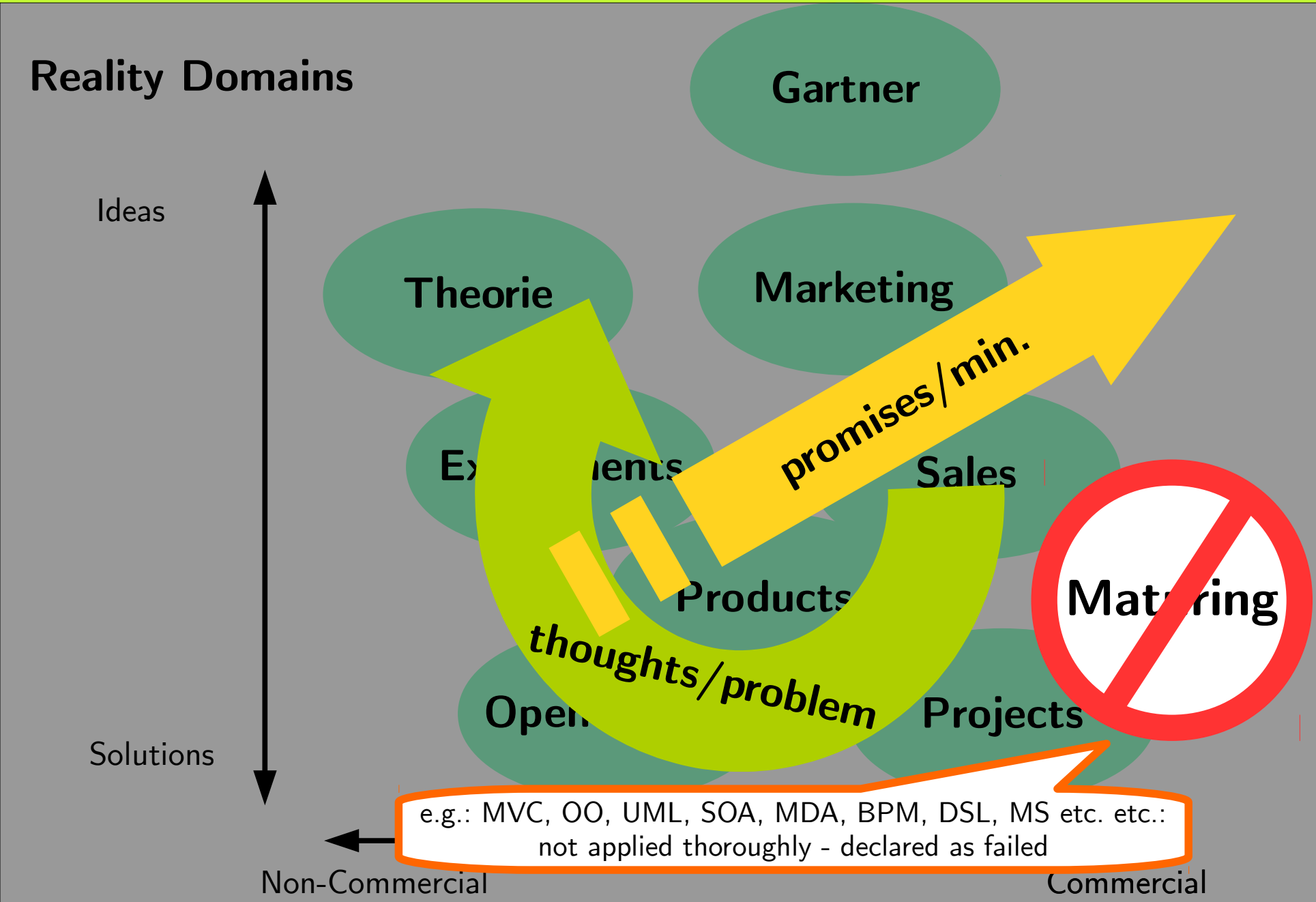
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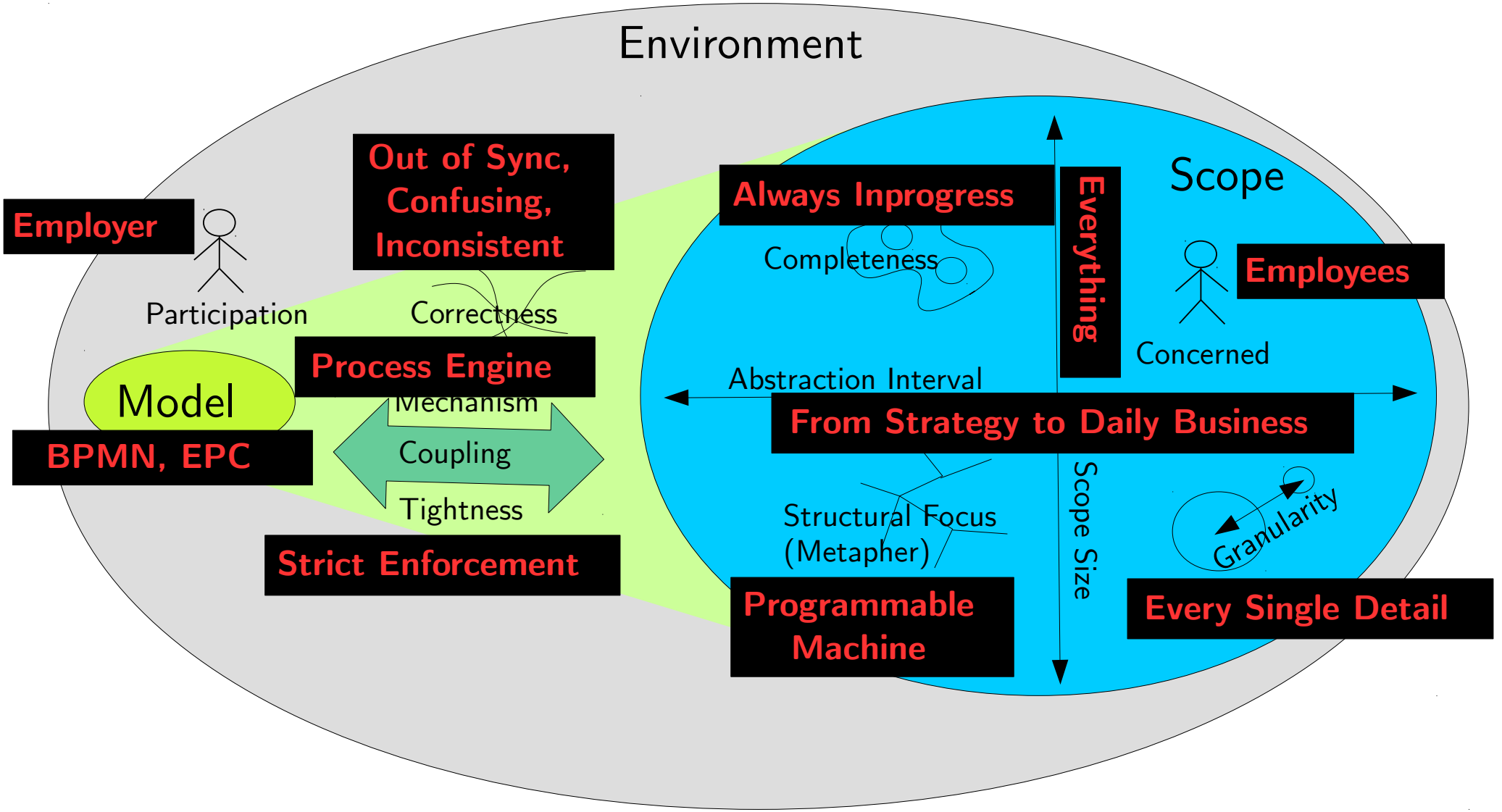
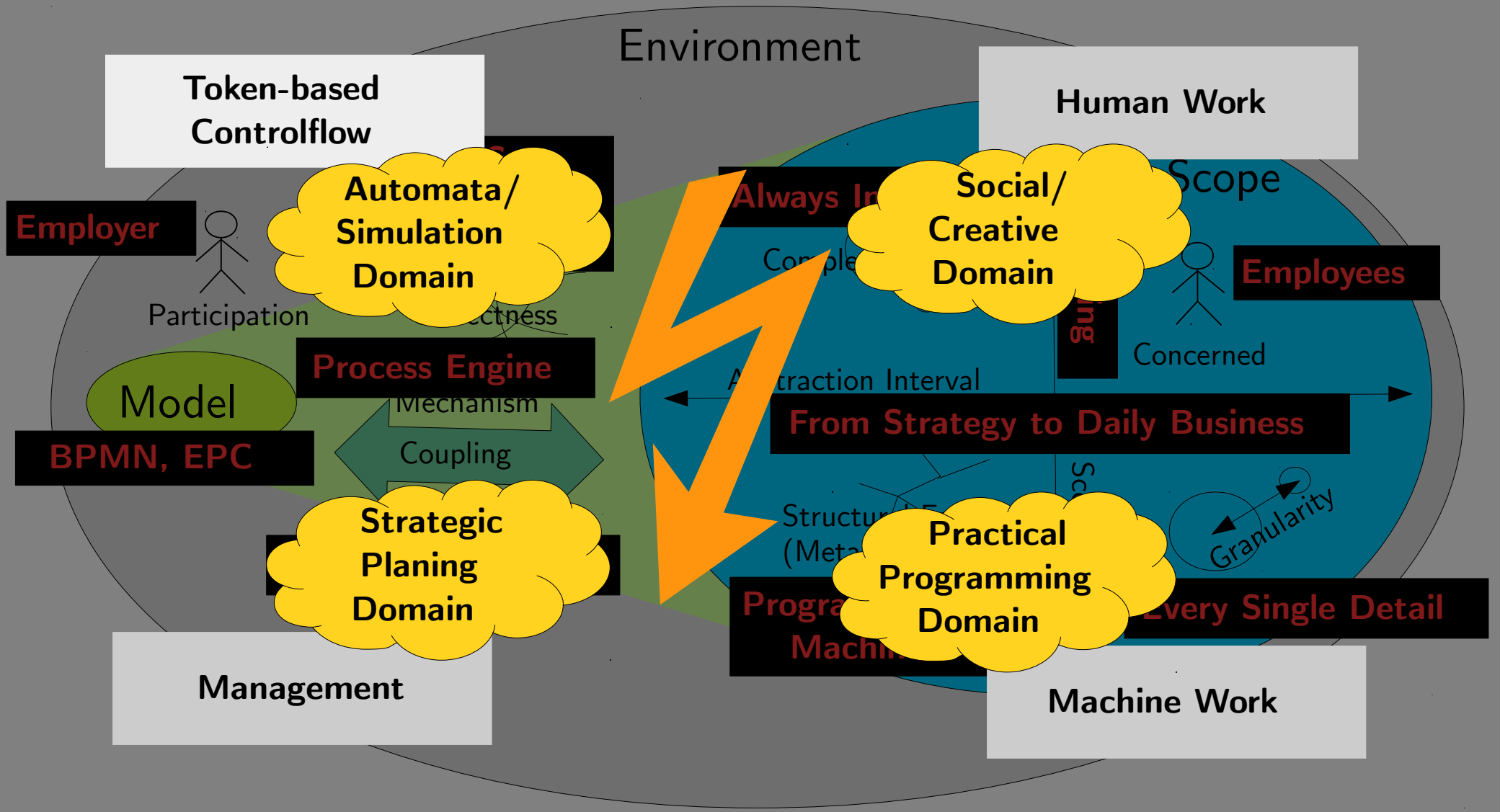
e.g.: MVC, OO, UML, SOA, MDA, BPM, DSL, MS etc. etc.:
not applied thoroughly - declared as failed
Non-Commercial
Commercial

Unintentional Misuse

Case Study: Controlflow Based Process



Example: Controlflow Based Process



Intentional Misuse And Rejection

Stakeholder Interests

- **Share holder:** good services for a better world
- **Employee:** create good solutions, work in flow mode
- **Software vendor:** help organisations to become more efficient and agile
- **Consulting company:** provide wisdom and solve problems
- **Developer:** develop quality solutions with minimal effort

Stakeholder Interests

- **Share holder:** good services for a better world
  maximise profit
- **Employee:** create good solutions, work in flow mode
  play around, avoid work, career
- **Software vendor:** help organisations to become more efficient and agile
  maximise sells and profit, make customer dependent
- **Consulting company:** provide wisdom and solve problems
  sell as much work hours as possible
- **Developer:** develop quality solutions with minimal effort
  solve nice, challenging, complex problems

Instability, Complexity, Problems, Intransparency - Welcome?

Stakeholder Interests

- **Share holder:** good services for a better world
  maximise profit
- **Employee:** create good solutions, work in flow mode
  play around, avoid work, career
- **Softwa** **Intentional Misuse** sations to become **Models Not Welcome** e
  ells and profit, ma t
- **Consulting company:** provide wisdom and solve problems
  sell as much work hours as possible
- **Developer:** develop quality solutions with minimal effort
  solve nice, challenging, complex problems

Sometimes:
technologies, complexity, problems, intransparency are simply welcome

Complex Environment - I

Questionaire: Agility

only effective within this order

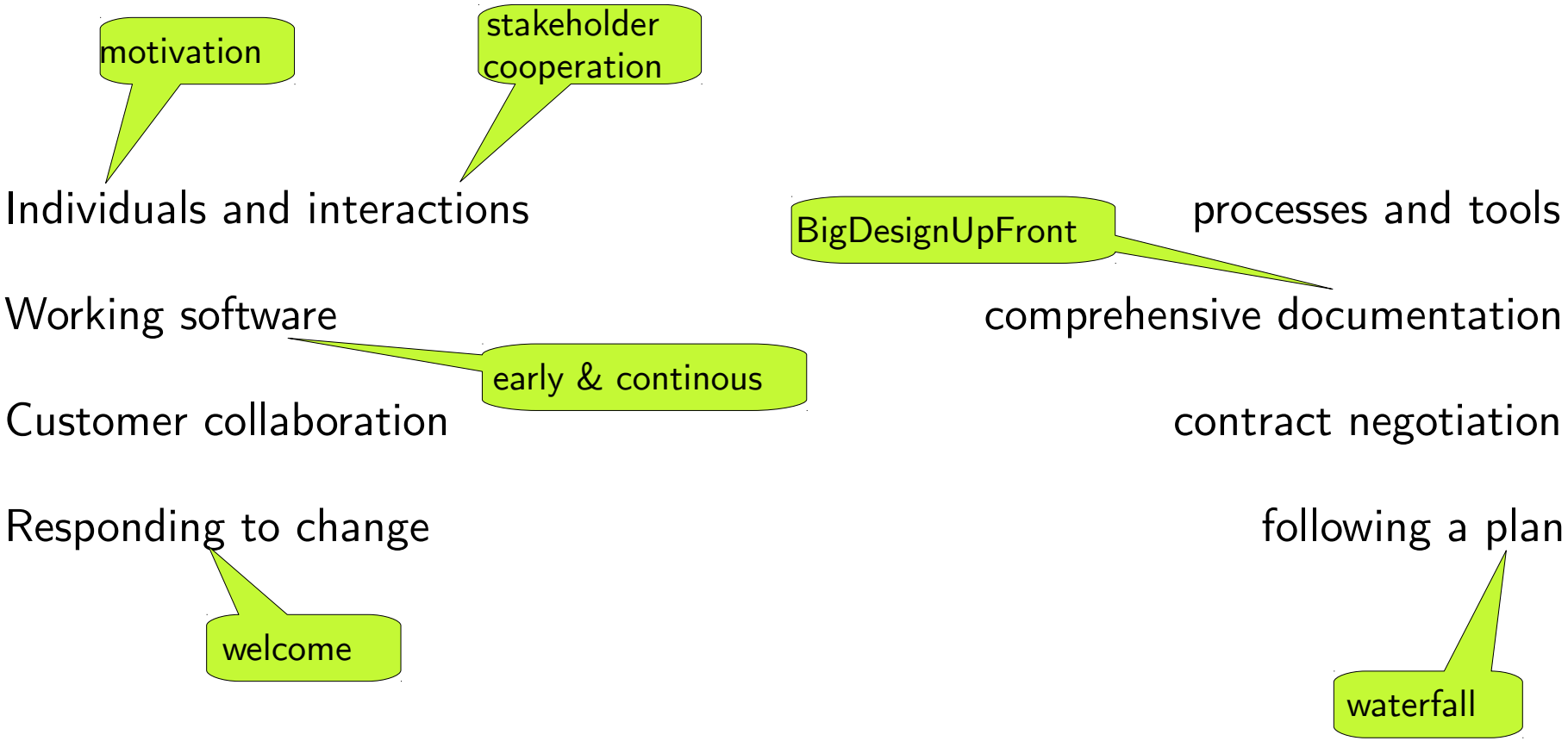
Key Aspect	Explanation	Outcome
A **healthy** team	cooperative, good mindset, supportive, motivated, reflecting	**performance factor 10**
Information **gardening** excellence	some bright people, capable of organising digital assets	**performance factor 10**
Good **tools**	high quality, oiled and sharpened, no fashionable crap, BT & IT	**performance factor 10**

10 * 10 * 10 = 1000

Agility - Manifesto, Principles, Connotations, Behind & Beyond

Individuals and interactions	processes and tools
Working software	comprehensive documentation
Customer collaboration	contract negotiation
Responding to change	following a plan

Agility - Manifesto, Principles, Connotations, Behind & Beyond



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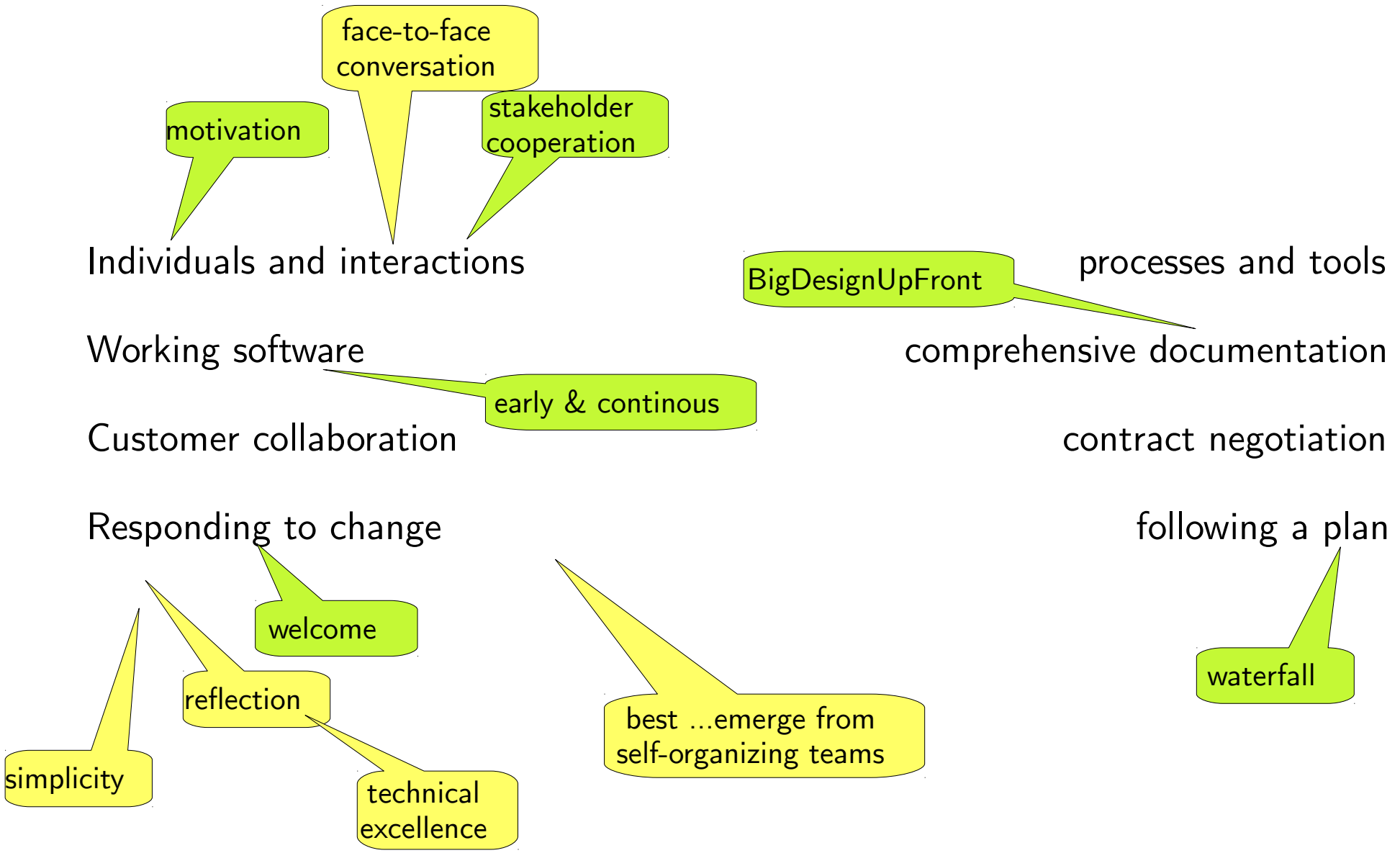

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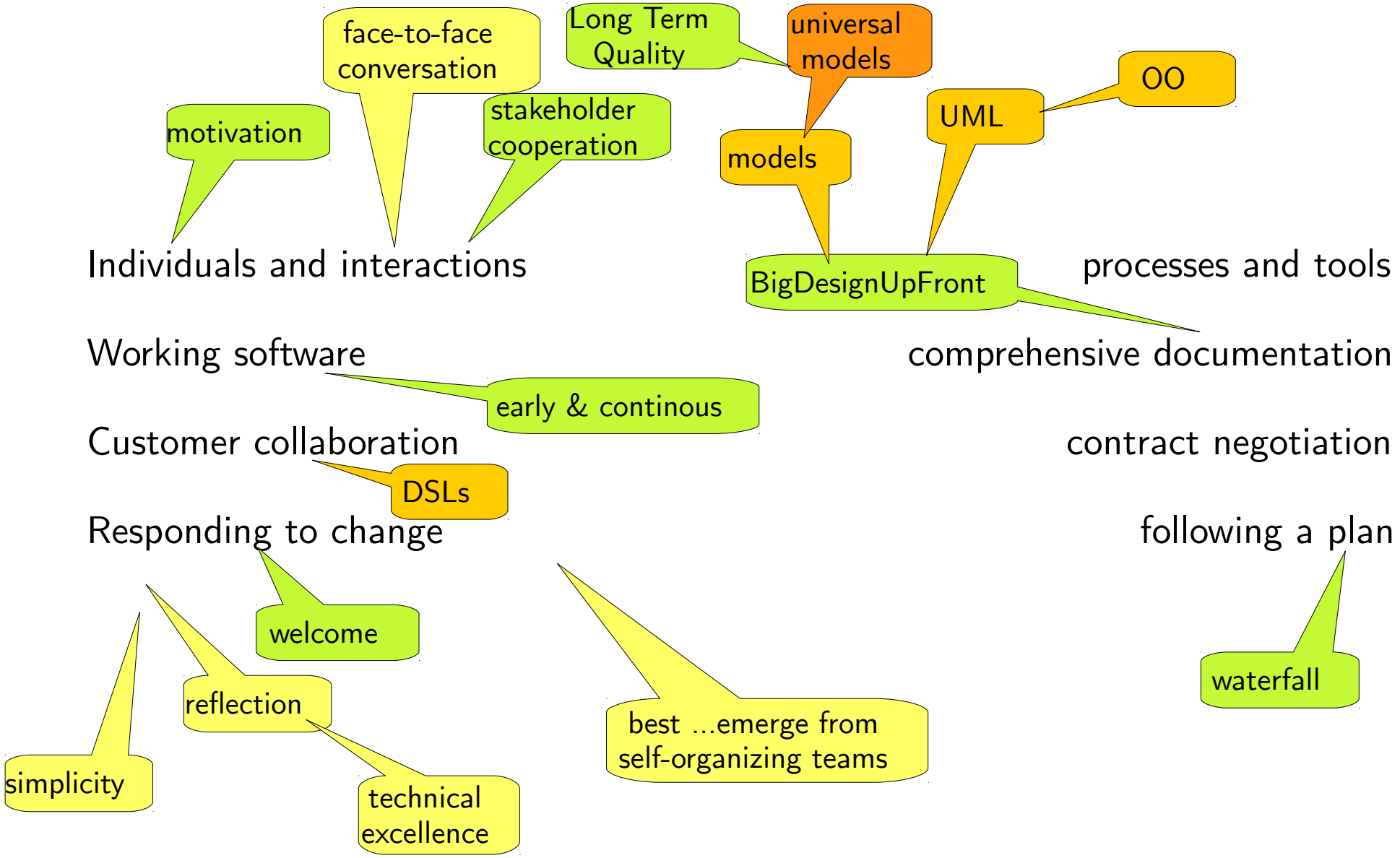

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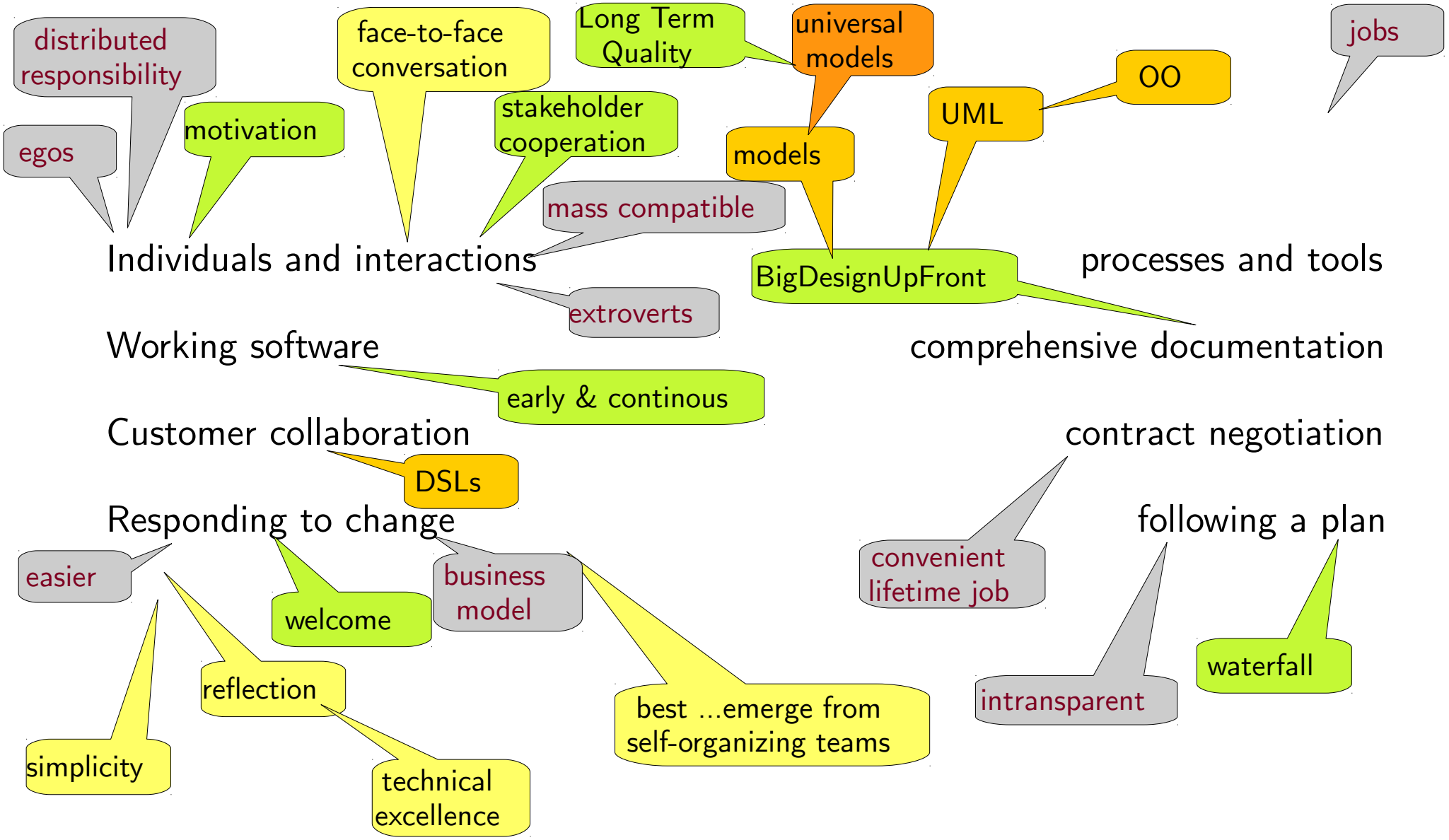

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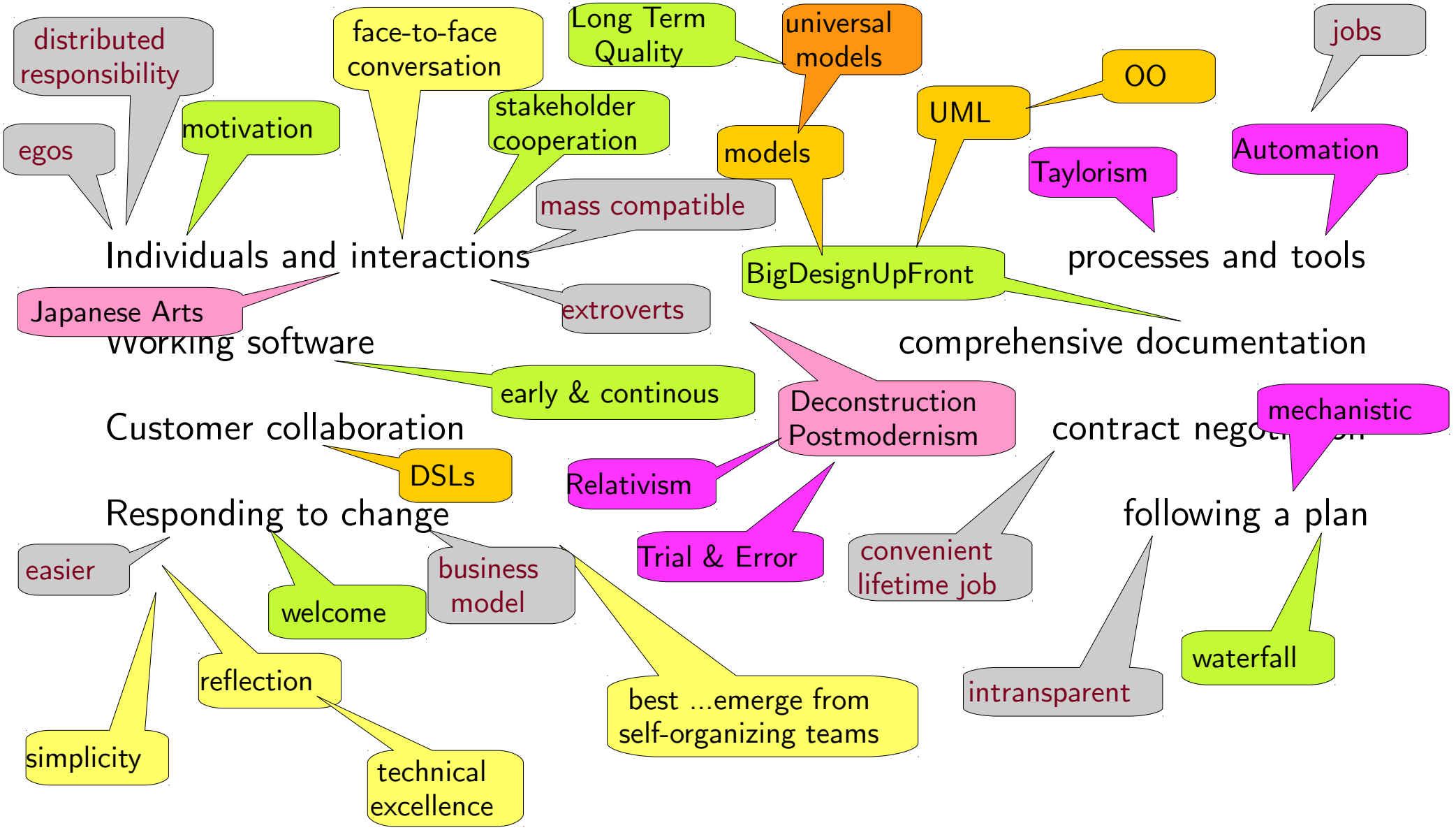

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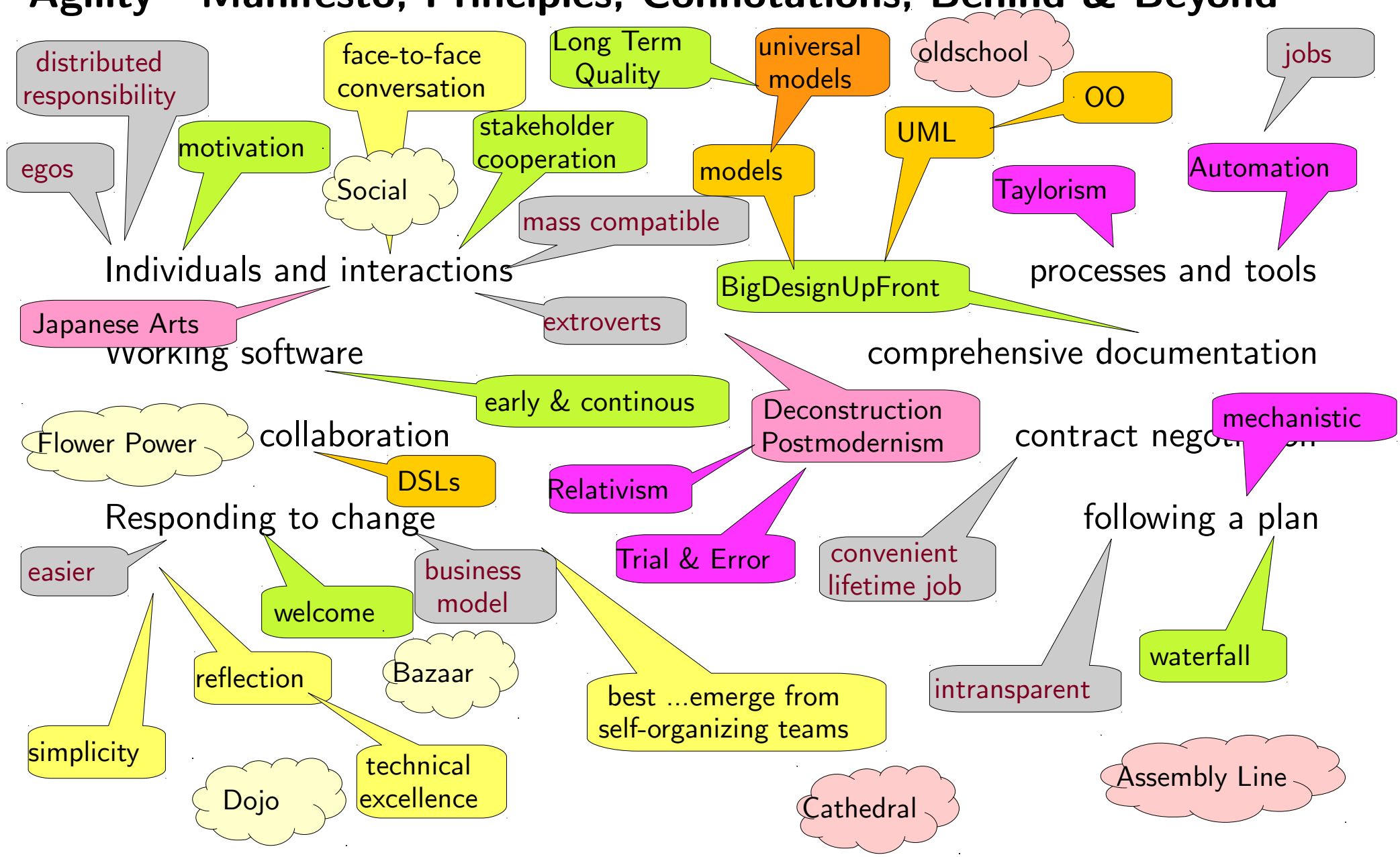

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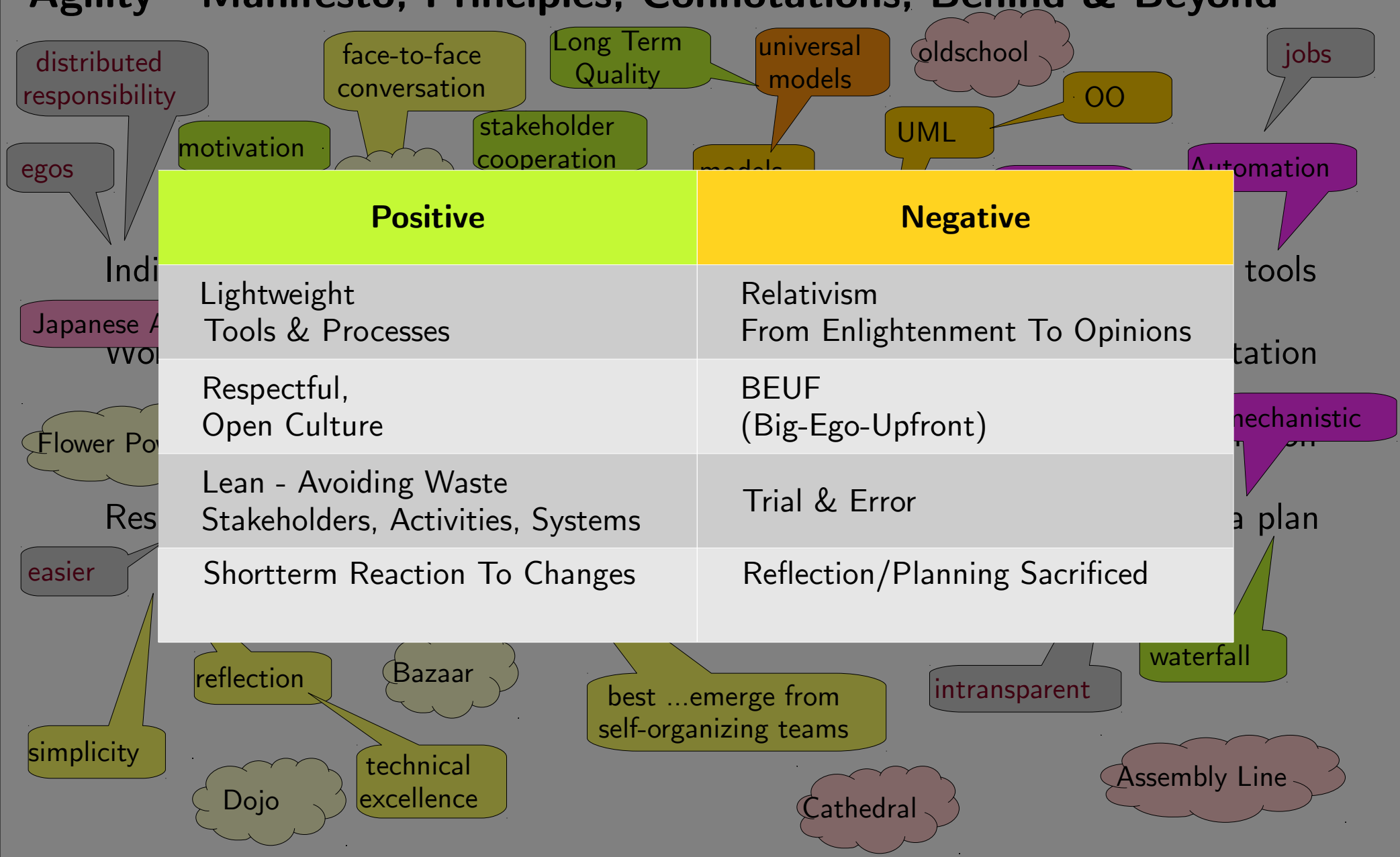
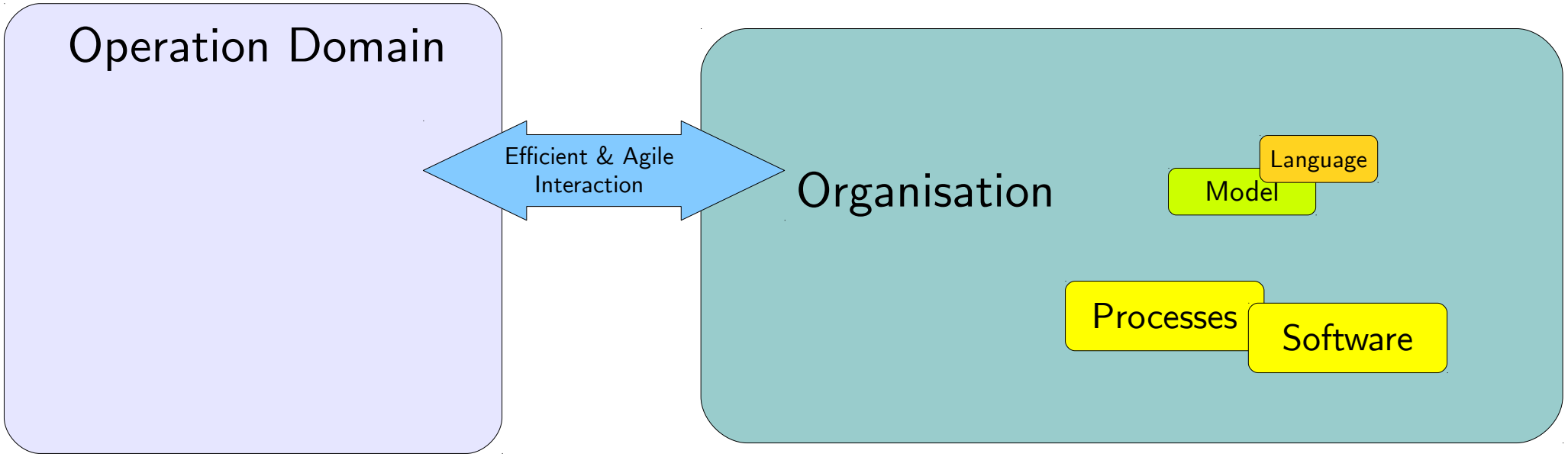


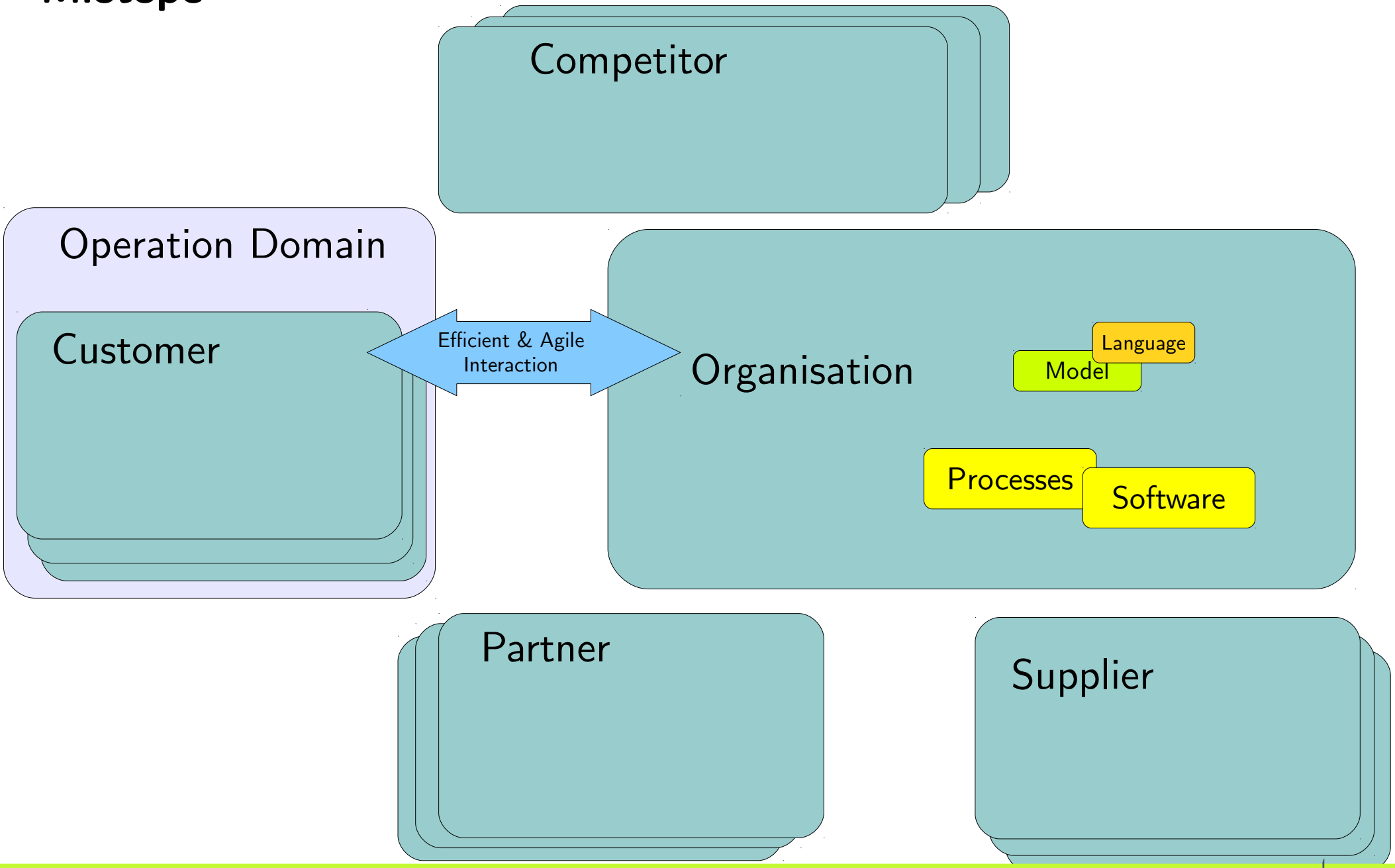
Positive	Negative
Lightweight Tools & Processes	Relativism From Enlightenment To Opinions
Respectful, Open Culture	BEUF (Big-Ego-Upfront)
Lean - Avoiding Waste Stakeholders, Activities, Systems	Trial & Error
Shortterm Reaction To Changes	Reflection/Planning Sacrificed

Complex Environment - II

Miotope


Operation Domain
Efficient & Agile
Interaction
Organisation
Language
Model
Processes
Software

Miotope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Supplier

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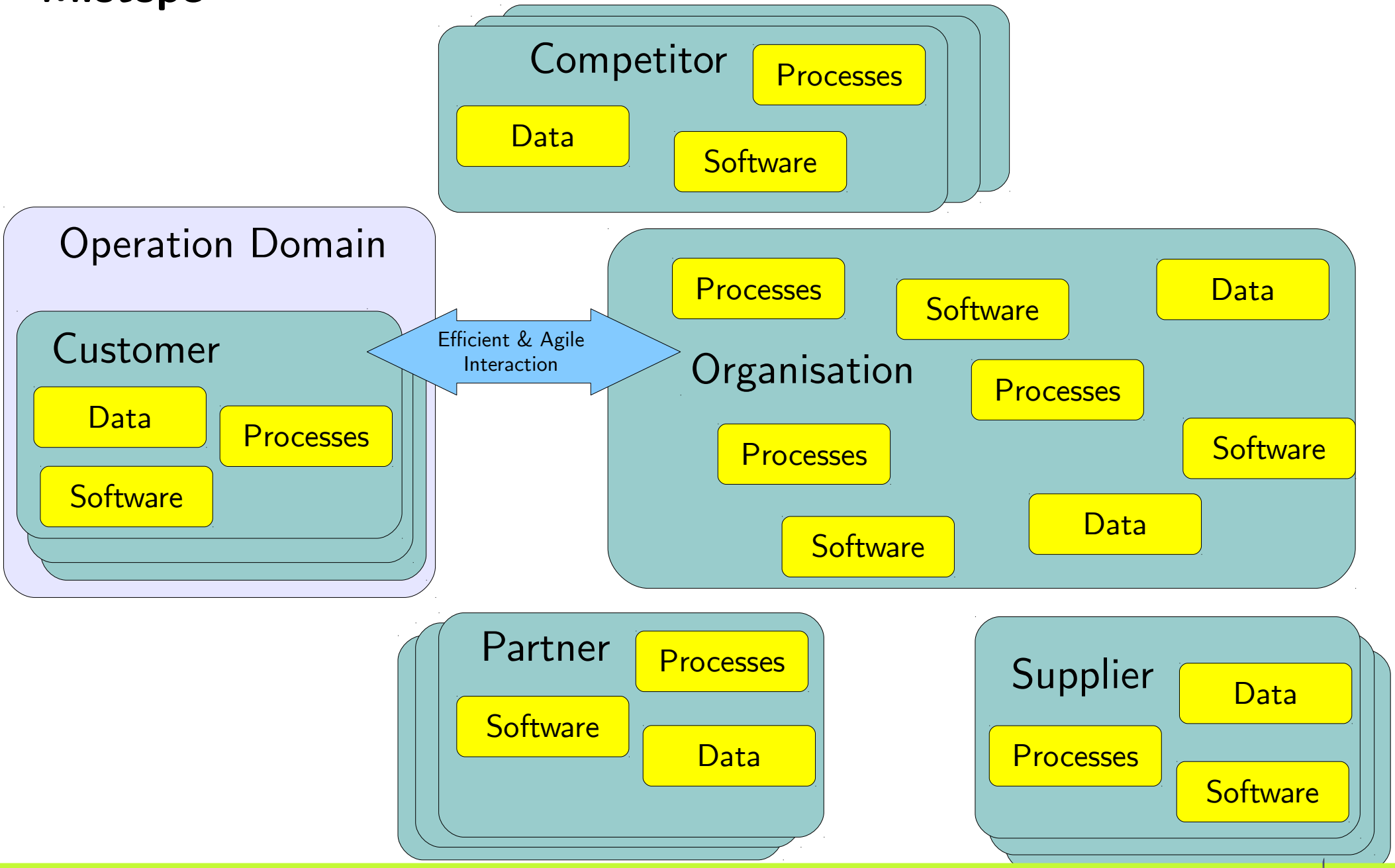
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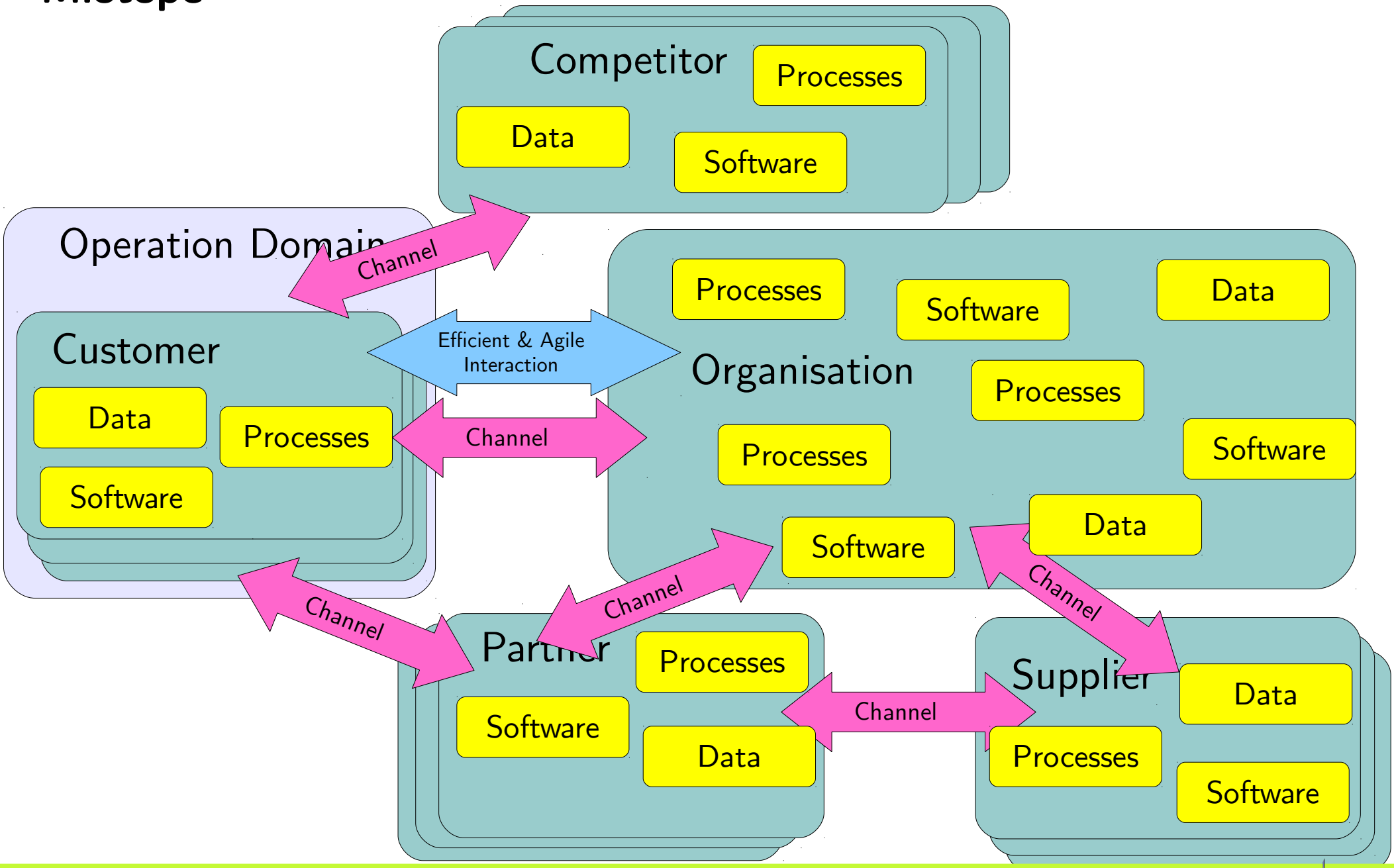
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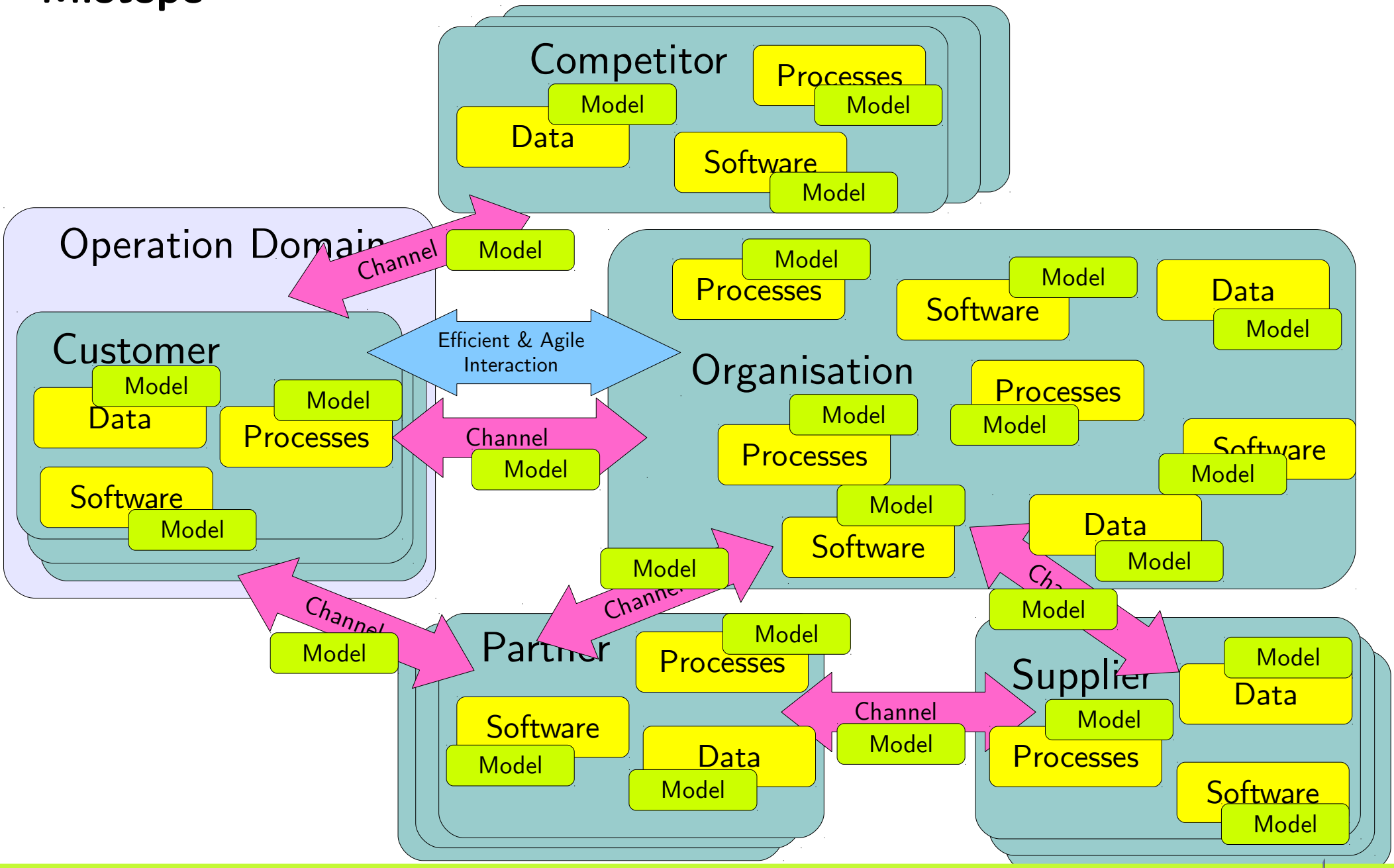
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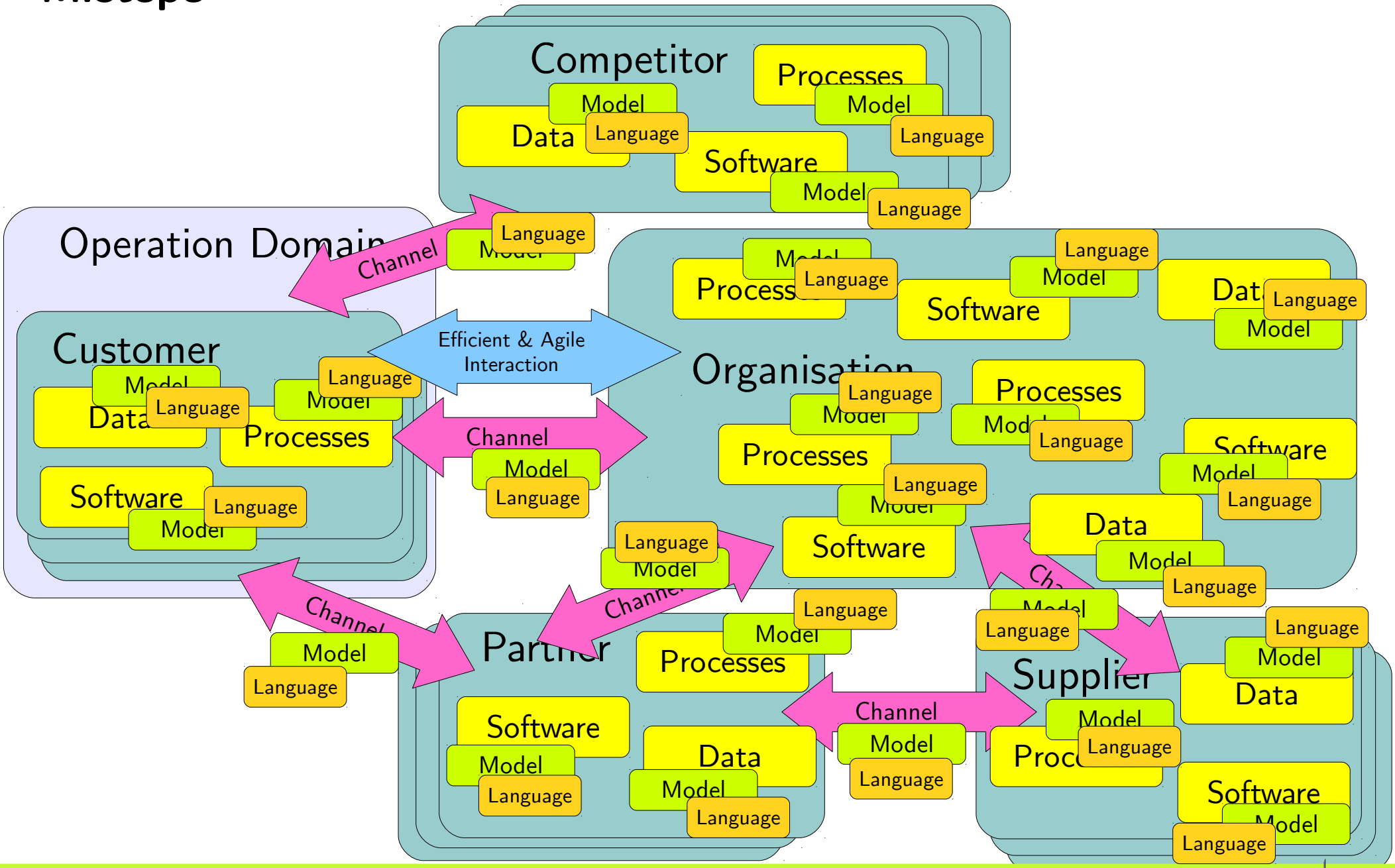
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Efficient & Agile
Interaction
Model
Data
Language
Model
Language
Processes
Channel
Model
Language
Software
Language
Model
Organisation
Language
Model
Processes
Language
Model
Processes
Language
Software
Model
Language
Data
Model
Language
Language
Model
Channel
Channel
Model
Language
Partner
Language
Model
Processes
Software
Model
Language
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Model
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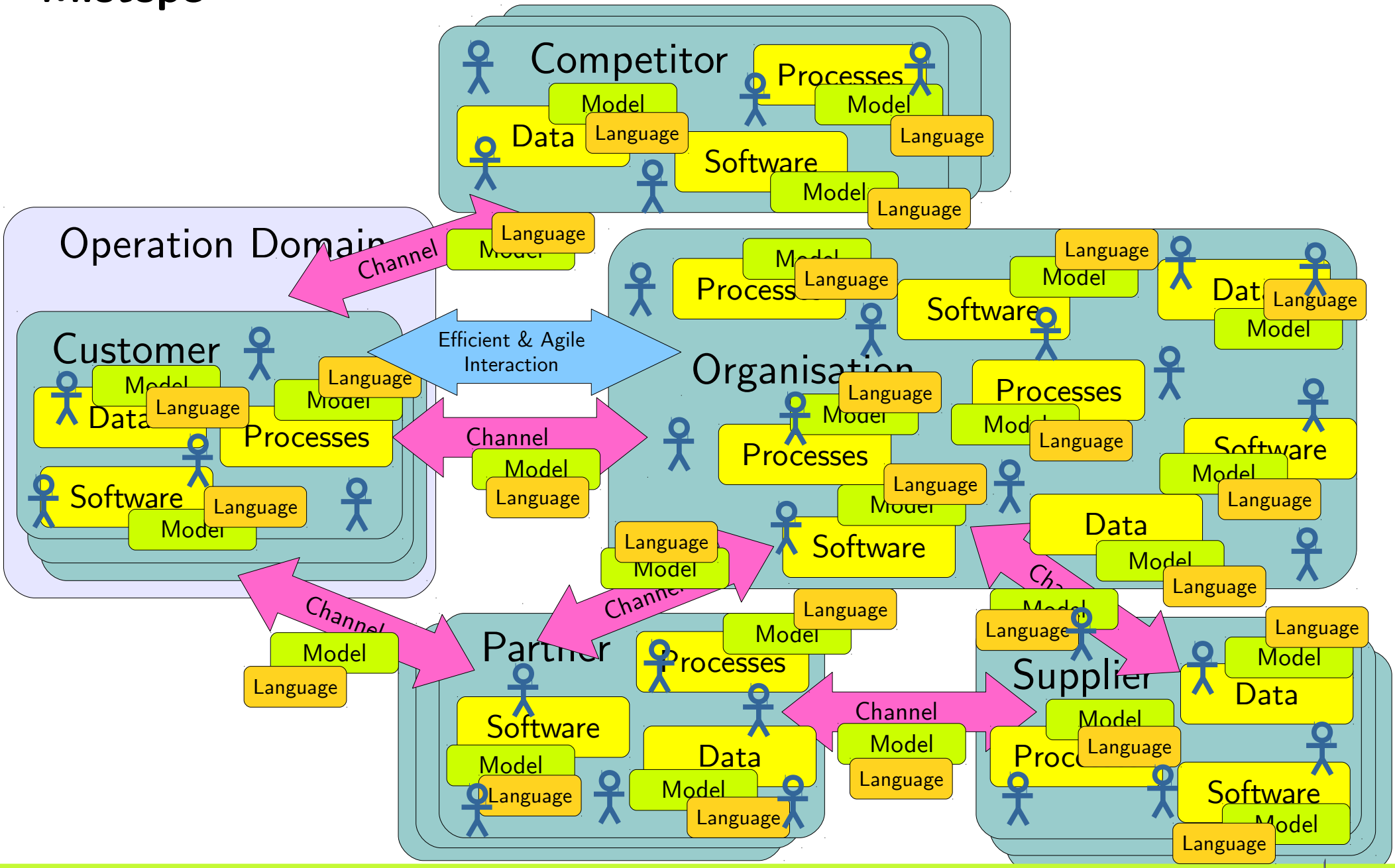
Channel
Model
Language
Supplier
Language
Model
Data
Model
Language
Software
Model
Language

Miotope


Competitor
Processes
Model
Data
Language
Software
Model
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Language
Operation Domain
Channel
Language
Customer
Efficient & Agile
Interaction
Model
Data
Language
Model
Processes
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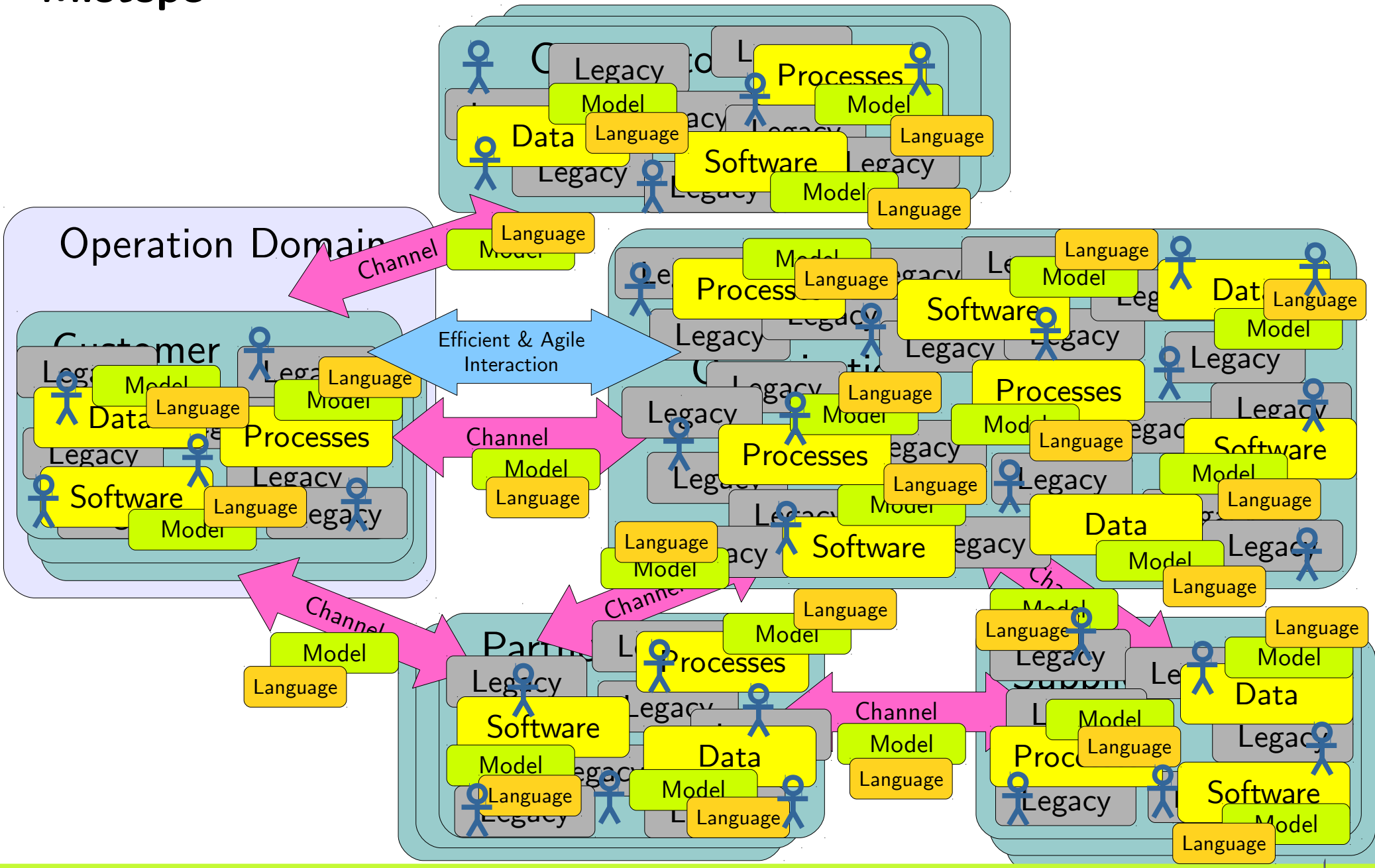
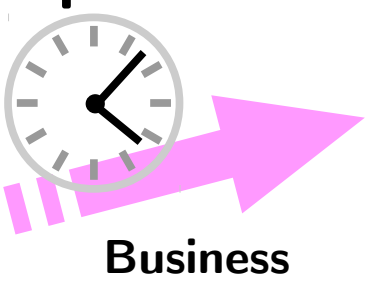
Model
Language

Miotope

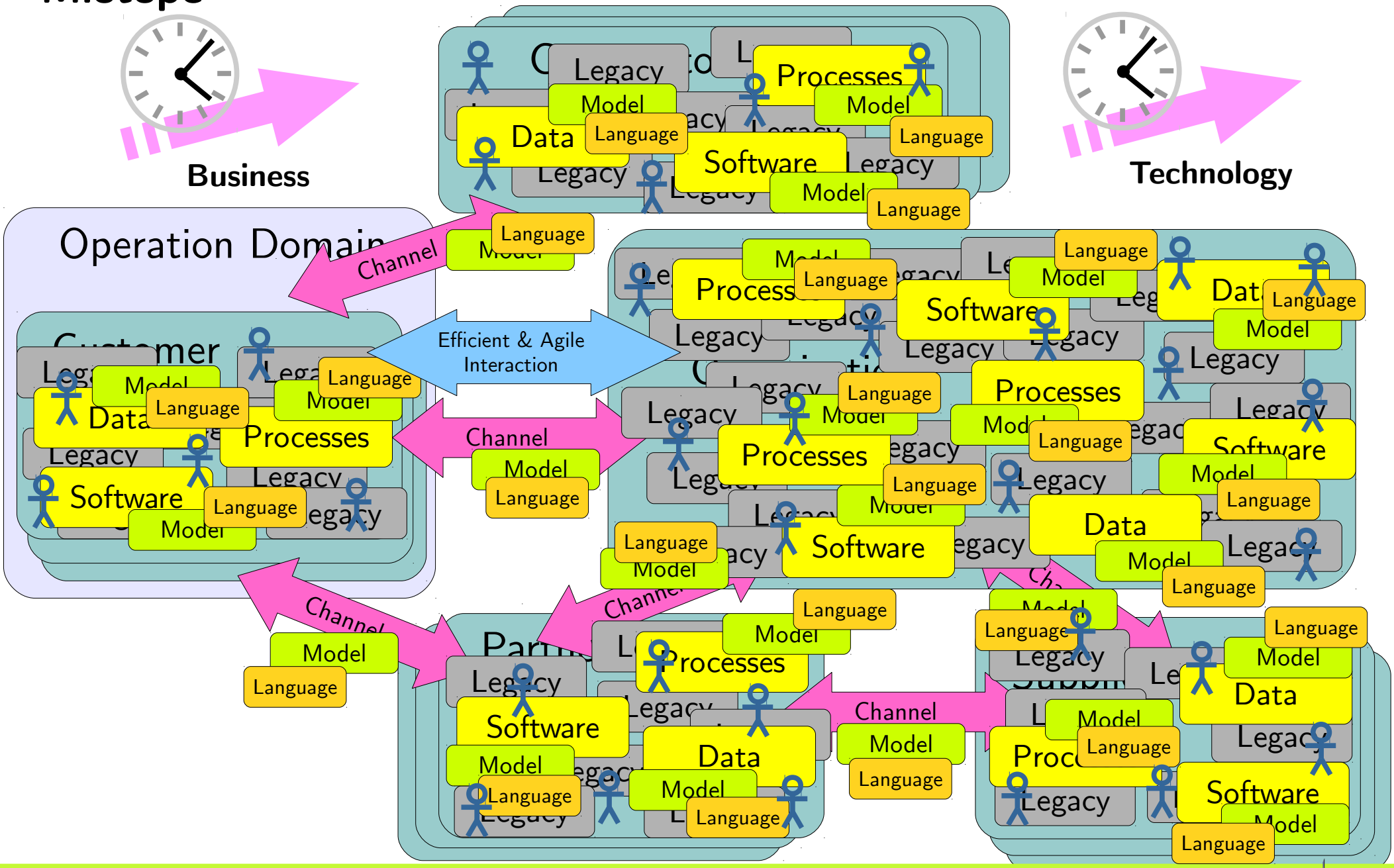

Operation Domain
Channel
Efficient & Agile Interaction
Channel
Channel
Channel
Legacy
Model
Language
Processes
Data
Software

Miotope



Business

Miotope


Business
Technology
Operation Domain
Channel
Efficient & Agile Interaction
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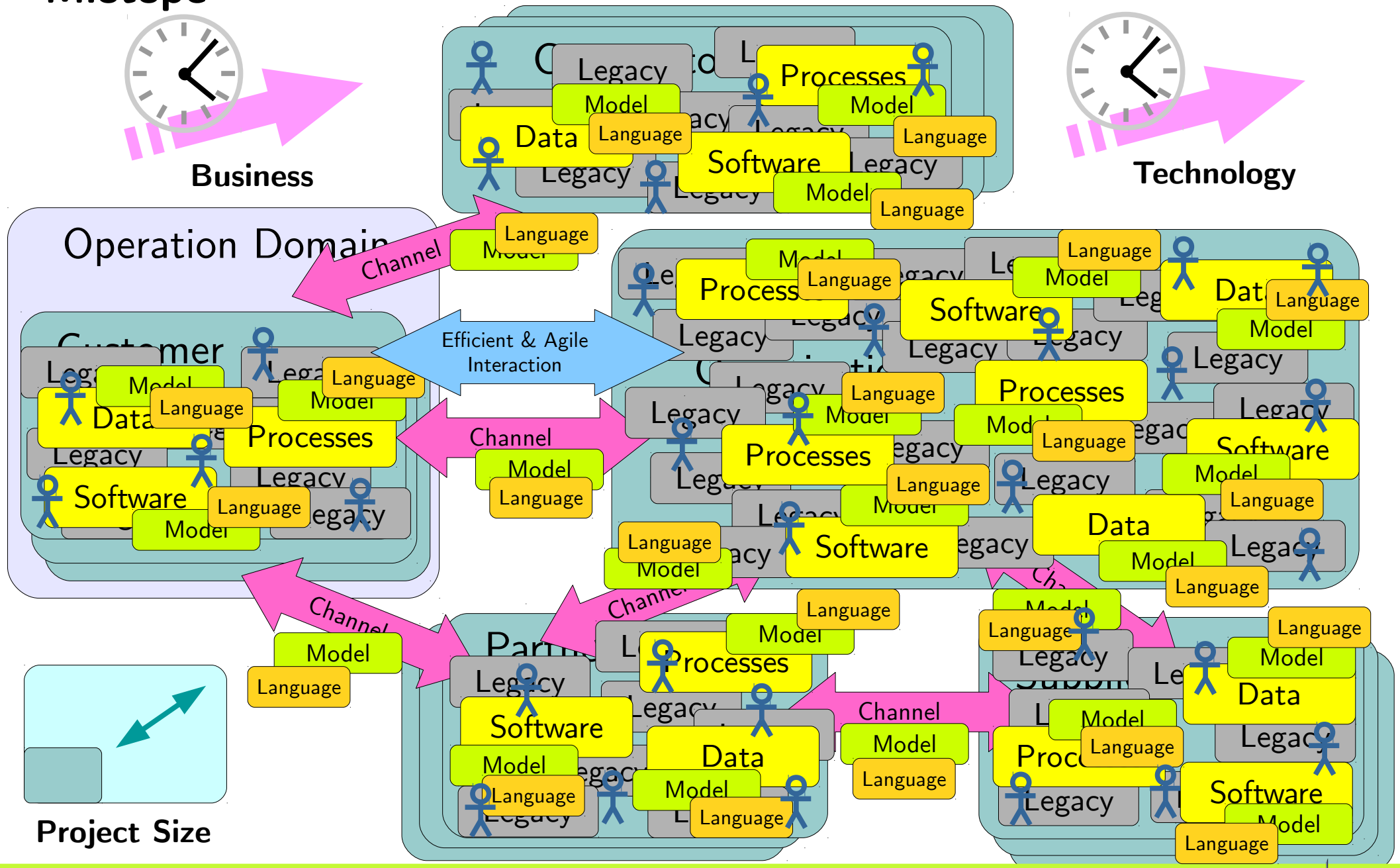
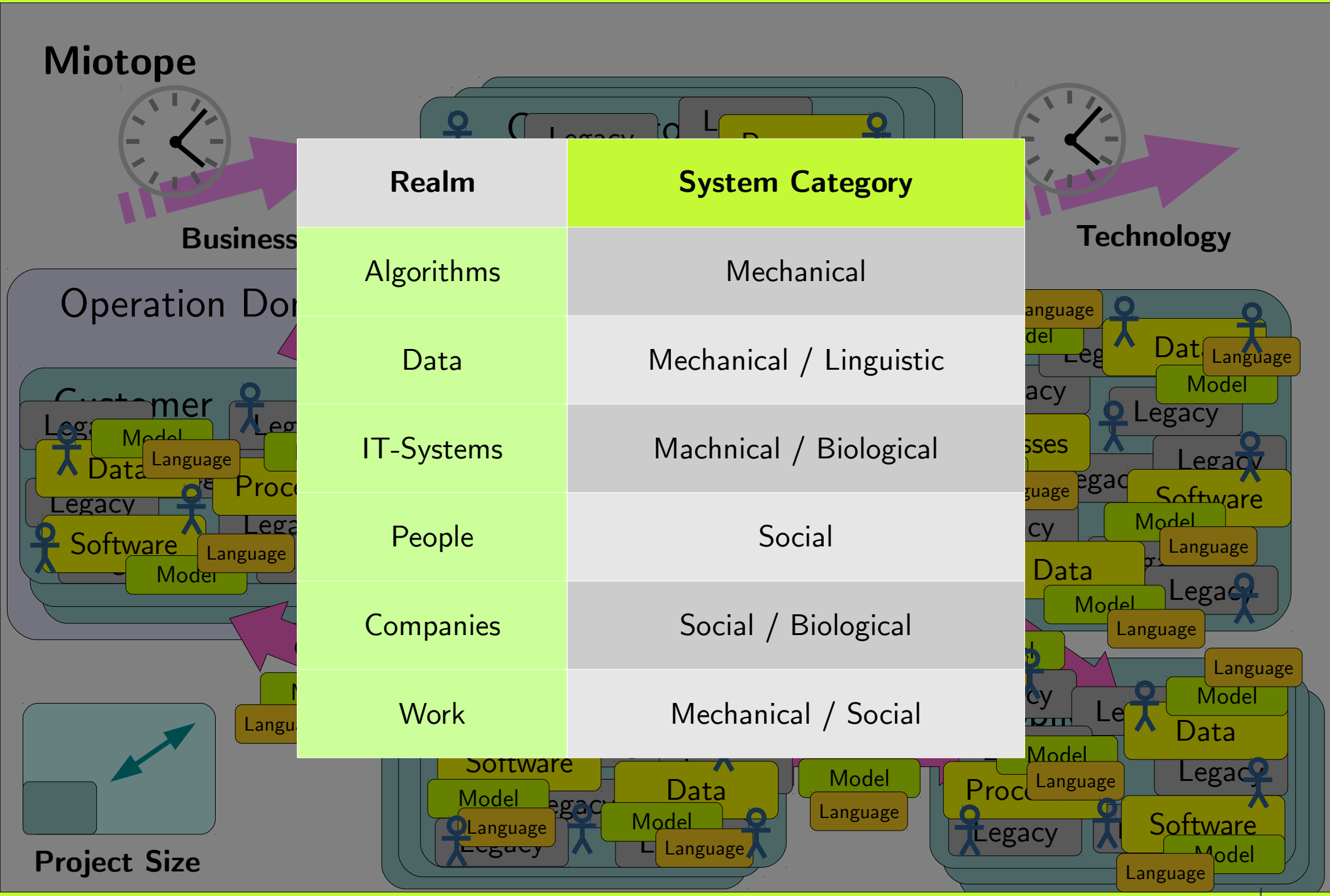
Channel
Channel
Legacy
Model
Language
Processes
Data
Software

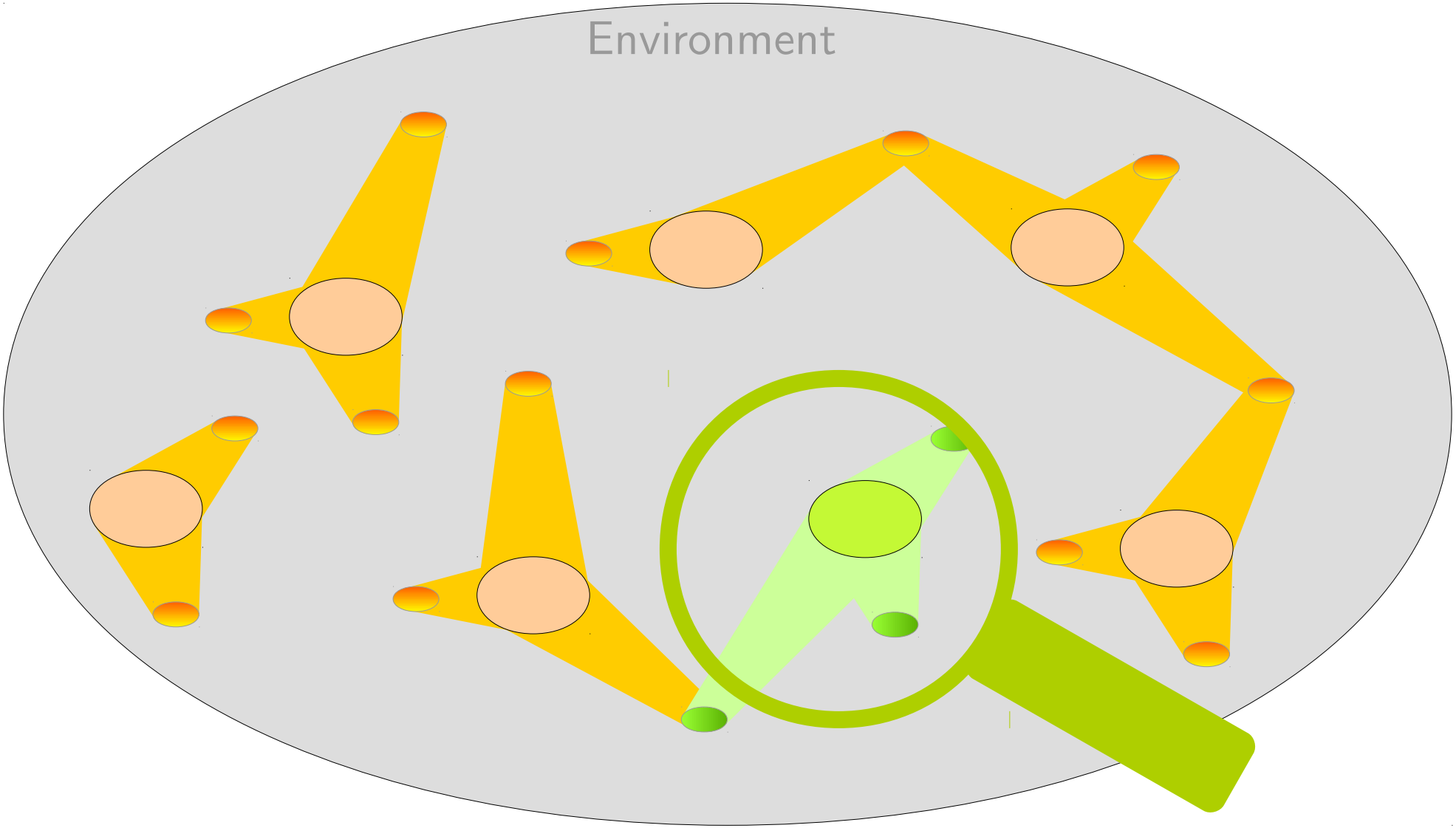

Miotope
Business
Technology
Operation Domain
Channel
Efficient & Agile Interaction
Channel
Channel
Channel
Channel
Legacy
Model
Language
Data
Software
Processes
Project Size



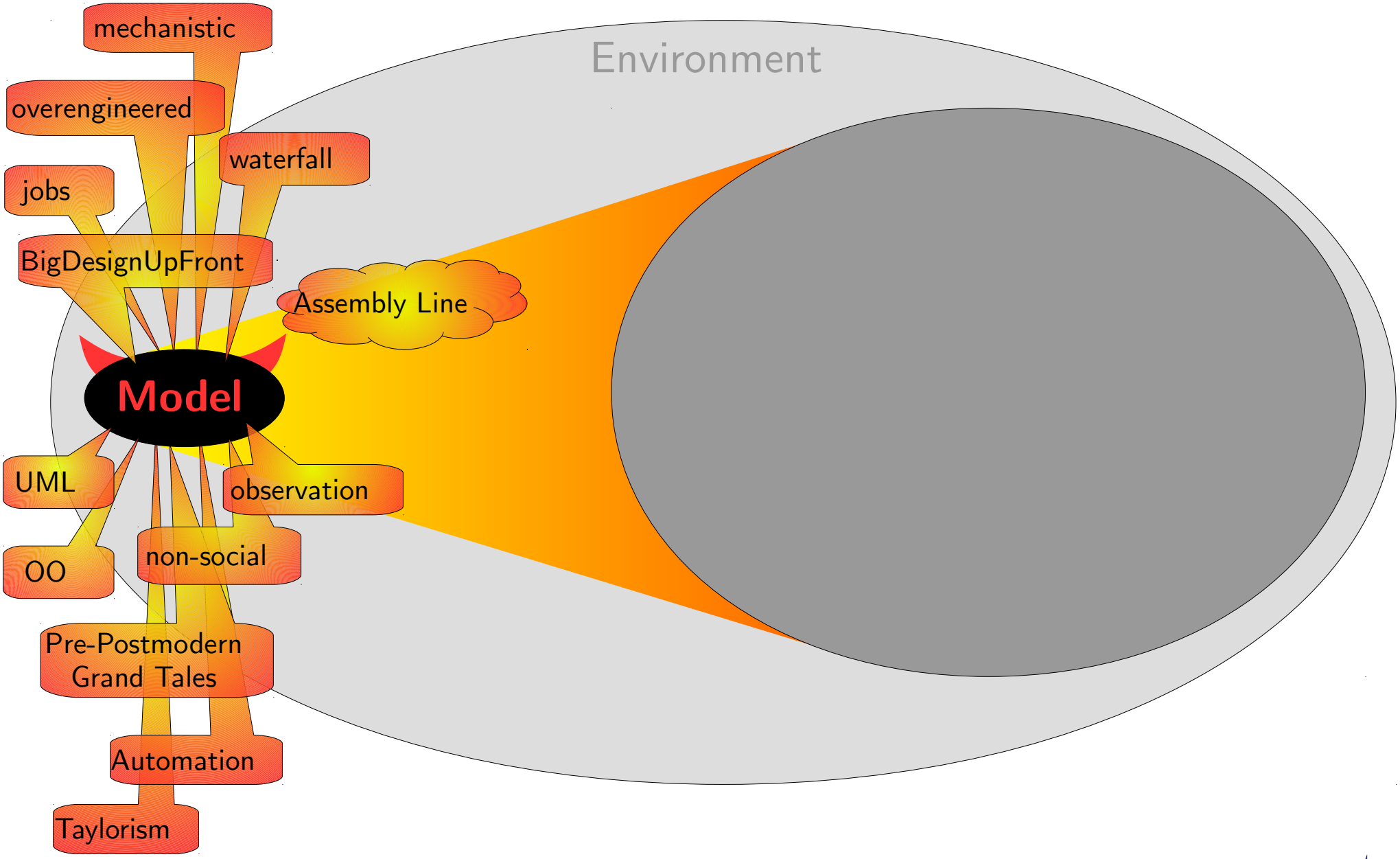
Realm	System Category
Algorithms	Mechanical
Data	Mechanical / Linguistic
IT-Systems	Machnical / Biological
People	Social
Companies	Social / Biological
Work	Mechanical / Social

Conclusions

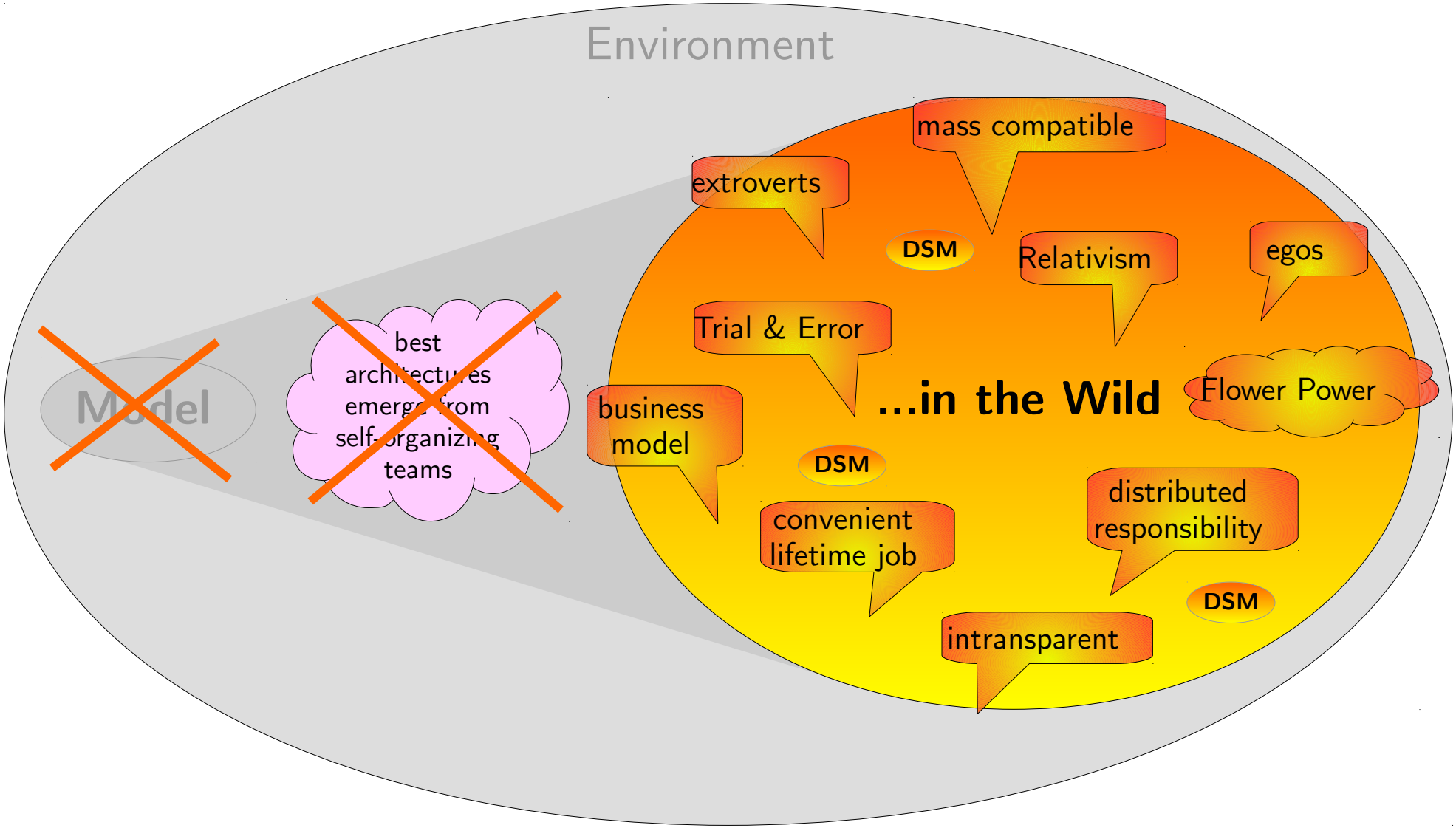
Limited Scope of Control



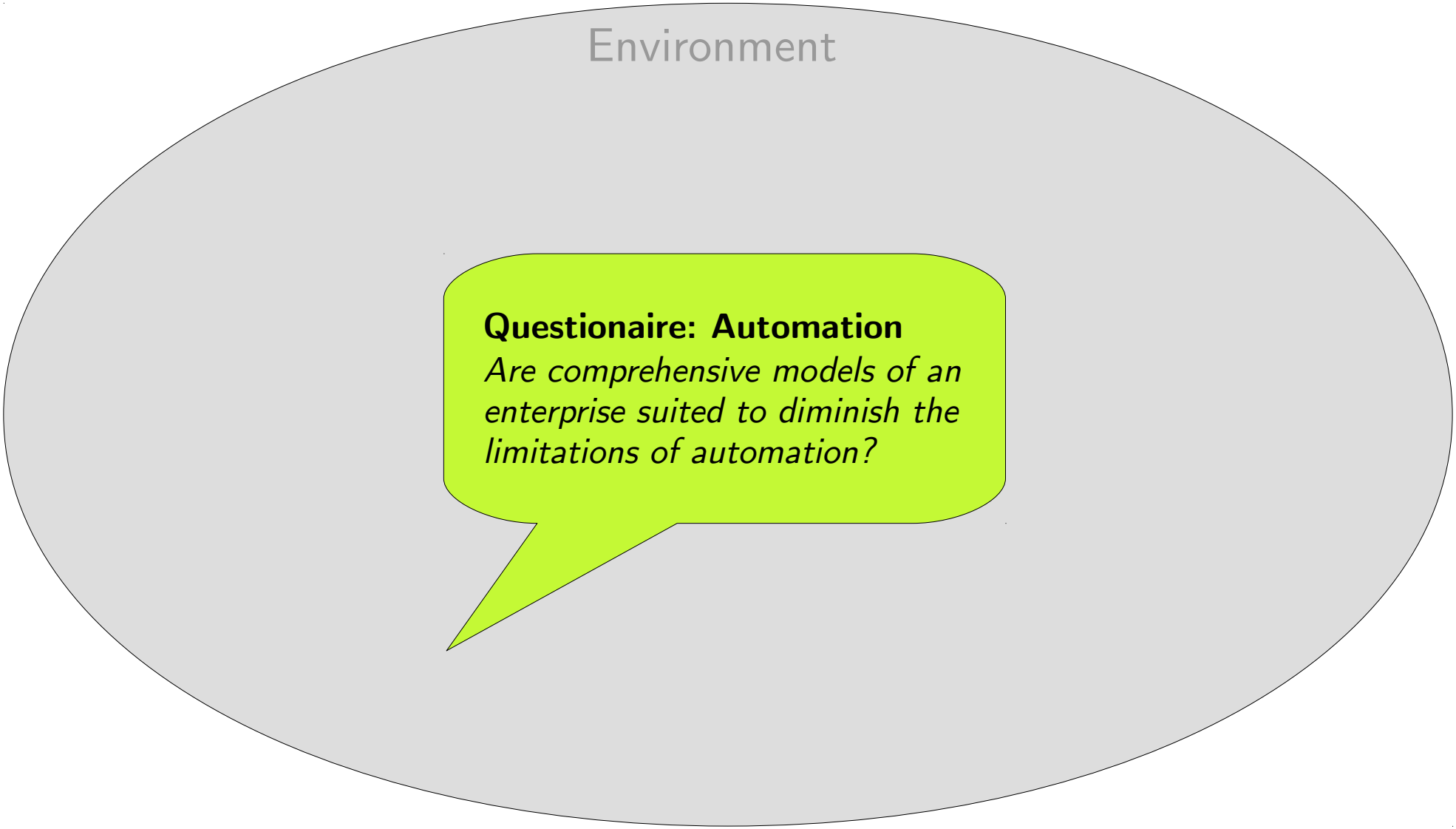
Mechanistic Models



Agile Wilderniss

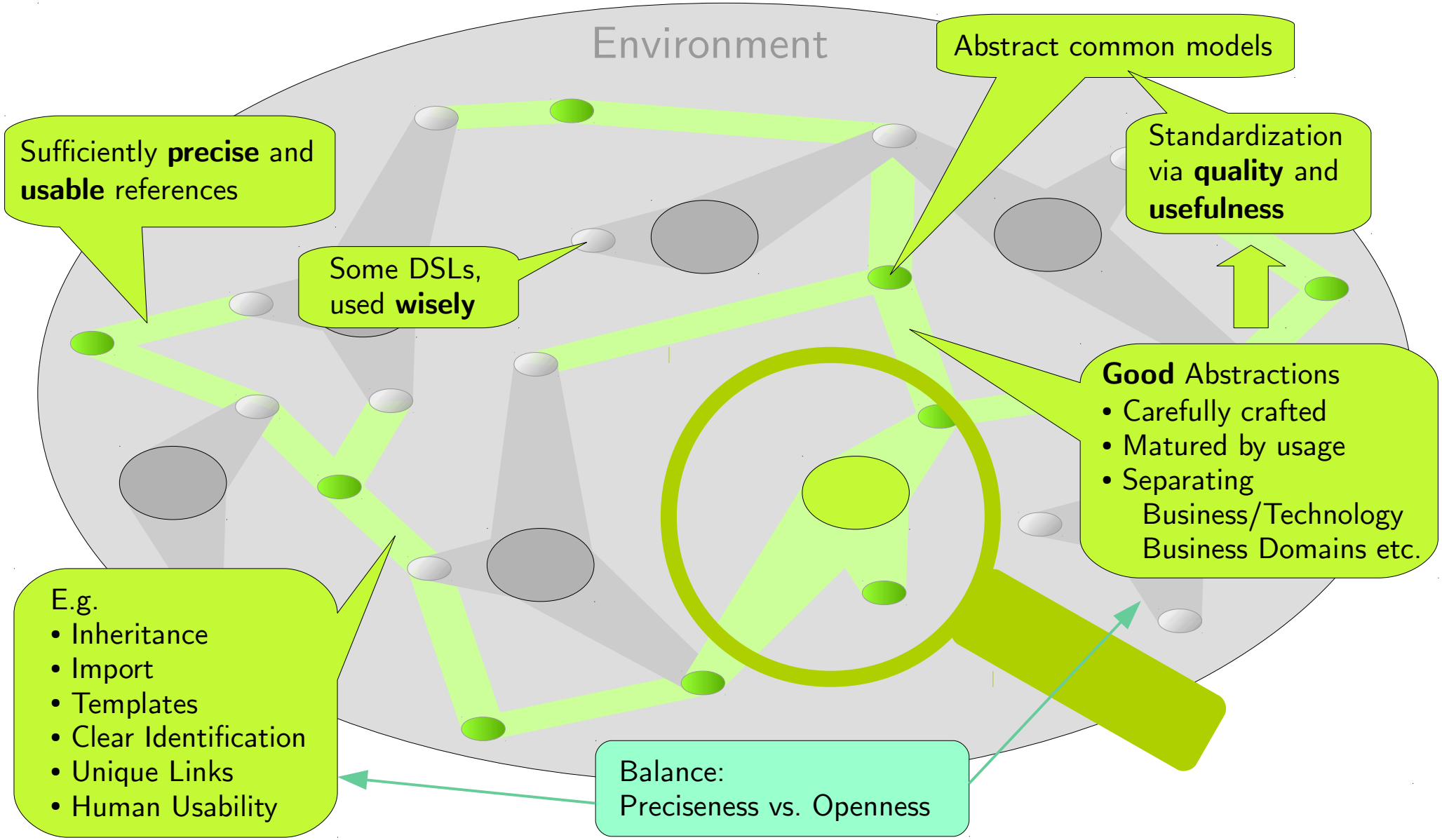


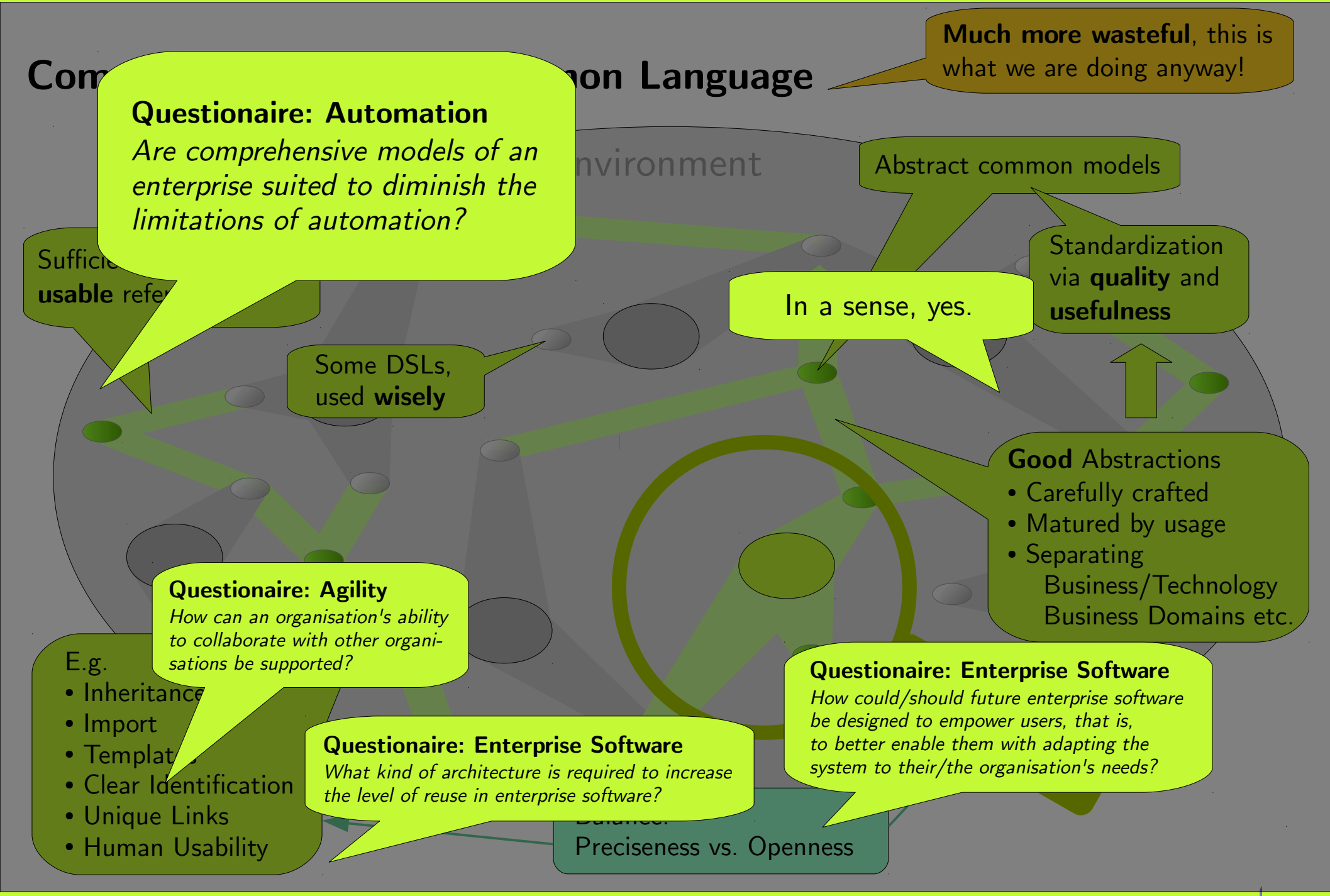
Any Chance?


Environment
Questionaire: Automation
Are comprehensive models of an enterprise suited to diminish the limitations of automation?

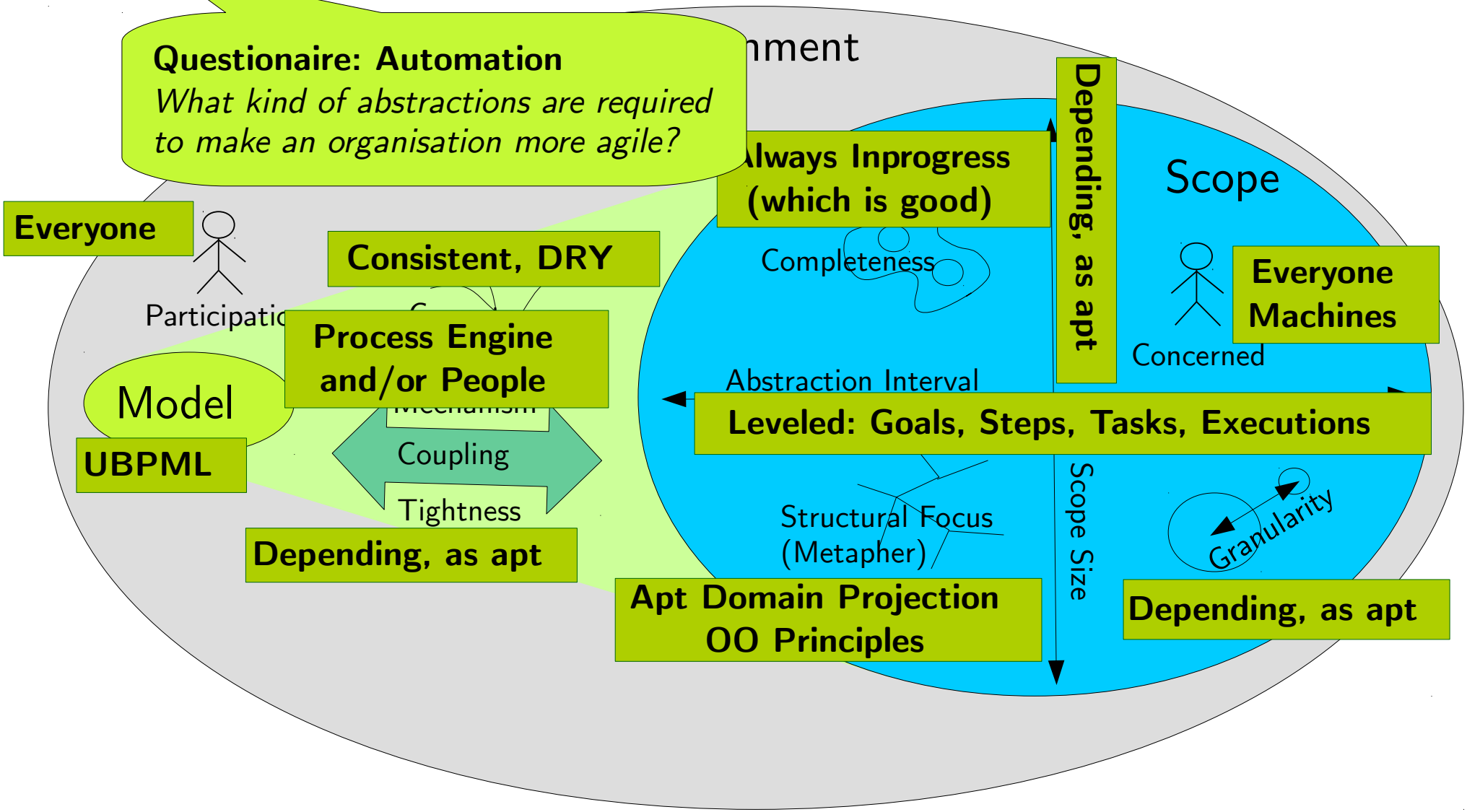
Comprehensive Model: Common Language

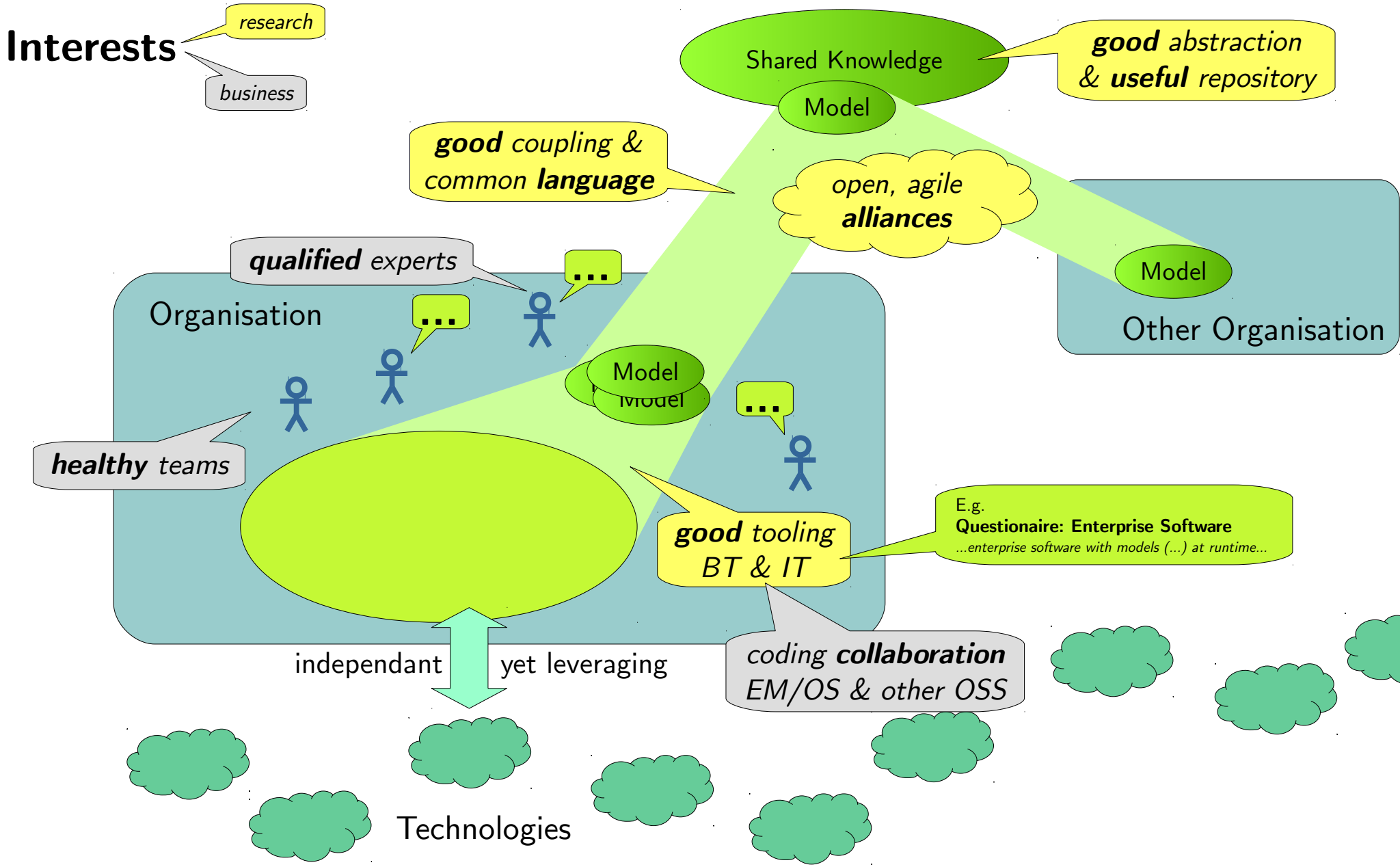
Much more wasteful, this is what we are doing anyway!




Com
non Language
Much more wasteful, this is what we are doing anyway!
Questionaire: Automation
Are comprehensive models of an enterprise suited to diminish the limitations of automation?
nvironment
Abstract common models
Standardization via quality and usefulness
In a sense, yes.
Some DSLs, used wisely
Good Abstractions
• Carefully crafted
• Matured by usage
• Separating
Business/Technology
Business Domains etc.
Questionaire: Agility
How can an organisation's ability to collaborate with other organisations be supported?
E.g.
• Inheritance
• Import
• Templat
• Clear Identification
• Unique Links
• Human Usability
Questionaire: Enterprise Software
What kind of architecture is required to increase the level of reuse in enterprise software?
Questionaire: Enterprise Software
How could/should future enterprise software be designed to empower users, that is, to better enable them with adapting the system to their/the organisation's needs?
Preciseness vs. Openness

Case Study: UBPML




Interests
research
business
Shared Knowledge
Model
good abstraction & useful repository
good coupling & common language
open, agile alliances
qualified experts
Organisation
Model
Other Organisation
Model
Model
healthy teams
good tooling BT & IT
E.g.
Questionaire: Enterprise Software
...enterprise software with models (...) at runtime...
independant
yet leveraging
coding collaboration EM/OS & other OSS
Technologies

Questionaire: Competitiveness
What is the role of models for representing an enterprise in a digital economy?

Inevitable **necessity** to increase **abstration level** of languages we use for IT & BT.

The term “Model” is debatable.