

Proactively dealing with climate change impacts in the construction sector.

A single-case study on proactive circular activities by a contracting company in the Dutch construction industry.

Gert-Jan Troost | 3 November 2020 | P5 Presentation

Nations Unies

Conférence sur les Changements Climatiques 2015

COP21/CMP11

Paris France



Climate Change

Impacts

flooding risks
overheating in cities
low air quality

Causes

population growth
industrialization
urbanisation

Nations Unies

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Paris France



‘to limit the rising of the average temperature on Earth to a maximum increase of 1.5 degrees Celsius compared to the pre-Industrial Age’

(Paris Agreement, 2015)

Potential of Construction Sector



36%

global energy use

Potential of Construction Sector



36%

global energy use



40%

global CO2-emissions

Potential of Construction Sector

36%

global energy use

40%

global CO2-emissions

1%

global growth in
CO2-emissions

The Dutch sector



‘the Netherlands should be a fully circular economy by 2050’

(Ministry of Economic Affairs and Climate, 2016)

The Dutch sector

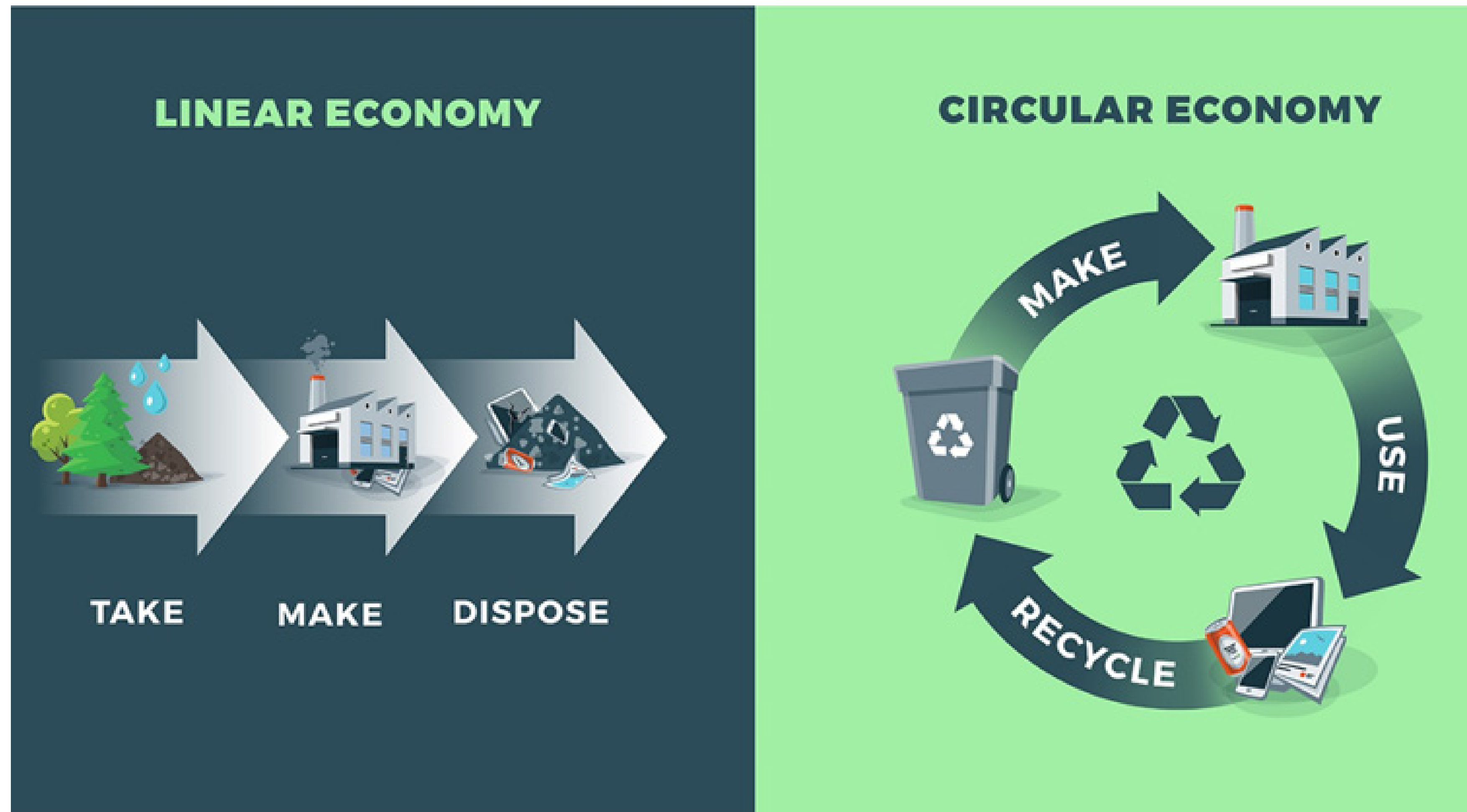


‘the Netherlands should be a fully circular economy by 2050’

(Ministry of Economic Affairs and Climate, 2016)

No more waste.

Circular Economy



(WRAP, 2018)



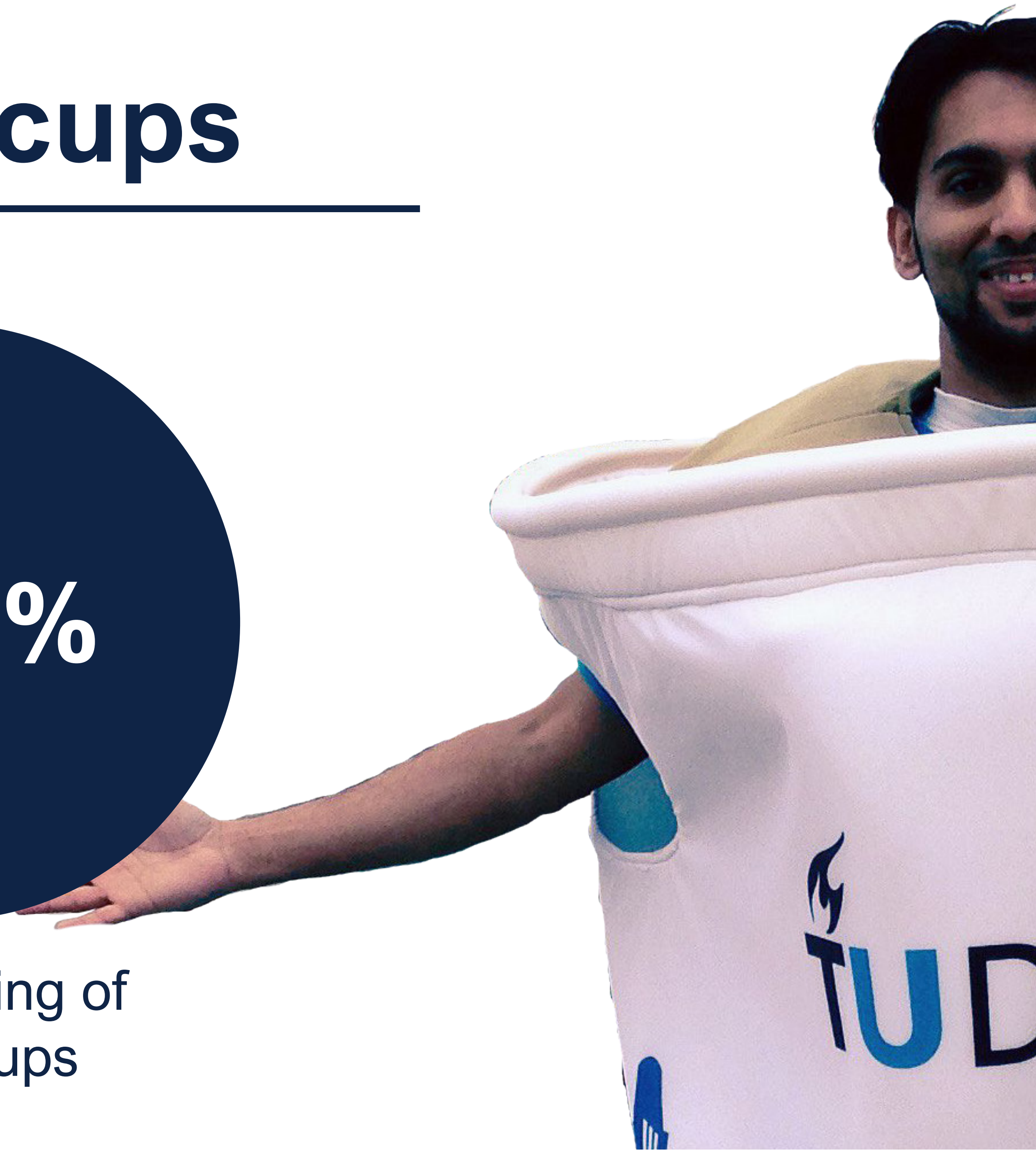
Coffee cups

**250 - 300
billion**

global paper cup
consumption

0.25%

UK recycling of
paper cups



Coffee cups

small change in behavior
can have a big impact



Coffee cups

small change in behavior
can have a big impact

common perceptions
of sustainable behavior
should be challenged



Coffee cups

small change in behavior
can have a big impact

common perceptions
of sustainable behavior
should be challenged

there are multiple ways
to address the issue at
hand



Review of previous studies

“What research has been conducted about climate change effects in the construction industry?”

Most studies consider the construction industry to take a reactive stance towards dealing with climate change effects.

Most studies are focused on policies rather than practice

Most studies are written for public actors rather than for private actors.

Most studies focus on climate change mitigation related topics rather than adaptation related topics.



Problem Statement

An increase in both climate change mitigation and climate change adaptation measures is needed in the construction sector to meet national and international targets. However, general consensus of climate change definitions, communication and cooperation on climate change knowledge and perspectives is underdeveloped in the construction industry. The industry is not known to be proactive in dealing with climate change, while knowledge on practice and aimed at private actors is scarce.

“How does a contracting company manage the implementation of circularity principles proactively?”

Sub-question 1

How are decisions, related to the implementation of circularity principles, influenced by the context in which the contracting company operates?

Sub-question 2

What circular principles can be identified that can be proactively implemented by the contracting company?

Sub-question 3

How is the implementation of circular principles within the contracting company related to its own current practices?

Sub-question 4

How can a contractor company act on circularity principles to maximize their potential?

“How does a contracting company manage the implementation of circularity principles **proactively?”**

Be Proactive!



Proactivity

“taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions.” (Crant, 2000, p. 436)

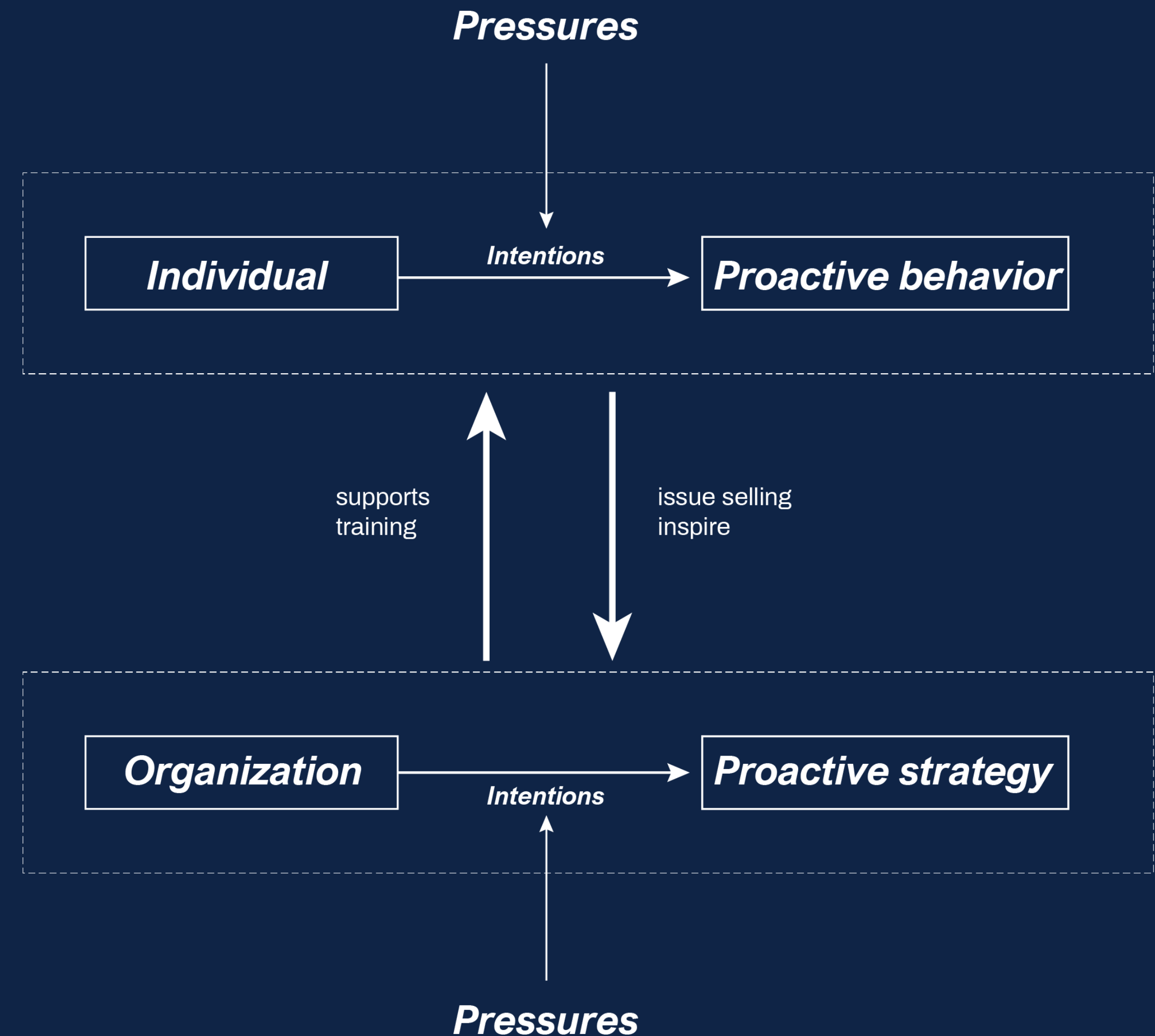
Proactivity

“taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions.” (Crant, 2000, p. 436)

- Takes place on two levels: the individual level and the group level
- They influence each other
- Pressures influence both levels as well
- Pressures come from different stakeholders, both externally as internally
- Pressures can lead to proactive behavior, but also hold this back

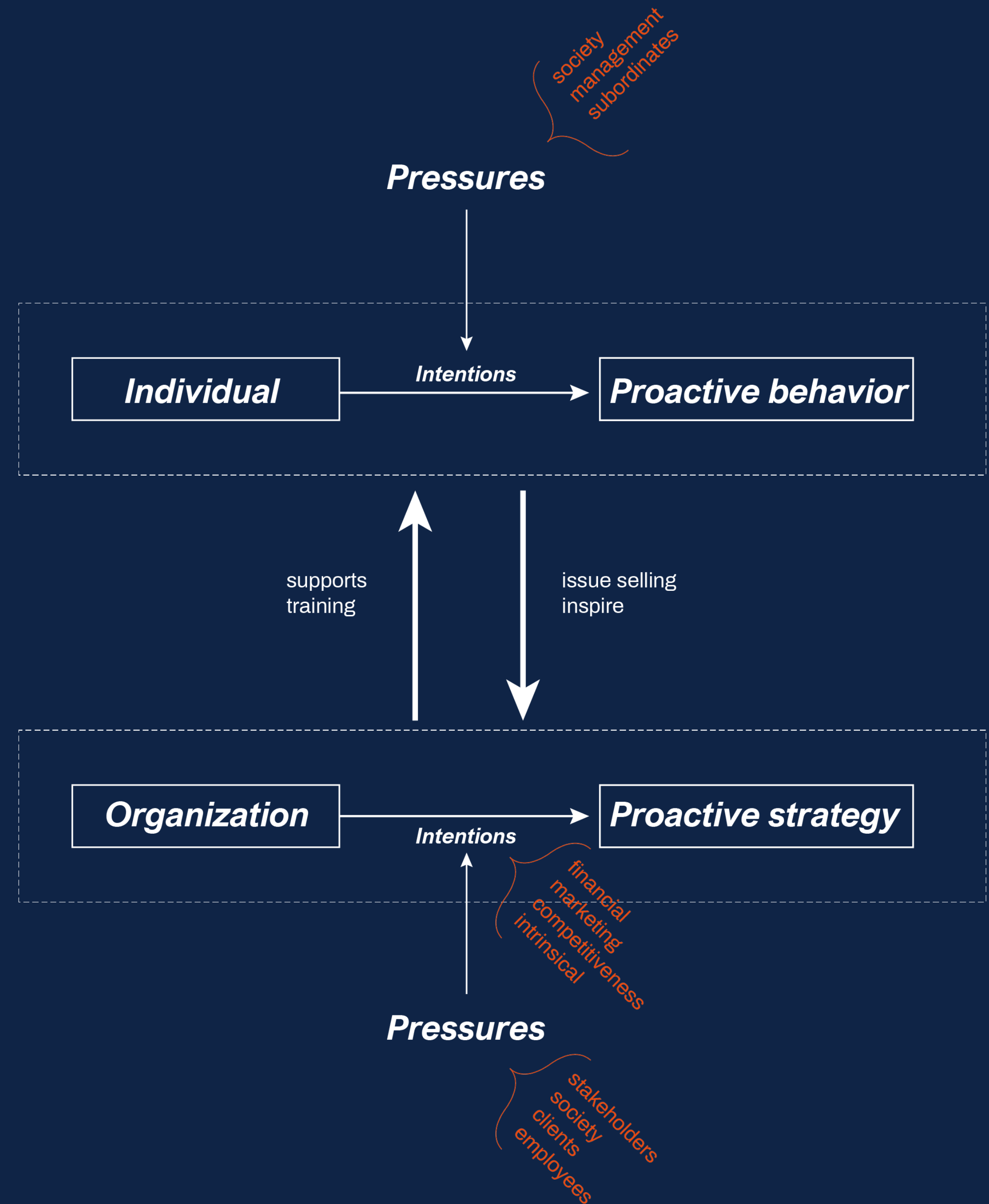
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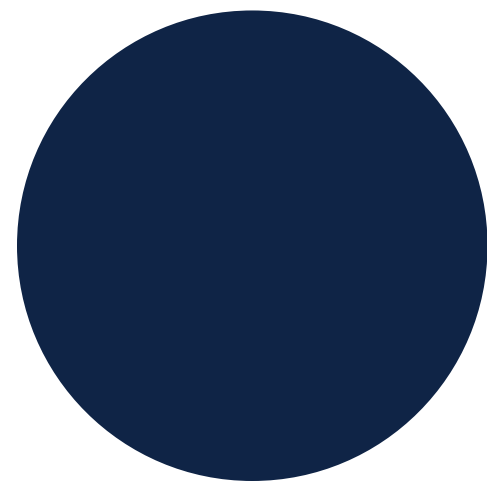


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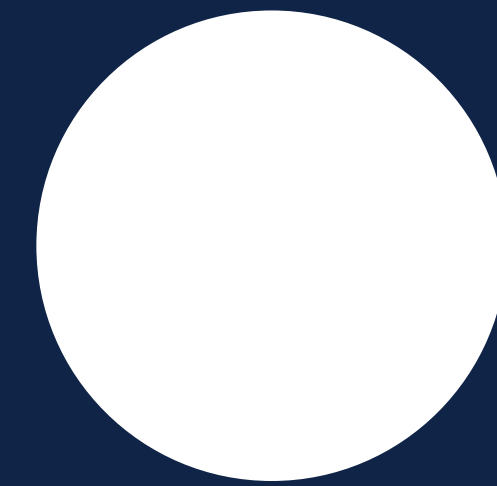
Methodology



Single case study



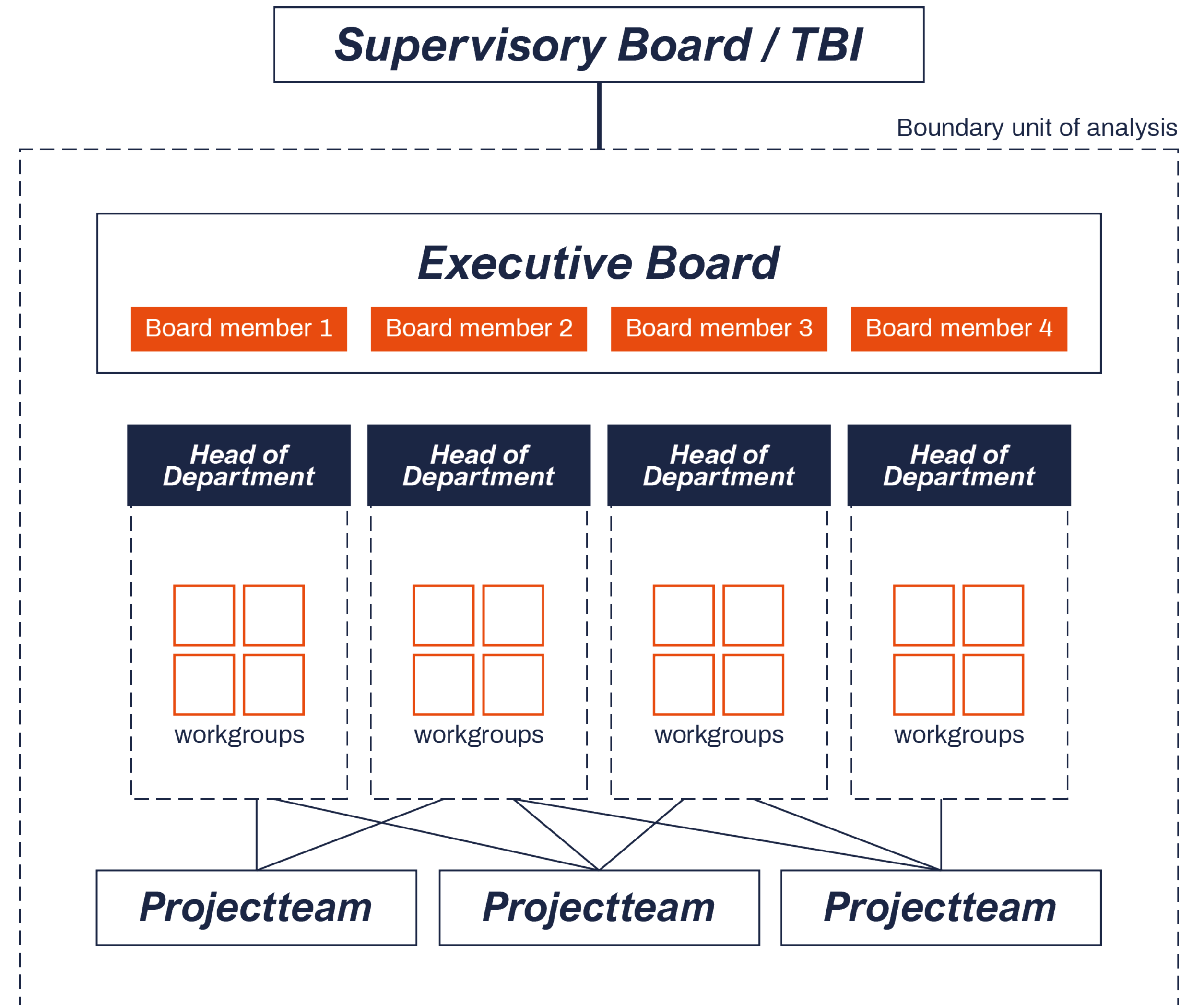
Desk Research



Interviews

Case study

J.P. van Eesteren
Part of TBI Holdings
Utility projects



Desk Research

Trends

scarcity human resources

nitrogenoxides and PFAS

technological trends

socio-ecological trends

Pressures

market pressure

regulatory pressure

market pressure

- 1) regulatory
- 2) societal and political
- 3) financial

Interviews

Part of project team

Not environmentally but mainly
commercially motivated

Supported by project manager
who was also the company's
'innovation manager'

Now taken up in J.P.'s strategy.



Interviews



Part of middle management

Appointed someone to
experiment

Financially motivated

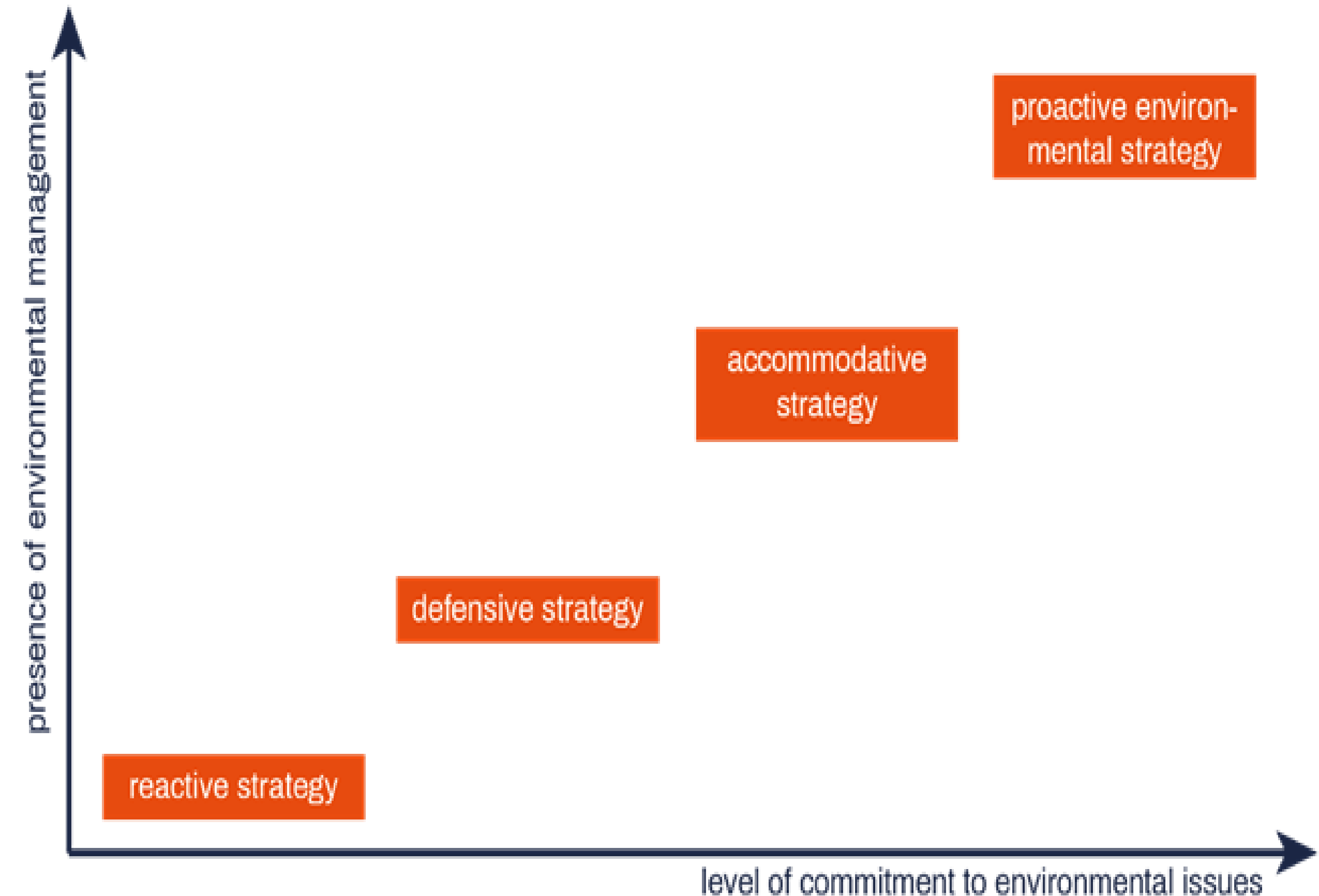
Promoted amongst other project
managers and foremen, but
without success.

Discussion of Findings

Sub-question 1

How are decisions, related to the implementation of circularity principles, influenced by the context in which the contracting company operates?

- TBI Holdings is an important driver
- Market demand holds back their adoption of circular practices



Sub-question 2

What circular principles can be identified that can be proactively implemented by the contracting company?

- Phase in building process
- Role in building process
- What is in control

Sub-question 3

How is the implementation of circular principles within the contracting company related to its own current practices?

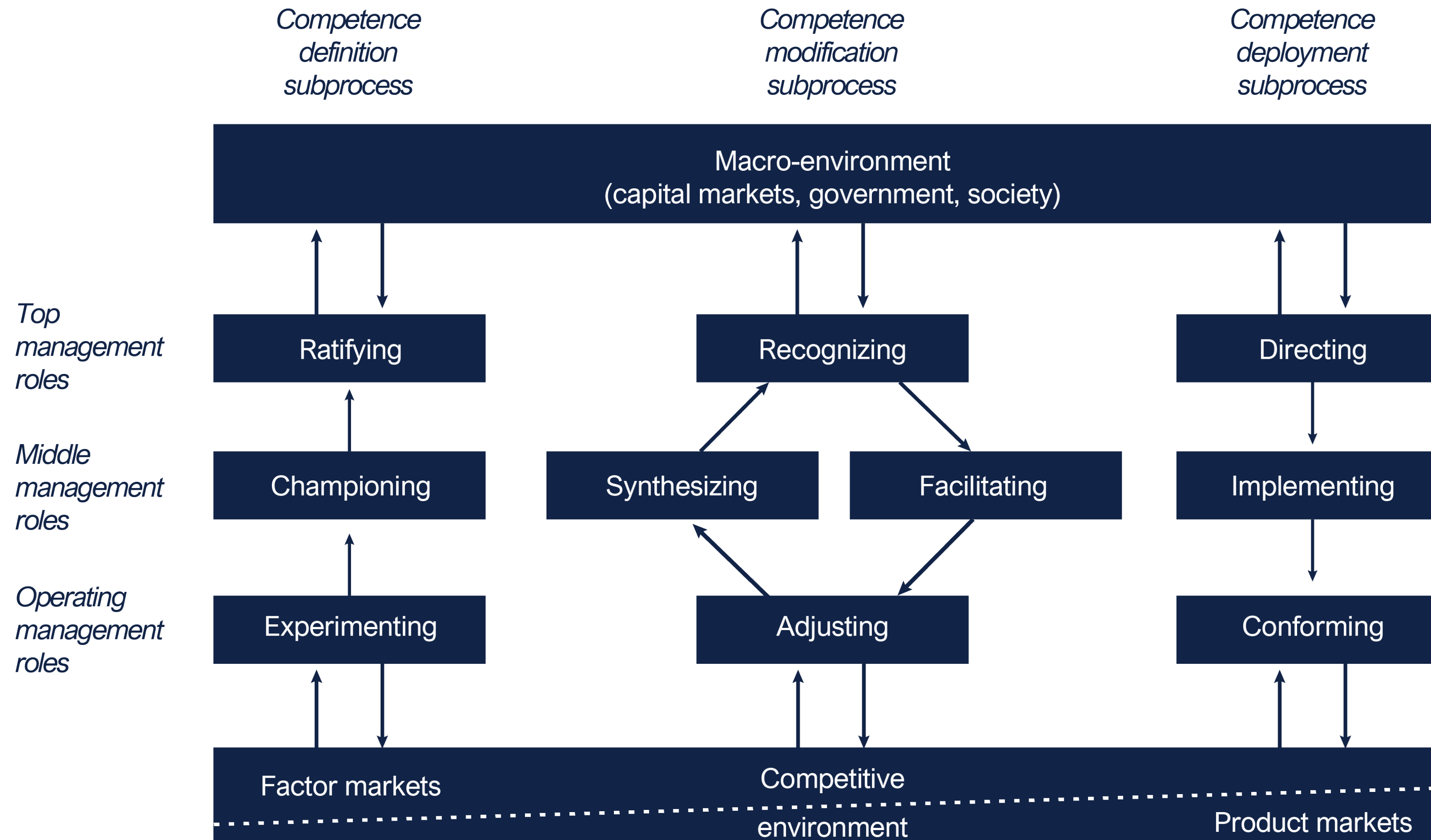
Organizational culture:
'(the perception of) a supportive organizational culture helps promoting issue selling behavior, whereas conservative organizational cultures makes people hesitant to issue selling.' (Crant, 2000, p.449)

'Organizational culture can be a potential barrier to environmental practices. Lack of capabilities in knowledge and training can lead to the company responding inaccurately to pressures for the adoption of environmental practices.' (Sarkis et al., 2010, p. 165)

Sub-question 4

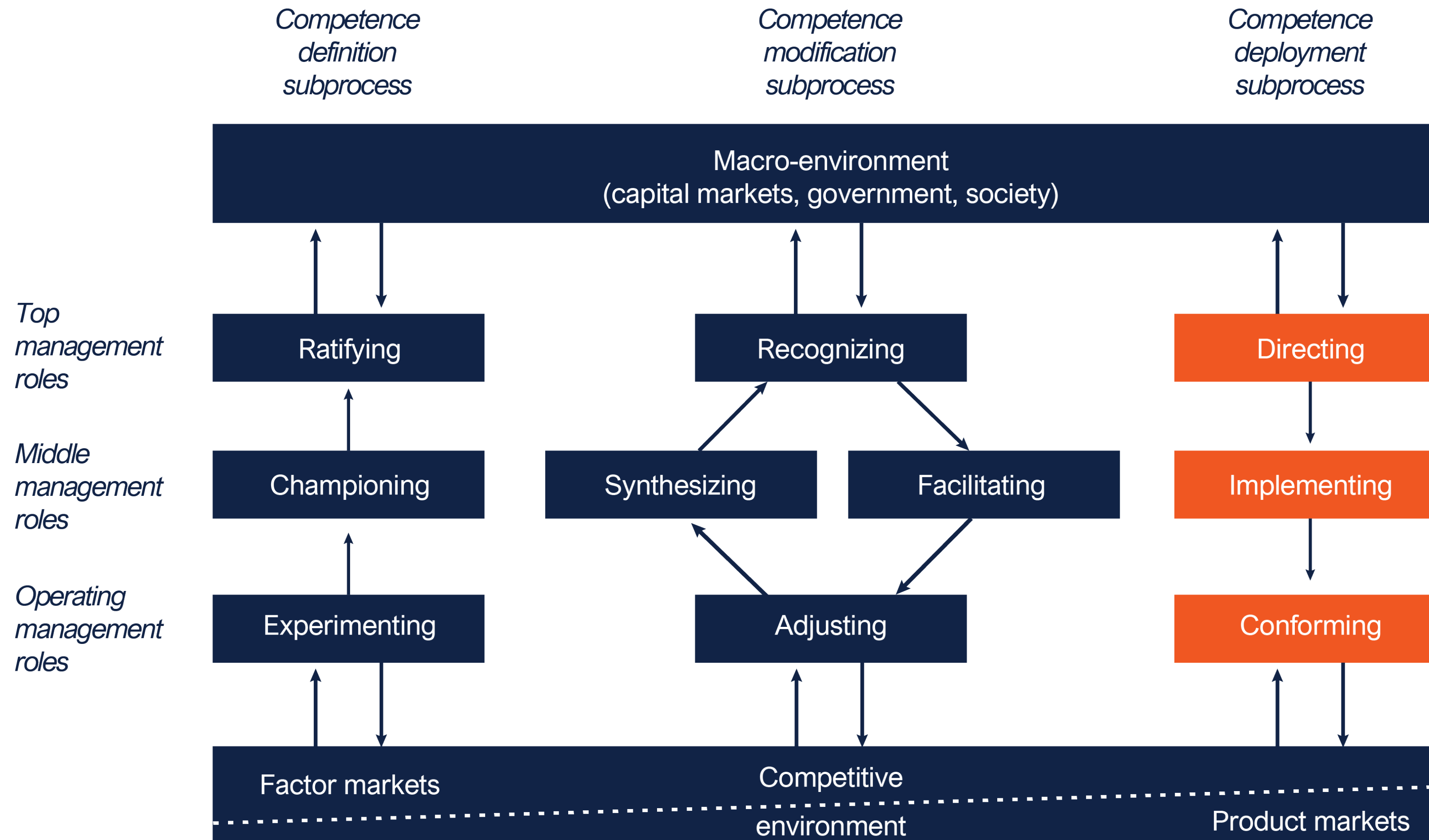
How can a contractor company act on circularity principles to maximize their potential?

Sub-question 4



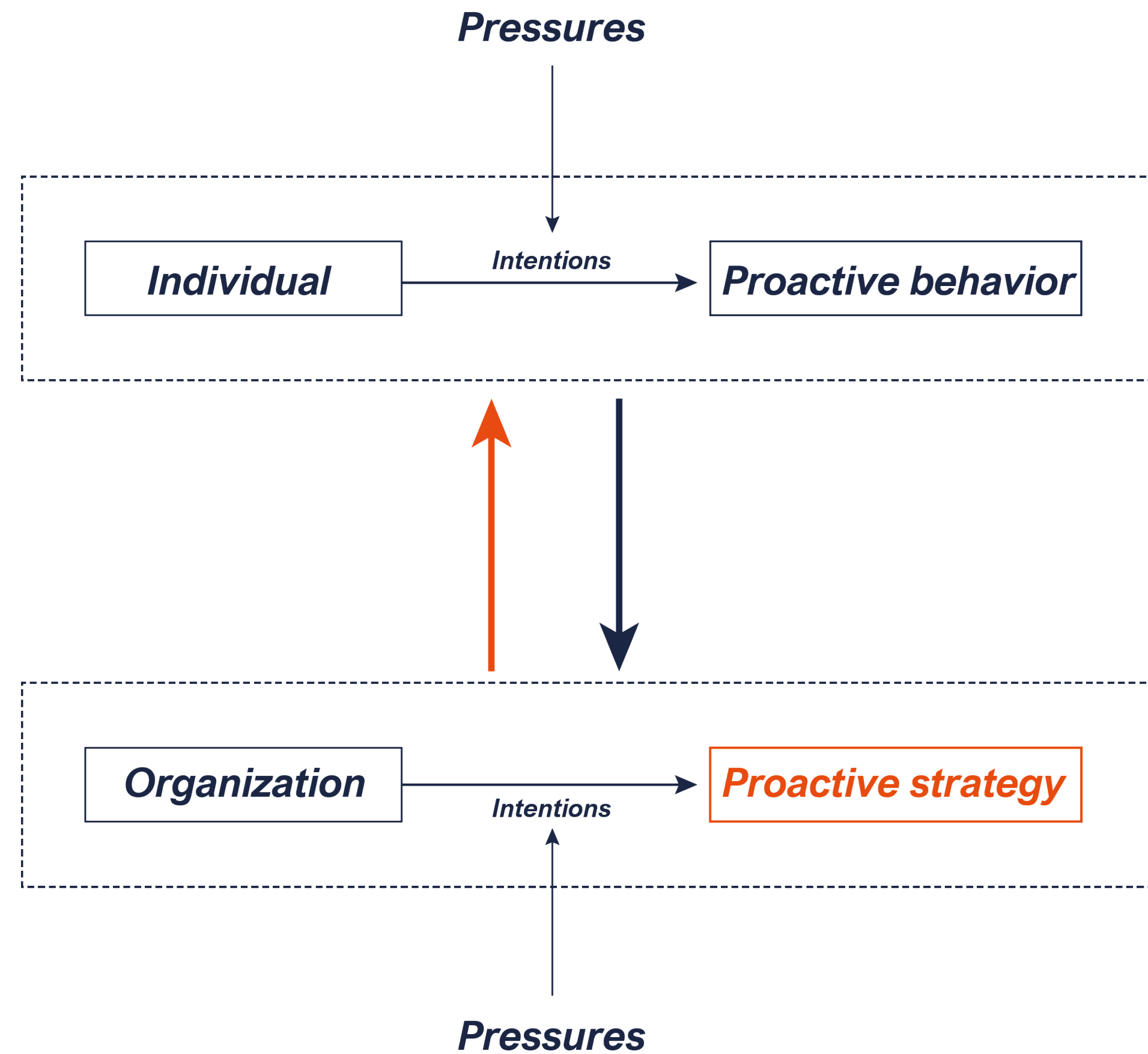
Floyd, S.W. & Lane, P.J. (2000). Strategizing throughout the organization:
Managing role conflict in strategic renewal.

Sub-question 4

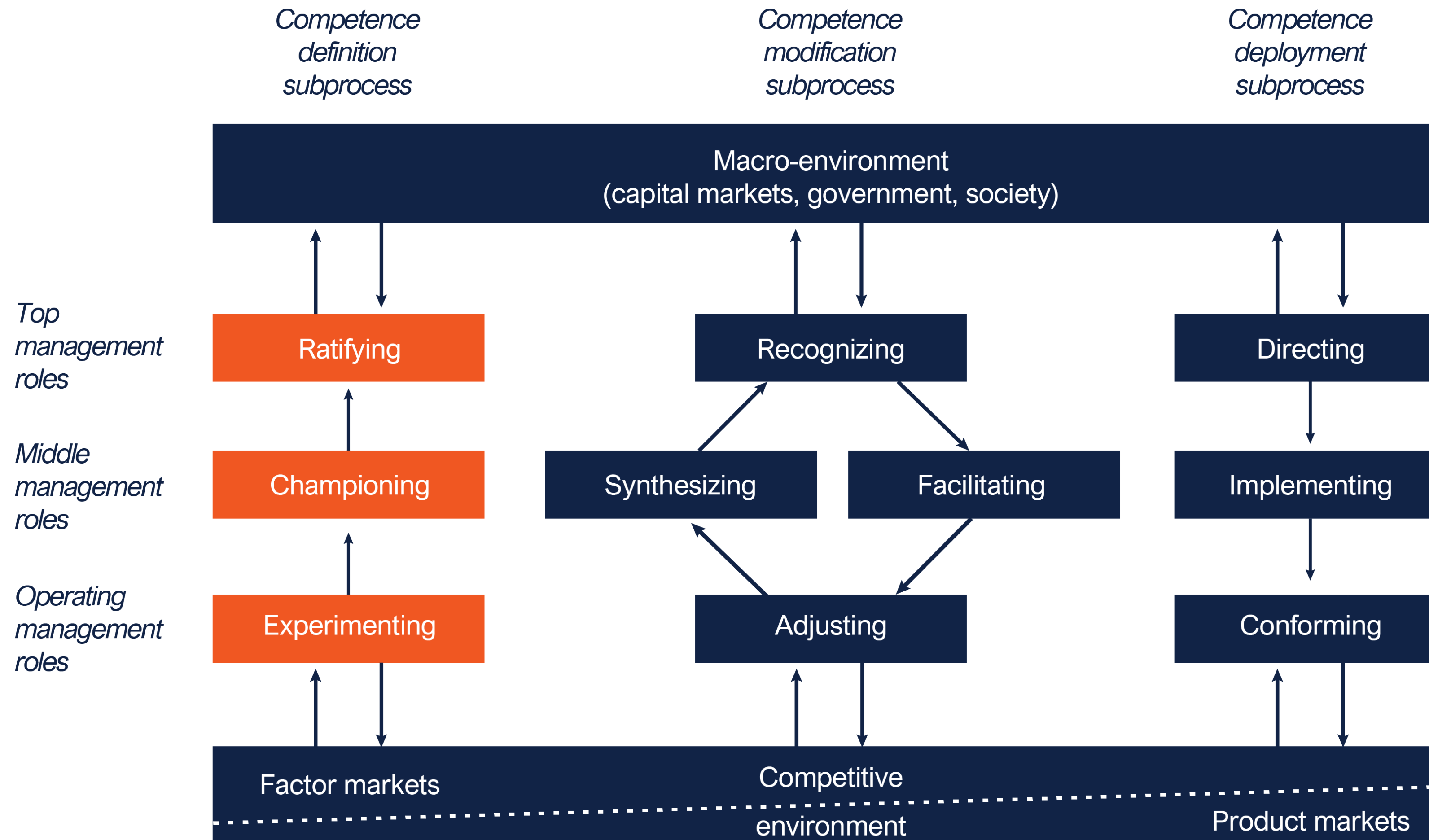


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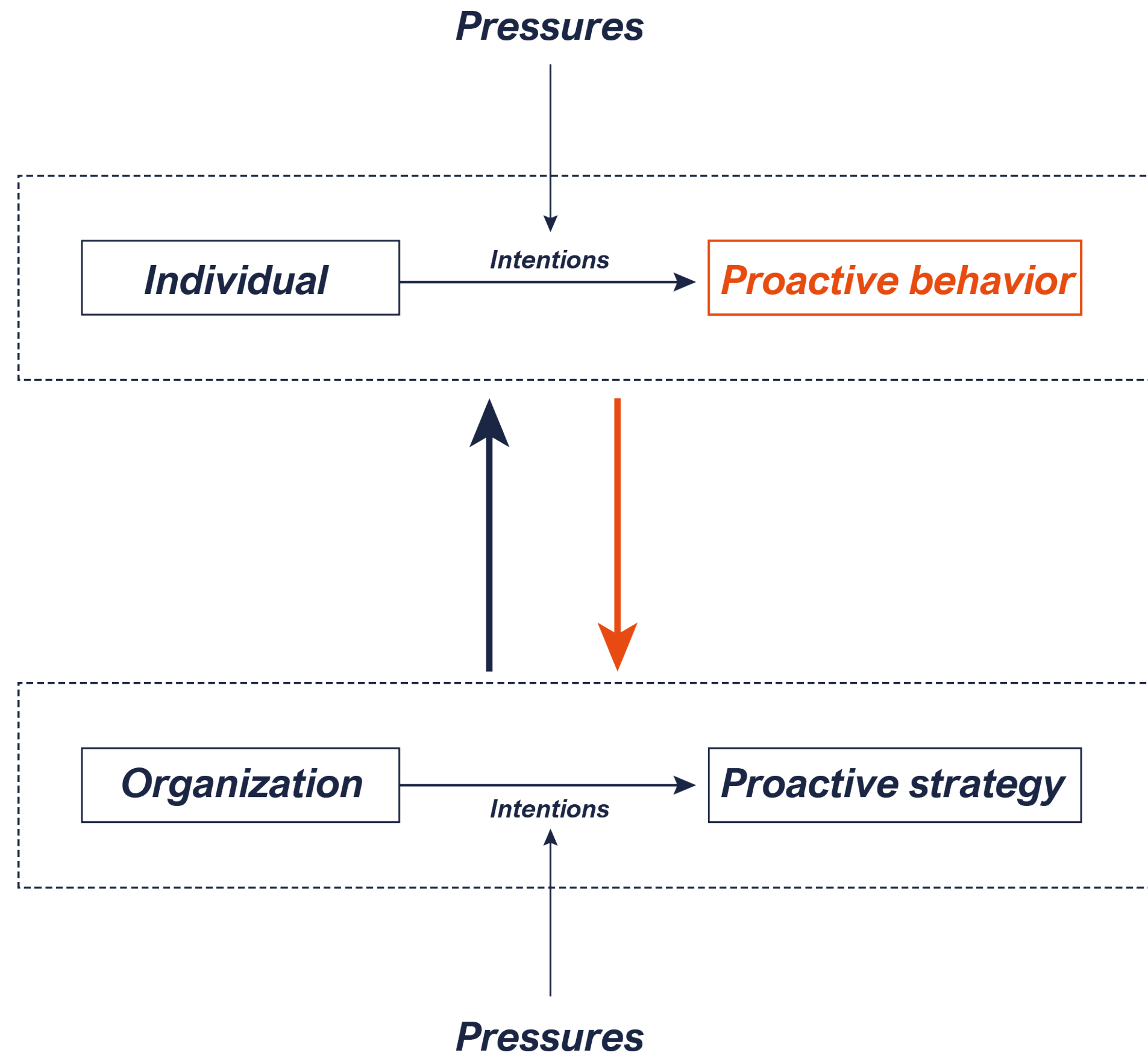


Sub-question 4

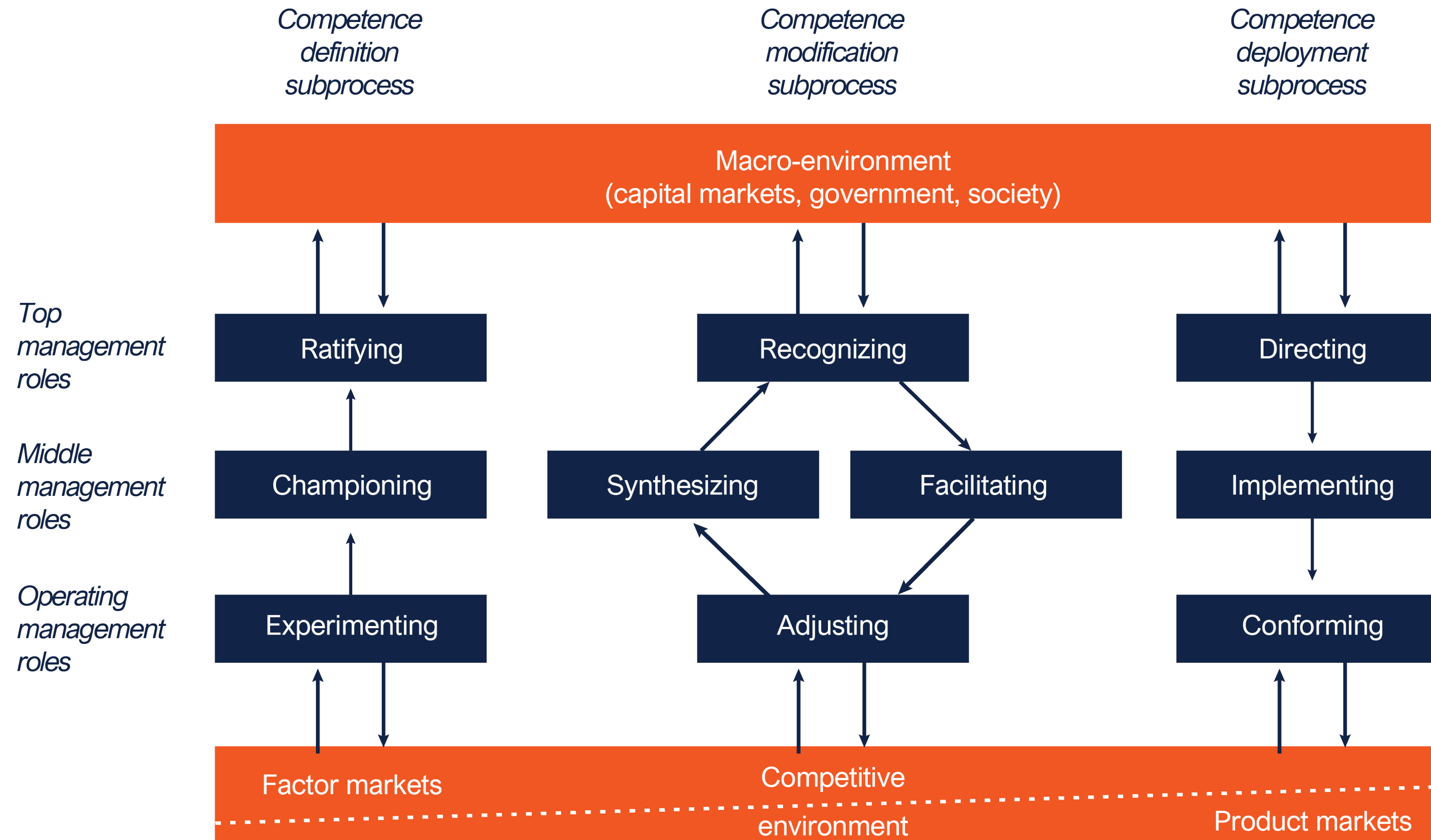


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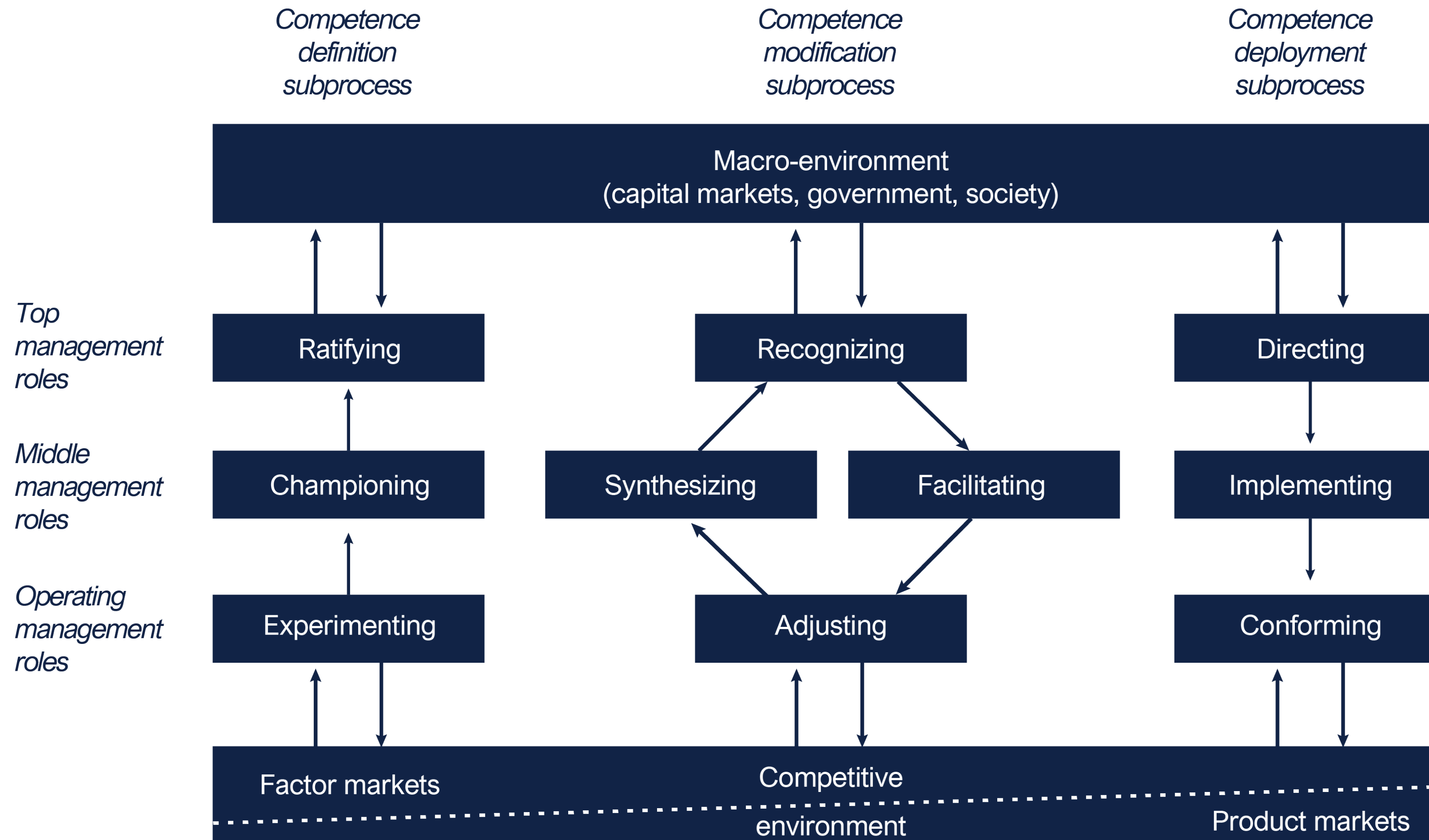


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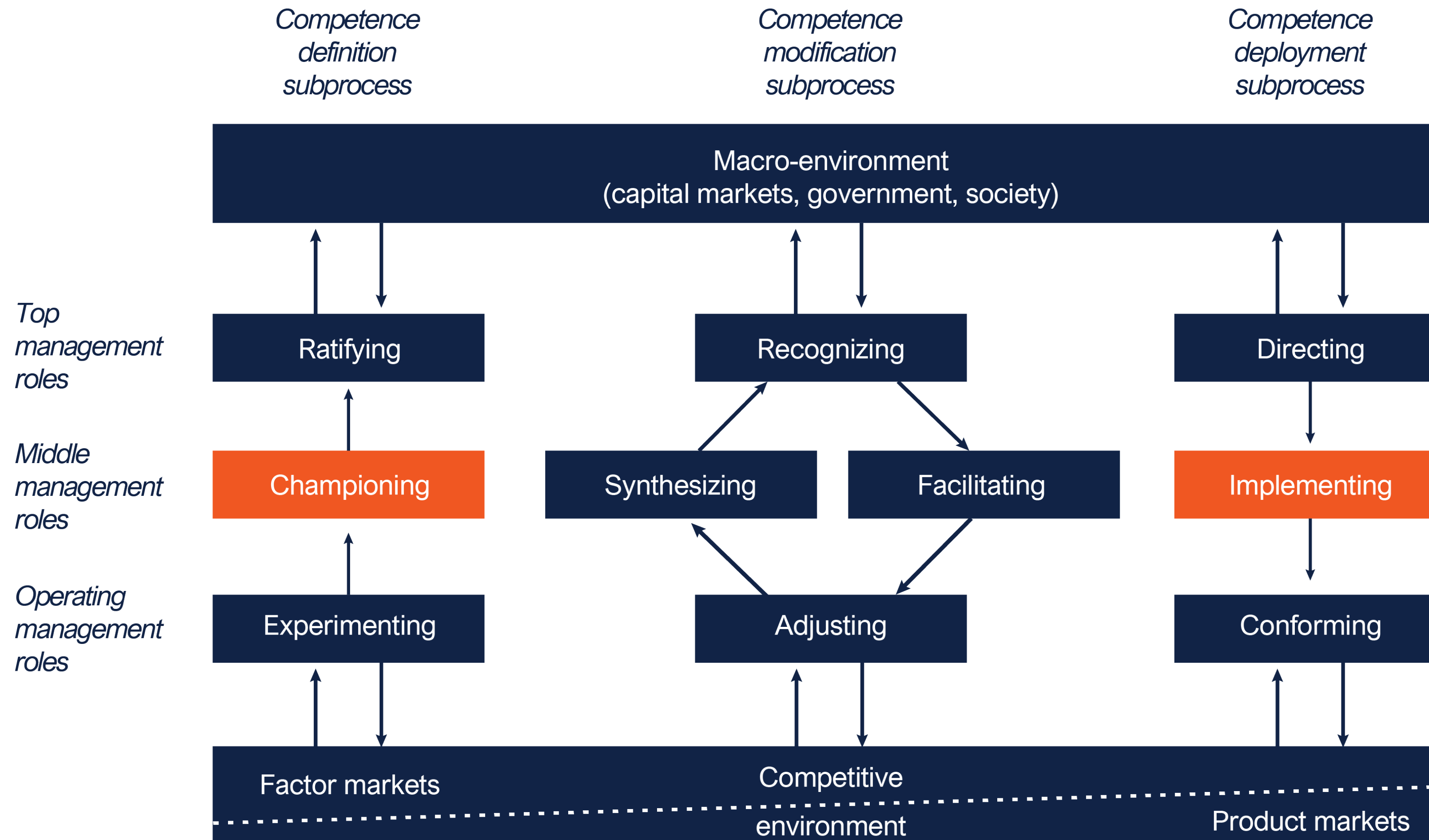
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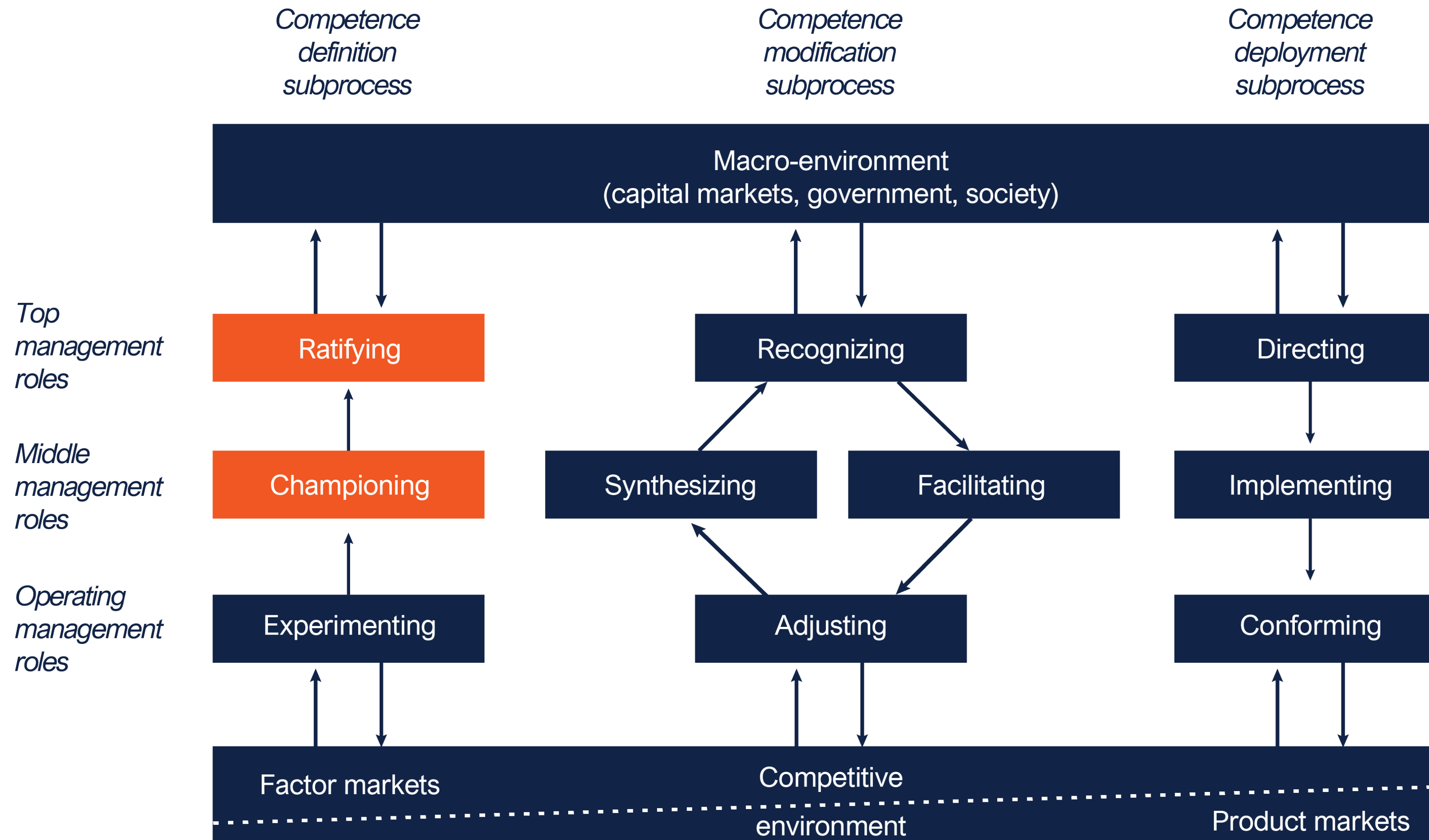
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Sub-question 4



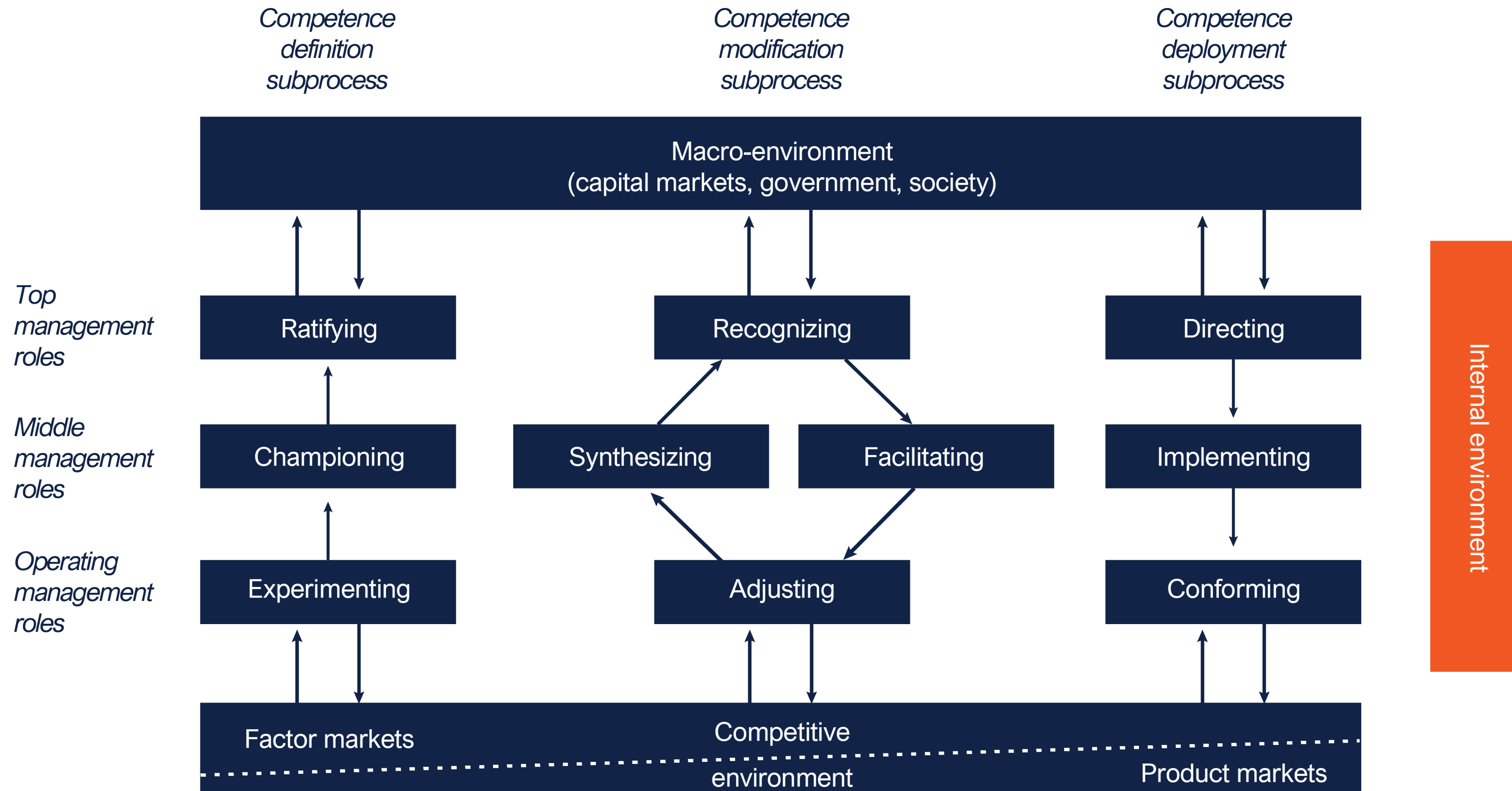
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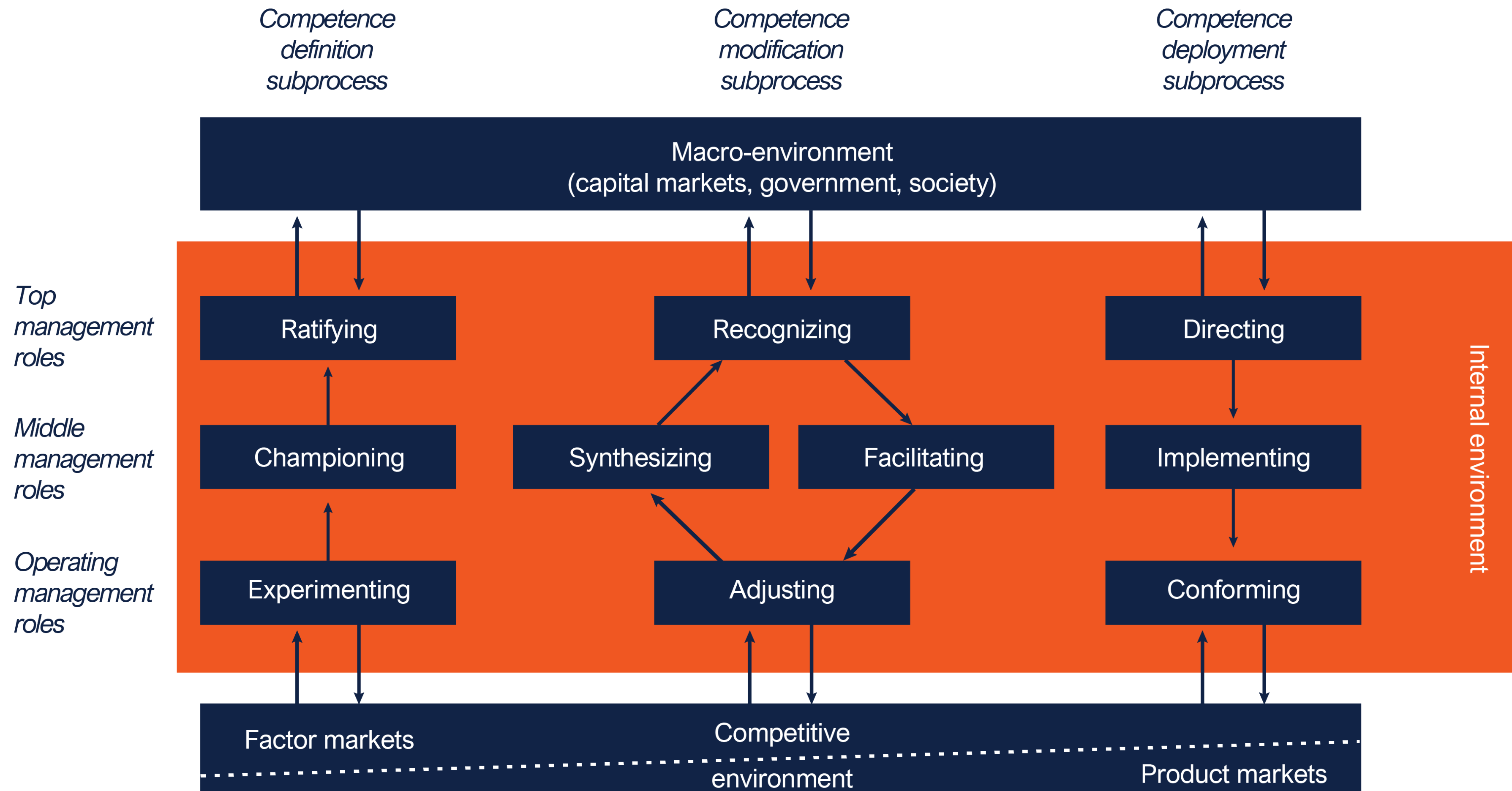
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Conclusions & Recommendations

How does a contracting company manage the implementation of circularity proactively?

- Be aware of your position as an organisation and use your influence from there.
- Top and middle management stimulate proactive behavior by individuals and support when shown.
- Switching to proactive environmental strategy, company goals can be communicated clearly.
- Creating the right environment, especially on a middle management level as they mediate between top and operations management levels.



Questions?

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