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Towards a Framework for Evaluating the Prudence of Enterprise Architecture Debts

EA debt students conference

Agenda

1. Motivation
2. Related work
3. Research Questions
4. Methods
5. Evaluation

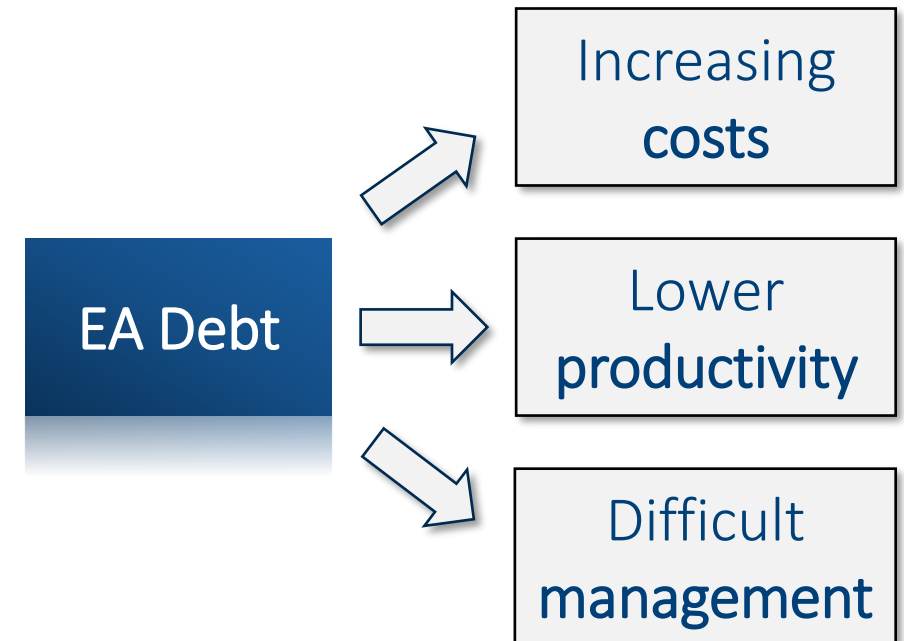
Motivation – Related work – RQs – Methods – Evaluation

Enterprise Architecture debt:

- „(...) *metric that depicts the **deviation of the currently** present state of an enterprise **from a hypothetical ideal** state.*” [Hacks et al., 2019]

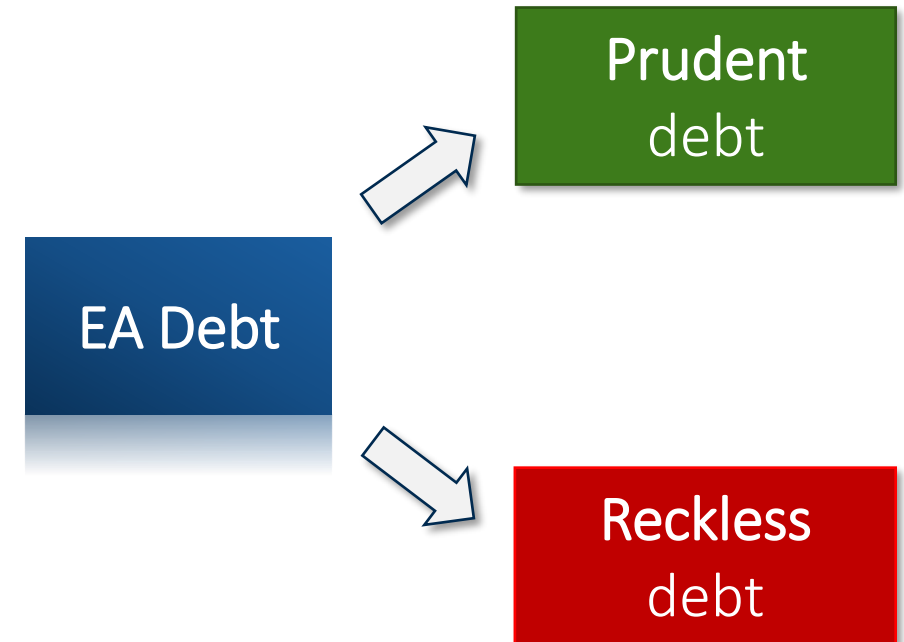
Enterprise Architecture debt:

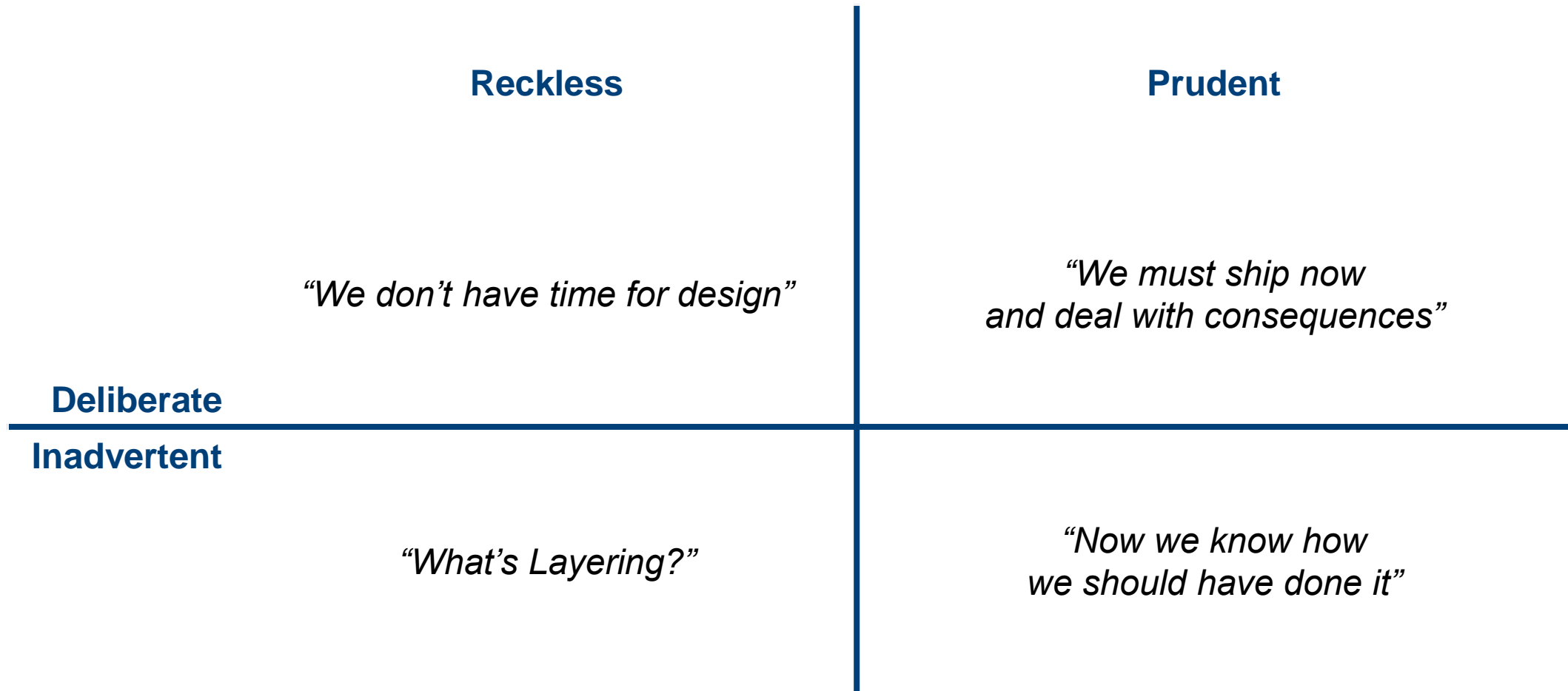
- „(...) *metric that depicts the **deviation of the currently** present state of an enterprise **from a hypothetical ideal state.**” [Hacks et al., 2019]*
- is causing **consequences,**



Enterprise Architecture debt:

- „(...) *metric that depicts the **deviation of the currently present state of an enterprise from a hypothetical ideal state.***” [Hacks et al., 2019]
- is causing **consequences**,
- can be divided into **reckless** and **prudent**





Motivation – Related work – RQs – Methods – Evaluation

	Reckless	Prudent
Deliberate	<i>“We don’t have time for design”</i>	<i>“We must ship now and deal with consequences”</i>
Inadvertent	<i>“What’s Layering?”</i>	<i>“Now we know how we should have done it”</i>

Motivation – Related work – RQs – Methods – Evaluation

To date there has been **no systematic work** on **prudence/recklessness** classification in debt. Although considered important, **no attention** was paid to it.

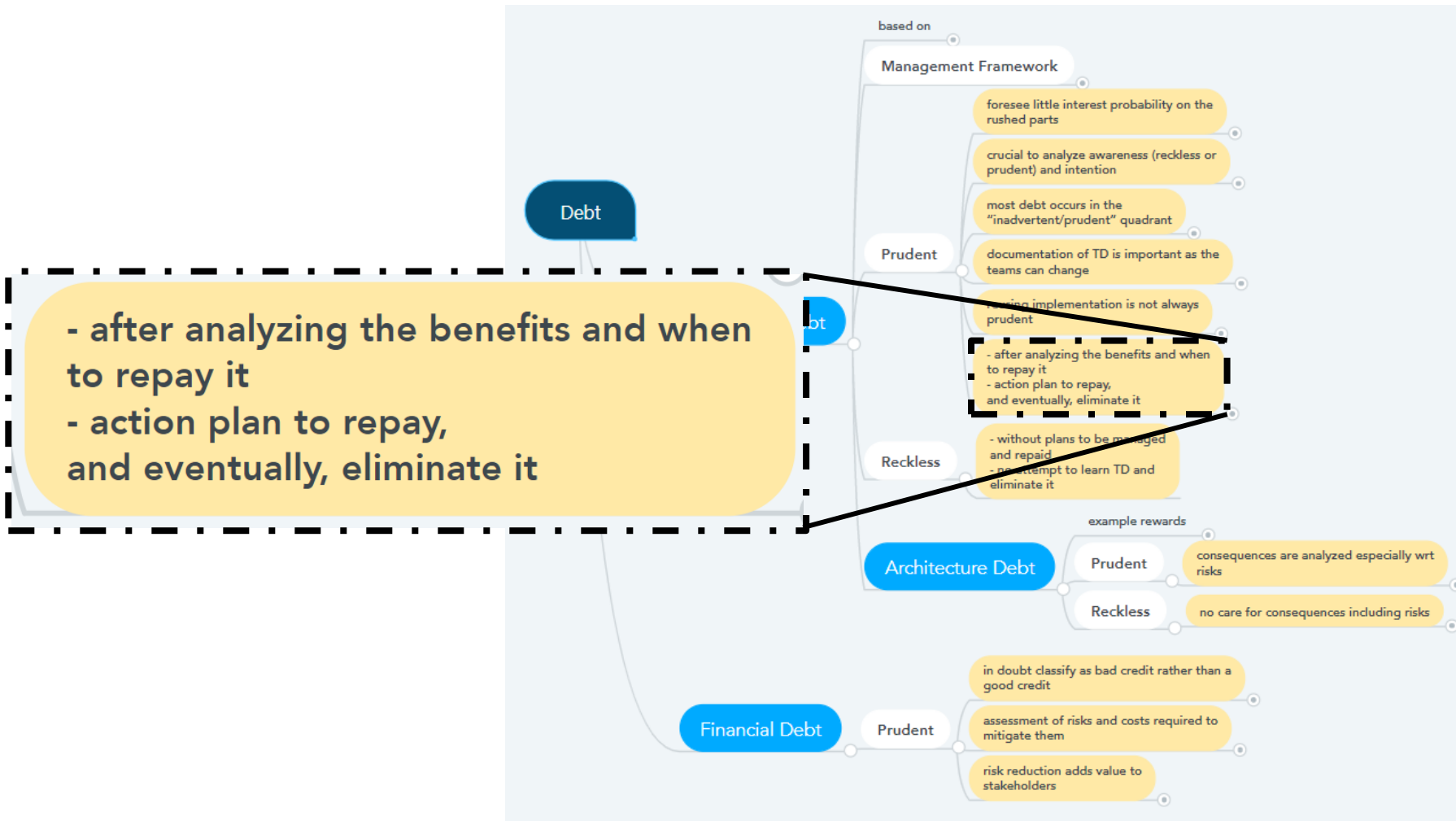
Motivation – Related work – RQs – Methods – Evaluation

Scientific Literature Review:

- Search String: Full text includes ("*prudence*" OR "*prudent*") AND "*debt*" AND "*decision*"
- Excluded: SpringerLink, CiteSeerx, Wiley InterScience, *El Compendex*, *dblp*

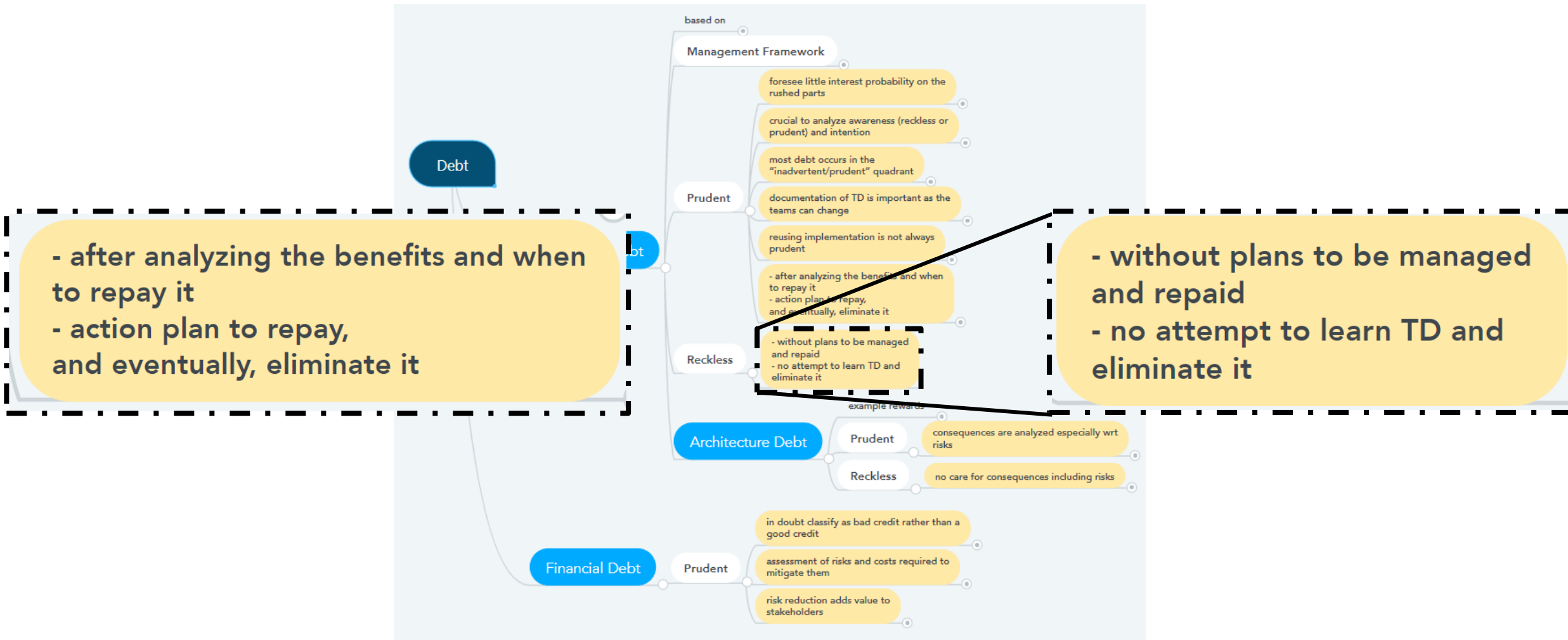
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DB2	ACM Digital Library	55
DB3	Science Direct	57
DB4	Inspec (ISI Web of Science)	6
DB5	Scopus	23
DB6	IET Digital Library	20

Related work

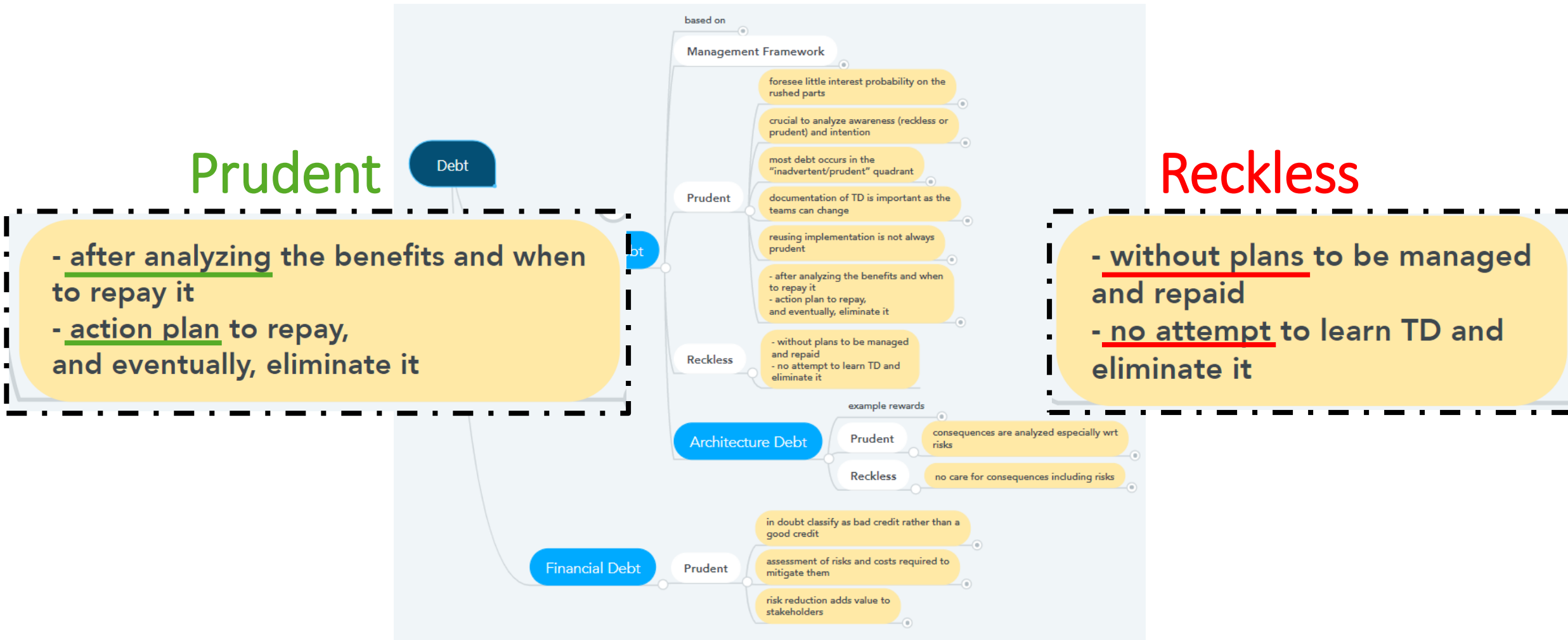


Motivation – Related work – RQs – Methods – Evaluation

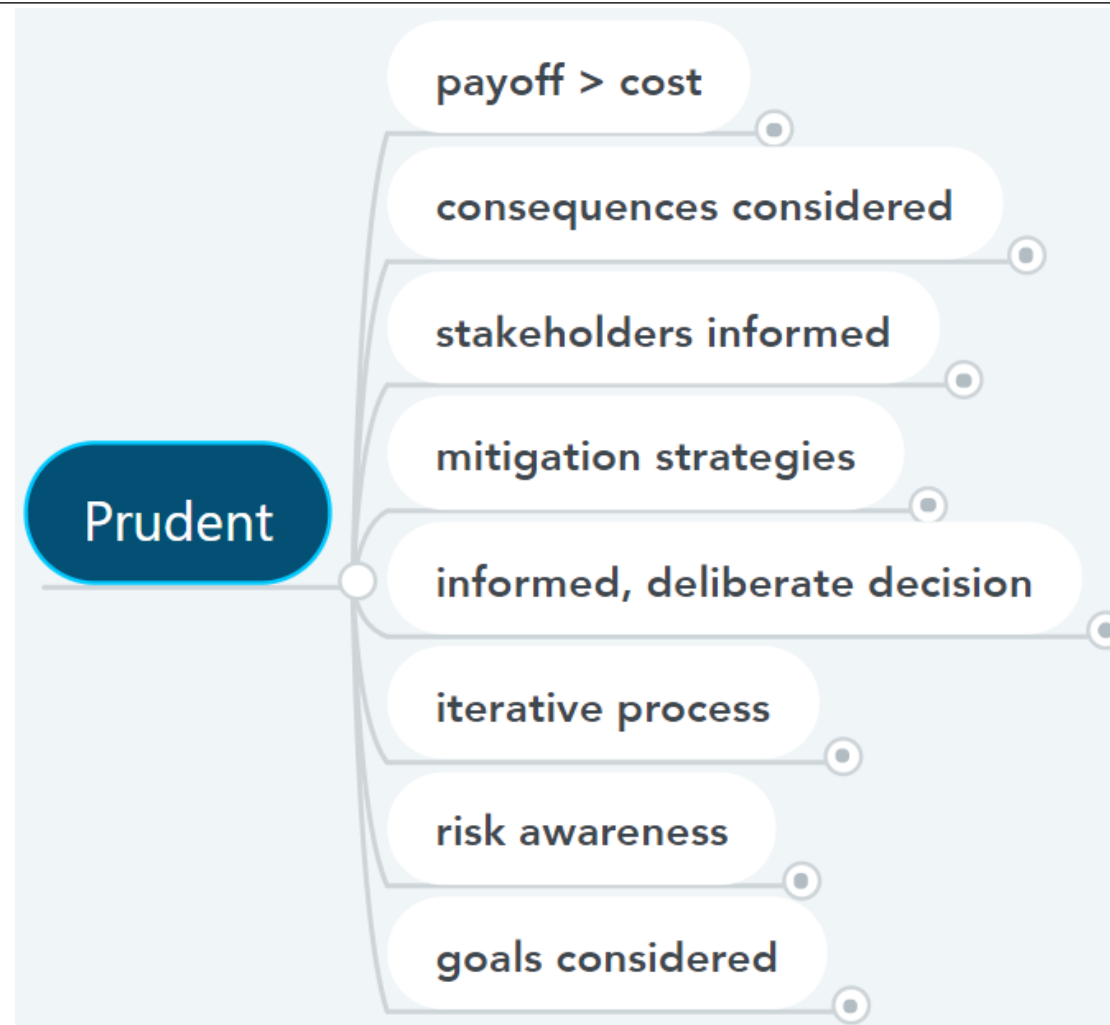
Related work



Motivation – Related work – RQs – Methods – Evaluation



Motivation – Related work – RQs – Methods – Evaluation



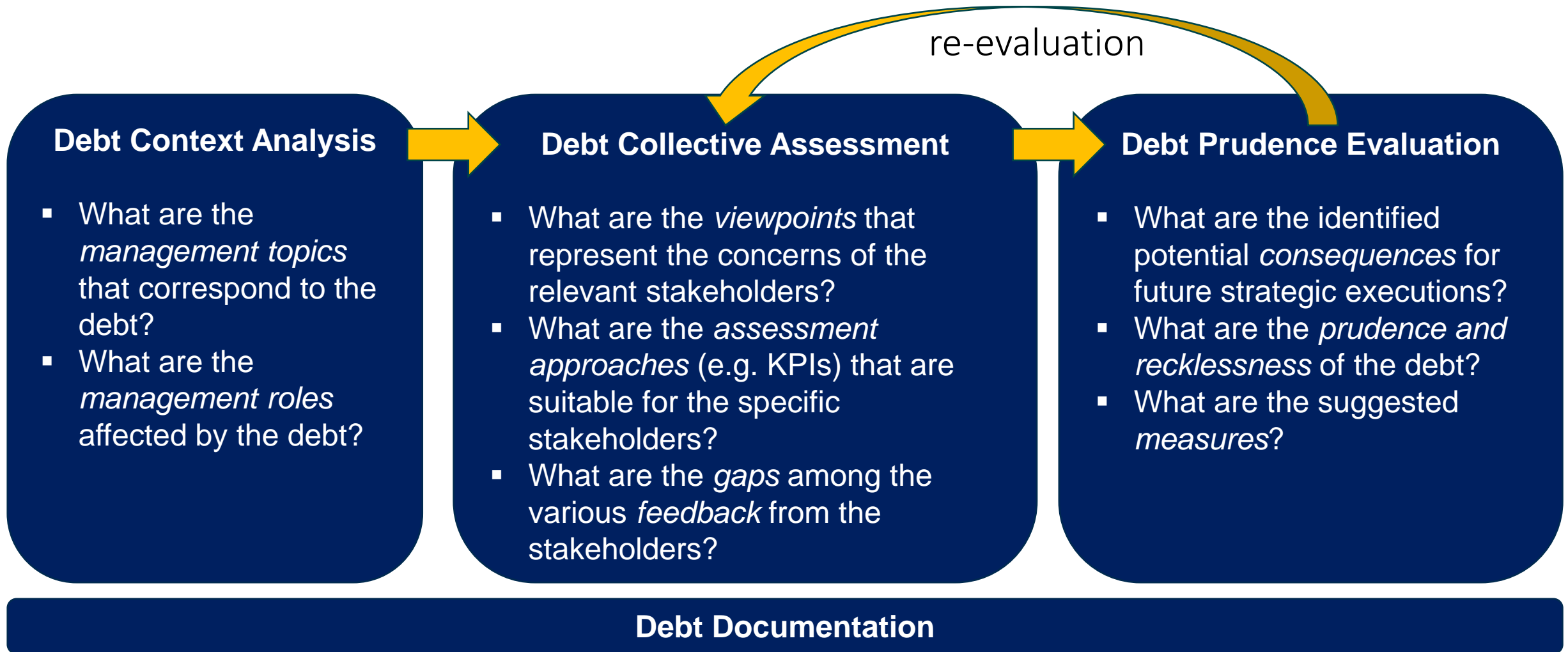
Motivation – **Related work** – RQs – Methods – Evaluation

RQ How to evaluate the prudence of EA debts in a large-scale enterprise environment?

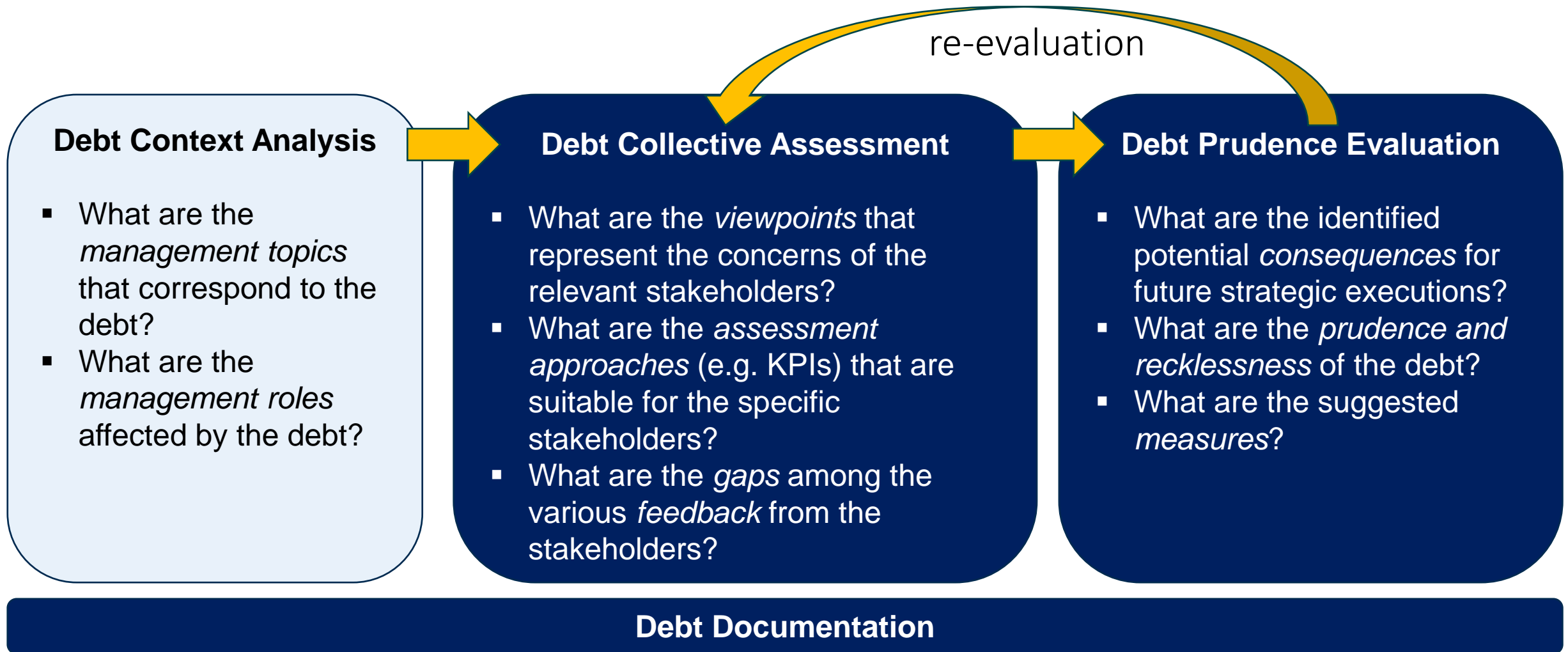
RQ1 What are the **existing definitions** of reckless and prudent debt?

RQ2 Which **criteria** contribute to debt being reckless or prudent?

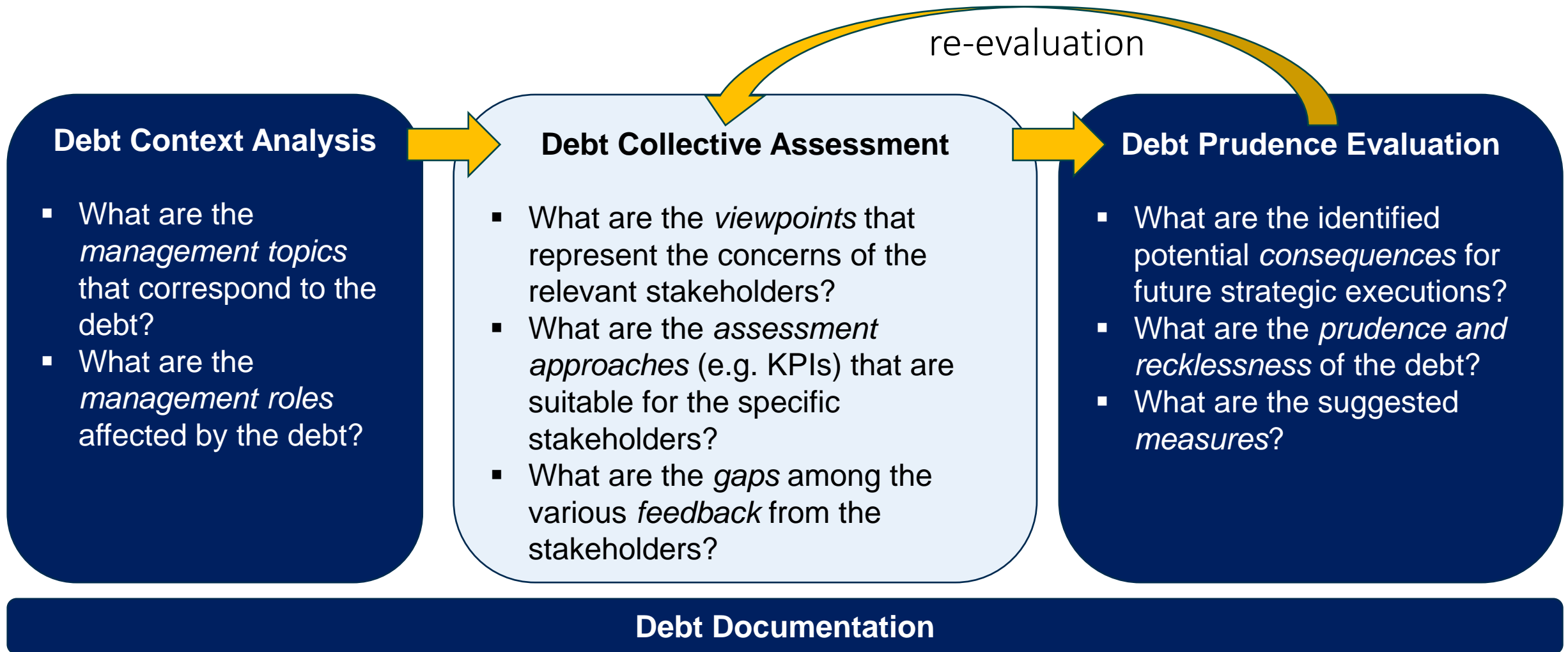
RQ3 Which **steps** should be taken to create a **sound judgement**?



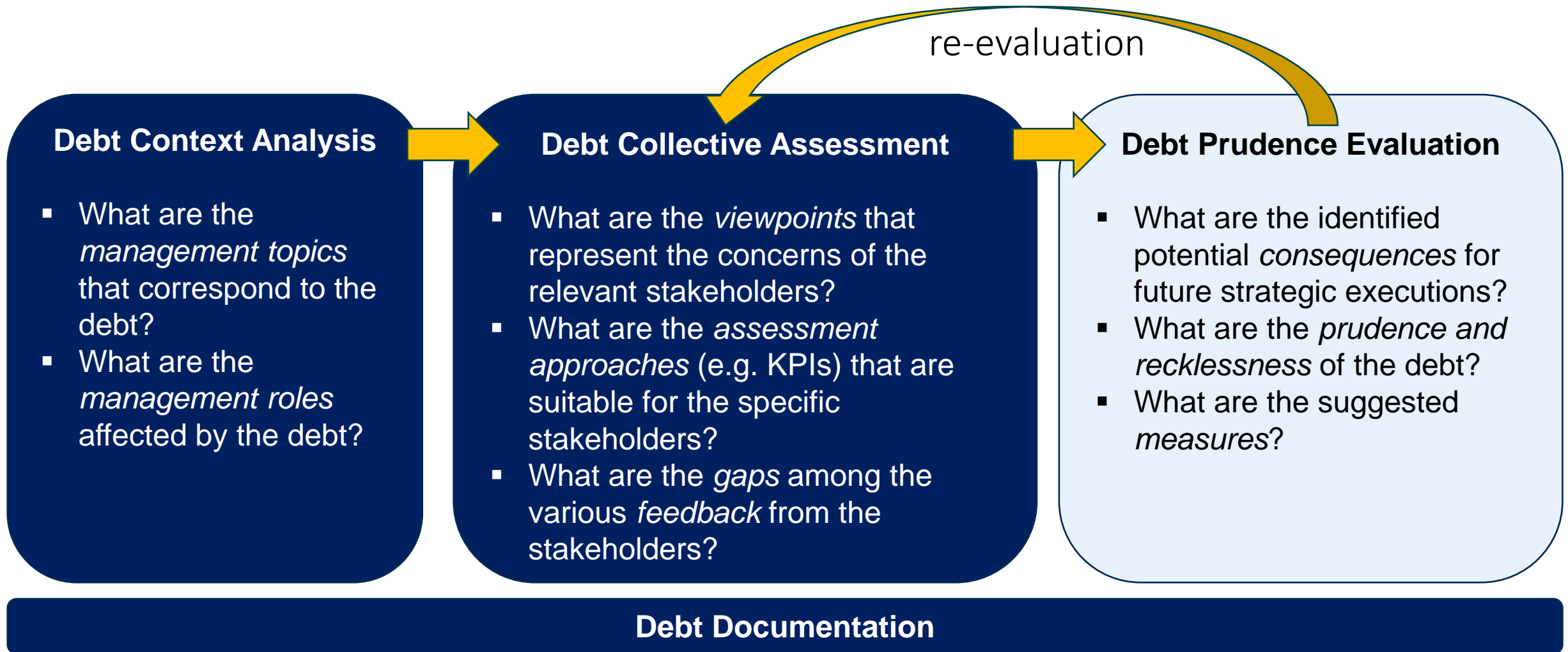
Motivation – Related work – RQs – **Methods** – Evaluation



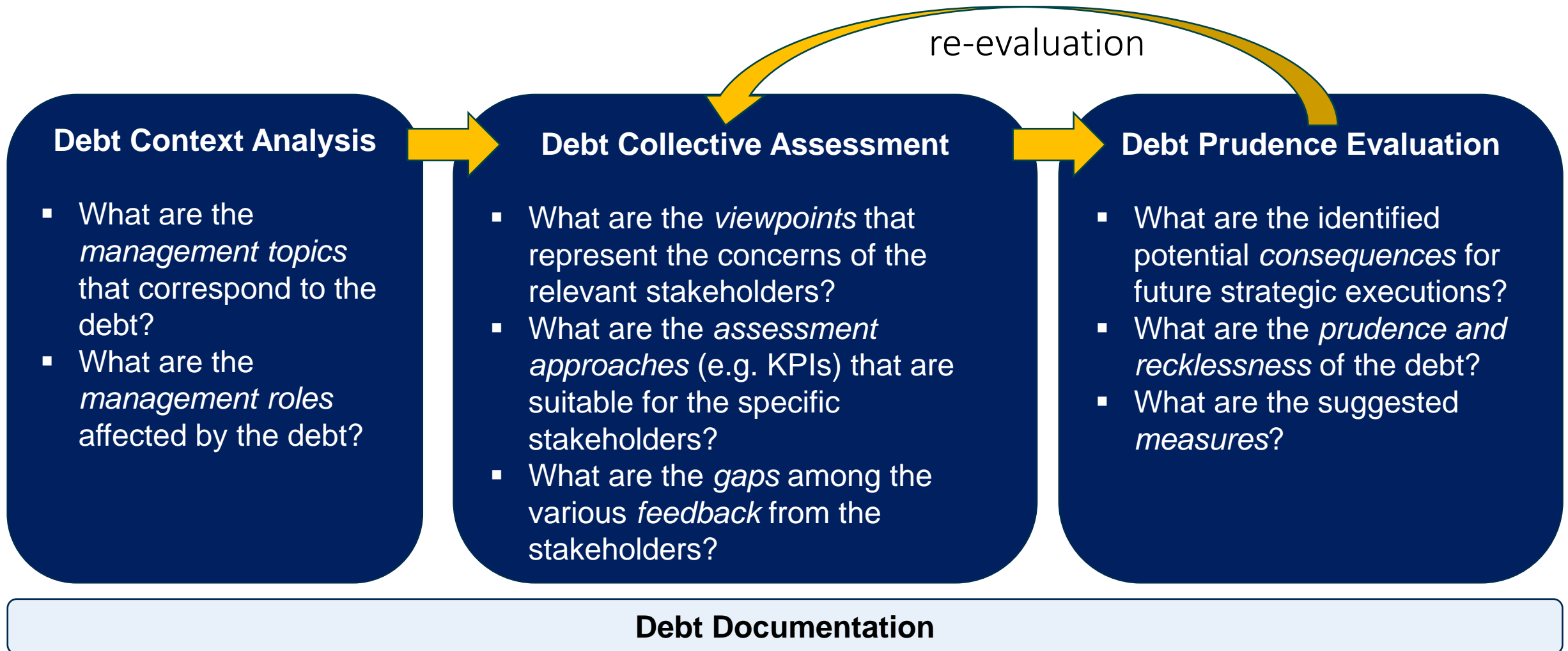
Motivation – Related work – RQs – **Methods** – Evaluation



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Motivation – Related work – RQs – **Methods** – Evaluation

SITUATION ON THE MARKET

GUIDELINES

company decides to **migrate** the services **from on-premise** data storage **to cloud**

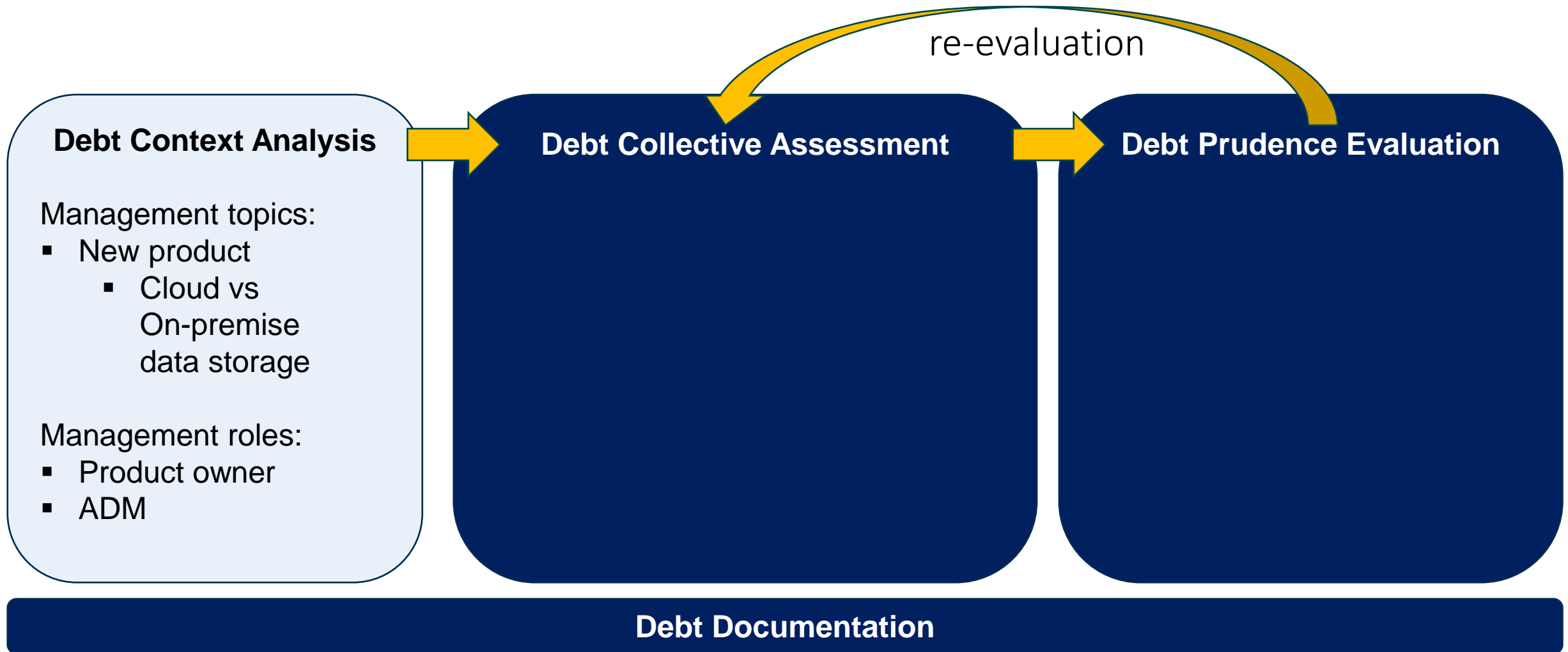
PROBLEM

some **cloud** services are **dependant on on-premise** services

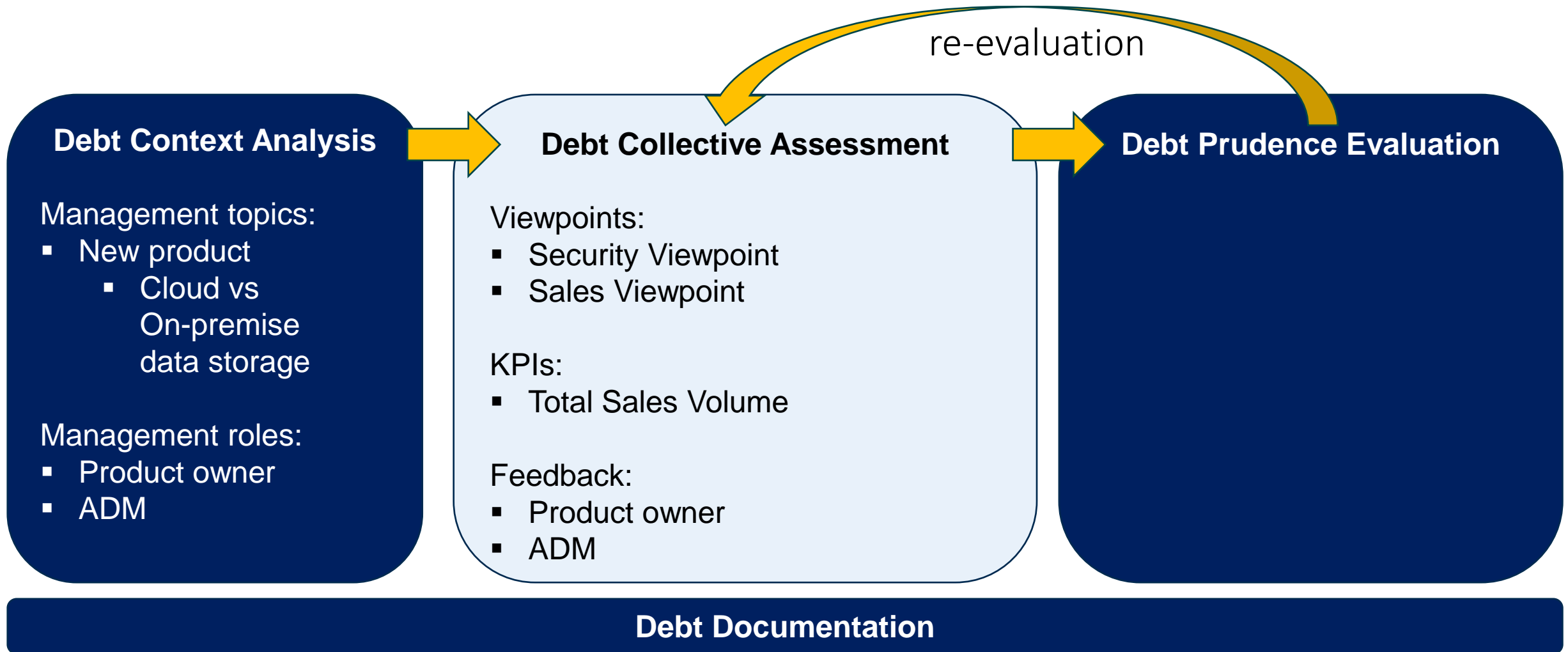
DEBT

reuse of on-premise services

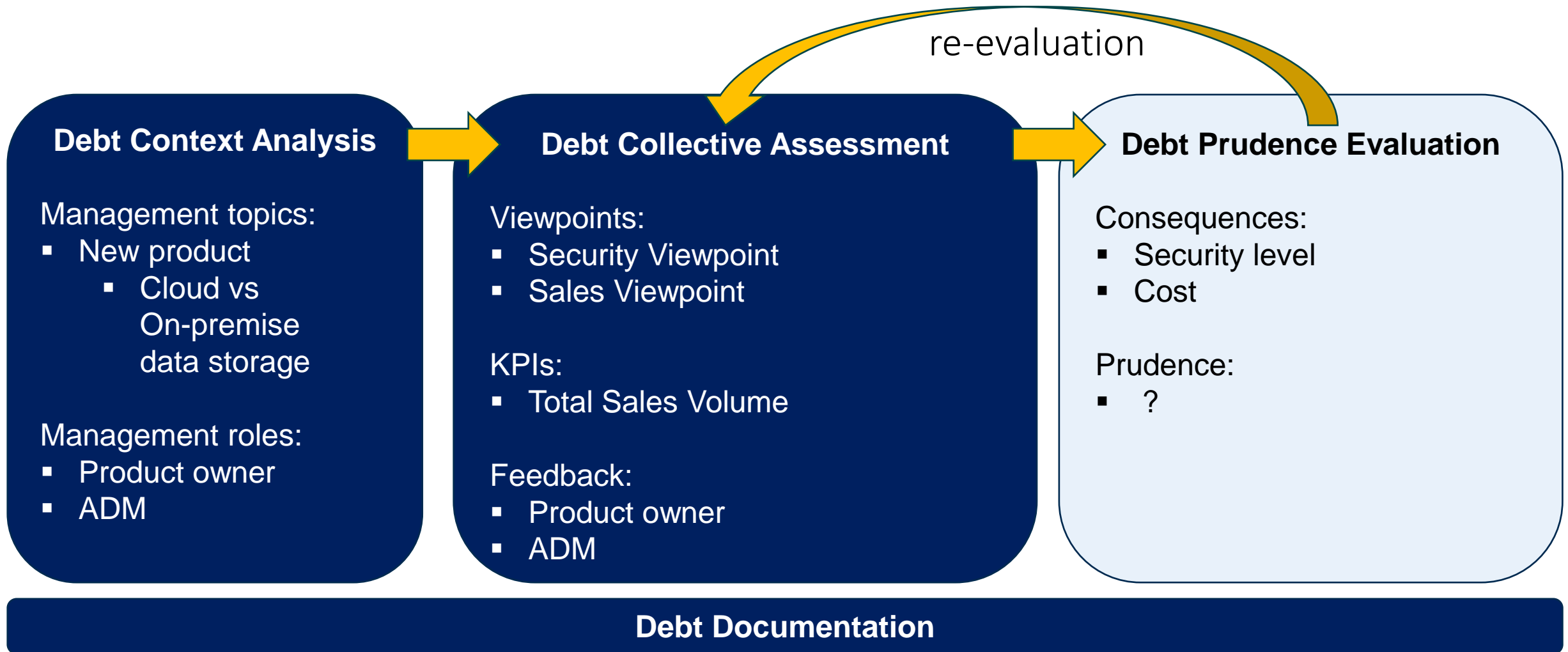
Motivation – Related work – RQs – **Methods** – Evaluation



Motivation – Related work – RQs – **Methods** – Evaluation



Motivation – Related work – RQs – **Methods** – Evaluation

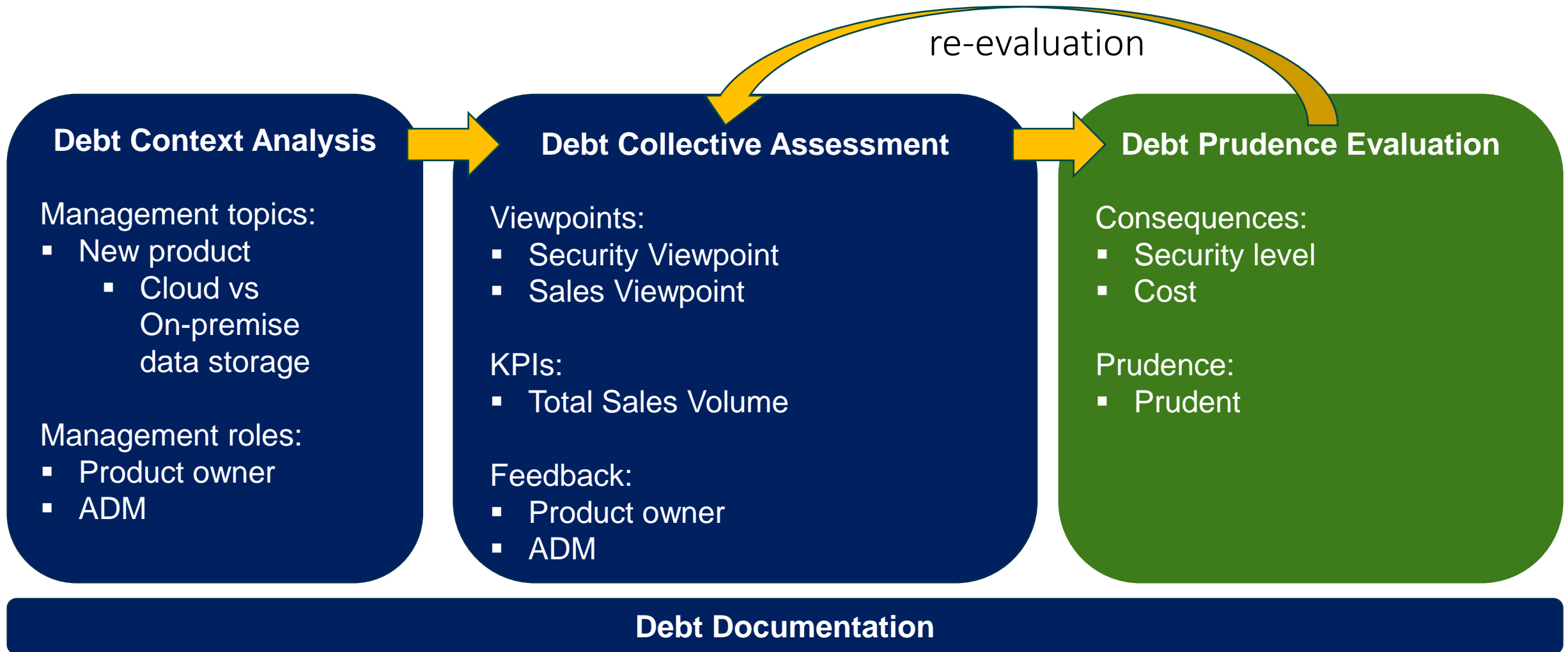


Motivation – Related work – RQs – **Methods** – Evaluation

Methods

Consequences	On-premise	Cloud
Cost	70.000€	130.000€
Security	20.000€	40.000€
Availability	10.000€	10.000€
Scalability	50.000€	20.000€
Total	150.000€	200.000€

Motivation – Related work – RQs – **Methods** – Evaluation



Motivation – Related work – RQs – **Methods** – Evaluation

CHANGE ON THE MARKET

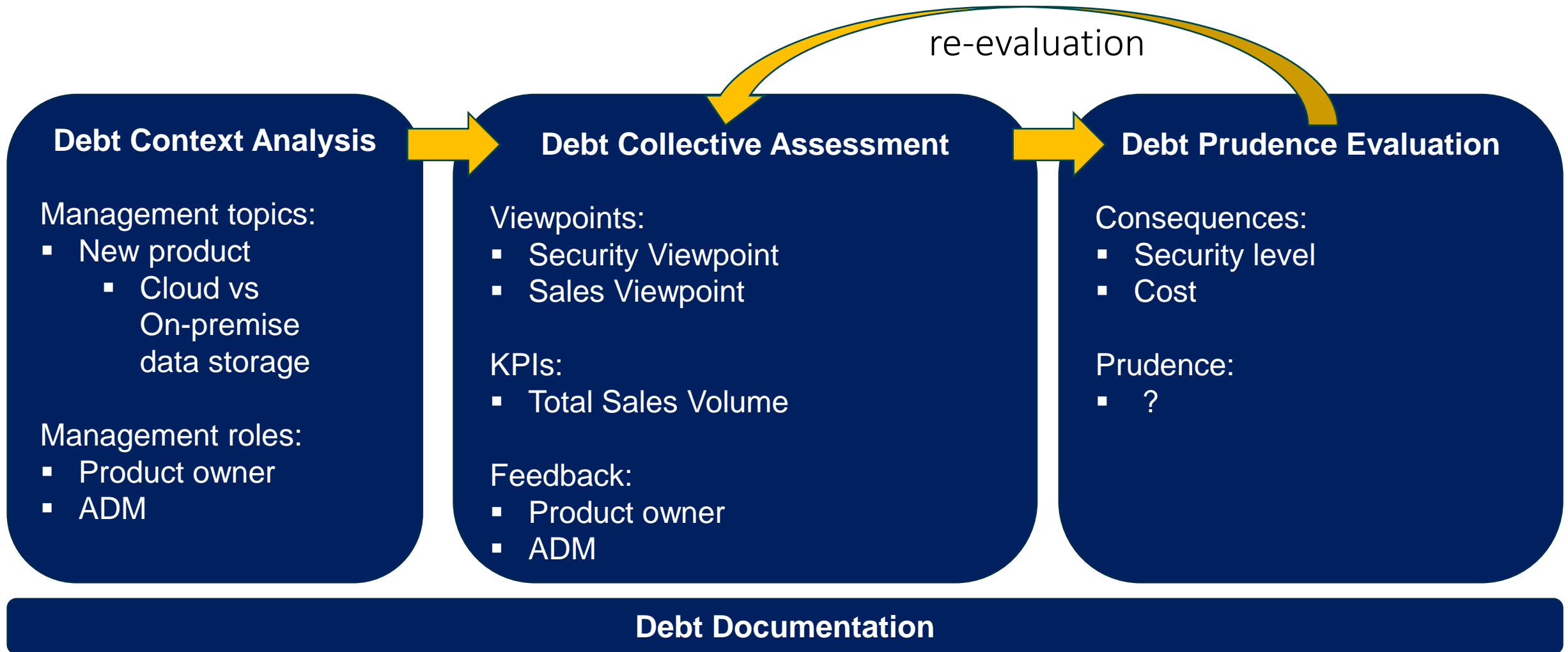
COST

migrating to the **cloud is cheaper than** hiring those people to maintain the **on-premise**

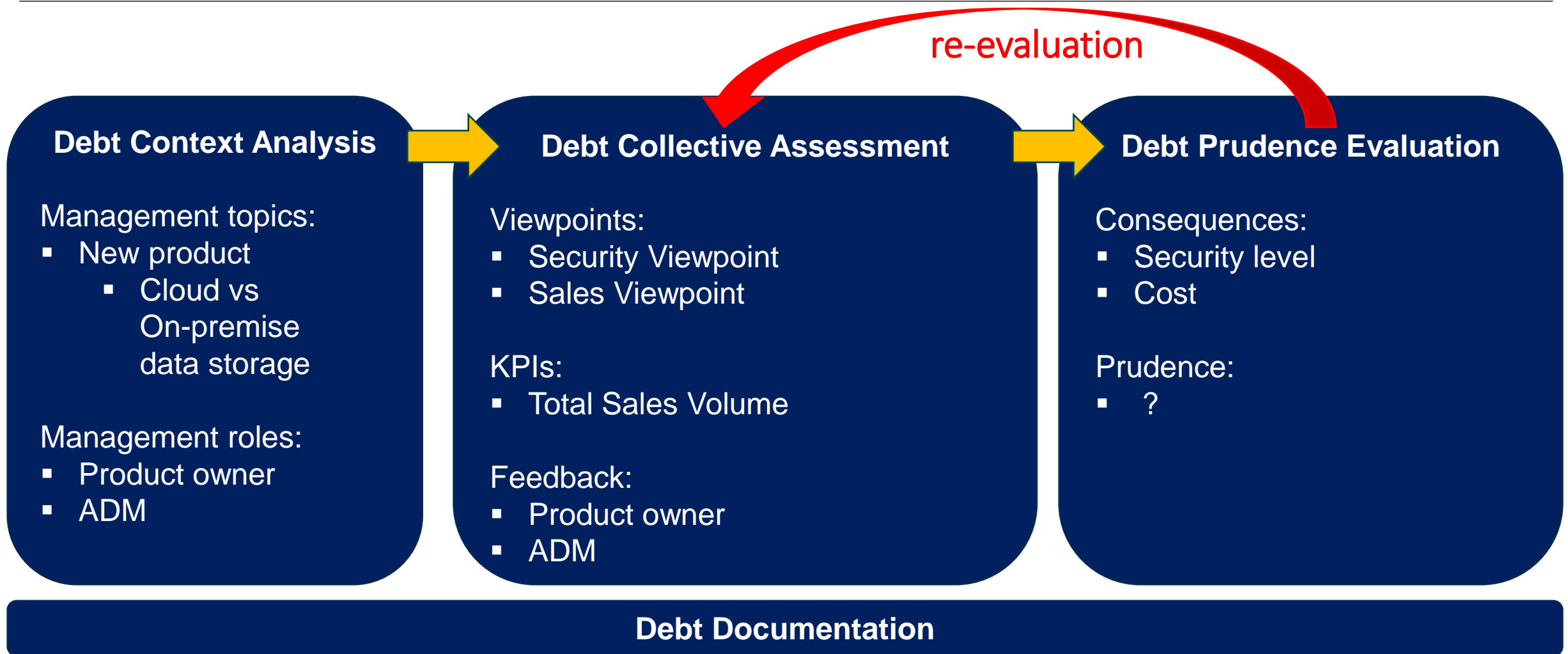
SECURITY

increase is needed due to **new, highly confidential data**

Motivation – Related work – RQs – **Methods** – Evaluation



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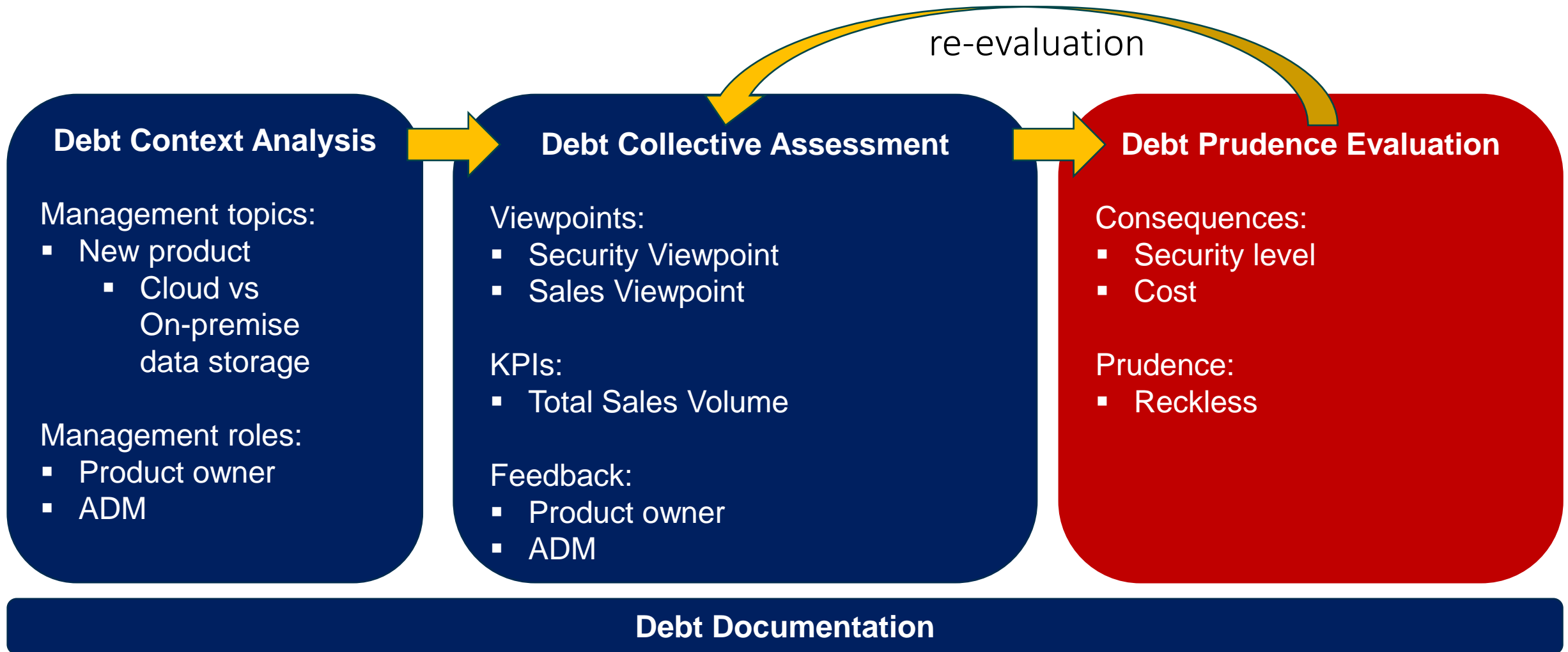


Motivation – Related work – RQs – **Methods** – Evaluation

Methods

Consequences	On-premise	Cloud
Cost	100.000€	90.000€
Security	60.000€	40.000€
Availability	10.000€	10.000€
Scalability	50.000€	20.000€
Total	220.000€	160.000€

Motivation – Related work – RQs – **Methods** – Evaluation



Motivation – Related work – RQs – **Methods** – Evaluation

Evaluation topics:

1. Proposed **definition**.
2. **Methods** for assessment.

Evaluation based on:

- Interview
- Questionnaire