Integrative and lean logistic management process of temporary construction items

Interview for validating the state of art review & framing the research objective

Key Question: *How can performance issues in construction be resolved by integrating temporary construction items (TCIs) in the logistics and site management?*

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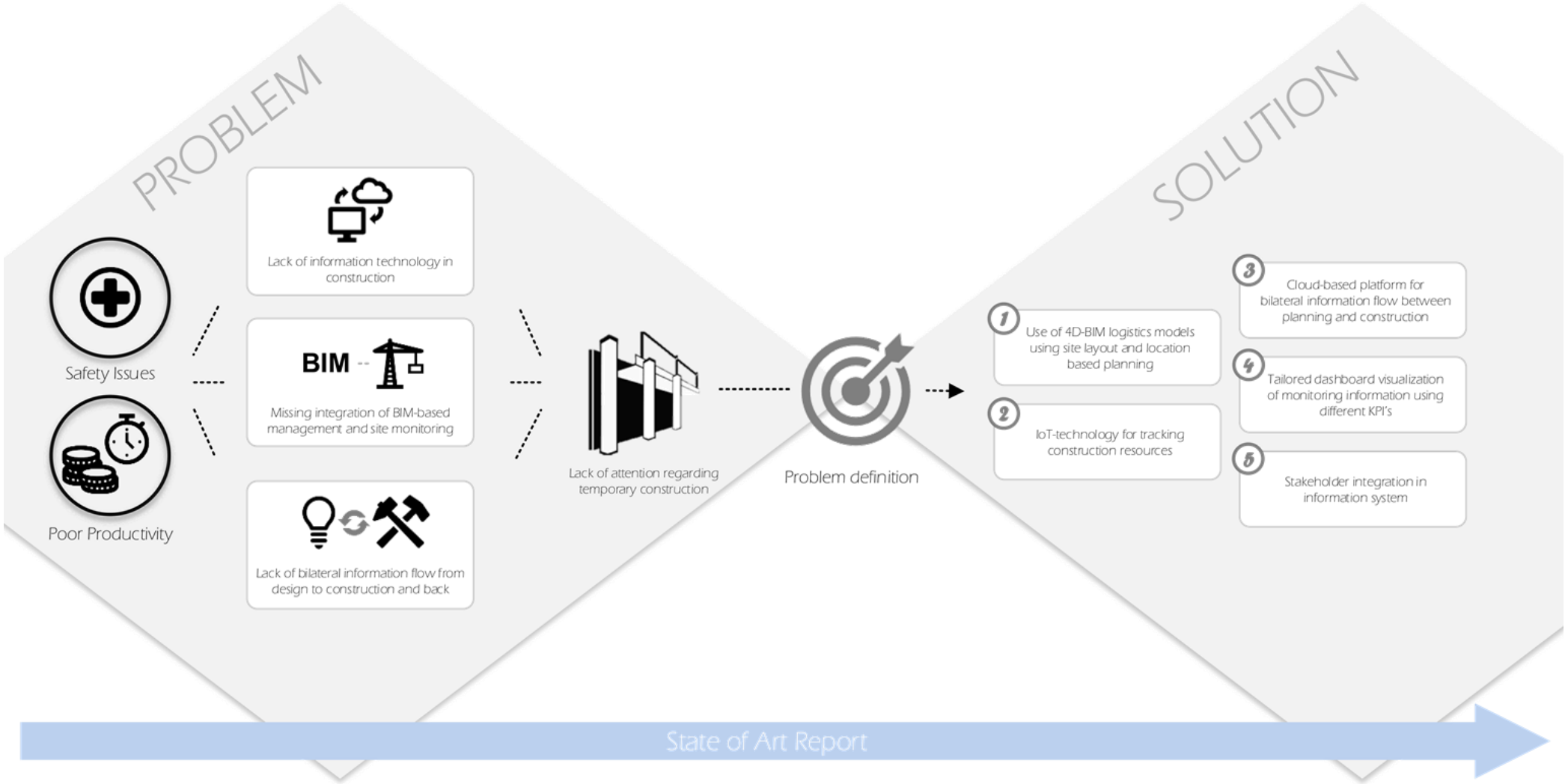
State of Art Review framing the research objective

Problem and solution space derived from literature



Section 1: General

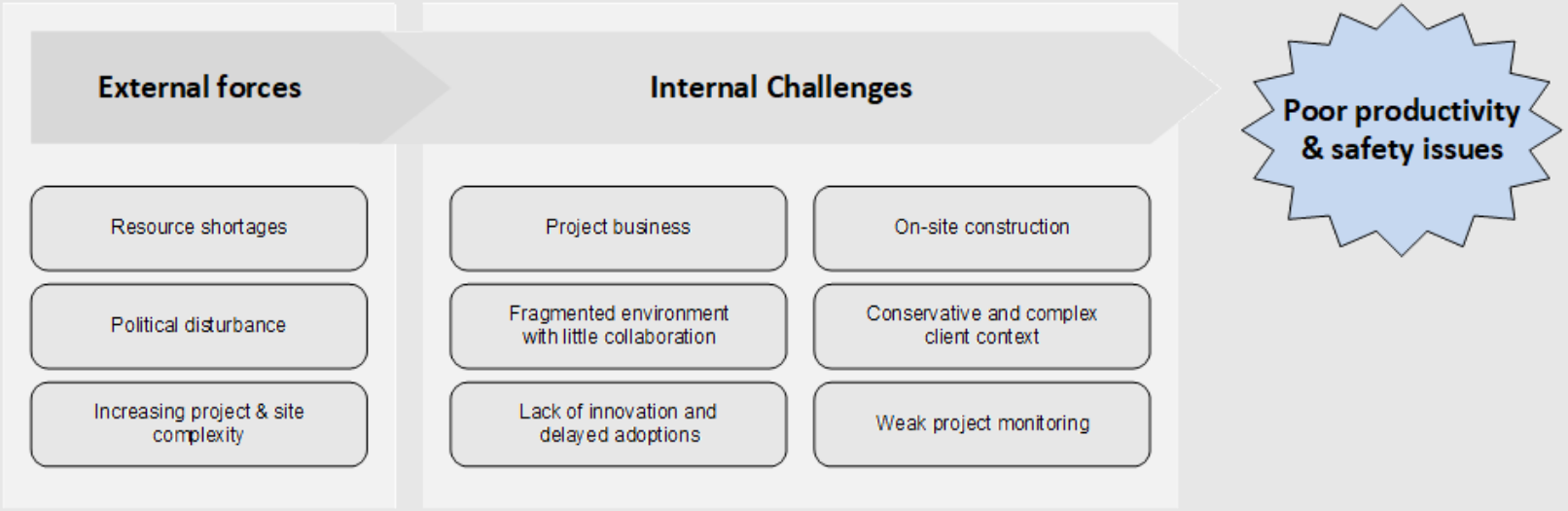
Question 1
Can you give a background about yourself and your career? What are your experiences with the use of technology in site & logistics management so far?

Section 2: Problem Space

Question 2

Assumption: In literature, poor productivity and safety issues are identified as common problems on construction sites, caused by elemental constraints and shortcomings in the industry (referring to the chart below).

Question: Do you agree on this and where (regarding site and logistics management) do you see the most potential to overcome these challenges?



Section 2: Problem Space

Question 3

Assumption: Missing integration of BIM and IT at the construction site is a big shortcoming of the industry, resulting in weak site monitoring and project management because of one-way information flow and lack of structured data?

Question: How can technology improve site logistics management and why is updated data from the construction site important?

Section 3: Problem Space

Question 4
Assumption: There is a lack of attention and information regarding **temporary construction items (TCIs)**. Temporary works is only included as an estimate or percentage of the total cost but is often not planned and monitored properly. Question: From your experience, how are temporary construction items managed and what would be the benefit of more and updated data about these items?

Section 3: Solution Space

Question 5

Assumption: Considering temporary construction items (TCIs) in construction planning can reduce waste, costs and safety hazards.
Question: How to integrate TCIs in construction management in a simple way? What type of temporary construction items (e.g. formwork, supporting struts and safety barriers)?

Section 3: Solution Space

Question 5 - Reference

	Construction site employment	
	Construction site layout	hours
	Assembly office modules	stk
	Assembly toilet box	stk
	Establishment of electrical installations shed	sum
	Establishment of electrical installations construction site	sum
	Establishment of lighting in public areas	sum
	Establishment of IT/phone installations	stk
	Etablering af vandinstallationer	sum
	Crane (semi-mobile crane) 35 m / 1,300 kg	stk
	Crane (tower crane) 50 m / 2,700 kg	stk
	Crane foundations 7 x 7 m	stk
	Material lift	stk
	Person - and material lift	stk
	Construction site fences	m
	Fence gates	stk
	Gates in fences	stk
	Construction site roads	m2
	Construction site storage	m2
	Construction site paving shed	m2
	Laying of walking plates	m2
	Transporter small	stk
	Transporter big	stk

	Construction site operation	
	Scaffold	m2
	Formwork	m2
	Supporting structures	stk
	Material container	mdr
	Smaller machines and hand tools	man hours
	Crew modules 10 men	months
	Office modules 2 rooms with toilet and tea kitchen	months
	Toilet box	months
	Office set furniture	months
	Cleaning sheds	stk*mdr
	Electrical installations rental excl. consumption	months
	Crane (semi-mobile crane) 35 m / 1,300 kg	months
	Crane (tower crane) 50 m / 2,700 kg	months
	Material lift rental	months
	Person - and material lift rental	months
	Fence construction site rental	m
	Building lift rental	months
	Safety protection	m
	Waste management	sum
	Laying of walking plates rental	sum
	Transporter small rental	stk
	Transporter big rental	stk

	Construction site dismantling	
	Disassembly of office and crew modules	stk
	Disassembly of toilet boxes	stk
	Crane semi-mobile down	stk
	Crane tower down	stk
	Material lift down	stk
	Person - and material lift down	stk
	Construction site fence down	m
	Transporter small	stk
	Transporter big	stk

Section 3: Solution Space

Question 6

Assumption: Five recommendations for developing a solution are derived from the state of art review.
Question: Where do you see the most potential as a focusing area of the research? What should be the primary research objective?

Section 3: Solution Space

Question 7

Assumption: An IoT-based real-time tracking system is a further development in the management process improvement of TCIs.
Question: How can temporary construction items be tracked? How should the tracked data be received, processed and then used to add value to the project?