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PhD title: **A Cloud-based BIM Governance Platform for Facilitating Team Collaboration during Construction Projects**

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Key Facts and Research gap

Construction projects involve complex activities and processes during their lifecycle [1], requiring construction team members from different backgrounds to collaborate to minimise project complexity, and complete construction projects within a set budget and to a timetable [1]. Collaboration among teams can play a vital role in the building management overall, facilitating the achievement of objectives predetermined in collaboration with a client [2]. However, Building Information Modelling (BIM) has emerged as a new way to manage information flow during the lifecycle of construction projects [3]. During a project that is handled in a collaborative way by people of multiple disciplines and m-ultiple actors, many issues can arise (e.g. trust, lack of clarity regarding roles and responsibilities, interoperability, etc.) [4]. These issues can all act to hinder the effective use of BIM in the building sector [5]. Although practitioners aim to maintain collaborative work environments, they nonetheless encounter challenges in many parts of the world, specifically with respect to the development of fully integrated multi-disciplinary collaborative modes of operation, which necessitate a specific tool to facilitate the adoption of BIM [6]. Hence, the rationale behind this research is three fold. First, there is a total lack of evidence in terms of studies, surveys, and documentation regarding the current situation with BIM governance for facilitating team collaboration across a project's lifecycle. Second, there are no proper BIM governance models offering implementation of technical storage solutions. Third, enhance the overall context of adopting BIM in the current Built Environment via the development of a Cloud-based BIM governance platform, to help it migrate from its current status to become more advanced via the use of Cloud environments to govern BIM processes.

Research Aim

The aim of this Ph.D. research is to investigate the requirements, suitability, and industry readiness and perception of BIM based collaborative construction; and thus to develop a Cloud-based BIM governance platform to facilitate team management and collaboration across the project lifecycle and throughout the supply-chain, as well as to evaluate the use of a distributed computing environment (e.g. Cloud Computing) for governing and managing BIM data for the built environment.
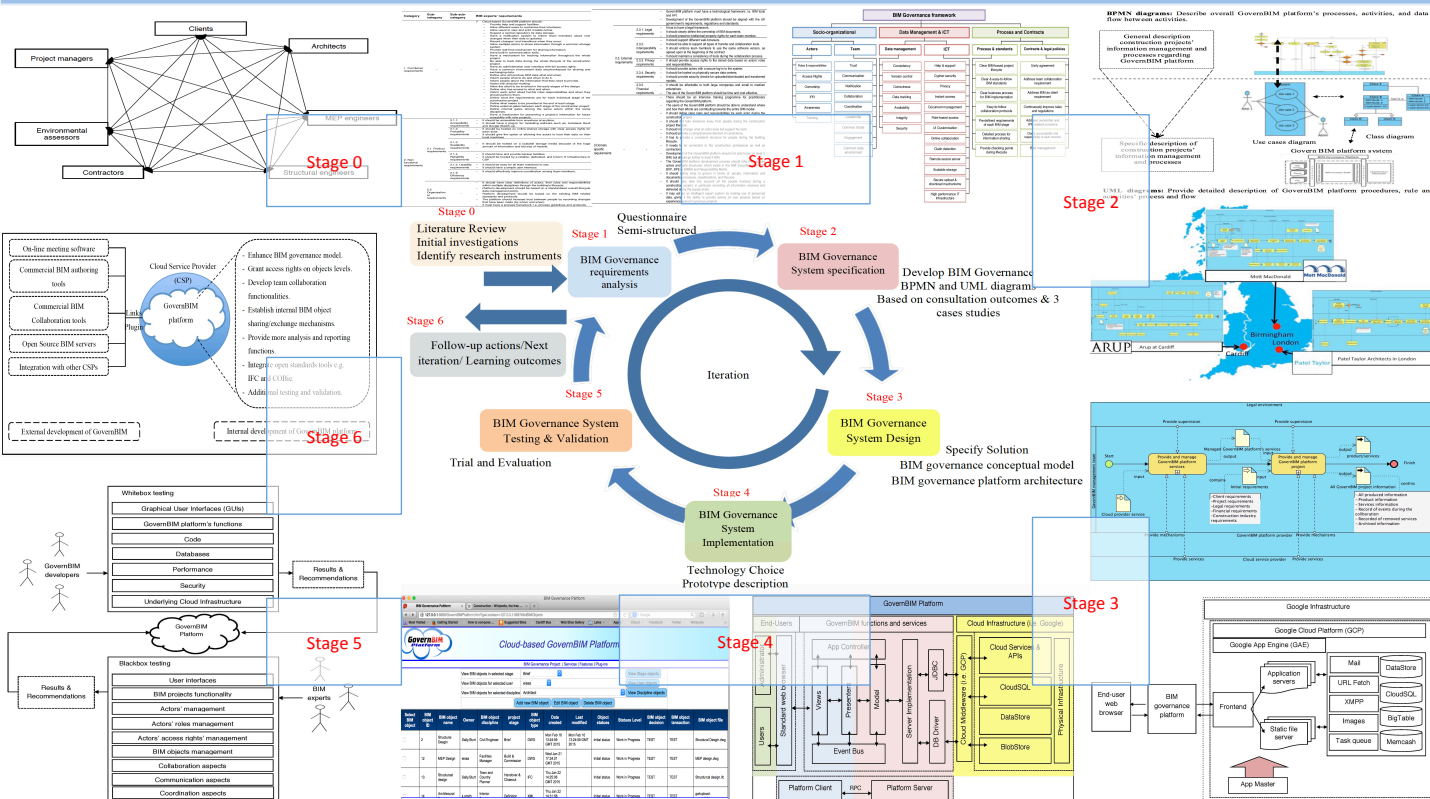
Overarching Research Questions

RQ1: "What is the current status (including barriers and opportunities) of BIM practices and adoption in the construction industry, especially for collaboration between people (e.g. team members) and products (software) where data plays a central role?"

RQ2: "How can the identified barriers from RQ1 the ones related to data management and governance, be addressed for enhancing collaboration between people and products, and for increased BIM adoption during construction lifecycle, in particular, using Cloud computing technologies?"

RQ3: "Can the findings from RQ2 be applied to develop a process-centric solution for facilitating enhanced collaboration across a building lifecycle that addresses the barriers identified in RQ1?"

RQ4: "Does the developed solution in response to RQ3 addresses existing challenges for collaboration?

PhD research methodology in line with key contribution of each stage

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