



# Use of Image processing technology for reporting: BIM Model comparison with Daily progress in Construction

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## ABSTRACT

- The basis of a successful project in the world of construction is largely based on the financial outcome of the project. There are many variables affecting the financial outcome of a project, being able to control the project with daily progress reporting is a key point that enormously drives the successful completion of the project. The paper describes the use of image processing technology in drones to compare the completed coordinated BIM models with the daily progress that has been made on the job by different trades. The methodology implements use of deep learning techniques to compare data with “to be accomplished” model. More than 18% of labor factor is taken in account in bid of project only for report generation and following progress reporting.

## CONCLUSION

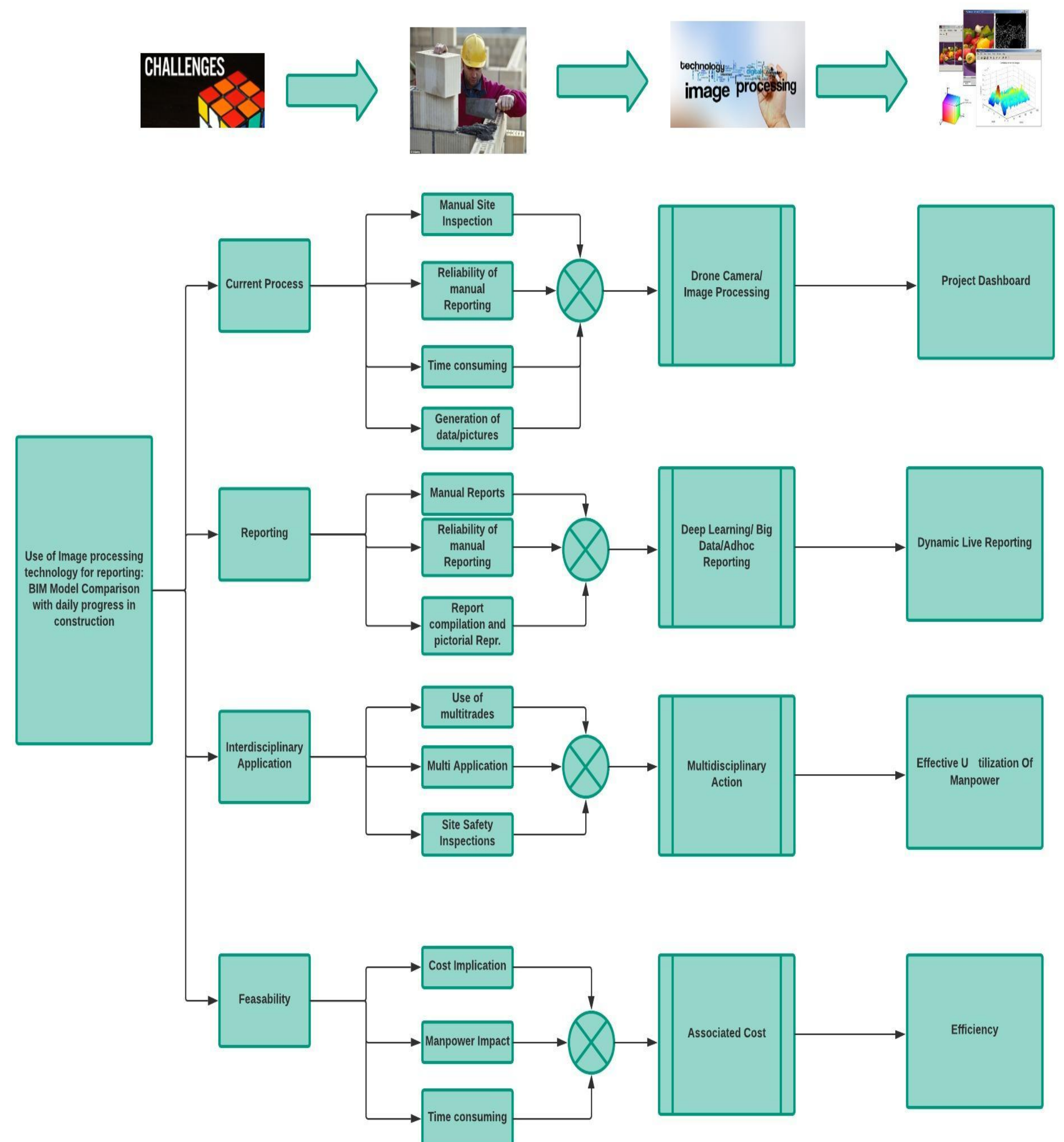
- Image processing technology along with drone technology can play a crucial role in future of construction. Based on data from the BIM Model and implementing deep learning techniques, the camera can generate reports on the project dashboard after completing a scan of the predefined area.
- The technology will be a game changer in terms of determining the overall budget of the project, eliminating almost 18% manual labor required for precise reporting.

## FUTURE RESEARCH

- Future research will focus on implementing image processing technology with drones not only in construction based application but also in any scenario where situation learning can be implemented utilizing machine learning and data extraction tools.
- The technology can be implemented for safety inspections and real time manpower evaluation along with site survey inspections.
- Big Data and Tableau tools and features can be researched and added to the project dashboard.

## FUNCTIONAL OVERVIEW

### KNOW-HOW



Functional Workflow Overview							
	Electrical		Mechanical			Architectural	
<b>BIM/MEP Model</b>	Conduits	Cable Trays	Mechanical Piping	Duct Work	Equipment	Room Boundaries	Ceiling Heights
<b>Machine Learning Software</b>	Cordinates of Conduits	Positions	Size of Pipes	Details of Duct Work Elements	Orientation Details	Wall Dimensions & Types	Celing Dimensions
<b>Drone Camera At Site</b>	Identify Missing Conduits, Fittings, Trays		Identify Missing Pipe insulations, Joints, Valves			Identifying Rooms, Slab Pores	
<b>Project Dashboard</b>	- Total Missing Fixtures - Percentage of Elemnt Completion		- Equipment Installation - Pipe Connection Status			- Wall Area Statistics - Ceiling Design Details	

