

Geospatial Technology for Smarter Project Management

Unmanned Aerial Vehicles (UAVs)


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Outline

- Introduction
- Industry Problems
- Solution: UAVs?
- Case Studies
- Roadblocks
- Proposed Solution
- Tech Improvements
- Conclusion

Introduction

- Gayatri Projects Ltd.
- One of India's top Construction and Infrastructure players:
 - EPC (roads, irrigation, industrial)
 - Highways (8 Toll & Annuity assets)
 - Power Plants (2640 MW complex)

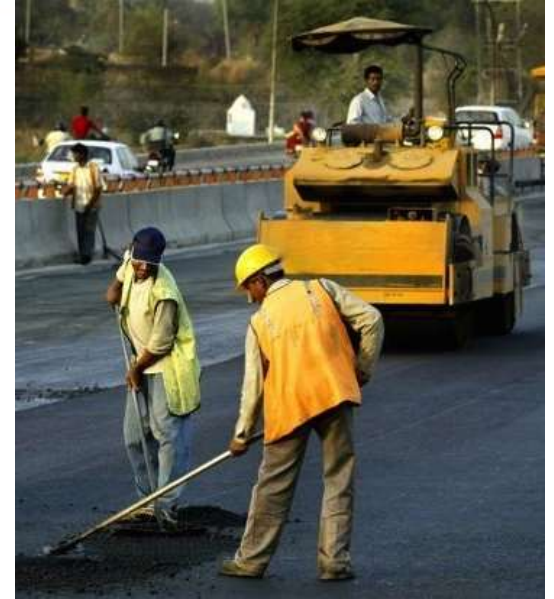


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Industry Problems

- Primitive project management techniques
- Lack of transparency and no access to timely project data
- Pilferage and misuse of materials and machinery
 - >60% of project cost goes towards raw materials
- Projects located in remote places
- Any mismanagement can lead to losses in the millions



Solution: UAVs?



- UAVs one of the best data capture methods
- Capture detailed visual data from Cameras, LiDAR etc.
- Can capture real-time status of work and stock-piles
- Can examine construction quality

Case Studies

- Surveying of Work-done and stock-piles
- Automation of machinery
- Vehicle tracking



Kespry & NVIDIA

Skycatch & Komatsu

Roadblocks

- Human intervention required
- Low willingness to adopt new technologies on site – additional work load
- Vested interests for some
- Difficulty in training and operations
- **Value prop not clear – if BIM not being used**



Proposed Solution

- Autonomous drone system – auto charging and data upload
- Auto surveying of work recorded in Daily Progress Reports
- Linking to CAD/BIM models and ERP software



Tech Improvements Required



DJI Guidance System



H3 Dynamics Drone Box

- Fully Autonomous navigation
- Collision avoidance systems
- Auto charging or battery swapping
- Improved battery life

Conclusion

- Technology fast improving
- Industry also becoming more tech savvy
- Value proposition improves when construction companies become more sophisticated:
 - BIM
 - ERP

