AI: The Next Utility?

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SUMMARY

Artificial Intelligence (AI) is emerging as the next utility—an essential infrastructure for commerce, productivity, and human advancement, much like water, electricity, telecommunications, the internet, and more recently, Global Navigation Satellite Systems (GNSS). Each of these utilities fundamentally reshaped how societies function and industries operate. GNSS, in particular, transformed the surveying and construction professions by providing continuous, precise positioning that underpins modern geospatial workflows. Today, AI stands ready to build upon that foundation, extending the reach of automation, intelligence, and decision-making throughout the built environment.

In surveying and construction, AI is accelerating a shift from manual measurement and static modeling toward dynamic, data-driven insight. Machine learning, computer vision, and autonomous systems are enabling real-time spatial analytics, automated feature extraction, and predictive modeling across project lifecycles—from planning and design to monitoring, asset management, and sustainability optimization. Just as GNSS democratized positioning, AI will democratize interpretation, transforming raw data into actionable knowledge at unprecedented scale and speed.

This evolution demands a new professional identity. Surveyors must increasingly act as data scientists and custodians of digital integrity, ensuring that AI-driven processes remain accurate, transparent, and ethical. Construction professionals will need to integrate intelligent systems into resource planning, risk management, and safety operations, leveraging AI to enhance—rather than replace—human expertise.

Academia holds a pivotal role in enabling this transition. Curricula must evolve to fuse traditional geospatial education with data science, computational modeling, and ethics of automation.

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Interdisciplinary research partnerships between universities and industry will be essential to develop domain-specific AI solutions that reinforce the profession's relevance in a rapidly digitalizing world.

As GNSS once became an invisible yet indispensable utility for positioning, AI is poised to become the universal utility for cognition and interpretation. The challenge before us is not to question if AI will assume this role, but how swiftly and responsibly surveying, construction, and academia will adapt to harness it for the collective good.

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