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# EA for Engineering Students: Value, Gaps and Challenges

Traditionally, information technology and business specialists have dominated the field of enterprise architecture (EA). In the current business scenario, information and data are most vital for successful running of an organisation aligning the IT infrastructure to meet the business goals. EA concepts become vital as engineering curricula evolve to meet the demands of an increasingly digital world.

It is indisputable that EA offers prospective engineers a valuable opportunity. Understanding frameworks like TOGAF helps students build a holistic view of complex systems. Modelling languages such as ArchiMate provide engineers the ability to view and comprehend the relationships between system elements, which promotes a systems-thinking mindset that is essential for solving complex engineering problems. The value of EA for engineering students lies in its ability to cultivate a problem-solving attitude along with the aptitude to understand business complexities. The success lies in creating EA to solve business problems and provide the necessary inputs that are pivotal to the business growth. EA provides a framework to analyze the systems, identifying interdependencies and potential bottlenecks. By understanding how IT aligns with business objectives, engineering students can develop solutions that address organizational needs.

However, there exists a significant gap in the integration of EA into engineering curriculum. There are courses that cover IT infrastructure and project management but what is essential for EA is the strategic perspective of the business needs. The ability to understand the complex business environment, the interdependencies while having the larger organisational interests in mind is a hard task for students and to truly enable students to understand the overall big picture requires changes in curriculum to develop a questioning, problem solving attitude and exposure to real life situations. Additionally, the abstract nature of EA can pose challenges for students accustomed to concrete problem-solving.

One of the shortcoming is that EA concepts must be introduced early in the curriculum with case studies and examples from industries. The students must be exposed to projects that provide solutions for problems in organisations so that their understanding of business widens and they think of varied applications of the IT knowledge gained by them towards problem solving.

While the potential benefits of EA for engineering students are substantial, its full integration into engineering education is still in its nascent stages. By proactively addressing the identified gaps and challenges, educational institutions can empower future engineers to become catalysts for digital transformation and create value for organizations.