THE ROAD TO EFFECTIVE PRODUCT DEVELOPMENT IN THE ERA OF IOT

In a **recent study**, Aberdeen Group explored how today's smart, connected products have changed the rules for product development. The internet of things (IoT) is coming, and the products that companies are developing are more innovative, more data-centric, and involve more software than ever before. Best-in-Class firms succeed via IoT-enabled operations and the use of a digital thread, digital twins, and APM (asset performance management). This toolkit also includes systems engineering techniques, PLM (product lifecycle management) as an innovation platform, and agile software development methodologies. The following checklist highlights actions that Best-in-Class firms take to successfully apply connected product development techniques and, ultimately, develop connected products.

☐	**Develop a "digital thread" that ties together all phases of a product's lifecycle.** For connected operations, harness this communication framework to connect previously uncoordinated "siloed" elements in your manufacturing processes. Doing so will provide an integrated view of assets throughout the product manufacturing lifecycle.
☐	**Establish "digital twins."** A digital twin is a virtual model of a process, product, physical asset, or service. It acts as a bridge between the physical and the digital world, allowing data analysis and the monitoring of systems and assets. Digital twins empower organizations to shift to an operations-centric view, where proactive and predictive maintenance enables front-line personnel to act before costly failures occur.
☐	**Look beyond technology.** Don't neglect business processes! In addition to the digital thread and the digital twin, you'll require business processes that help weave data-driven decision management into the manufacturing culture.
☐	**Dip into the tool kit used by successful Best-in-Class firms for product development:** • *Harness the asset visibility created by digital twins.* • *Use asset performance management (APM) to optimize asset and operational performance, reducing cost, improving availability and reliability, and managing risk.* • *Employ systems engineering for continuous validation and verification.* • *Deploy product lifecycle management (PLM) to enable a digital thread that ties together all phases of the product lifecycle.* • *Streamline software development via agile methodologies.*

Read the full report: Product Development in the Digital in the Era of IoT: Tying the Digital Thread

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