

Application of IoT (Internet of things) and Big data technology in smart grid and renewable energy integration.



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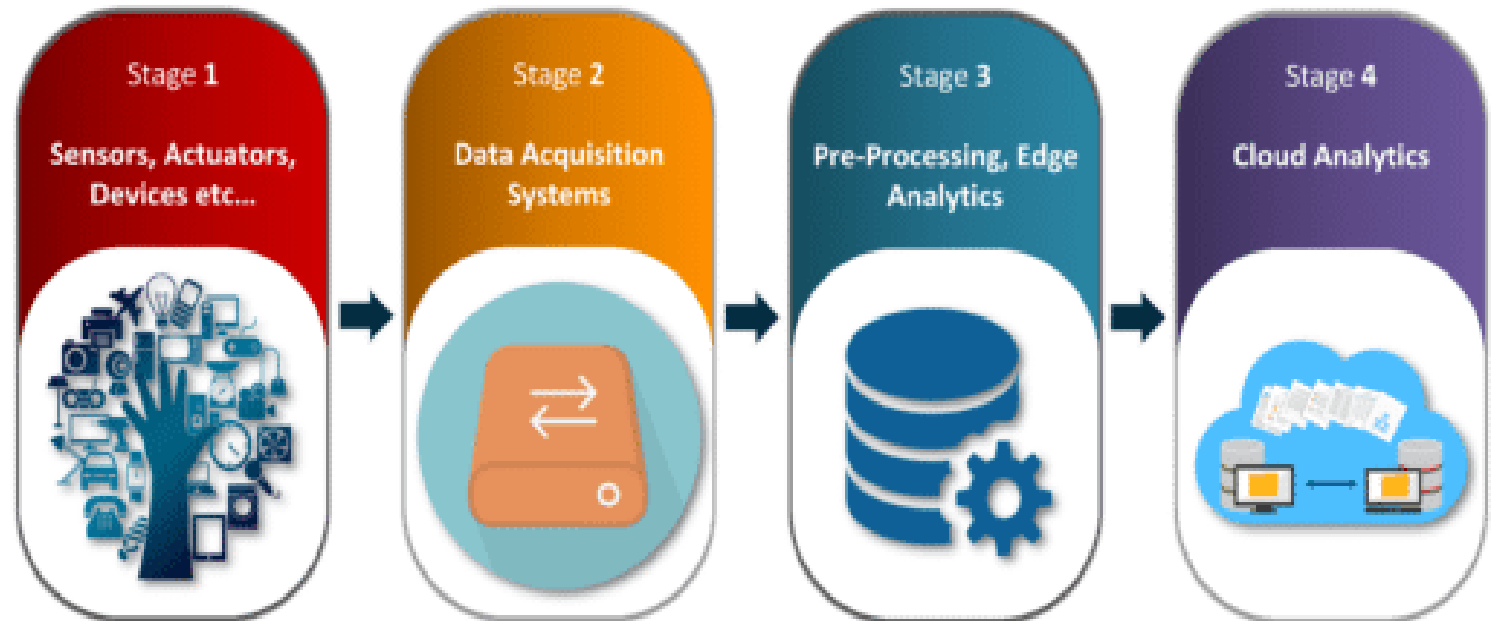
Internet of Things (IoT)

Stage 1. Sensing and actuating phase

Stage 2: Sensor data aggregation systems and analog-to-digital data conversion

Stage 3: Edge IT systems

Stage 4. Analysis and management



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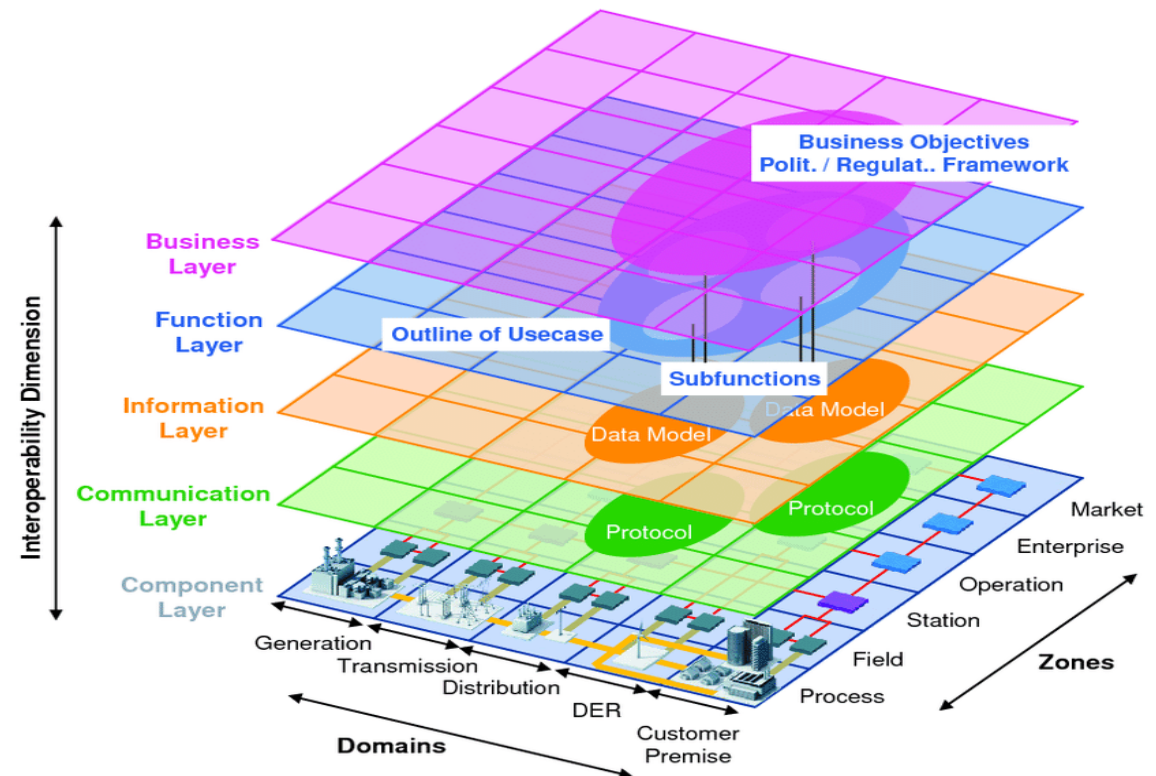
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Smart Grids

- Business Layer
- Function Layer
- Information Layer
- Communication Layer
- Component Layer



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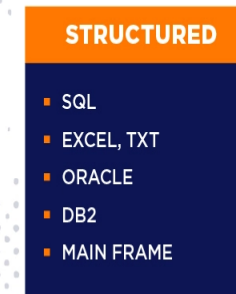
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Big Data

- Derivative of IOT
- Produced through sensors & digital equipments
- Used to store massive amount of data.
- Promising technology of the future for enhancing the quality of our lives



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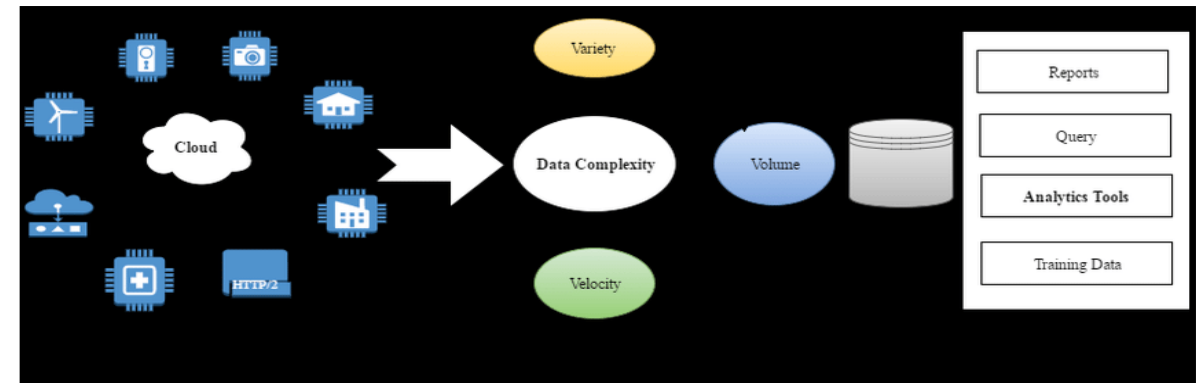
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Relationship of IoT with Big Data

- **Step 1:** Management of IoT data sources
- **Step 2:** Generated data called big data which is based upon its volume, variety and velocity.
- **Step 3:** This step involves data analytics tools such as Skytree



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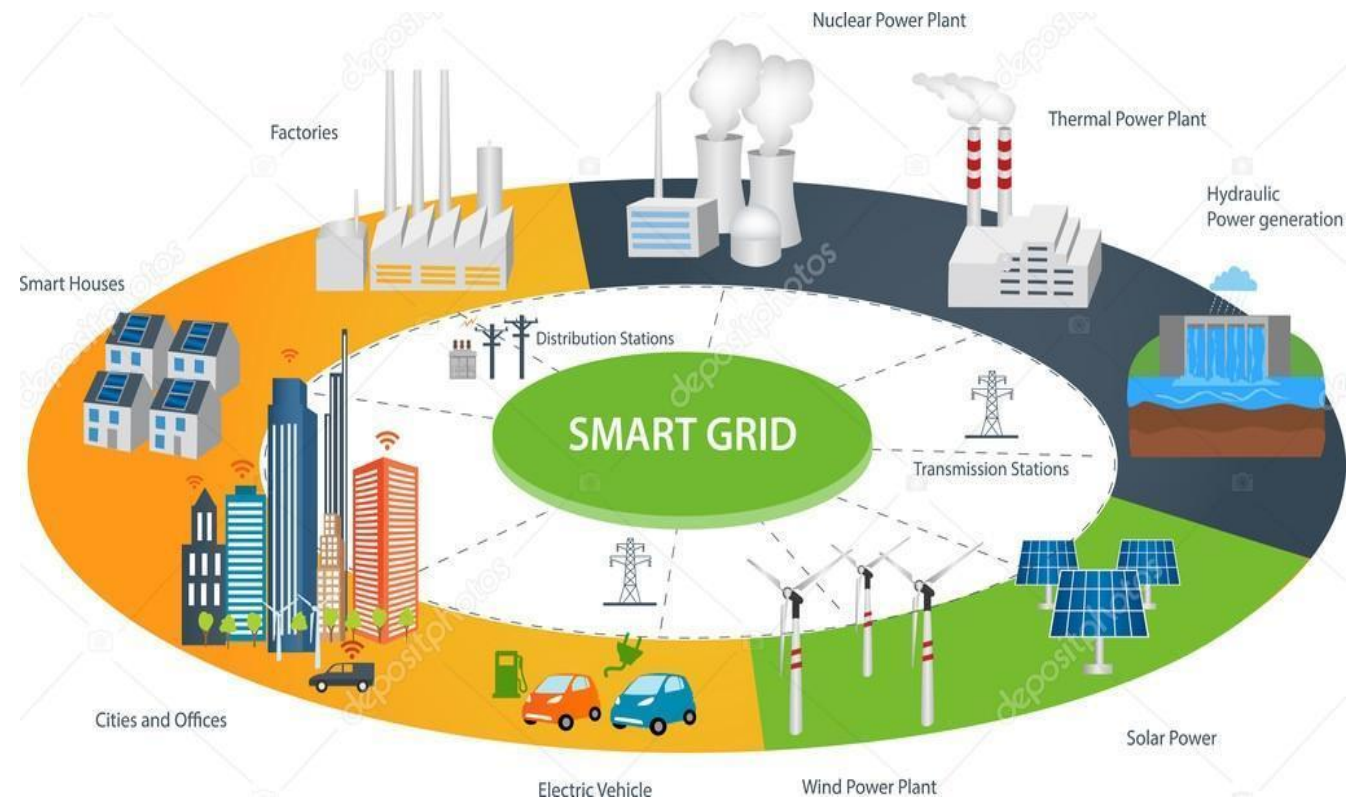
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Integration of Technologies (IoT and Big Data with Smart Grid)

- **Layer 1:** consumers (subscribers)
- **Layer 2:** Cloud-Based Computing (using IoT)
- **Layer 3:** Big data analytics



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Blockchain Technology

Decentralized Ledger



CBINSIGHTS

- A chain of blocks with each block containing information
- No block could be modified or deleted
- Used in health care & finance industries
- Supports the implementation of decentralized applications

