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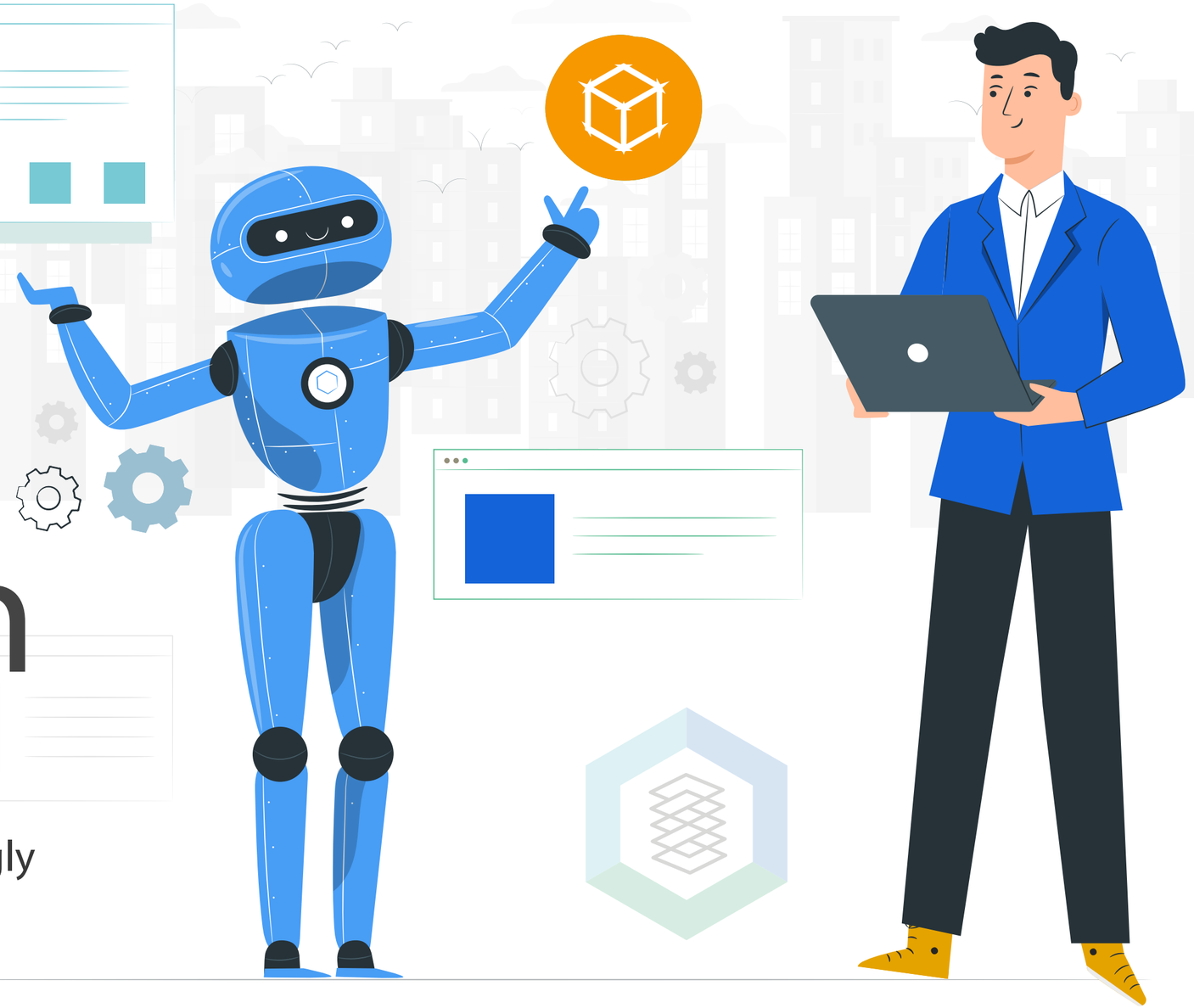
By ecoBPM

Where can I use IoT?

The following are some of the surprisingly practical applications of IoT:



Wearables:

Virtual glasses, fitness bands, GPS tracking belts, etc.

Health:

Sensors connected to patients to improve care and prevention of lethal events in high-risk patients.

Smart cities:

Smart cities are places where IoT is heavily present to solve problems that affect any city in the world. The most notable action points for IoT applications are supply management, environmental quality, and traffic.

Traffic monitoring:

Management of vehicular traffic in large cities, contributing to the concept of smart cities using applications such as Waze and Google Maps.

Fleet management:

Helps with geolocation, performance analysis, telemetry control, and fuel economy.

Agriculture:

SA significant amount of data can be obtained on the state and stages of the soil, such as soil moisture, acidity level, presence of certain nutrients, temperature, luminosity, and many other factors that can affect production. All of this makes it easier for farmers to predict and quantify each harvest before harvesting.

Hospitality:

For the hospitality industry, IoT brings improvements in the quality of service, with implementations such as electronic keys, automated checkout processes, centralized air conditioning equipment management, lighting control, refrigeration equipment supervision, water monitoring and misuse, food warehouse monitoring, and maintenance monitoring.

Livestock:

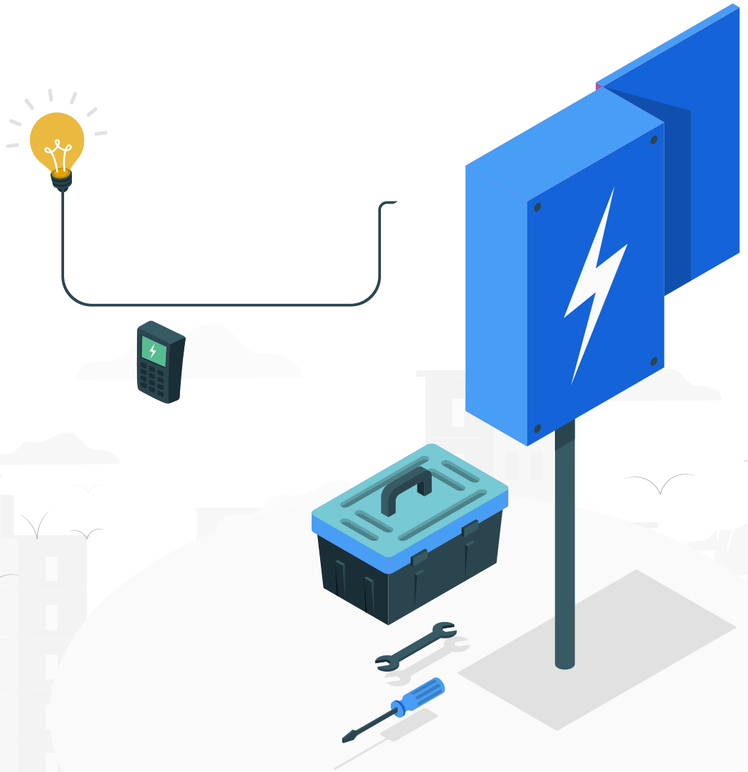
Biometric monitoring of animals and their geolocation.

Home automation:

Control of water quality in swimming pools (temperature and turbidity), control of parameters in aquariums, control of luminosity, temperature, electronic devices, kitchens, bedrooms, bathrooms, etc.

Gardening:

The IoT technology can provide very valuable information in this regard, like parameters that can identify deficiencies in plants, automatic irrigation, and even automate planting.



Energy saving:

The use of smart energy meters and the installation of sensors at different strategic points allows better monitoring and control of the electrical network.

Water supply:

A sensor connected to water meters and the Internet helps collect, process and analyze data to compile information about consumers behavior, detection of failures in the supply service, etc.

E-commerce:

Thanks to IoT applications, e-commerce is being transferred to retail stores like shopping centers. Questions like “How often does a customer come?”“At what time?”“What does he or she buy?” “Where does he or she come from?”“How much time does he or she spend shopping?” can be responded to with sensors.

Maintenance Management:

Used for real-time monitoring of physical assets that allow determining preventive or corrective maintenance.

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IoT Benefits

There are many benefits that a user or company can begin to enjoy when deciding to implement technologies like Sweven in their products, manufacturing systems, etc. The top five benefits of IoT are:

1 Cost reduction: Allows to streamline operations and increase profitability in terms of personnel and / or energy efficiency. IoT devices can monitor equipment and minimize downtime, in addition to centralizing information.

2 Efficiency and productivity: Accurately assess the demand for a product, reduce repetitive tasks, increase internal and external communication in offices, etc.

3 Business opportunities: Advanced analytics that provide new insights that are not only used to create new businesses, but also to implement in traditional industries.

4 Customer experience and Data Protection: Through IoT devices, front-end customer engagement and data protection have become a priority for organizations. Data protection consists of centralizing the information, allowing the implementation of security and privacy policies.

5 Mobility and agility: Companies now have the opportunity to allow their employees to do their work from virtually anywhere.

Actual information with

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IoT

Once the data has been collected through the Sweven IoT applications, it must be analyzed. By itself, data is just numbers that have no value. However, after the data and the context in which they have been obtained have been analyzed, they become information.

Thais is the reason why it is necessary to have tools that present this information through notifications, alarms and results in a simple way through interfaces and screens.
Depending on the sensors installed, Sweven IoT offers the following features:

Alarms or Alerts: When a signal exceeds a threshold.

Metrics in Real Time:

- Performance Metrics
- Predictive Analytics

Every certain time interval, data is obtained in order to graph and visualize the information depending on the context, and thus use artificial intelligence and machine learning algorithms to obtain statistics and predictions of sensed phenomena. Patterns of behavior are sought to provide objects and things with intelligence and autonomy.

What you need to do next

IoT projects consist of the following phases

1 Exploration Phase: Gather information for devices and sites where IoT will be implemented, as well as what data will be measured.

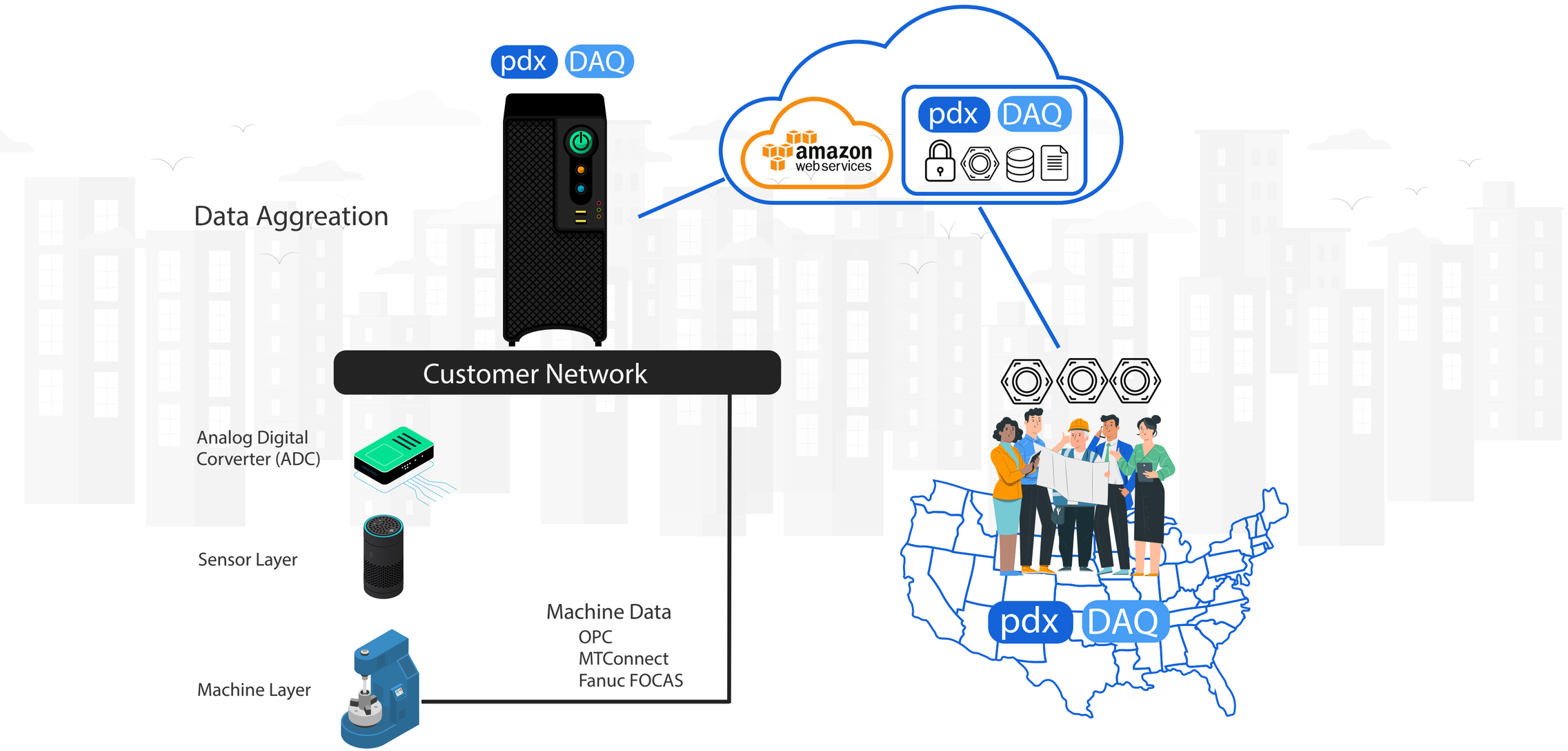
2 Design Phase: Custom pieces are ordered and designed to meet your specific requirements.

3 Development Phase: Final pieces are assembled and a direct connection to our network is set to start processing and testing.

4 Implementation Phase: Device dispatch with necessary documentation and manuals.

IoT Implementation Framework

The following are the levels in the IoT framework



An IoT architecture consists of the following 4 stages:

1 Sensors and actuators: Sensors have the ability to convert information obtained from the outside world into data for analysis, while actuators can intervene in physical reality.

2 Data acquisition systems: The data acquisition systems (DAS) connect to the sensor network and add an output for their interpretation while Gateways work through WIFI or LAN and perform additional processing. The importance of this is to process the enormous amount of information collected in the previous stage and squeeze it to the optimal size for later analysis.

3 Analysis and pre-processing of the information: In this stage we are looking at improved analysis and pre-processing like, for example, visualization technologies and machine learning.

4 Data Center: Data analysis, management and storage allow for in-depth processing, along with a follow-up review to receive feedback. Here, the skills of IT and OT (operational technology) professionals is the key. In other words, this stage involves heavily analytical skills, both in the digital and human domains.

Who manages IoT?

There are 2 types of roles in the architecture of IoT devices:

Admin: The person in charge of registering the devices associated with the IoT solution, organizing devices into groups (Hierarchies), wireless firmware updates on each device, and control of the outputs and data representation.

User: Through an API (Application Programming Interface), the users will consume the information supplied by an Admin.

List of IoT sensors and brief explanation

Sensors currently available with Sweven IoT services are:

Activity sensor: Specifically designed for residential and elderly environments, where a notification of daily activity is necessary in addition to being able to discriminate the detection of animals.

Smoke Detector: Features an onboard sounder and smoke sensor.

CO2 detector: Features an onboard sounder and carbon monoxide sensor.

Glass break detector: Detects blows or breaks in the glass.

Fire extinguisher monitor: Detects if the extinguisher has suffered any loss of pressure due to either use or lack of recharging, in addition to sensing if there are obstacles.

Temperature sensor: Measures the external or internal ambient temperature.

Humidity sensor: Measures the external or internal ambient humidity.

Pressure sensor: Measures atmospheric pressure and altitude.

Panic Button: Enables users to operate a button that triggers an alarm in the presence of potential danger to a person.

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