IoT → Globd network interconnecting smart objectst

→ Technologies to have this interconnections

↓

Builds on 3 pillors:

- Be IDENTIFIEBLE
- COMMUNICATE
- INTERACT

SMART OBJECT → Physical objects with electronics that allow them to **COMPUTE / COMMUNICATE** and to have **PHYSICAL PHENOMENA SENSE CAPABILITY**.

Features that IoT needs to support:

- Heterogenity
- Scalability
- Data exchage
- energy-efficiency
- Localization
- Self organization

Key building blocks → WSN, RFID

Can we <u>avoid batteries</u>? Yes, with <u>BACKSCATTERING</u>

which is the reflection of the signal back to the

direction which it comes.

2 backscattering **techniques**:

1. AMBIENT BS → devices collect power from signals available in the environment
   - Use of existing RF signals
   - Low data rate
   - Signal weak
2. RFID BS → tags collect power from signals emitted by RFID readers.
   - Signals always available
   - There must be the reader

* vedi slides

Infrastructures-based Wireless Networks

Based on an infrastructure, consists of base stations connected wired, but with MOBILE DEVICES that communicate wireless with the base station

Cons:

- Requires infras. available
- Too expensive
- Long set up time

Mobile Ad-Hoc Networks

Network without a central infros. that relies on porteci ponts networking abilities.

Challenges:

- Lack of central entity
- Limited range of comunication
- Mobility
- Battery dowices