

Base Station Evolution for LTE

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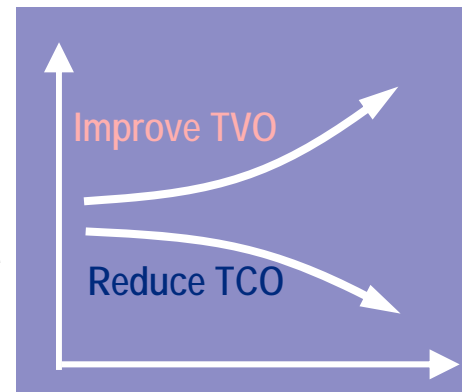
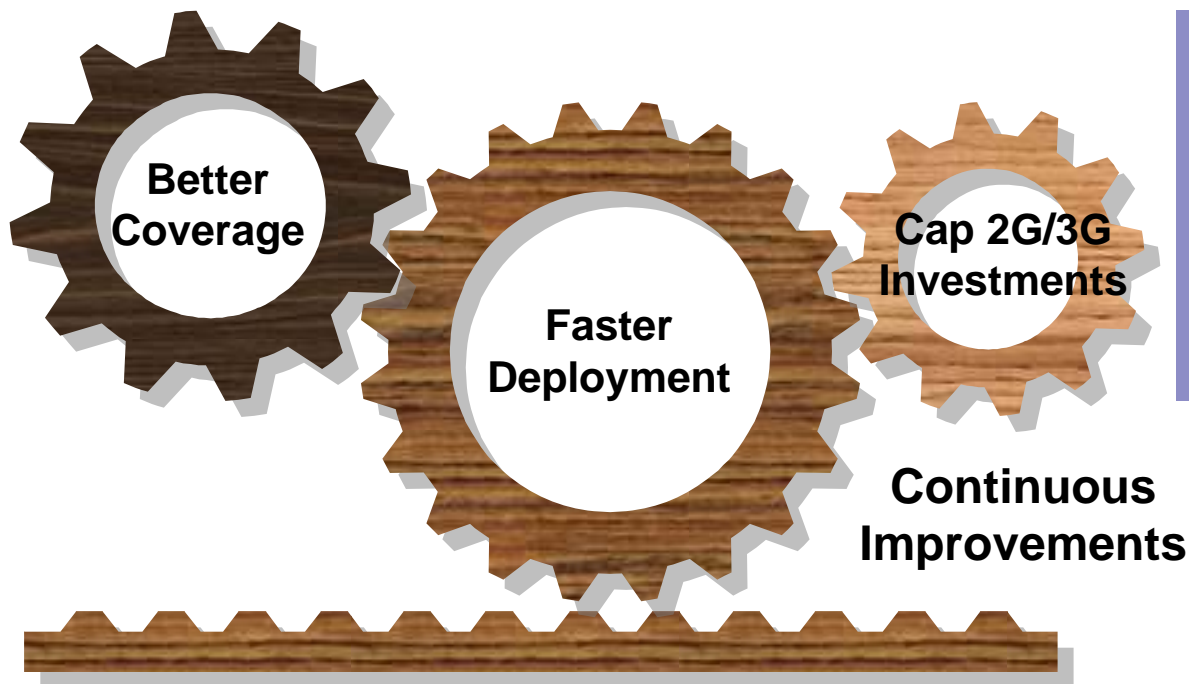
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Agenda

- Operator Requirements
- Challenges of Traditional Base Station Solutions
- Base Station Design Considerations
- Distributed Base Stations

Operator Requirements



Benefits:

- ❑ Better coverage reduces CAPEX, increases network reliability, promotes the brand, and attracts more subscribers
- ❑ Fast deployment keeps one ahead of the competition and provides quick returns on investments
- ❑ Cap legacy equipment investment with future-proof solutions
- ❑ Increased Total Value of Ownership and Reduced Total Cost of Ownership

Challenges of Traditional Solutions



Hard to Acquire Sites

- Difficult site acquisition and installation, leads to long construction cycle and large investment

Hard to Install

- Extremely heavy and challenging requirements for auxiliary support

Hard to Transport

- Large volume, very heavy , bulky and hard to transport

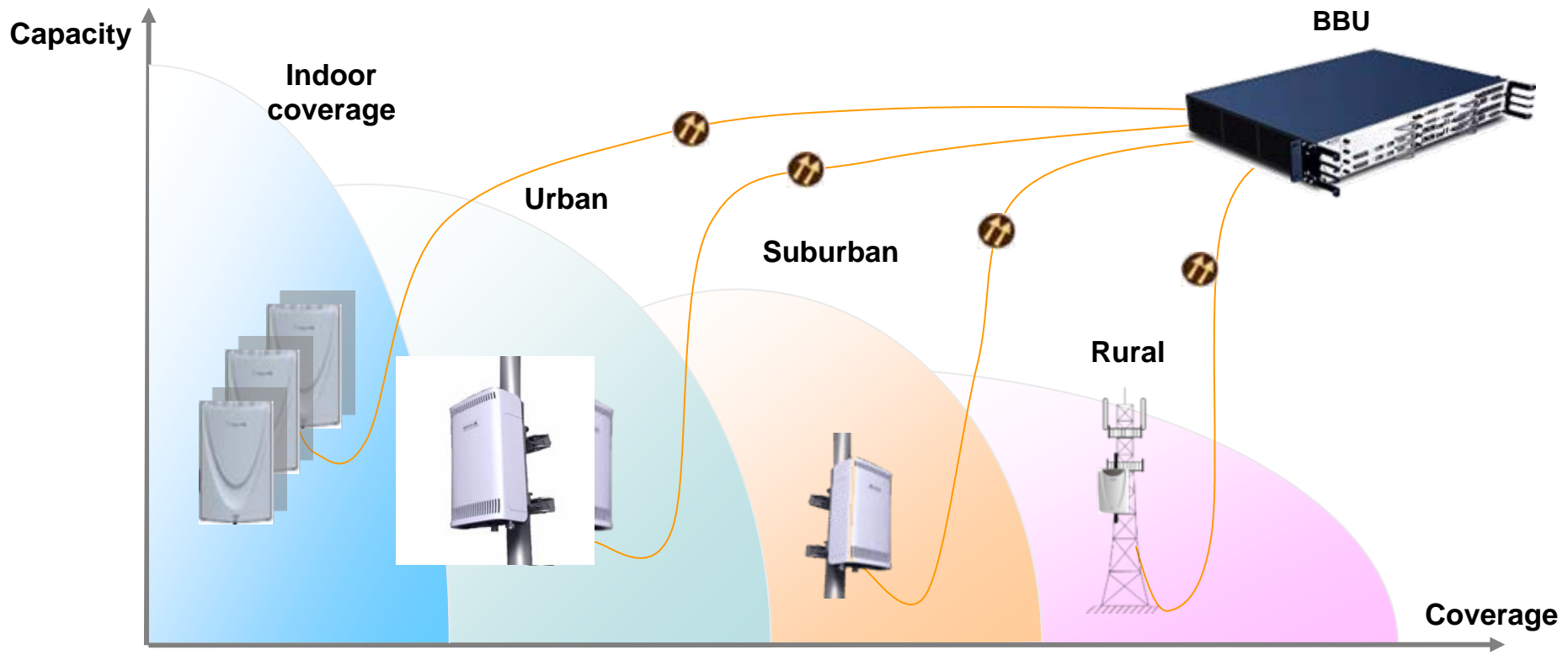
Hard on the Environment

- High energy costs and noise, hard to protect the environment

Base Station Design Considerations

- **SingleRAN**
 - Software defined radios
 - Multimode operation
 - Maximum flexibility
- **Green Designs**
 - High Efficiency Power Amplifiers
 - Miniaturization
 - Alternative Energy Sources
- **Broadband Radio Designs**
 - Scalable channel bandwidths versus fixed channelization
- **Reliability and Availability**
 - System design to eliminate single points of failure

Distributed Base Station (DBS) Solutions



Indoor environment



Urban area



Suburban area



Rural, mountainous area

Alternative Energy Example

From 5200 to 6500 meters on Mount Everest



The highest BTS in the world

- BTS3006C@O4 uses **solar energy** for power supply on Everest at **5200 meters**
- Provided communications at **6500 meters** for **Olympic Torch Relay**

Thank you

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