The selection of commercial or industrial Ethernet network products should be based on the environment. In a controlled environment like office condition, commercial-grade is acceptable.   In hot, humid, vibration-prone, electrically noisy environments, industrial-grade is required.   Managed or unmanaged switches can be used, but managed switches provide the capability to speed troubleshooting and repair.

The specifications of Industrial Ethernet products (temperature, shock, vibration, immunity... etc.) exceed harsh and industrial operating environment.   Most commercial Ethernet products have commercial temperature ratings (0-40C), and do not publish environmental specs.   Industrial Ethernet are designed for operation at -10 to 60C or -40 to 75C or even -40 to 85C, and have excellent environmental tolerance specification. Furthermore, Industrial Ethernet switches have rugged enclosures using Din-Rail or Panel Mounting.   Most commercial Ethernet equipments cannot be installed easily inside equipment enclosures.   Most industrial Ethernet equipments have redundant power input.   Commercial grade normally have a single power supply input.   This assure maximum uptime.

Commercial Ethernet has been available in the office environment long before industrial Ethernet   In many harsh and industrial environment cases, customers only implemented commercial-grade Ethernet equipments because they were not aware that industrial grade equipments was available. Therefore, they may implement commercial networking to
1. Build Climate-controlled environments using commercial grade Ethernet in harsh and industrial working areas (which is very costly)
2. Connect all devices to a Climate-controlled environment using commercial-grade equipment (which is very costly and affect reliability)
3. Simply use commercial Ethernet regardless of harsh and industrial environment (which will fail in the future or affect reliability)

LCSI mainly develops and markets industrial Ethernet products (Switch, POE Switch, Media Converter and Device Server) and partially Commercial Ethernet products (Workgroup Switch, POE switch, and Media Converter).   Listed below are applications for LCSI products.

LCSI Product Applications

.Industrial Ethernet

Transportation- Traffic Information systems, Video Surveillance, Toll Collection, Data Logging, Signalization, Ticketing, etc. for Highway, Tunnel, Urban Traffic, Railway, Airport, Seaport, Subway

Security and Surveillance- Area Monitoring, Access Control, Video Surveillance of Public, Government, Industrial, Factory, Transportation, City Center

Building Automation- Energy Management Systems, Facility Monitoring and Control Systems (HVAC / Lighting Controls), and Video Surveillance for Security systems

Industrial Control and Factory Automation- Infrastructure network for Device Network, Production Network, Robot and Machine, Video Surveillance

Power Utility- Infrastructure network for controlling power generation, transmission, substation, distribution, video surveillance

Military- Battle Field, Board Patrol, Video Surveillance

Telecom- Critical Network, Outside Plant

Commercial Ethernet

Media Conversion: Extend Network Distance; Provide a link between two different media types, Integrate high-bandwidth devices into the network.

Power Over Ethernet: Enables enterprises to provide power to network devices over the existing data connection

Why Industrial over Commercial Ethernet

- Designed to operate in Harsh and Industrial Environment
- Specification meets or exceeds industrial environments
- Industrial Style enclosure
- Appropriate approval

Din-Rail or Panel Mount
- Most commercial equipment can not conveniently fit into inside of equipment enclosure

Extended Temperature Range
- LCSI industrial products operate in two temperature range for most models at -10 to 60C and -40 to 75C, while most commercial product are only rated to a range of 0 to 40C

Rugged Enclosure
- Hardened protection

Managed Redundant Ring network Recovery time less than 20ms

Redundant DC Power Input
- Use the DC power (12-48VDC)

Withstand Extended Shock, Vibration, electrically noisy, and Humid environment,

Managed Switch models has fast redundant network recovery less than 20ms when network link is down