

Marketing Demand: Supplying Power Over the MDI

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Power over the MDI

- Opportunity
- Applications
- Market Demand
- Issues

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Opportunity:

- Growth in Consumer Electronics requires a great deal of cabling in both home and industry. With the Web and IP telephony, LAN access devices are proliferating.
- Growing desire for consolidation of home and industry control functions:
 - Environmental control
 - Security
 - Communications
- Simplify the installation & deployment of LAN equipment; Less cabling i.e. Data and Power on the same cable.

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Opportunity (cont.):

- With major drops in cost and power, LAN access devices are expanding into new applications.
- Standardization of Power over the MDI will spur the growth of a new market segment
 - External powering is a barrier to new class devices.
 - A single cable connection, greatly expands the potential for new products.
- Huge Market:
 - 1999 / 2000 / 2001 Cat 5 installed nodes (home): 977k / 1530k / 2211k *

* source InStat

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Applications:

- There are a large number of applications that could benefit from Power over MDI technology. These applications can be categorized in the following manner:
 - Communications / Data
 - Security
 - Control / Management
 - Convenience / Entertainment

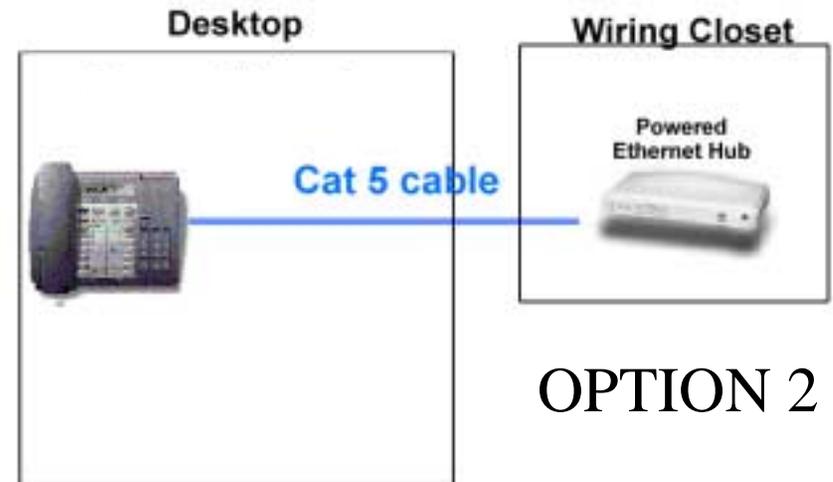
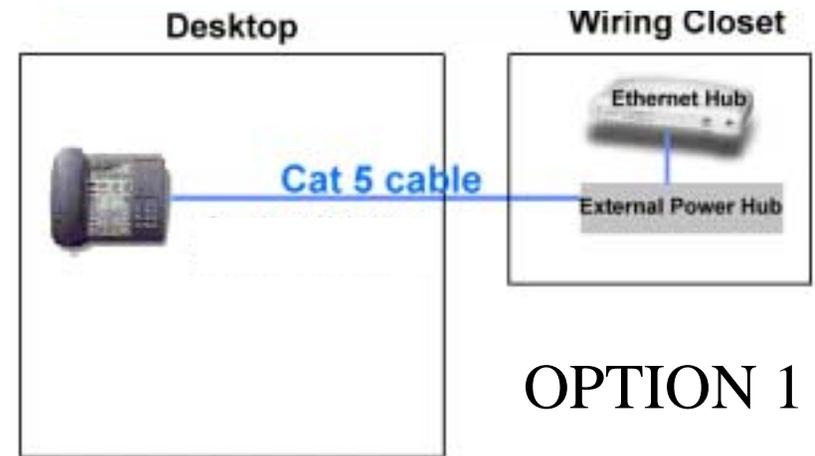
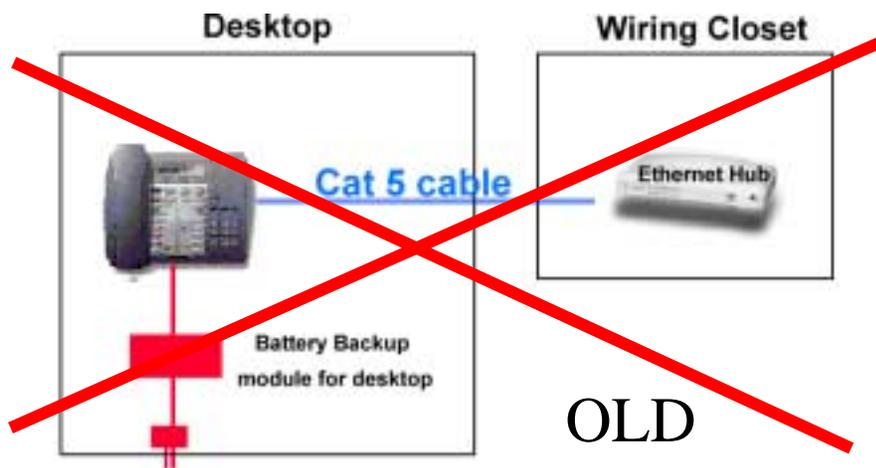
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Applications (Communications / Data):

- Web Cams, and other Web devices
- Palm Computers and PDAs
- Intercoms
 - Video links to remote entry points
 - Video and/or audio links through-out the home or business
- Ethernet Telephony
 - Most Ethernet telephones have External power connections, or use proprietary solutions
 - Increasing interest / applications
 - Customer base interested in only a single wire coming to the phone

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Applications (Communications / Data):



Source: Burton

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Applications (Communications / Data):

- Wireless LAN Access Points
 - Wireless Access Points require wired network and power connections. They are often remote & difficult to reach
 - Access Points are typically located on ceilings or high on walls to provide best radio coverage
- They are a big business
 - Yankee Group forecast of US Market:
 - 1999 Installed base of 700k WLAN nodes
 - Projected for 2000, 1M nodes
 - Projected for 2001, 1.4M nodes
 - IDC forecast of Worldwide Markets
 - 1999 Installed base of 2.3M nodes, 445k Access Points
 - Projected for 2000, 3.5M nodes, 561k Access Points
 - Projected for 2001, 5.2M nodes, 701k Access Points

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Applications (Security):

- Fire Alarms
 - Concise data regarding fire location, personnel in affected area, and size of fire
- Burglar Alarms
- Remote Monitoring
 - Video
 - Audio
- Remote Entry
 - Lock / Unlock
 - Personnel tracking

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Applications (Control / Management):

- Environmental control
 - Thermostats
 - Vents / Dampers
- Mechanical home appliance status / health
 - Locks
 - Meters
- Central home electrical control. New intelligent consumer products.
 - Light switches with macro functions
 - Log on from work and have the oven start pre-heating at 6:00 and the hot-tub heated by 8:00

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Applications (Convenience / Entertainment):

- Battery charger
- Web-enabled entertainment box
 - MP3 download
 - Real-Audio
 - E-mail
- Ethernet Shaver

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Market Demand:

- Benefits
 - With power over the MDI separate routing AC is not required.
 - Costs about \$200 per run to wire Cat 5 from hub in wiring closet
 - Costs about \$800 per run to wire AC conduit to code
 - With power over the MDI, no external power supply is required. No need for local power outlet.
 - Applications are easier to install. One connection is less cumbersome and more compact. Desktops are less cluttered
 - Reliability
 - Not dependent on local supply
 - Greater possibilities for power supply backup Enable centralized power backup facilities for high reliability uninterrupted service. A phone must always work.

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Issues:

- No Standard
 - Already there are a number of proprietary solutions. Can't interconnect different equipment.
 - Some proprietary solutions may not take into account operation with other standards. A proprietary 10/100 BASE-TX solution may adversely affect 1000BASE-T for example.
 - Lack of a standard will limit uptake of Ethernet telephony etc.
- The 802.3af standard needs to be compatible with legacy equipment.
- Must be safe

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Why Now?

- Avoid proliferation of proprietary non-interoperable solutions
- The ubiquity of Ethernet will open a new market segment for a new class of powered, intelligent devices
- For applications such as Ethernet telephony, it is still an emerging market; there is still a chance to establish a standard.
- The IEEE standards process is the best way to achieve a standard

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Acknowledgements:

1. Carlos Rios, 3Com, “WLANs and Power over Ethernet”, July 1999
2. Nick Stapleton, 3Com, “DTE Power via MDI”, July 1999
3. Arlan Anderson, Nortel, “DTE Power over MDI: Terminal powering over LAN wiring”, July 1999
4. Scott Burton, Mitel, “DTE Power via MDI” , July 1999