MAINSTREAM digital
Future Communications

# Anyone can do cabling – can't they?

**It is commonly held belief that anyone can install network cabling. The consequences of that line of thinking can be seen manifested in telephony errors, dropped broadband, slow networks and swirling buffering symbols.**

## BS EN 50173 and 50174

Just like every other area of technology, there are standards for safety and good practice associated with cabling that ensure the safety of the users of the cabling system and the installers and ensure that environmental standards are met at the same time. The combination of the application of these standards result in a proven and reliable platform for your data and telecoms.

## What do our engineers consider when planning a cabling installation to BS EN 50173 and 50174?

Type Of Cabling

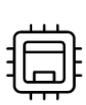
Future Plans

Current Building structure

Effectiveness

Building Regulations

Building Access



Current Hardware

Health & Safety

## Disasters such as the Grenfell Tower refocus our attentions on adhering to standards for installations.

Quite rightly, such disasters ensure that processes and standards are updated to ensure that the probability of such a reoccurrence is made even more remote. In the analysis of such a disaster, consideration is extended to all aspects of building construction, which extends even to cabling and ducting. This inevitably results in amendments and refocus on any related standards including those pertaining to cabling.

## Mainstream and Standards

Mainstream Digital are staunch supporters of standards and indeed comply with ISO 9001, ISO 2301 and ISO27001 as part of their normal compliance practices, but in addition, we follow BS EN 50173 and 50174 and benefit from cabling engineers qualified to City and Guilds 3667-02 in copper and fibre, as well as holding all relevant compulsory certifications for standards based cabling implementation.

## Experience teaches us lessons – Here are 6 such lessons:

### 1. Short sighted planning

It goes without saying that your network infrastructure needs to work *today* – not tomorrow, not five years from now. However, a company's network infrastructure needs to support the company's strategy and business processes in the long run.

Every piece of the strategic development puzzle is carefully laid out.

We painstakingly plan the development of well-understood pieces of infrastructure, like office estate and equipment acquisition. The development of a company's office network, especially of its most fundamental component – the cabling – should be no exception.

If you work with a service provider, you should aim for giving a broad overview of your growth plans, and especially of how you expect your network bandwidth and availability demands to evolve as a consequence of this growth.

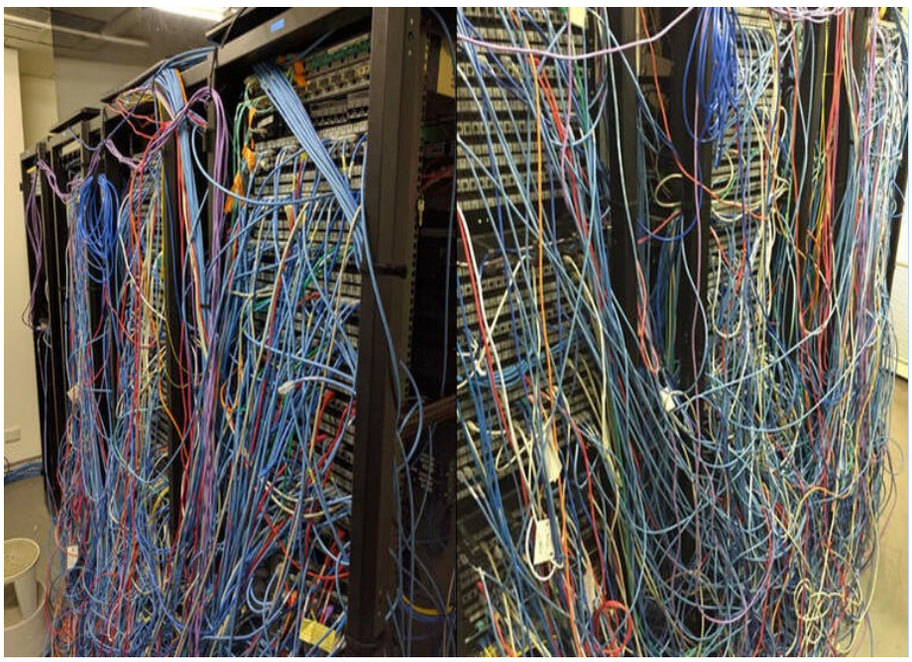
The final solution should have reliable, solid answers to three classes of questions:

- How will this design deal with the expected growth in terms of internal users and equipment, and how efficient (time- and money-wise) will it be to make the required changes?
- How will this design deal with the expected bandwidth and/or latency growth, and the associated growth in terms of deployed equipment, and how efficient (again, time- and money-wise) will it be to scale it?
- How maintainable is this solution? What kind of expertise is required to keep it running, and what kind of maintenance work will be required for the most common types of failures?

## 2. No Cable Management

Cable management is one of those activities that routinely gets ignored, postponed or done half-heartedly, until there is simply no way to ignore the consequences anymore. Dealing with them at that point, however, is more costly than even the most painstaking cable management process.

Cable management deficiencies not only make troubleshooting and maintenance more difficult, but they also increase the cost of simply using the network when it runs fine – in other words, they increase its TCO.



Poor cable management routinely results in needless duplication of cables, frequent patchwork, sub-optimum use of switching equipment, and downtimes that are longer than they need to be.

Implementing cable management techniques right from the beginning can result in tremendous cost savings, and devising a set of good cable management measures right from the planning stage is the best way to ensure early implementation. If you are working with a network cabling service provider, make sure to cover devising a good cable management system as part of your supplier partnership.

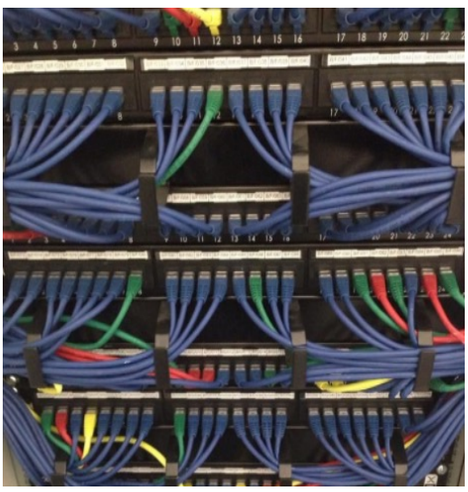
## 3. Ignoring Installation Standards

Superficially, network cabling seems like little more than a tedious matter of running cables from one plug to another. Every network engineer has their own favourite story about that one time when they spent days troubleshooting connection problems that were traced to cables exceeding distance, bend radius or environment requirements.

Depending on equipment type and speed, cable type and installation environment, a number of installation requirements need to be observed. The most often-quoted ones are distance and routing requirements like protective sheathing. However, many other problems arise in practice, with cabling standards, building codes and legal requirements mandating parameters like bend radius, shielding and distance to other types of cable.

Ignoring these requirements is not only a performance and reliability problem – depending on what requirements get ignored, it may be a *legal* problem. For example, because tripping and falling is the most common workplace hazard in the UK, employers are required to provide adequate protection through (among other things) adequate cable installation.

All these requirements need to be observed during installation, and initial planning needs to take all of them into account. Fortunately, most of these requirements are formally specified in regulatory and legal material, so it is possible to cover them with your cabling service provider.



**Professional Cable Management**

## 4. Incomplete Testing

It is essential that all links, from every network section, be tested at the same time. That is because structured cabling is usually installed in phases, over long periods of time; some of its components are installed early, while an office is being built or refurbished, weeks before the user-facing sections are installed.

Sections that worked fine when they were first installed can be damaged during construction, or can turn out to have integration problems when the entire ensemble is finished.

Testing should be a part of every hand-off procedure, but it can offer quality guarantees only if it is treated as a way to confirm that requirements are met, not just a set of checkboxes.

## 5. Unnecessarily Mixing Cable Types

Needless proliferation of cable types also results in higher long-term costs and complicates maintenance. As long as it does not compromise on long-term scalability, one should aim to minimise the number of cable types used in a network.

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## 6. Not Provisioning for Maintenance and Service

Every setup is great while it works, but the true test of a piece of infrastructure's flexibility and long-term reliability is how easy it is to maintain and repair. Failing to make provisions for maintenance and replacement postpones this true test for what is typically the worst possible moment.

Common examples of failure to plan for maintenance and replacement include:

- Running cables through areas that are difficult to access or service
- Not leaving room for removing cables, so that cables need to be left in place when changing or moving equipment, thus increasing clutter and cabling costs.
- Failing to provision and implement cable management rules in non-critical sections, leading to lengthy troubleshooting procedures when disaster strikes.

Very large networks have tight maintenance and replacement, formalised as part of company procedures. For smaller networks, things need not be so formal, but you should at least discuss the most common maintenance and replacement scenarios with your network cabling company.

## Contact us

**Consider asking Mainstream Digital to assist you with your network and telephony cabling requirements**

**As part of our Technical Audit capability allow our experienced cabling specialists to appraise your existing or future cable plant requirement and take advantage of the experience that we have on hand.**

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**MS Digital** Cirencester Business Park, Love Lane, Cirencester GL7 1XD
**E** sales@msdigital.com **www.msdigital.com**