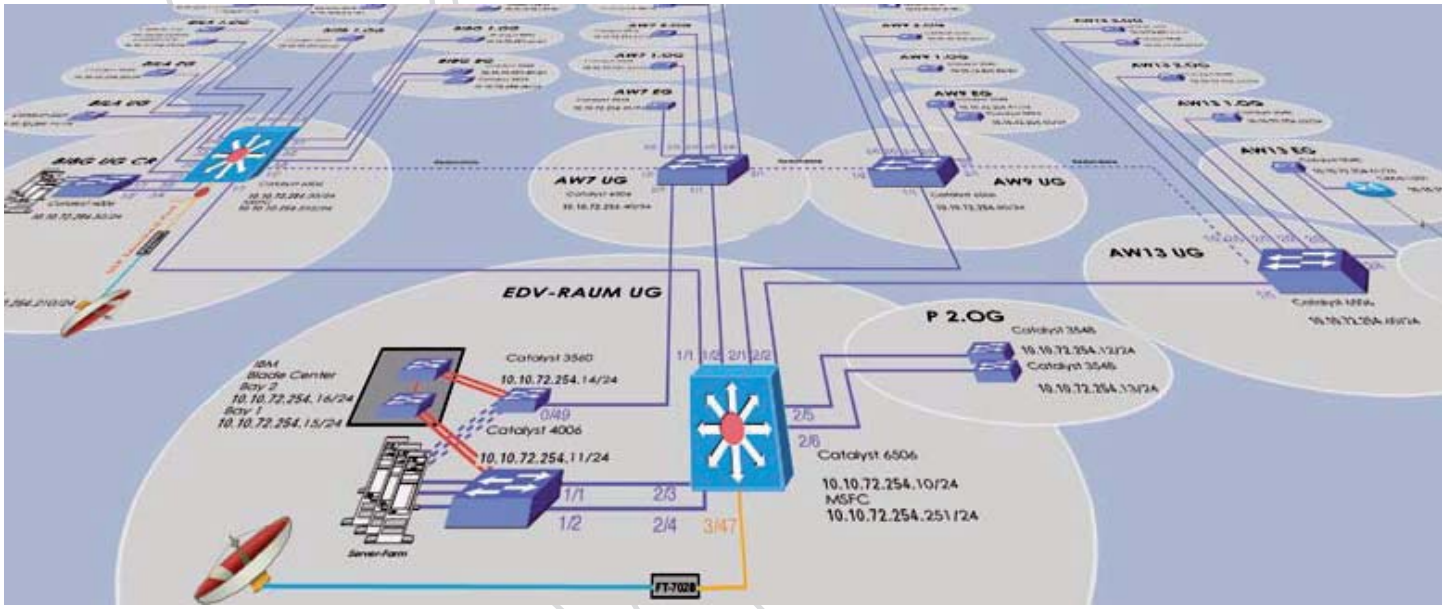
R&M Guaranteeing quality with a plan and goal



Customised cabling solutions are not achieved with the quickest possible installation under time pressure and by concentrating on the least expensive solutions, but with complete, expert planning and continuous checking for errors.

This time we want to take a closer look. The first and most important point is the design of the cabling infrastructure. Every expert involved in network installations has a clear idea of a cabling setup. However, the definition of the quality level aimed at is frequently less obvious.

In planning, it is often the case that only part of the actual work is taken into account: preparing material lists and calculations as well as the selection of components. In most cases, the selection criteria are dominated by the cost factor. However, statistics show that 72 % of all projects fall short of the set goals with regard to functionality, performance, building time and costs, although much attention is given to the last factor. There are many causes. The crucial point, however, is the method of network planning.

Planning an infrastructure is a very complex task. Even small mistakes, particularly early on, can put the entire project at risk. Thus, successful planning requires a proven method as well as profound know-how in the cabling area. The latter particularly involves the full use of cabling standards, particularly technical guidelines. The method is based on many years of experience and requires involving the planner in all project phases to the point of final acceptance by the customer. We teach methodology and sound technical understanding intensively in the "R&Mfreenet" planner training program. Technological competency guarantees the functional cabling quality, whereas the right methodology harmonizes the functional and economic success factors.

Four steps are important in achieving Quality of Service: planning, implementation, checking and error correction. Quality deficiencies can almost always be attributed to flaws in planning and error correction. Planning is vital as it is in this step that all requirements regarding capacity and performance are defined, and components and network architectures are established. Error correction is of great importance because problems can be eliminated, causes can be determined and the methods thus improved.

Studies of implemented projects consistently show the same result: the cabling infrastructure frequently does not comply with the standards and does not achieve the desired target performance. To avoid this, the following principles must be respected:

1. The customer requirements for the cabling system must be taken into account in the planning phase. In continuous cooperation between the project manager and the customer, the latter's requirements can be assessed as well as possible and be harmonised with the functional and economic requirements.

2. Every infrastructure project is an investment. The material and implementation expenditure specified in the project draft should not be considered as costs but be seen as a cost-benefit ratio. If this result is negative, the implementation phase must be stopped and alternatives, defined in the planning phase, must be implemented. Experience has shown that such alternative scenarios are often missing.
Due to time pressure, the project is patched up and continued which is fatal for the end result. The cost-benefit ratio should also be viewed while keeping future requirements in mind. Therefore, the planner must collect all information prior to the beginning of the planning phase in order to prepare a medium to long term scenario of future technologies.

3. Infrastructure errors are always very expensive. However, the earlier the error is discovered and corrected the lower the costs. This is another reason in support of the importance of the right planning method. Errors are discovered when they can still be easily corrected.

The following information must be collected and recorded in a checklist during the planning phase:

- required cabling performance
- complete knowledge about the building to be cabled
- maintenance or construction work that must be completed prior to beginning the network installation
- material and workers needed for the installation
- the necessary know-how the workers involved in the installation must have
- logistics issues on timely deliveries and temporary material storage

The subsequent implementation phase is frequently assigned entirely to the installer. In spite of his important role in successful cabling, he cannot assume typical planner tasks. Component selection and the layout of the cabling system remain the planner's tasks. He should monitor the total project process even if he has great confidence in the installer. Additional tasks of the planner are decisions concerning the required workers, instruments and materials as well as security measures and the content of the cabling documentation. Successful planners have the ability to listen and to scrutinize decisions continuously. Furthermore, they need the courage to make changes and respond in good time whenever the success of the project is in danger.

Direct feedback as well as smooth collaboration between planners and installers should avoid errors and additionally provide useful possibilities for exchanging experiences. If the same person carries out both planning and installation, there is a risk that, due to a lack of self-control, the efficiency of the project is reduced and important action alternatives are overlooked.

As "Master Mind" of the project, the planner must also handle the economical management of cabling, from installation through maintenance to the running operation. These aspects will be looked at more closely in a future issue of Connections. We will describe how easy it is to increase the quality of an installation project and thus network performance with instruments such as the R&M Netplanner.

Cabling planning

Collecting information	– Installation purpose and customer requirements – List of standards to comply with – Building drawings – Machine inventory and logical network configuration
Inspecting site	– Verify electrical system conformance – Define telecommunications grounding system – Check environment (inside/outside) – Identify and size passages, cable routing and support structure – Define telecom room and other spaces as needed – Identify entrances
Sizing and planning	– Determine number and locations of drops – Size and configure distributors – Draw floor plans – Size and define risers – Draw backbones – Draw grounding connections – Size and plan building distributor
Reviewing plans	– Review with installer and customer – Verify on site feasibility – Refine/finalize design
Schedules	– Identify all parties and tasks involved – Size time and resources required – Determine installation sequences – Define detailed schedules – Review and concur with parties
Problem diagnostics and maintenance	– Document network data flow – Document software for problem diagnostics and control – Define problem diagnostics procedure – Define cabling maintenance and responsibility – Define spare part requirements – Define maintenance procedure
Execution	– Order material according to schedule – Verify skill availability – Verify received parts – Check installation progressing as per schedule – Supervise cabling testing – Complete administrative package – Submit warranty request form and package if required

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