

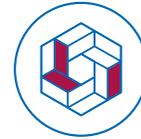
A photograph of a man with a beard and dark hair, wearing a dark blue shirt, looking intently at a large screen in a meeting room. He has his hands clasped in front of him. In the background, other people are visible, including a woman with glasses. The scene is overlaid with a blue geometric network pattern of lines and dots. A large blue curved shape is on the left side of the image, containing the text.

Orchestration: the IT manager as conductor of the network

The 5 major challenges that
IT managers face in the area of
network management

How can I make my network optimally match the requirements of my organization? And how do I make sure that it will still meet expectations in five years' time? The demand for bandwidth is growing, automation and machine learning are rapidly emerging and specialist knowledge is increasingly necessary to keep the network secure.

In this e-book we discuss the five major challenges that IT managers face in the area of network management.



1. The paradox between increased complexity and higher expectations



2. The IT department has to consider a growing number of interests.



3. From reactive to automated management



4. It is becoming increasingly difficult to keep the network secure



5. Innovation: the network of today, tomorrow and in the future



1. The paradox between increased complexity and higher expectations

Today's IT manager has a job that many people would not be able to cope with. If we take a closer look at the connectivity within the IT department, we notice a strange paradox.

The IT manager must take care of, among other things:

- The availability of the network, while the number of endpoints, such as IoT devices is on the increase;
- A larger IT, OT and application landscape;
- The implementation of updates at an increasingly rapid pace;
- A shorter time for troubleshooting while the complexity of the network continues to increase;
- A higher quality experience and higher expectations of users in a primarily wireless environment.

You might expect that there is full understanding for the challenges facing this IT manager. In reality, however, not only has his role become more complex, the expectations have also increased.

Not only from the end user, but also from the management. Not surprising when you consider that the average cost of downtime is \$5,600 per minute.* Furthermore, managers often feel strategically inhibited by an overly complex and difficult to manage IT and purchasing department. All things considered;

network management is a heavy responsibility. It is not that simple to reduce such complexity and it is by no means the only responsibility of the IT manager. This raises the question: how do you address this paradox as an organization?

How network complexity and network load are increasing

The increase in the number of wireless devices per person, including applications and functions, result in higher network traffic. The emergence of technologies such as IOT, WIFI6 and Big Data Analytics increase the demand for bandwidth even more.

The capacity of the network is not geared to dealing with this and the user experience deteriorates. It is a major challenge for the IT department to keep the connection stable, fast and secure.

* Source: Gartner (2014), The Cost of Downtime



2. The IT department has to consider a growing number of interests

The network has now become a 'hygiene factor'; you don't notice it until something goes wrong. Although the management often still sees the network as a cost item, in reality it has become a 'business enabler'. It is the highway to digital transformation for all organizations. Not just the management, but departments such as operations and marketing are becoming aware of its increasing strategic importance. As a result, they are becoming more involved in IT policy.

While the IT department used to be leading in decisions regarding network choices, it must now increasingly take into account the requirements of non-specialists. For instance, the management takes a top-down decision, for cost efficiency reasons, that the organization will move to the cloud. It is up to the IT manager to take on the challenge of successfully completing this mission.

Theoretically it is of course possible to place full responsibility, once again, with the IT department. However, in practice it does not work like that, because the network is a crucial factor in the daily processes of the employees in all departments.

It is therefore important that the IT manager is given the opportunity to analyse and assess all aspects of the wishes and requirements and (possibly) implement

them. However, he should not be alone in this. A partner who not only helps to fulfil the wishes, but who is also able to anticipate the future requirements, is of great added value and is crucial with regard to providing you with support and guidance in your new role as a 'business enabler'.





3. From reactive to automated management

The switch from reactive to automated management has many different aspects. One of the latest developments is 'Network Orchestration', also known as Software Defined Networking (SDN). In this process, the behaviour and configuration of a network is programmed automatically.

The network connects effortlessly with the hardware and software elements and applications and services are supported more efficiently and effectively. The benefit of network orchestration is that services and applications are separated from the network components by means of a software layer. The intelligence of the software layer ensures that the network is automatically configured according to the specifications of an application. This benefits the user experience.

How can I achieve network orchestration? It is a key question in many IT environments. Outdated infrastructures are often not flexible enough to support this extensive automation or are simply not standardized. This is a major challenge for the IT manager.

The path to network orchestration consists of the following steps:



With automation it is important to determine which applications are important and which must always be given priority. If it is clear that a relatively unimportant (web) application, for example YouTube, slows down primary processes, then it is important to set priorities in the network policy.

It makes sense to base this decision on data that arises from the network. Dashboards can easily provide this insight, provided that these are available. Eventually data collection and analysis even make the network 'smart', due to extensive automation. This innovation in the area of network management leads to a continuously improving user experience.

How can you switch from reactive to automated management?

Being able to automate the network management, requires insight into the behaviour of the network. Axians proposes three specific steps:

1. Insight: what happens to my network.
2. Monitoring: what is happening on my network.
3. Control: define policy on the basis of the insights and enforce this as effectively as possible on the network.



4. It is becoming increasingly difficult to keep the network secure

The dependencies between your LAN, WLAN and WAN domains can no longer be considered separately; they have been merged into one integral network environment. However, this merger also entails the necessary additional security requirements. Many organizations have not arranged for any chain management tools over these components. Furthermore, the specialised knowledge for these domains is often not available. Recruiting specialists with knowledge about the three connectivity domains is a major challenge. Retaining control within all these domains is an increasingly greater challenge and burden for your IT department.

We regularly see reports about the risks of an insufficiently secured network in the news and no organization wants to see its name in one of these newspaper headlines. At the same time, it occurs alarmingly often that an IT manager is provided with insufficient resources to achieve a secure network. It is a dangerous form of burying one's head in the sand. This raises the question: is the network security within your organization well organized?

One of the most important aspects for a secure network is the systematic installation of updates, bug fixes and upgrades. Product suppliers continue to invest more in the security of their components, so that they can provide

a guarantee with them. To be able to make efficient use of this investment, you need to assign ownership and implement a release management process. A homogeneous network infrastructure is a major benefit in this. This saves you time with regard to identifying new releases and mastering the various implementation methods.

'Retaining control within all these domains is an increasingly greater challenge and burden for your IT department.'

Make an IT network manager responsible for everything and define a time each month to check whether there are new releases from your product supplier. A fixed periodical 'change window' is essential to implement these releases.

The result of these measures: your network is up-to-date and the chance of a data breach or hack is significantly reduced. A consequence of this is that the number of disruptions is reduced, your employees can work undisturbed and you will have more time to work on what you are good at.



5. Innovation: the network of today, tomorrow and in the future

Applications and network technologies innovate at a fast rate, and this makes it increasingly difficult to determine where you can best deploy the network budget. You have to look four to five years into the future, even though it is difficult to estimate how much and which type of traffic the network will have to deal with at that time.

It is therefore important to view the network as a flexible connectivity platform that continues to scale and renew itself. The network may not be static, even though in most cases it is, but must grow with the changing requirements within the organization.

Because it is quite complicated and time consuming for the average IT department to keep up with the daily course of events, a preview of the future is not the first priority. But if your network has to be deployed to also facilitate your organization in the digital transition, a new network approach is essential. An approach where the view on new functionality and optimization is a continuous process. This in contrast to a new Request for Proposal or tender criteria that only occur once every 5 to 7 years.

How do I guarantee the flexibility of my network?

To allow the network to grow in line with the changed requirements and technological developments, an increasing number of organizations opt to purchase their network as a service. The major benefit: instead of a one-off investment in a static network, you have a subscription to connectivity and innovation. In addition, 82% of the organizations experience a cost reduction by switching over to as-a-service*. Furthermore, the organisation immediately has available the latest (chain) management technologies, which considerably reduce the troubleshooting and recovery times.

* Deloitte (2018), Flexible Consumption Models Study

Een netwerk dat ook morgen relevant is, waar moet ik op letten?

1. Optimization of the network management

The majority of the daily network management activities can be automated. Consider the daily events, incidents and standard changes. By means of the software layer, with smart APIs and scripts, you can automate the identification, analysis and countermeasures. The time that your software, network and employees start strengthening each other has arrived with the latest network technology.

2. Implementing and removing (new) functionality

A Software Defined Network is no longer a static environment. Thanks to the software layer it is possible to regularly extend the network with relevant functions (sometimes free of charge!). Ensure that your network managers or architects are up-to-date with regard to the latest functionality developments and draw up a roadmap to implement these developments.

With Axians NAAS you take out a subscription to innovation, with which we set our sights on the future and take over the activities from you!



The ROI of your network

The cost benefits of Network as a Service

The IT manager has a heavy responsibility. He is continuously busy directing the network employees, which distracts him from matters that make a difference for the business. For example, strategical IT advice or demand management. So, we have added a sixth challenge: the ROI of your network.

The network is frequently seen more as a cost item, than as a business enabler. As a result, the cost benefit is the most important reason that an increasing number of organizations purchase the network 'as a service'. It is not necessary to make the investment in one go, but in effect you take out a subscription to an integral connectivity and innovation service.

There are even more **cost benefits** that can be gained by outsourcing the network:

1. 24/7 support by a specialised partner

It applies for many organizations that downtime is not an option. So 24/7 support is normally the standard. However, in practice this means that you need at least 3 to 4 FTE to be able to provide the required support. That is a considerable cost item. Furthermore, these network specialists have to continually keep their knowledge up to date. This costs a lot of time and energy. By outsourcing the network to a specialised partner, these resources are freed up for strategic activities.

2. Keep the costs under control with licence and guarantee management

It is difficult to keep track of when licences and add-ons must be renewed. What happens if you do not renew on time and the licence is no longer supported? This leads to safety risks, because you no longer have a right to bug fixes, upgrades and/or technical support. On the other hand, automatic renewal results in continuing with unnecessary licences or useless guarantees. A specialised partner keeps track of this for you.

3. Recruiting specialists is no longer your problem

Managing a network requires technical specialists, who must continually keep their knowledge up-to-date. However, these people are increasingly difficult to find. The importance of the network for organizations is growing faster than the number of available technical specialists required to manage it. Keep your focus on your core business, by leaving the recruitment of specialists to a partner.

4. Asset management always in order and no worries about depreciation

Do you have a good summary of your network assets? And is it up-to-date? This is apparently a complicated problem for many organizations. For example, troubleshooting for IT network managers soon becomes a complex and thereby expensive task when there is insufficient insight into the status of the various assets.

5. Standardization and virtualization of the network avoids complexity

If you store a configuration centrally, you can push it from the centre to the hardware, so that the hardware immediately has the correct settings. If you do not do this, then you have to do it manually on site, that costs a lot of time, effort and thereby money. Furthermore, the chance of human errors and downtime increases considerably. This all becomes a thing of the past after standardization and virtualization of the network.

With Network as a Service from Axians your current network is immediately transformed into a modern and flexible connectivity service. It connects all the ambitions within your organization with the network and provides new, distinctive capabilities. All this thanks to your new software-defined network!



At an international level, Axians maintains the same validated standard designs when drawing up network blueprints. This enables us to quickly implement innovations for all our customers and deploy international best practices for all public and enterprise networks. Our networks are more predictable and stable, so that the IT department can focus on more important issues.

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Connecting Ambitions

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