5.2. IT Infrastructure (RC)

Introduction

Multi-National companies often have centralized IT-Departments that manage the infrastructure centrally worldwide. This Infrastructure mostly is based on a centralized Client-Server infrastructure which in general brings benefits considering Administration and Safety.

While this is a straightforward approach for most constellations as long as there do not exist any blockages of internet traffic, the situation might be different for China: Services that are commonly used in western countries can be blocked by the "Great Firewall" or the performance of accessing them is too slow to really use them in a productive way. Additionally the time difference between your headquarter, in which the service desk is often located, and different public holidays can have a serious impact in your operations if there are no proper processes set up which provide support outside of the usual business hours in your headquarter.

Localized and corporate dual network Infrastructure

While a company in general has a high requirement for protecting its information technology environment, usually the systems are set up in restrictive environments preventing unauthorized installations, filtering malware, Spam with centralized file storage. To achieve this, at least medium-sized companies use dedicated lines that connect the local IT infrastructure directly into the corporate network, utilizing the same mail servers, proxy servers, storage systems as in the headquarters and therefore bypass the great firewall. The downside is: When trying to access websites within China, they might either be inaccessible or barely usable due to performance issues. Banking Websites, Interaction with tax offices and other specialized software interacting with Chinese servers might refuse to work.

Due to varying performance of international connections, this can also be true for corporate infrastructure and applications perform too slow or not at all if the packets take too long to trigger a time-out.

Many medium-sized multi-national companies therefore set up a parallel local internet access with a local internet provider to allow interaction with local websites and servers. This localized infrastructure is mostly independent and does not have a centralized administration structure.

Choosing the right devices for your local IT

Mostly multi-national companies set up guidelines on what kind of devices can be bought for the corporate infrastructure and they often also define the suppliers. While some of these devices might be less critical (e.g. computer screens) than others (e.g. printers and laptops), devices that should be embedded in the corporate infrastructure should be agreed upon with the centralized IT Infrastructure Management.

If you decide to build up a localized parallel IT, it is recommended to utilize a systematic decision approach on the devices you are going to choose based on a total cost of ownership approach. Next to the purchasing price, some more items to consider:

- Guarantee/Warranty
- Complexity for Service: Is a certain provider required?
- Data recovery if the device is broken, e.g. can be problematic with integrated SSDs
- Included Licenses
- Stability and Durability
- Manufacturer support including security updates
- Special considerations for Printers and similar devices:
    - Prices and availability of consumables, e.g. toner
    - Printing speed (Pages per minute)

Local IT File

When your company hands out hardware to your employees, be sure that you have a file in which you can track which employee has what kind of device and how old it is.

When employees are leaving you will know what devices should be handed back and you can follow a rolling plan to exchange devices.

Company mobile phones

Companies in China rarely hand out company phones, instead it is expected from their employees that they use their private phones for business. Often companies support their employees with allowances for mobile phone us. Still, this constellation brings possible leaks of data if phones are stolen or when an employee is leaving.

VPNs and MPLs connections

Foreign invested companies often rely on VPNs for enabling access to the unregulated internet or to the corporate Intranet. VPNs which do not have the proper license in China are illegal and have the high risk of being cut-off by the great firewall if VPN providers from other countries are being used. The performance is hard to predict and can change dramatically even if the same network is used with the same VPN servers.
The main offices of Chinese subsidiaries often use MPLS to connect the subsidiary to the headquarters: While these are (currently) legal, they will not be helpful for your staff working outside of the offices.

Common Pitfalls and considerations

- If the IT Infrastructure is not adjusted correctly to China, employees tend to find their own ways of fulfilling their work duties. This also includes violating company rules for Security, e.g. using private E-Mail-Addresses or officially not sanctioned messenger solutions for business correspondence which brings the additional risk of relevant company information leaving the company.
The company loses control over its data.
- Using a localized IT infrastructure with low-cost often results in independent laptop clients which are not embedded in a client-server infrastructure. Centralized administration of user accounts, user rights, backups and encryption do not take place and centralized security management is not possible.
- The dual infrastructure can bring additional costs for licenses since one user uses an official device for which often enterprise volume licenses exist while for the second, independent device, another license has to be bought, e.g. for office software.
- Consider defining an IT guideline which defines how the corporate IT infrastructure can be used and which should be signed by all of your employees when signing the working contract.
- Mostly the local IT department is built on a single person. Centralized critical knowledge about the relevant passwords is risky: Make sure that you can still access the infrastructure if that employee is not available by making a document with the important URLs, user names and passwords for routers, printers and the local administration passwords for the local devices.
- When planning the IT budget, do not plan it too tight: Always consider some investment budget for devices that suddenly need replacement.
- If you are using international IT systems, during the development it is often forgotten to check the compatibility with Chinese characters. This is one of the first things you can test when new systems are rolled out.