# IT Infrastructure

## COST

**“In other words, rather than simply looking at cost on its own, it’s also critical to consider which is the best investment approach for your organisation in terms of long-term efficiency and suitability”**

# TOTAL COST OF OWNERSHIP

## TCO

- The total cost of ownership (TCO) is the purchase price of an asset plus the costs of operation. Assessing the total cost of ownership represents taking a bigger picture look at what the product is and what its value is over time.

- The total cost of ownership is considered by companies and individuals when they are looking to buy assets and make investments in capital projects. For a business, the cost of purchase and the costs of operations and maintenance are often itemised separately on financial statements.

# When to use TCO?

- TCO is useful whenever a company **aims to acquire an asset or make a large investment**. The metric could be relevant in situations such as.

- Purchasing new computers and other tech devices.
- Renting a new office.
- Purchasing facilities for the company’s headquarters.
- Hiring a new management system.

# How to Calculate TCO?

- initial cost (I)
- operation cost (O)
- maintenance cost (M)
- downtime cost (D)
- production cost (P)
- remaining value (R)

Thus, the calculation will be:

I + O + M + D + P – R = TCO

The **initial cost** is the label price, that is, how much you will pay for the asset.

The **maintenance cost**, in turn, involves the costs to ensure that the asset remains useful in the long term.

The **remaining cost** is the asset's price in the long term, for example, in five years. This calculation focused on a possible devaluation.

# Example of Total Cost of Ownership

An example of a business investment that requires a thorough analysis of the total cost of ownership is an investment in a new computer system. The computer system has an initial purchase price.

Additional costs often include new software, installation, transition costs, employee training, security costs, disaster recovery planning, ongoing support, and future upgrades. Using these costs as a guide, the company compares the advantages and disadvantages of purchasing the computer system as well as its overall benefit to the company for the long term.

On a smaller scale, individuals also use the total cost of ownership when making purchasing decisions. While the total cost of ownership can be overlooked, its analysis is essential in preventing unnecessary future losses that can arise from focusing only on the immediate direct costs of a purchase.

# TCO of Keeping IT Infrastructure On-premise

There are two main considerations to make when assessing whether IT infrastructure should be purchased and installed in on-premise server rooms, or whether it should be set up “in the cloud” by partnering with a managed IT services provider.

1. **What is the Total Cost of Ownership (TCO) of each approach?**
2. **How will each IT investment approach impact my organisation over the long term?**

# The TCO of on-premise IT infrastructure

There are a number of significant costs associated with installing and operating IT infrastructure in-house:

- **Real estate costs** – you have to allocate climate-controlled, secure space to accommodate servers, storage, network infrastructure, air-conditioning units, raised floor and cabling.
- **Infrastructure costs** – this includes the upfront costs of purchasing servers, storage, network infrastructure, air-conditioning and cabling.
- **Hardware maintenance** –maintenance coverage for the first three years i.e. the warranty, is typically pre-paid at the time of purchase. At the end of the warranty, maintenance has to be paid again and usually at a higher rate (as the hardware is now older).
- **Setup costs** – costs of IT staff to establish the environment and set up networking – including for remote users.
- **Hardware and software** – IT resources required to support servers, storage, networks, and to perform updates, patches and fixes.
- **Security & DR** – IT resources are responsible for data breaches and server failures, and IT bears the direct costs of backups and redundancy.

# The TCO of managed IT services in a hosted private cloud

With cloud-based managed IT services, costs associated with

Real estate, infrastructure, hardware maintenance, hardware and software currency, security

are all replaced with a **single monthly** charge that matches with your ongoing resource consumption.

Additionally, a **hosted private cloud** provider offers economies of scale that no on-premise alternative can come close to matching. These economies of scale include:

- Large data centres with space allocated to many private cloud tenants
- Security capabilities and costs amortised over many tenants
- Wide use of virtualisation – especially on servers – ensuring optimal resource utilisation
- Much greater buying power, leading to lower costs
- Many processes are automated and standardised, leading to greater efficiencies

*Most importantly, with managed IT services, internal teams aren't tied down to managing the on-premise environment, which means they can* ***focus their attention on innovation and technologies to help grow the organisation.***

**“So, rather than facing lumpy and unpredictable capital expenditures, an organisation only pays for the IT services it needs when it needs them, and can scale up and down as needed. Effectively, the volatile CapEx cost model is replaced by a predictable OpEx-based subscription fee.”**

# Shifting IT investment from CapEx to OpEx

- The purchase cost of installing on-premise IT infrastructure is just the beginning.
- In addition to the IT resources needed to operate, support and maintain the environment, end-of-warranty and the end-of-life events require more cash investments.
- Maintenance payments begin where there weren’t any before, replacement for end-of-life assets become necessary, and migration costs are incurred to move from the old to the new.

# Shifting IT investment from CapEx to OpEx

- The operating expenses (OpEx) associated with cloud-based managed IT services are used purely for day-to-day running costs – and while subscription costs can go up if resource usage increases, they can also go down when workloads reduce.

- The CapEx alternative to increased resource usage is making potentially significant cash investments into an environment that could soon be outdated, and for what may simply be a temporary increase in usage.