CAPEX VS OPEX: AN INTRODUCTION

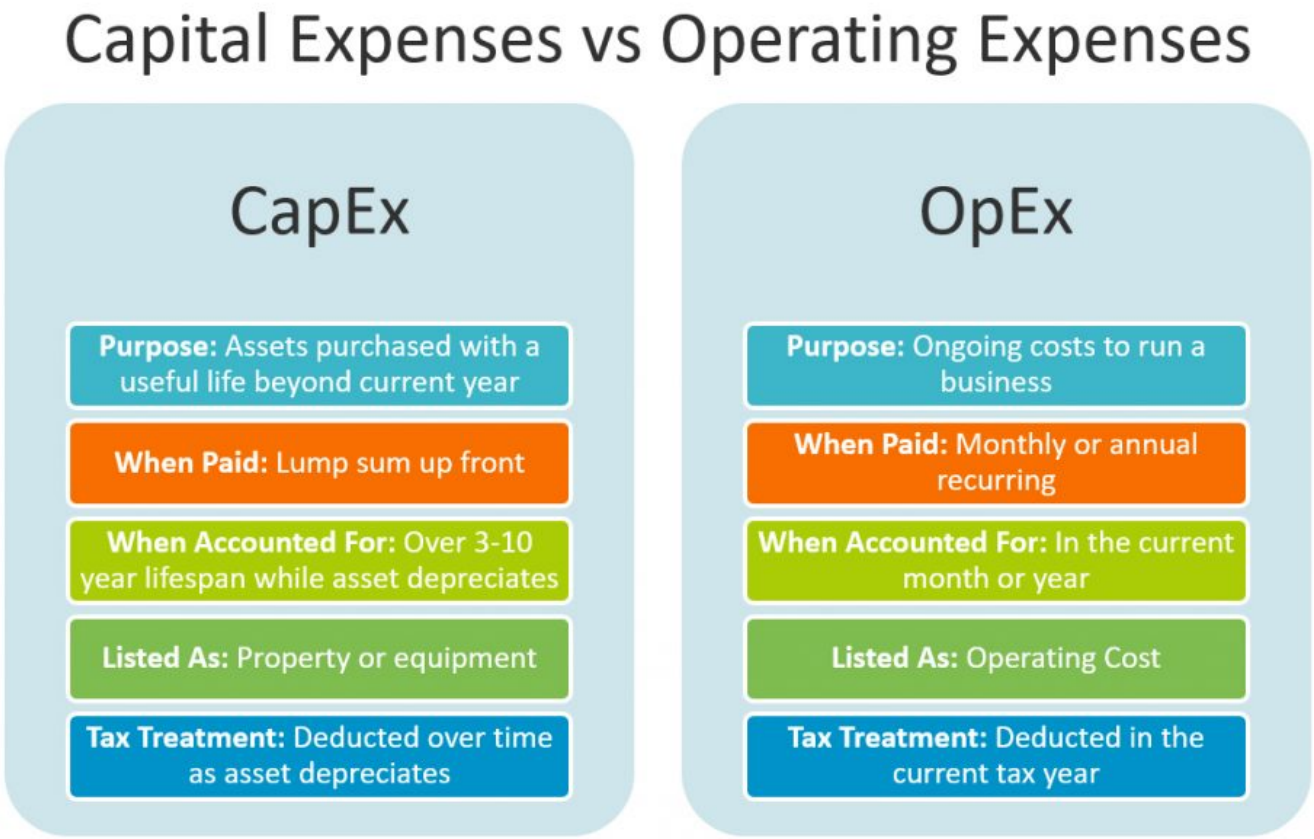
IT professionals generally have two options when it comes to procuring new equipment, capabilities, and software:

- They can obtain new capabilities and equipment as a capital expense (CapEx), or
- They can obtain them as an operating expense (OpEx).

As many companies are shifting from traditional hardware and software ownership to a SaaS model, IT and finance departments must reconcile how best to classify cloud costs. According to Gartner, worldwide IT spending will total just below $3.8 billion by the end of 2019. This is the smallest increase in IT spending in recent years, perhaps due to global economic events. Interestingly, this slowdown is only a pause: the industry expert forecasts continued growth, with a 3.7% increase for 2020—meaning IT spending will approach $3.9 billion. By 2021, that number is expected to break the $4 billion mark.

In other words, IT spending is big business. The way companies think about it may deserve new consideration. Today, let's look at the differences in CapEx and OpEx, the two basic expense categories for IT spending. (Note: This articles discusses CapEx and OpEx purchasing in the United States. The points and ideas discussed in this post may be different in other countries.)

CapEx vs OpEx for IT hardware and equipment



Defining CapEx

Capital expenditures (CapEx) refers to the money a company spends towards fixed assets, such as the purchase, maintenance, and improvement of buildings, vehicles, equipment, or land. This is also sometimes known as PP&E, short for property, plant, and equipment. One-time purchases of these major physical goods or services are intended to benefit the organization for more than one year. In the IT world, these items include:

- IBM Power systems
- Intel-based Windows servers
- Other high-dollar items
- A variety of supporting items such as Universal Power Systems (UPS), line printers, air conditioners, scanners, and generators
- Additional procurement costs

CapEx spending has pros and cons from the accounting side. If the asset's useful life extends beyond a year, which is typical, the cost is expensed using depreciation, anywhere from 5-10 years beyond the purchase date. Real estate, in particular, can be depreciated for over 20 years. Finance teams and bookkeepers applaud these CapEx tax depreciations.

On the other hand, the more money put towards capital expenditures means less free cash flow for the rest of the business, which can hinder shorter-term operations.

Understanding OpEx

Operating expenses (OpEx) are the funds that support your day-to-day business. OpEx items are generally used up within the year they are purchased, including:

- Consumables such as printer cartridges, paper, electricity, and other supplies
- Contract items such as yearly service or maintenance agreements, website hosting, and web domain registrations

OpEx purchases cover pay-as-you-go items that show up on an organization's profit and loss statement, and they are deducted from income as they occur. When material goods or services are purchased as an OpEx item, costs are assigned to the operating expense budget; the expense is tracked in your profit and loss statement; and the equipment's monthly expenses are tracked and deducted from the bottom line as they are incurred rather than being depreciated over several years.

Management is often tasked with decreasing OpEx spending without blunting the firm's ability to compete or produce. Unlike the depreciation of CapEx, OpEx are fully tax-deductible in the year they are made.

Determining CapEx vs OpEx

Many IT material goods such as servers, generators, or UPS systems can be purchased **either** as a capital item or as an operating expense item. For example:

- You can pay cash and own the item outright as a capital expense.
- You can lease the item or sign a hosting contract with a managed services provider (MSP) that provides access to the equipment as a service for a monthly cost, making the purchase an operating expense item.

Having the choice between CapEx and OpEx for acquiring new IT capabilities isn't a novel development. These options have been with us in various shapes and forms for a long time. The difference today is that with new cloud hosting capabilities, using OpEx procurement to obtain major IT equipment and services is easier today than it's ever been.

Obtaining IT capability as CapEx or OpEx: A Comparison

Outside of their tax and payment treatments, there are several advantages and disadvantages to procuring major IT capabilities as either CapEx or OpEx items.

Let's look at an example of upgrading or purchasing a new IBM Power system, and how the process differs when procuring it as either a capital expense or as an operating expense. Here are different components to consider when deciding:

- **Approval process.** CapEx and OpEx items go into different budgets, with different approval processes. Capital items generally must be approved through several layers of management (including executive management), which will hold up purchasing until approval is received. Adding the IBM Power system as an OpEx item is generally an easier process, if the item is covered through and budgeted for in the operating expense budget.
- **Up-front investment.** For a capital purchase, all money must be paid up-front. Purchasing IBM

Power capability on lease or from a hosting company as an OpEx item allows you to pay as you go, on a monthly or quarterly basis. This can free up budget dollars for more bottom line revenue producing projects.

- **Supporting infrastructure capabilities.** Purchasing an IBM Power machine as a CapEx item may also require you to buy several other supporting capabilities, including redundant power supplies, UPS systems, generators, air conditioning, insurance, and maintenance—plus, you have to have access to a Data Center where you can run it all. Procuring the same capability as an OpEx item under a hosting contract will usually include all the infrastructure items that go along with your hardware, allowing you to pay for the infrastructure along with the hardware, in one regular payment.
- **Shifting IT Operations capabilities to an outside vendor.** When purchasing an IBM Power system, you as the purchaser are responsible for all IT Operations management (ITOps) capabilities, including backups, operating system upgrades, and repairs. In a CapEx environment, you need to provide these capabilities. All IT Ops capabilities remain with you as the buyer. In a hosted OpEx environment, you can include these items in your contract, so that the provider will handle them as part of your monthly service.
- **Sizing for now and later.** Purchasing a capital item requires a certain amount of forecasting. IBM Power systems may be purchased on a four-year lifecycle, with the intent of replacing or upgrading the machine every four years. That means when you purchase the machine you would need to buy it with all the capabilities you believe you'll need for a number of years into the future. You either need to overbuy the machine with capabilities you may not use until the fourth year or you'll have to purchase additional capabilities as you need them. If you have a cyclical business such as retail where you have significantly busier months than others (think Christmas rush), then you must size your machine to have the capability to always run at peak performance, even during the slow times of your year. With OpEx hosting, you may be able to contract for additional CPU and memory on an as needed basis, and run with lower capabilities the rest of the year, possibly reducing your costs.
- **Control over your hardware.** In a CapEx situation, you own the hardware and have total control over its use, location, and disposition. If you are procuring an IBM Power system as an operating expense item in the cloud, you are dependent on the hardware, operating system software, and maintenance the cloud service is providing. You may have problems if your cloud provider has an outage, doesn't have sufficient capability to meet your needs, is unable to meet your service level agreements, or goes out of business. In OpEx situations (especially with cloud providers), you introduce a third-party into the provisioning of your IT capabilities, which can affect your performance and deliverables.
- **Corporate culture.** Many organizations specify that all major IT goods or services be purchased, and they cannot be leased or "rented" through an MSP. Other organizations may specify the opposite. While each method has its own advantages and disadvantages, the choice of a procurement method may be mandatory depending on organizational rules.

Changes in IT spending that favor OpEx

Traditionally there are two significant benefits of CapEx, aside from the financial positives: a company will own the product outright, so you can alter and tweak it as you need—once owned, you don't continue paying for it. Further, owning assets such as hardware and software may be seen as prestigious.

Despite these benefits, three complaints of CapEx continually rise to the top:

- High cost items require well-forecast budget estimates and long processes for approval, which can slow down purchase of the equipment.
- Age is a significant factor. Once you own the hardware or software, you're likely stuck with it for a long time, in order to extend its ROI.
- Estimating future capacity needs for static hardware or software can be tricky and complicated.

As IT has become imperative to any business in the 21st century, major changes have affected both hardware and software. Today, hardware is frequently significantly cheaper to purchase than it once was. While highly specialized machines may be necessary, many employees can perform their daily functions on basic, low-cost computers.

Thanks to the advent of the Internet, software can be a lot nimbler—and more cost-effective. Instead of purchasing expensive licenses to own and alter software in a CapEx model, companies can shift towards SaaS (software as a service) options that require small, monthly subscriptions and run via internet connection. SaaS is an OpEx procurement model, with all the benefits described above. It is also transparent, letting companies pay only for pieces they use.

With low monthly costs, budget approval can be a lot speedier, reducing the time needed to achieve business goals. SaaS's monthly payment model can help streamline business cash flow over time, and there's no long-term commitment – the minute one SaaS option doesn't work, a department realistically could switch to another one that better suits their needs. This flexibility is key for emerging opportunities.

SaaS is also very scalable. If you need to add many users only for a month, SaaS is still cheaper than outright owning software for that many users. Importantly, SaaS and similar solutions make it much easier to measure ROI: i.e., is the cost justifying the benefits? It's usually harder to track ROI on a lump-sum purchase of a product that continues to age, than it is on a monthly payment under a SaaS arrangement.

With these changes in cost and use of hardware and software options, the traditional benefits of CapEx may not carry their weight. Using an OpEx solution like SaaS allows organizations to unlock money that was formerly frozen in CapEx purchases on other business needs.

Still, the complaints of CapEx do not mean that OpEx is the ultimate solution for every company or every purchase. Some companies worry that they don't know what to expect and instead wind up budgeting their IT needs on a month-to-month basis. If use is low one month, but skyrockets the next, long-term forecasting is complicated. Justifying a switch from CapEx to OpEx can also be difficult, as C-level executives and the finance department appreciate the tax benefits of CapEx. Many C-level execs and financial departments like stable rather than fluctuating monthly payments.

Fortunately, more SaaS providers are addressing these OpEx concerns. Increasingly, cloud environments can predict or limit—often automatically—these costs. As cloud technology continues to develop (indeed, it's in the very early stages), it will get smarter in its usage predictions, ensuring that monthly costs don't go through the roof.

Choosing CapEx or OpEx

The good news is that selecting CapEx or OpEx is not an either-or situation. Companies need to choose which areas to bucket under CapEx and which to bucket in OpEx, understanding the trade-offs. Perhaps some enterprise systems must be owned outright and in-house, while other applications can come and go as the need and staff change.

Proper forecasting can help a company invest as necessary in CapEx, while accurately estimating OpEx. Experts also recommend considering the non-monetary cost of the transaction. This can include the friction users feel when switching from one type of technology to another, common in a CapEx/OpEx tradeoff.

Keeping in mind the pains of forecast and change, remember that the benefit of considering CapEx/OpEx for IT spending is about shifting money spending to better benefit overall business needs. Regardless of what expense model you choose, having the visibility and control of your infrastructure—whether in a CapEx model on premises or an OpEx model in public or private clouds—gives you the ability to make decisions that will impact your overall business success.

Additional resources