

Move from CAPEX to OPEX:

Analyze your ROI in 6 steps

Author: Ryan Jarvis, Sr. Solutions Engineer



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Why you should read

This eBook is about evaluating the opportunity cost of CAPEX vs OPEX:

- The metrics that are typically overlooked during an ROI analysis.
- The metrics that need to be compiled to perform a proper investment analysis.
- How to leverage ROI tools to weigh the investment performance against goals & initiatives.

Who this eBook is written for:

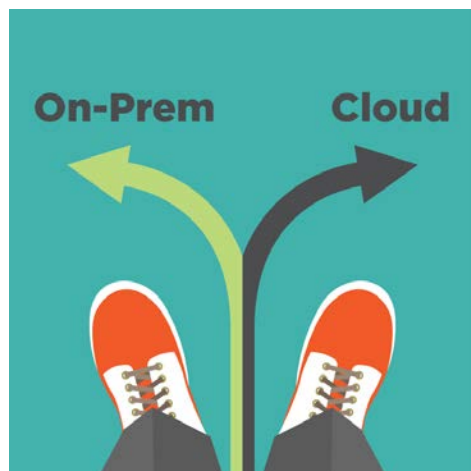
- IT Leaders who weigh & justify the investment outcomes of CAPEX & OPEX purchases.
- A CTO who is concerned with how their apps & infrastructure deliver value.
- An IT leader who wonders what technologies will bolster their organization's core competency.

On-Premises or Cloud Considerations

There are many things to consider when deciding whether to run IT on-premises or in the cloud, and the cost is often high on the priority list. However, “cost” is often boiled down to a simple cash on cash analysis, meaning calculating the total costs of hardware on-premises (CAPEX) and compare that directly to the expenses of a cloud contract over a standard refresh cycle (OPEX).

The analysis often omits the soft costs such as management, maintenance, and administration of a data center. More importantly, it overlooks the opportunity cost of investing in data center equipment vs. creating advantages for your business.

As organizations drive to remain agile, adaptable to change and have the resources on hand to react to market demands - focus and specialization have become increasingly more important. Businesses that are bogged down by legacy process and infrastructure can quickly fall behind the competition, particularly if financial resources are tied up in non-core competency projects and investments.



Software companies, as an example, were quick to realize this opportunity cost and have overwhelmingly embraced a cloud-first approach.

Having evaluated the opportunity cost of purchasing a new piece of hardware for a data center or reinvesting those dollars back into the development group to add a feature that will allow them to take market share from a competitor, or reinvesting those dollars into the marketing engine for increasing sales and returning 20% on that investment. These factors have driven most Software Companies to push internal operations, testing and development, and delivery of Software-as-a-Service products to cloud platforms.

Role of the CFO

According to Gartner, CFO's play a vital role in determining IT investment in 75% of companies today. As finance teams are playing a bigger role in IT, businesses now look at CAPEX as a true opportunity cost, where they can either invest in technology assets or in their core competency to drive top-line revenue and long-term growth.

Operationalizing IT costs allows organizations to move from high cash burn in upfront asset purchases to smoother and more predictable spending. This process allows for easier cost projections, and the ability to deploy upfront cash on other core competency projects or internal reinvestment, rather than depreciating non-core equipment.

If running a data center is not an organization's core competency, it still has to make financial sense to migrate to the cloud. CFO's rely on investment analysis to help weigh the investment performance and then compare that against goals and initiatives.

Investment Analysis

Investment analysis is a critical step in defining the opportunity cost of running traditional on-premises data centers or operationalizing IT through cloud services, and realizing the potential return on investment.

There are a variety of tools used for preparing an investment analysis - we have created our own ROI tool available for download at the end of this eBook. According to CIO magazine, more CIO's are now basing investments on ROI and these tools are crucial in helping IT leaders with this analysis.[\[1\]](#)

Outlining ROI Analysis

The remainder of this eBook will be devoted to outlining how to tackle an infrastructure ROI analysis. We will walkthrough the process using the assistance of an ROI analysis tool.

The conventional ROI process includes:

- Analyzing fixed investment costs such as hardware
- Monthly recurring costs like internet bandwidth
- Annual/Monthly recurring costs like hardware and software maintenance contracts
- Discounting the net present value based on the cost of capital

Did you know there are a few costs that are frequently overlooked? Some of the most common overlook costs, include:

- Power consumption
- Colocation or On-Premises Hosting expenses
- Software licensing expenses such as VMware, backup software, and operating systems
- IT staff time and additional headcount required to scale

These ancillary costs can be easily overlooked during calculations, and these are important to consider to determine a true ROI. These costs do bare a significant impact on the analysis and future investment success for both CAPEX and OPEX as they lead to unplanned expenses or faulty analysis.

ROI preparation can be completed in six steps

- 1) **Identify future asset purchase prices**
 - CAPEX purchases: servers, storage, networking, software licenses, etc.

- 2) **Identify future asset maintenance fees**
 - Maintenance & warranty fees for asset purchases
 - Often the first 1-3 years are included in the initial purchase
 - Determining costs following initial contract is critical to the accuracy of the model as costs often increase after initial term

- 3) **Identify additional recurring expenses**
 - Recurring expenses are typically bandwidth, colocation, software rental payments, etc.

- 4) **Account for personnel costs**
 - Costs for employees & consultants

- 5) **Retrieve your Weighted Average Cost of Capital (WACC) from your finance team**
 - Discount rate in financial analysis

- 6) **Collect quotes from Cloud Service Providers**
 - Total monthly recurring fees including all normal & variable costs
 - Include setup fees or non-recurring costs

Example Case Study

Background of Company: A medical device manufacturing company, headquartered in Chicago, is evaluating whether to stay on-premises or move to a cloud provider. Their IT department has four full-time employees that currently manage a production environment in a nearby colocation provider with roughly 100 virtual machines supporting their critical systems including ERP, customer web portal, and internal Virtual Desktop Environment. They purchased their servers, switches, and storage array three and half years ago and they are preparing for a hardware refresh.

Challenges: Over the past few years they have been challenged with hardware issues, which resulted in downtime. Their infrastructure team has also experienced personnel turnover. Having been tasked with modernizing their ERP system, they feel their time could be better spent on other projects. These challenges and pending initiatives have pushed them to evaluate moving away from the business of managing hardware and data centers to adopting a cloud strategy.

Evaluation: They have met with several cloud providers and have received three quotes as requested by management. Their executive leadership team has asked they present options for keeping their environment in the data center or adopting a cloud strategy, and include an ROI analysis showing the total costs of both options.

ROI Inputs and Technical Requirements to include in analysis:

- Eight Hosts – each with Dual Intel 12 Core Processors w/ 128GB RAM
- 20TB High Speed Production Storage
- 60TB Backup Storage Appliance
- Enterprise Network Stack
- VMware vSphere Enterprise Plus Licensing
- VMware Horizon View Enterprise Licensing
- Microsoft Datacenter Edition OS Licensing
- Veeam Enterprise Plus Backup Software Licenses
- 200Mbps Internet
- Two Colocation Racks with 220v 30Amp A/B Power

Using our comprehensive ROI tool we took this common scenario and ran the investment analysis for this medical device company. The below screenshots reference the cells on our ROI tool, which you can download below. Use this sample exercise as a tutorial for when you run your own analysis!

[Download the ROI Tool](#)

1. Identify future asset purchase prices: (Cells A19-A27:C19-C27 in the ROI tool)

In the example scenario, the capex purchase items would be servers, storage, network infrastructure, Software, etc., as seen below.

	A	B	C	D
17	Hardware Refresh - Current Costs	Cost Type	Non-recurring Costs	Monthly recurring Costs
19	Server Acquisition Cost	Non-recurring	\$ 50,000	\$ -
20	Storage Cost	Non-recurring	\$ 60,000	\$ -
21	Network Infrastructure	Non-recurring	\$ 35,000	\$ -
22	Backup Storage	Non-recurring	\$ 20,000	\$ -
23	Backup Software	Non-recurring	\$ 15,000	\$ -
24	OPEN	Non-recurring	\$ -	\$ -
25	OPEN	Non-recurring	\$ -	\$ -
26	OPEN	Non-recurring	\$ -	\$ -
27	OPEN	Non-recurring	\$ -	\$ -
28	Maintenance 4th Year (20% of Acquisition Cost)	Non-recurring	\$ 36,000	\$ -

2. Identify future asset maintenance fees: (Use Cells A28:D28 in the ROI tool)

	A	B	C	D
17	Hardware Refresh - Current Costs	Cost Type	Non-recurring Costs	Monthly recurring Costs
28	Maintenance 4th Year (20% of Acquisition Cost)	Non-recurring	\$ 36,000	\$ -

Note for the non-finance folks: Usually the first three years of hardware or software maintenance is included in the initial asset purchase. A good rule of thumb for budgeting maintenance costs for the 4th year is to factor 20% of the acquisition cost as shown above.

3. Identify additional monthly expenses such as Bandwidth, Colocation, and Microsoft EA payments (Use Cells A29-A39:D29-D39 in the ROI tool)

	A	B	C	D
17	Hardware Refresh - Current Costs	Cost Type	Non-recurring Costs	Monthly recurring Costs
29	Bandwidth Cost	Recurring	\$ -	\$1,000
30	Colocation Cost	Recurring	\$ -	\$1,800
31	Microsoft Server OS Licensing	Recurring	\$ -	\$2,448
32	Virtualization Software	Recurring	\$ -	\$1,250
33	Virtual Desktop Software	Recurring	\$ -	\$1,000
34	Personnel (1/2 Fully loaded FTE @ \$120K/yr)	Recurring	\$ -	\$5,000
35	OPEN	Recurring	\$ -	\$0
36	OPEN	Recurring	\$ -	\$0
37	OPEN	Recurring	\$ -	\$0
38	OPEN	Recurring	\$ -	\$0
39	OPEN	Recurring	\$ -	\$0

4. Account for personnel costs (Use Cells A34:D34 in the ROI tool)

	A	B	C	D
17	Hardware Refresh - Current Costs	Cost Type	Non-recurring Costs	Monthly recurring Costs
34	Personnel (1/2 Fully loaded FTE @ \$120K/yr)	Recurring	\$ -	\$5,000

Note for the non-finance folks: One basic rule when budgeting for personnel costs is to not forget the overhead load of a full time employee (FTE). You need to take their base salary and increase by ~20% to account for taxes, benefits, etc. In the above example we used a base salary of \$100K.

5. Retrieve your Weighted Average Cost of Capital (WACC) or "hurdle rate" from your finance/accounting team (Use Cell B46 in the ROI tool)

	A	B
46	WACC (Weighted Average Cost of Capital)	10%

Note for the non-finance folks: WACC (Weighted Average Cost of Capital) is the % of which your company's fully backed borrowing rate. Calculated from equity and debt mix, and can vary drastically from company to company. This is important is because without it would be to ignore the time value of money and opportunity cost.

6. Collect quotes from Cloud Service Providers

-Include all normal and variable monthly fees (Use Cells A9-A10:D9-D10 in the ROI tool)

-Include all Non-recurring costs and Setup Fees (Use Cells A11-A13:D11-D13 in the ROI tool)

	A	B	C	D
8	Cloud IaaS Solution - Proposed Costs	Cost Type	Non-recurring Costs	Monthly recurring Costs
9	IaaS - Compute, VMware, Storage, Network	Recurring	\$ -	\$ 15,000
10	Professional/Managed Services	Recurring	\$ -	\$ -
11	OPEN	Non-recurring	\$ -	\$ -
12	OPEN	Non-recurring	\$ -	\$ -
13	Setup Fee	One-Time	\$ -	\$ -

After inputting the metrics we collected from the example case study into our ROI tool, there is a positive Net Present Value (NPV) over a four year period. NPV modeling is a great tool for long-term projects or contracts such as Cloud Services, as it accounts for the time value of money and considers such things as cost of capital and opportunity cost.

While, the NPV will not always show a cloud model as being less expensive, the outcome is entirely based upon your business initiatives and goals. The soft gains of cloud services are difficult to model and these must be weighed against the short-term bottom line.

Each option should be carefully considered against your long-term strategy. The agility of cloud alone could outweigh the pure costs and may be better for driving long-term growth and valuation to a company.

How Faction Cloud Works

We at Faction work with customers and partners everyday to help build Private and Hybrid Cloud Solutions to meet every customer's needs and budget. We've seamlessly integrated a customer dedicated vCenter into every private cloud we deploy. This allows every customer access to a VMware self-managed VPC starting at \$1,750 a month with pay-as-you-grow economics. With administrator level access, our customers can bring their existing environments into our cloud, deploy existing toolsets, and have an unprecedented level of control.

We don't think that just because an IT team wants to stop managing hardware and start running their business, they should be forced to change tools and processes. Our cloud is simple, fast, and secure; and the deep access and broad customization in our environment leads to infinite variety for our customers. Production, Disaster Recovery and Backups to Virtual Desktops - our cloud has the building blocks for any workload and we can help you operationalize your IT process and budget.

If you're looking for help determining if cloud is a fit for you - We can help!

**LET'S
GET STARTED!**

Our private cloud is designed to make your use of public cloud easier - learn how by downloading our Hybrid Cloud eBook

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