



VIDEO SURVEILLANCE TCO

TOTAL COST  
OF OWNERSHIP

## Understanding TCO - Total Cost of Ownership *Comparing the Costs of Cloud VMS to On-Premise VMS Solutions*

*By Martin Renkis*

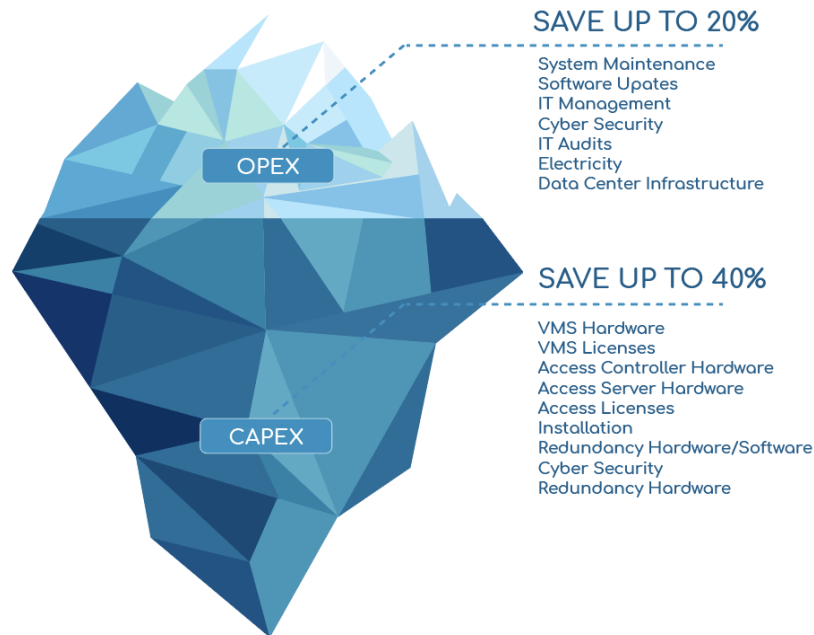
General Manager Tyco Cloud Global Security Solutions, Johnson Controls

What Is an Operating Expense compared to a Capital Expense? How are they related to a Total Cost of Ownership? A capital expense (CAPEX) is an expense a business incurs to create a benefit in the future and an operating expense (OPEX) is an expense required for the day-to-day functioning of a business. Operating expenses and capital expenses are treated quite differently for accounting and tax purposes. To determine the total cost of ownership (TCO), add the OPEX and the CAPEX. The TCO is the real cost of anything a business might purchase.

$$\text{TCO} = \text{CAPEX} + \text{OPEX}$$

Total Cost of Ownership = Capital Expenses + Operating Expenses

When considering the real cost of physical security for a business, in particular video surveillance, it's important to understand the real total cost of ownership. With major advancements in cloud technologies, there can be significant savings over typical surveillance systems once the CAPEX and OPEX are factored to understand the TCO.



Consider that over 3 to 5 years, the operating expense of a typical video surveillance solution may be up to 20% more expensive and capital expense may be up to 40% more expensive than typical on-premise video surveillance systems. Incorporating a cloud camera solution in a small business with one location, the total cost of ownership savings over five years can be 30% or more and for a large business with one hundred locations, the total savings can be 40% or more.

Calculating the total cost of ownership requires taking into consideration many different line items for both solutions, the cloud based and the typical surveillance solution. Some of these line items are obvious and others require more due diligence to determine. Here are some of the items that should be considered. The total cost of ownership of a typical on-premise video surveillance solution includes at least these seven key line items:

1. NVR Server Hardware with VMS Software License and Support Plans
2. IP Cameras
3. Installation Labor, Parts and Accessories
4. NVR and Camera Maintenance and Updates
5. IT Management, Reporting, and Audits
6. Cyber Security and Privacy Management
7. Electricity

Consider also that on-premise video surveillance systems do not include many advanced features which are included at no additional line item cost with most cloud-based solutions. These features include items such as redundant video storage, bandwidth management, and automated cyber security and privacy updates.

Below are two sample total cost analysis tables, one for a small business with 2 locations and 8 cameras at each location as well as another with 100 locations and 12 cameras per location. In both instances, the total cost of ownership for cloud-based solutions offers interesting advantages. For the smaller business the savings were \$11,396 or 35% over 5 years and for the larger business with more locations, the savings were \$508,400 or 24% over 5 years.

Total cost of ownership analysis over 5 years for a property management business with 2 small commercial property locations and 8 cameras at each location:

Small Business TCO Analysis	Cloud Camera with Cloud VMS Solution						On Premise NVR Solution						
	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Total	
<b>Application Details</b>													
Total Number of Sites	2	2	2	2	2		2	2	2	2	2		
Number of Cameras Per Site	8	8	8	8	8		8	8	8	8	8		
Total Cameras for All Sites	16	16	16	16	16		16	16	16	16	16		
Video Storage Per Camera (Hrs)	336	336	336	336	336		336	336	336	336	336		
<b>Recurring Costs</b>													
Cloud VMS Service	\$1,344	\$1,344	\$1,344	\$1,344	\$1,344	\$6,720						\$0	
NVR Support Plan						\$0		\$1,020	\$1,020	\$1,020	\$1,020	\$4,080	
<b>Hardware and Other Costs</b>													
Standard IP Cameras						\$0	\$4,784					\$4,784	
Cloud Cameras	\$10,352					\$10,352						\$0	
Camera Installation	\$1,600					\$1,600	\$1,600					\$1,600	
NVRs and VMS Licenses						\$0	\$6,000					\$6,000	
NVRs Replacement/VMS Licenses						\$0				\$6,000		\$6,000	
NVRs Installation, Labor, Setup						\$0	\$520				\$520	\$1,040	
NVRs VMS Software Updates						\$0		\$520	\$520	\$520		\$1,560	
NVRs/Cameras IT Maintenance						\$0	\$400	\$400	\$400	\$400	\$400	\$2,000	
Cloud Cameras SD Replacement					\$2,496	\$2,496							
Cyber Security Management, Audits						\$0	\$700	\$700	\$700	\$700	\$700	\$3,500	
Video/System Redundancy						\$0	\$0					\$0	
<b>Location Electricity Costs</b>													
NVRs Electricity Usage						\$0	\$400	\$400	\$400	\$400	\$400	\$2,000	
<b>Total</b>	<b>\$13,296</b>	<b>\$1,344</b>	<b>\$1,344</b>	<b>\$1,344</b>	<b>\$1,344</b>	<b>\$3,840</b>	<b>\$21,168</b>	<b>\$14,404</b>	<b>\$3,040</b>	<b>\$3,040</b>	<b>\$3,040</b>	<b>\$9,040</b>	<b>\$32,564</b>
<b>Total Cost of Ownership Savings</b>					<b>35%</b>	<b>\$11,396</b>							

Total cost of ownership analysis over 5 years for a large logistics business with 100 satellite locations and 12 cameras at each location:

Large Business TCO Analysis	Cloud Camera with Cloud VMS Solution						On Premise NVR Solution						
	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Total	
<b>Application Details</b>													
Total Number of Sites	100	100	100	100	100		100	100	100	100	100		
Number of Cameras Per Site	12	12	12	12	12		12	12	12	12	12		
Total Cameras for All Sites	1200	1200	1200	1200	1200		1200	1200	1200	1200	1200		
Video Storage Per Camera (Hrs)	336	336	336	336	336		336	336	336	336	336		
<b>Recurring Costs</b>													
Cloud VMS Service	\$100,800	\$100,800	\$100,800	\$100,800	\$100,800	\$504,000						\$0	
NVR Support Plan						\$0		\$70,550	\$70,550	\$70,550	\$70,550	\$282,200	
<b>Hardware and Other Costs</b>													
Standard IP Cameras						\$0	\$358,800					\$358,800	
Cloud Cameras	\$776,400					\$776,400						\$0	
Camera Installation	\$120,000					\$120,000	\$120,000					\$120,000	
NVRs and VMS Licenses						\$0	\$415,000					\$415,000	
NVRs Replacement/VMS Licenses						\$0				\$415,000		\$415,000	
NVRs Installation, Labor, Setup						\$0	\$26,000				\$26,000	\$52,000	
NVRs VMS Software Updates						\$0		\$26,000	\$26,000	\$26,000		\$78,000	
NVRs/Cameras IT Maintenance						\$0	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$100,000	
Cloud Cameras SD Replacement					\$187,200	\$187,200							
Cyber Security Management, Audits						\$0	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$175,000	
Video/System Redundancy						\$0	\$0					\$0	
<b>Location Electricity Costs</b>													
NVRs Electricity Usage						\$0	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$100,000	
<b>Total</b>	<b>\$997,200</b>	<b>\$100,800</b>	<b>\$100,800</b>	<b>\$100,800</b>	<b>\$100,800</b>	<b>\$288,000</b>	<b>\$1,587,600</b>	<b>\$994,800</b>	<b>\$171,550</b>	<b>\$171,550</b>	<b>\$171,550</b>	<b>\$586,550</b>	<b>\$2,096,000</b>
<b>Total Cost of Ownership Savings</b>					<b>24%</b>	<b>\$508,400</b>							

Every video surveillance installation is a bit different and may present unique results. There are tools available for you to create your own TCO comparison. Evaluate the total cost of ownership on your next video surveillance project to see if there are advantages for you with cloud-based video surveillance.

Create your own custom TCO analysis using a free tool available for download: <https://tycocloudsolutions.com/tco>