

## Cisco Wireless Solution ROI Calculator

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This guide offers an overview on the ROI calculator created to measure the business value of implementing Cisco Wireless solutions.

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### Overview

Cisco commissioned Forrester Consulting to create an ROI calculator that provides an estimate of the potential return on investment customers may realize by deploying a Cisco Unified Wireless Network and related solutions. The tool is designed to allow maximum flexibility for users to customize the most appropriate solution for their wireless implementation. More specifically, users can calculate the return from an investment on a core wireless infrastructure or model how incremental investments in Wireless Video Surveillance or Voice over Wi-Fi solutions would impact ROI. The tool allows users to navigate back and forth and adjust the inputs and change selections to determine the return on investment related to their company. The “reset” functionality allows users to automatically reset the content to the original default settings.

**Privacy notice:** This tool does not collect or store any personal information and all values can be reset to default.

### Methodology

To create this model, Forrester analysts who specialize in mobility services and financial analysis collaborated to define and quantify the benefit areas in which companies may realize financial returns from the implementation. The tool integrates financial modeling techniques to arrive at a risk-adjusted ROI to evaluate the benefits while taking into account the costs associated with the deployment as well as the uncertainty in the costs and benefit estimates. The values delivered by the model are calculated using Forrester’s Total Economic Impact (TEI) methodology, which includes elements of cost, benefit, risk, and future flexibility options. To learn more about Forrester’s TEI methodology visit, <http://www.forrester.com/TEI> or click on “Model Instructions” on the tool’s Home page.

### Navigation

When opening the file you are required to enable macros in order to operate the tool. The following information is included in the Define Model Settings page under the Instructions section.

### Instructions for Microsoft Excel PC users:

For Excel 2003, if the window below (Figure 1) appears, click on “Enable Macros” and proceed. If you were not prompted or need to check your system security level, follow these instructions:

1. Click "Options" from the "Tools" menu command.

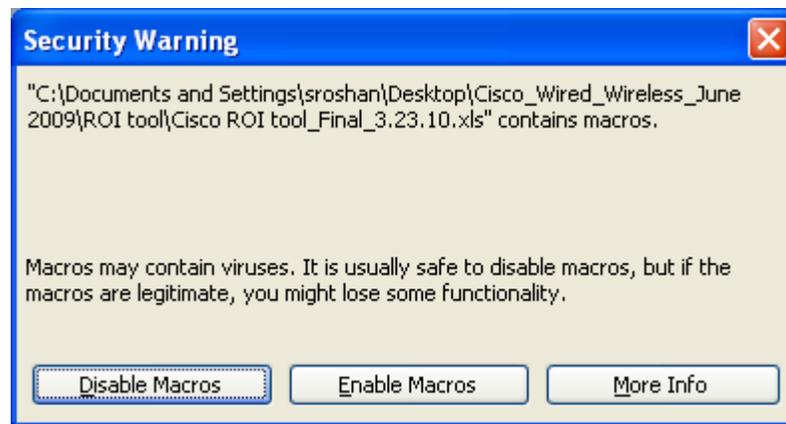


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2. When the "Options" multi-tabbed dialog box appears, click the "Security" tab.
3. Click "Macro Security".
4. When the "Security" multi-tabbed dialog box appears, select the "Security Level" tab.
5. Select the "Medium" setting, which will allow you to enable or disable macros every time you open a workbook that contains macros. Click "OK".
6. Exit Microsoft Excel.
7. Re-open this workbook and select "Enable Macros" when given the option to enable or disable macros as seen in figure 1 below. If the macro security level settings have been adjusted correctly, you should be presented with the Home page as shown in the figure 1 above.

**Figure 1: Security Warning – Enable Macros Excel 2003**



For Excel 2007, if the "Security Warning" banner in figure 2 below appears, click on "Option" and select a radio box beside "Enable this content" as seen in figure 3.

1. In Excel, click the "Office" button in the upper left corner of the screen.
2. Click the "Excel Options" button in the lower right.
3. Click the "Trust Center" button on the left. Then, at the bottom right, select "Trust Center Settings".
4. In the next window, select "Macro Settings", then select the radio button for "Disable all macros with notification".
5. To close the Trust Center window, click the lower right "OK" button.
6. Save and close Excel completely.
7. Re-open this workbook. Now there should be a "SECURITY WARNING" notification beneath the Office ribbon.
8. In the "SECURITY WARNING" banner, click the "Options" button.

9. Select the radio box beside "Enable this content", then click "OK". After you click "OK" and the window closes, macros included in this tool should function normally. Note you will need to follow steps 8 and 9 each time you open this workbook.

Figure 2: Security Warning banner for Excel 2007

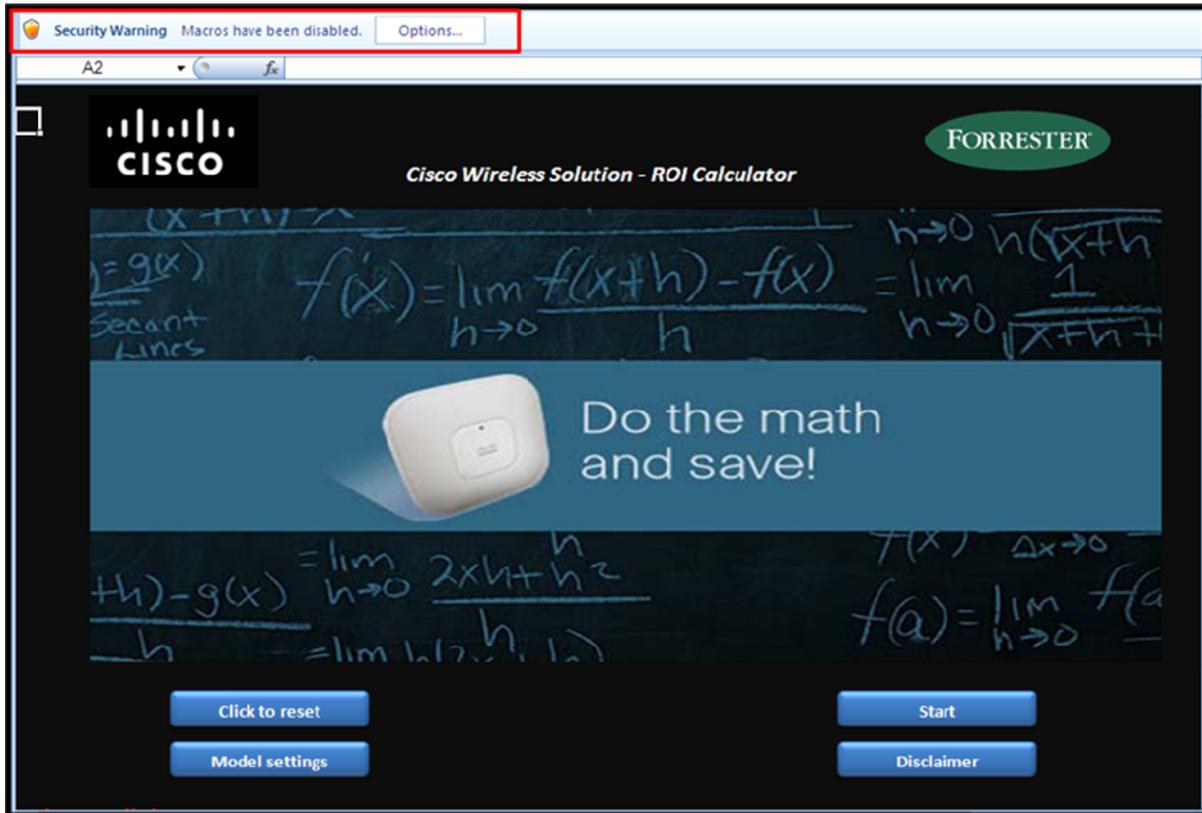


Figure 3: Security Alert – Macro for Excel 2007



## Instructions for Microsoft Excel Apple users:

- If you are running the Windows operating system on an Apple computer, please follow the directions for enabling macros using Microsoft Excel 2003 or Microsoft Excel 2007.
- If you are running the Apple operating system, please contact your IT department to determine if this calculator can run properly on your machine.

## What you can expect when you start

The following diagram illustrates the layout of the tool that will follow after you click on the “Start” button on the Home page.

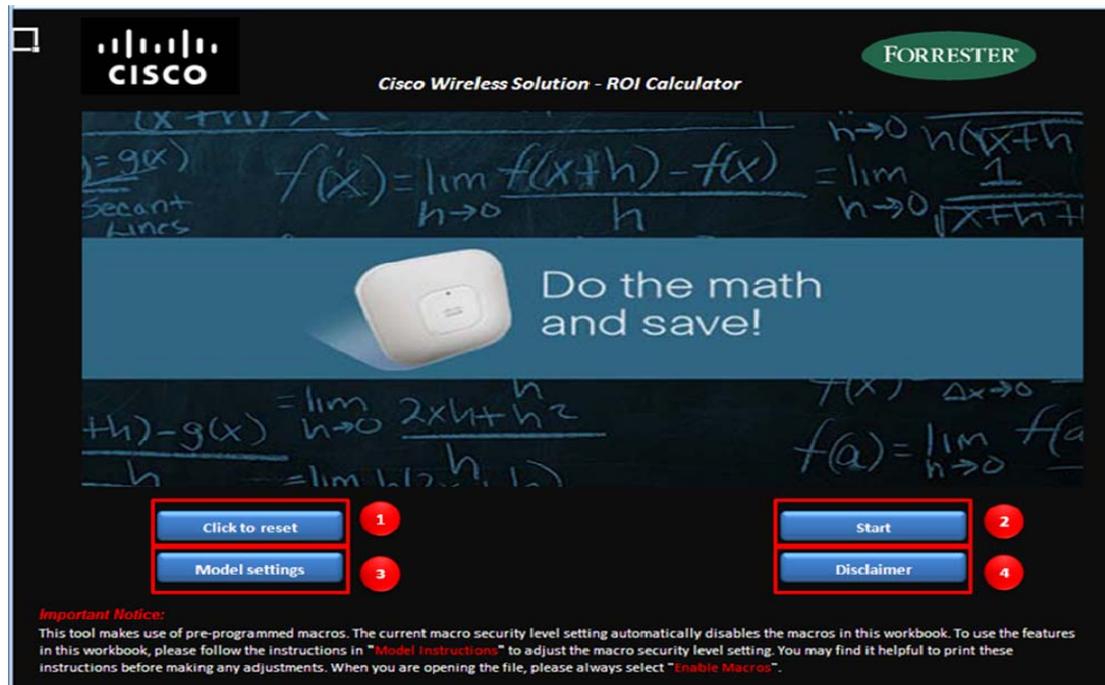
Diagram 1: Flow of calculator



## Home page

At the Home page (Figure 4) you can access the tool and adjust it to meet your needs. You can navigate the tool by using the functionality offered on the Home page as well as the banners located on the top of pages throughout the tool.

Figure 4: ROI calculator Home page



1. **Reset** – Forrester has populated the tool with some default values from customer interviews. The non-default values or input values are based on users’ specific situation. The user has the ability to override the default values. By clicking on the “Click to reset” button, you can reset the tool back to the original values. Meaning that default values and input value will be returned to the original form. If you have previously used the tool, it is recommended to reset the tool when you open it before using it with another customer to ensure that all the data is set to the original estimates (see Figure 5).

**Important note:** If you reset the tool you will lose all data that has been entered into the cells. To preserve your entered values answer “no” to the question shown in Figure 5.

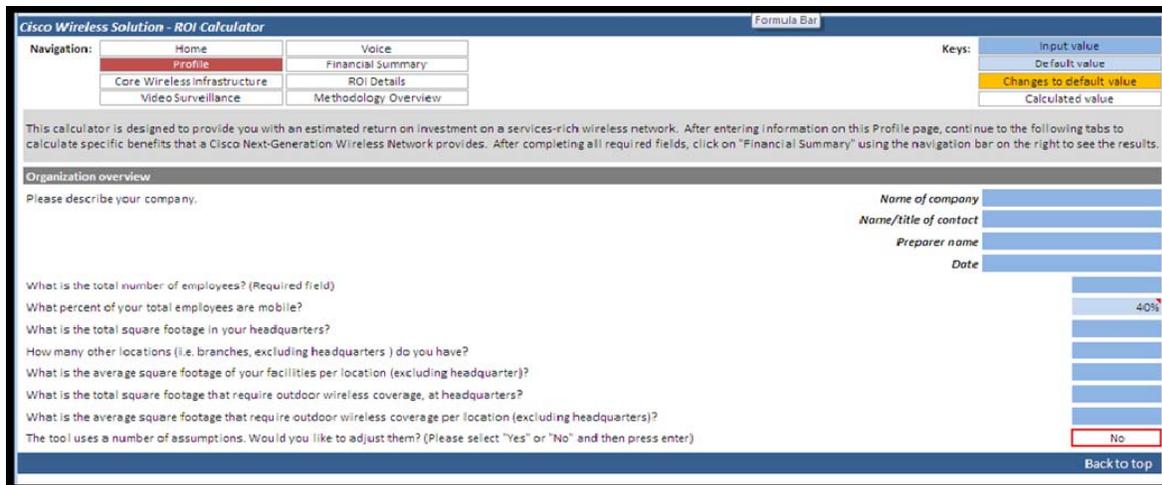
**Figure 5: Warning that all entered data is lost when the tool is reset**



2. **Start** – After resetting the tool and/or adjusting the model setting, users can click on the “Start” button to proceed.
3. **Model Settings** – The users can adjust the size of the screen in the Model Settings page. You can click on “Home” to return to the Home page. If you experience any difficulty when adjusting the screen size, close the file and reopen it.
4. **Disclaimer** – This page illustrates the disclaimers for both Forrester and Cisco.

On the Profile page (Figure 6), you will be asked to supply some information in order to customize the tool for your company. You will also be required to answer a few questions.

**Figure 6: Profile page overview**



If you decide to view model assumptions you will be able to change some default information such as:

**The confidence level** cells allow users to indicate the level of confidence they have in the information provided in each of the benefit categories. In the risk-adjusted calculations in the financial summary, the benefit amounts will decrease as the users' confidence levels decrease.

**Implementation phasing (roll out)** allows users to indicate what percentage of benefits they think they are going to realize in each year during the analysis period. It takes time to implement a solution, so the full value of the benefits will be realized over time.

**Figure 7: Keys**

**Keys:**

Input value
Default value
Changes to default value
Calculated value

- **Dark blue boxes** are User Inputs. Please fill in ALL dark blue boxes.
- **White boxes** are Calculated Values based on other inputs and are not changeable.
- **Light blue boxes** are Default Values provided by Forrester. Forrester applied values gathered from research and customer interviews to provide Default Values based on industry averages. You may decide to keep the Default Value provided or to change the value to more specifically match your business.
- **Changes to default value boxes** are boxes in which the Default Value has been changed. For your convenience any changes in default values automatically changes the color of the cell, indicating that the default value has been adjusted. If you are interested to view the original default value, the user can mouse over the now orange cell and see the original value. The "Reset" button on the Home page will reset all Default Values to their original settings.

After completing inputs within the Profile page, click on the "Core Wireless Infrastructure" button to move to the Cost page. The navigation buttons (Figure 9) are located at the top of each page.

**Figure 8: Navigational buttons located at the top of the screen**

Home	Voice
<b>Profile</b>	Financial Summary
Core Wireless Infrastructure	ROI Details
Video Surveillance	Methodology Overview

In the following pages (Core Wireless Infrastructure (Figure 10), Video Surveillance (Figure 11), and Voice (Figure 12)), depending on the answers and selection in the prior page, users are presented with a set of assumptions and inputs.

The response to these questions will allow users to customize the answers and calculate the results for their respective organization. Users have the ability to eliminate or include services within Core Wireless Infrastructure such as Context Aware and Security, as well as Video Surveillance and Voice that are created as add-ons.

To calculate the core wireless infrastructure costs, there are series of assumption available under the wireless infrastructure cost section. To view and adjust this information, the user can select “Yes” and press Enter.

Figure 9: Core Wireless Infrastructure

**Cisco Wireless Solution - ROI Calculator**

**Navigation:**

Home	Voice
Profile	Financial Summary
<b>Core Wireless Infrastructure</b>	ROI Details
Video Surveillance	Methodology Overview

**Keys:**

Input value
Default value
Changes to default value
Calculated value

This section will help you calculate the benefits from your investment in a wireless network infrastructure. The Cisco Unified Wireless Network is a services ready architecture that can deliver multiple benefits from mobile applications. For a complete view of the capabilities of the CUVN please scroll down and fill out all sections in this page.

**Please answer the following questions:**

How many users are using their laptop or another Wi-Fi connected device for work?

What is the average amount of productive time a user is expected to recover per day as a result of having network access anywhere on-premise? (Minutes)

What is the average number of guests that require network access per month?

What is the average time (minutes) required to provision a guest account?

What is the average hourly rate of external contractors?

Do you encounter situations that require ad hoc network coverage (i.e., seasonal deployments, temporary moves, and construction limitations for wired networks)?

Please specify the number of users you support annually for those ad hoc network deployments.

What is the alternative cost to provide wired network connectivity per user for above situations?

**Context Aware:** The ability to capture and integrate into business processes detailed contextual information about things such as location, temperature, the availability of an asset, and applications used. Fill out the questions in this section about mobile assets and the users of those assets, to see the impact on your organization's profitability. (To include Context Aware in the ROI calculation select "Yes", otherwise "No")

How many unique assets (i.e., laptops, Wi-Fi phones, projectors, etc.) are being tracked weekly?

What is the average time spent looking per asset weekly? (Minutes)

How many assets are marked as lost or remained uncovered monthly?

What is the average cost per asset lost?

\* What is the opportunity cost associated with not having the asset available for an hour?

**Security:** Constant and thorough network visibility is an integral part of the Cisco Unified Wireless Network solution. Fill out the questions in this section to find out how Cisco's wireless infrastructure-integrated approach to comprehensive wireless security reduces capital costs while streamlining security operations. (To include Security in the ROI calculation select "Yes", otherwise "No")

How many rogue detections activities (i.e., RF scans) do you perform annually using internal staff?

How long does it take per engagement to participate in rogue detection activities? (Total Man Hours)

How many rogue detection activities (i.e., RF scans) do you perform annually using third-party service providers?

What is the third-party service provider rogue detection cost per RF scan?

How many rogue APs do you identify per year on your premises that require you to manually remove them?

How long does it take to locate and remove each rogue AP from your premises? (Total Man Hours)

**Spectrum Intelligence:** Cisco CleanAir technology is a systemwide feature that improves air quality by detecting RF interference, identifying a source and locating it on the floor plan (requires Context Aware), provides automatic adjustments to optimize wireless coverage around the interference. It enables faster troubleshooting and effective policy enforcement. (To include Spectrum Intelligence in the ROI calculation select "Yes", otherwise "No")

How many RF interference related incidents does IT respond to per month?

How long does it take IT personnel to troubleshoot (detect and classify interference source) each issue? (Hours)

How long does it take IT to locate and remove each source of RF interference using a handheld device during a walk-about scan and for system remediation? (Hours)

**Wireless Infrastructure Costs:** This section details some of the assumptions that will be used to calculate the cost elements of the Cisco Unified Wireless Network infrastructure deployment (including equipment and man hour) and maintenance costs. To view model assumptions select "Yes" and press Enter.

**Basic wireless financial summary results** Present result?

Total costs	
Total benefits	
ROI	
Payback (months)	

[Back to top](#)

Figure 10: Video Surveillance

**Cisco Wireless Solution - ROI Calculator**

Navigation: Home, Voice, Profile, Financial Summary, Core Wireless Infrastructure, ROI Details, Video Surveillance, Methodology Overview

Input value, Default value, Changes to default value, Calculated value

**Video Surveillance:** A services rich wireless network infrastructure allows you to run a multitude of mobility applications on it. Fill in this section to calculate the expected benefits you would receive in productivity, operational and IT productivity savings associated with deploying a flexible physical security network that utilizes wireless video surveillance technology.  Yes

Please answer the following questions:

What is the total cost to physically monitor your company per year?

Expected percentage reduction in physical security costs if you implement a video surveillance solution  10%

How many video surveillance cameras does your firm plan to set up?

What is the average cost to set up a wired video surveillance (i.e., CCTV or IP) camera? Outdoor  \$5,000 Indoor  \$5,000

What percentage of video surveillance cameras would you expect to replace with wireless cameras? Outdoor  10% Indoor  10%

How many man-hours (per month) do you spend reviewing video surveillance feeds in order to locate an incident you wish to investigate? (Requires context aware)

What is the average hourly fully-loaded salary of a security personnel?  \$50

Wireless video surveillance financial summary results Present result?  No

Total costs	
Total benefits	
ROI	
Payback (months)	

Figure 11: Voice

**Cisco Wireless Solution - ROI Calculator**

Navigation: Home, Voice, Profile, Financial Summary, Core Wireless Infrastructure, ROI Details, Video Surveillance, Methodology Overview

Input value, Default value, Changes to default value, Calculated value

**Voice:** For an incremental cost you can take advantage of the Cisco wireless network to direct voice calls over Wi-Fi. When used with dual-mode handsets you can significantly decrease cellular contract fees, while improving productivity and collaboration between employees. Fill out this section to calculate the expected benefits from a Voice over Wi-Fi solution.  Yes

Please answer the following questions:

What percent of total number of employees now (or in the future) use voice over WLAN?

What is the average cellular cost for domestic calls per user? (Monthly)

What is the average cellular cost for international calls per user? (Monthly)

What percent of the user monthly cellular minutes can be reduced by transferring calls to Wi-Fi?  50%

What is the productivity improvement on average per user using Voice over WLAN? (Minutes per week)  30'

Voice financial summary results Present result?  No

Total costs	
Total benefits	
ROI	
Payback (months)	

The functionality provided in the tool allows users to do quick sensitivity type of analysis and determine the incremental costs and benefits from investments in context aware, security, wireless video surveillance or voice over Wi-Fi. Even after completing the tool you can perform this sensitivity analysis by including or excluding results from the final ROI and viewing the impact on the Financial Summary section.

### Financial summary result

It is important to note that the tool has been designed to present individual financial summary result for each section “Core Wireless Infrastructure”, “Video Surveillance”, and “Voice” at the bottom of each page. Financial summary result page (Figure 13) presents the consolidated view of the financial results. The results include the following:

- Summary of Financial Results
  - Risk-Adjusted, Profit-Loss Analysis graph

- ROI and Payback Summary table
- Non-Risk-Adjusted Financial Summary table
- Risk-Adjusted Financial Summary table
- Summary of Benefits
- Summary of Costs

The following are definitions for some of the items included in the financial summary results.

**Return on Investment (ROI):** A measure of a project’s expected return in percentage terms. ROI is calculated by dividing net benefits (benefits minus costs) by costs.

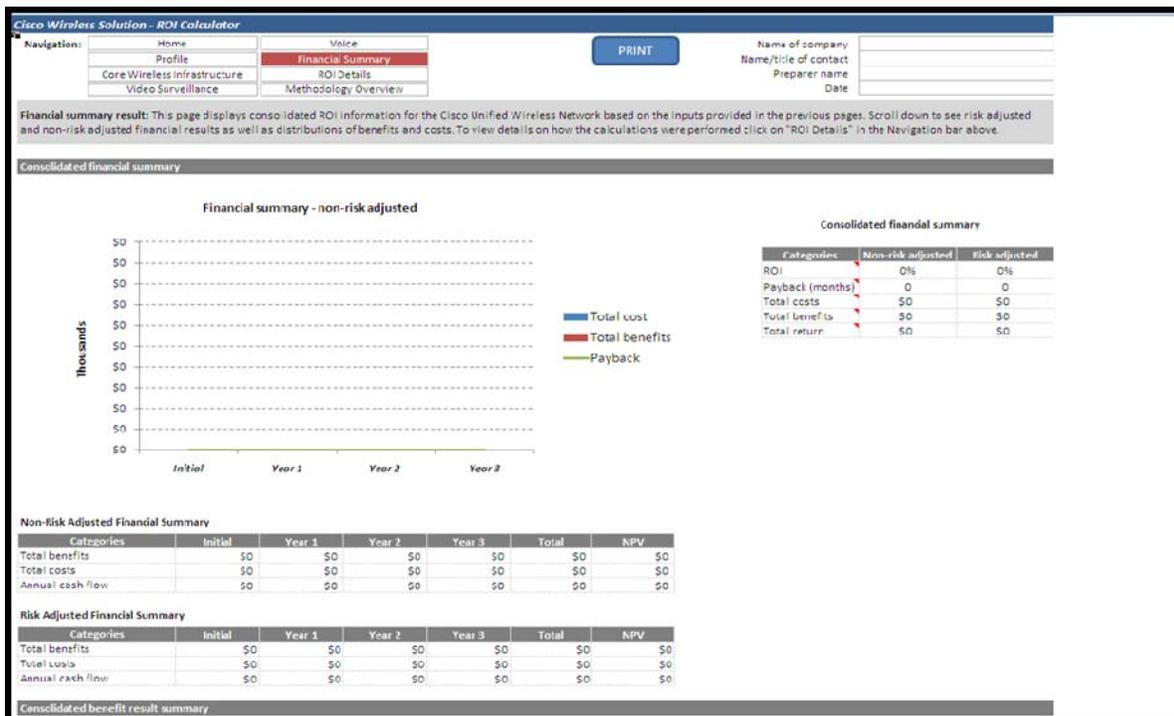
**Payback period:** The breakeven point for an investment. This is the point in time at which net benefits (benefits minus costs) equal initial investment or cost.

**Present value (PV):** The present or current value of (discounted) cost and benefit estimates given at an interest rate (the discount rate). The PV of costs and benefits feed into the total net present value of cash flows.

**Net present value (NPV):** The present or current value of (discounted) future net cash flows given an interest rate (the discount rate). A positive project NPV normally indicates that the investment should be made, unless other projects have higher NPVs.

The result in the present value (PV) and net present value (NPV) should indicate if implementing the Cisco Wireless solution would have value for the customer.

Figure 12: Summary of financial results (graph and tables)



## ROI details

This page presents a detailed breakdown of costs and benefits for risk-adjusted as well as non-risk-adjusted estimates. It illustrates the assumptions used throughout the tool. Users should note that the tool is locked and the users cannot change any of the calculations. The data and calculation presented in this section was aimed to provide transparency by allowing the users to note the drivers of ROI.

The ROI details page (Figure 14) includes the following sections:

- Assumption summary
- Cost overview
- Benefit overview

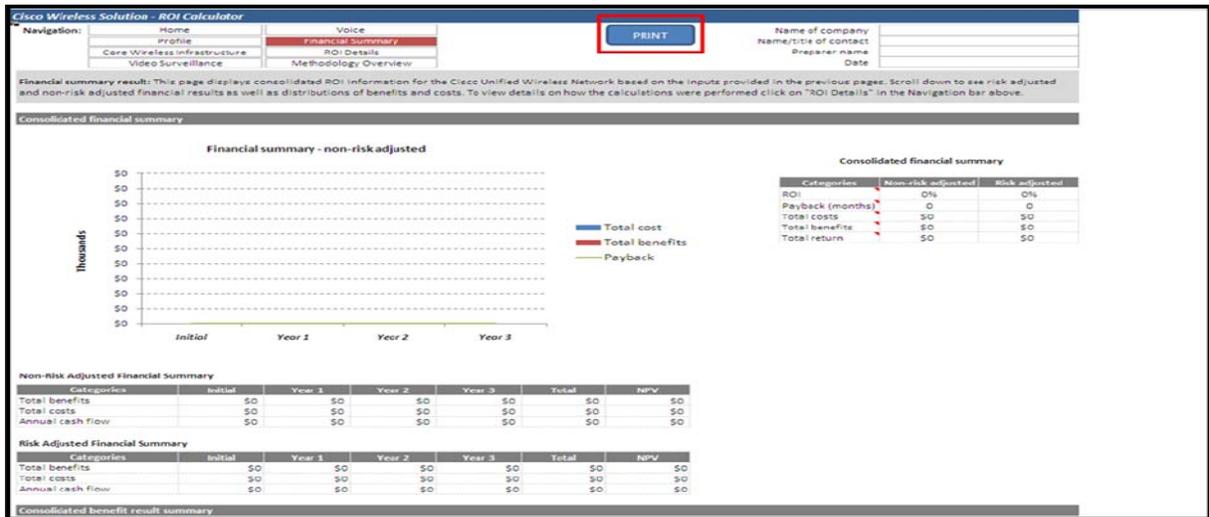
Figure 13: Example of ROI details page

Cisco Wireless Solution ROI Calculator	
Navigation: Home Voice Profile Financial Summary Core Wireless Infrastructure <b>ROI Details</b> Video Surveillance Methodology Overview	
ROI details: This section presents the complete calculation used throughout this tool.	
<b>Foundational benefits</b>	
How many users are using their laptop or another Wi-Fi connected device for work?	0
What is the average amount of productive time a user is expected to recover per day as a result of having network access anywhere on-premise? (Minutes)	0.20
What is the average hourly fully-loaded rate of your wireless connected workers?	\$38
<b>Productivity improvement</b>	
What is the average number of guests that require network access per month?	0
What is the average time (minutes) required to provision a guest account?	0.25
What is the average hourly fully-loaded rate of your wireless connected workers?	\$38
<b>Guest access: impact on IT personnel productivity</b>	
What is the average number of guests that require network access per month?	0
What is the average time (minutes) required to provision a guest account?	0.25
What is the average hourly rate of external contractors?	\$150
<b>Guest Access: impact on guest productivity</b>	
Please specify the number of users you support annually for those ad hoc network deployments.	0
What is the alternative cost to provide wired network connectivity per user for ad hoc situations?	\$400
Wireless as a primary access	\$0
<b>Context Aware benefits</b>	
How many unique assets (i.e., laptops, Wi-Fi phones, projectors, etc.) are being tracked weekly?	0
What is the average time spent looking per asset weekly? (Hours)	1.00
What is the average hourly fully-loaded rate of your wireless connected workers?	\$38
<b>End user productivity gain from improvement in asset tracking</b>	
How many assets are marked as lost or remained uncovered monthly?	0
What is the average cost per asset lost?	0
What is the number of months per year?	12
<b>Asset recovery cost</b>	
How many unique assets (i.e., laptops, Wi-Fi phones, projectors, etc.) are being tracked weekly?	0
What is the opportunity cost associated with not having the asset available for an hour?	\$0
What is the average time spent looking per asset weekly? (Hours)	1.00
<b>Asset recovery opportunity cost</b>	
	\$0

## Print capability

All the calculation sheets throughout this model offer the option to print as a PDF (so that you can email the file to your customer) or to a local printer.

Figure 14: Print function



The pages have been preformatted and the users are not required to make any adjustments. Printing a PDF document will require the user to have the software available on your machine. If you have any questions concerning the appropriate PDF software contact your IT team.

**Guidance when using local printer:** This is a simple process. By clicking on the “Print” button on top of the financial summary page (see Figure 14), you can get a physical copy of the final version of the entire document.

**Guidance when printing a PDF:** By clicking on the “Print” button, the list of printers will allow you to choose a printer where you can select PDF as an option. The user is required to save and name each sheet as it prints. We recommend labeling the sheets as “Home”, “Profile”, “Core wireless infrastructure”, “Video surveillance”, “Voice”, “Financial summary”, and “ROI details”. You can change the names of the sheets as it makes sense to you. **NOTE:** If you are not interested in printing and saving individual files for each of the sheets labeled above. You can use Excel print functionality and print as PDF. You are not required to format any pages. All pages have been formatted. However, you need to always select “Entire Workbook”. Ensure that “Ignore print areas” always remains unchecked.

Figure 15: Printer PDF selection

