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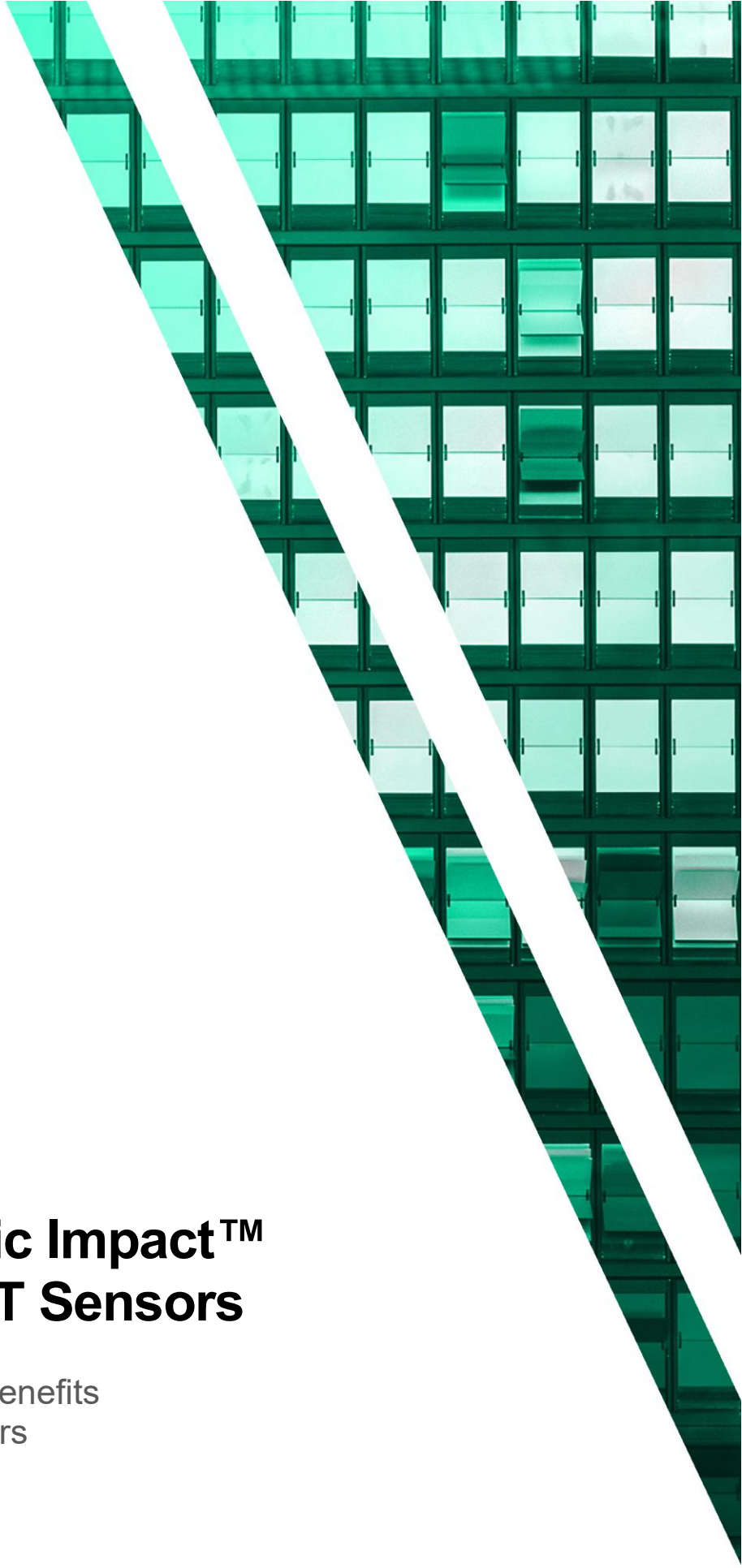

The Total Economic Impact™ Of Cisco Meraki MT Sensors

Cost Savings And Business Benefits Enabled By Meraki MT Sensors

FEBRUARY 2022

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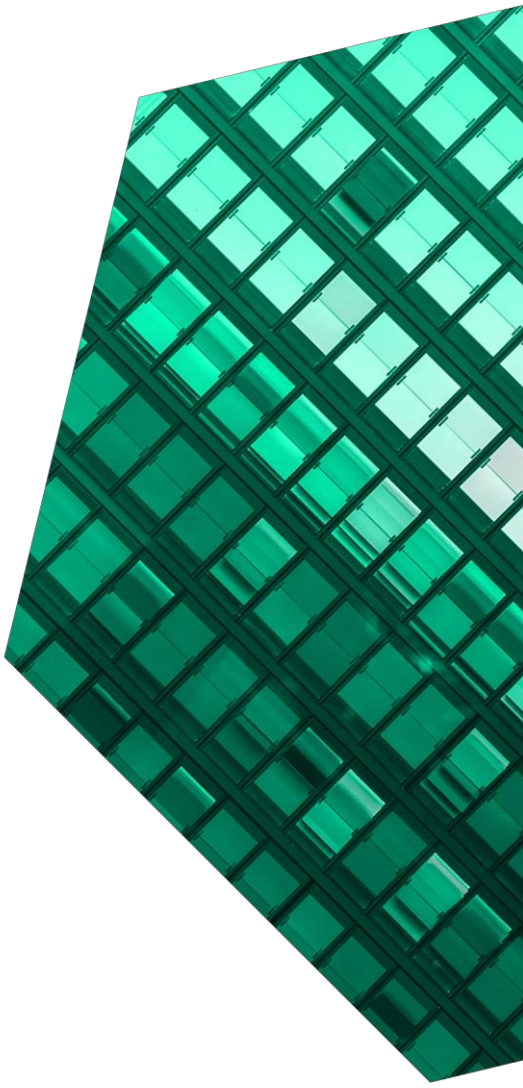


ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. For more information, visit forrester.com/consulting.

Executive Summary

Cisco Meraki MT is a product family of internet-of-things sensors that provides real-time visibility across a slew of enterprise environments to remotely monitor temperature, humidity, water leaks, and door access for critical infrastructure. Meraki MT sensors empower companies to improve uptime, reduce damage to business assets, and reduce power consumption.

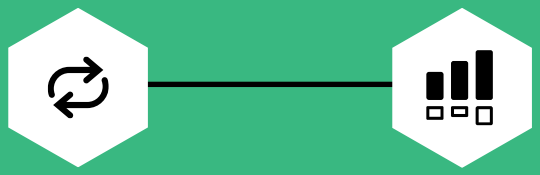
The Cisco Meraki MT family of cloud-based internet-of-things (IoT) sensors address users' top challenges: reduced network downtime and business disruptions, improved network reliability, and reduced energy consumption. Users can remotely monitor their critical infrastructures and crucial business assets through a single-cloud platform.

Fully integrated with the Cisco Meraki MV family of smart cameras and the Cisco Meraki MR family of wireless access points, the Cisco Meraki MT family combines environmental data with physical monitoring and scalable wireless solutions to bring compelling business outcomes. Meraki MT sensors eliminate the need for regular physical inspections of critical assets, which are not only costly but also miss real-time events. Customized alerts can immediately notify key personnel when an issue develops.

Cisco commissioned Forrester Consulting to conduct a Total Economic Impact™ (TEI) study and examine the potential return on investment (ROI) enterprises may realize by deploying Meraki MT sensors.[1] The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Meraki MT sensors on their organizations.

To better understand the benefits, costs, and risks associated with this investment, Forrester interviewed four decision-makers with experience using Meraki MT sensors. Additionally, Forrester surveyed 60 decision-makers with experience using IoT sensors including those from the Meraki MT family. For the purposes of this study, Forrester aggregated the experiences of the interviewed and surveyed decision-makers and combined the results into a single composite organization.

KEY STATISTICS



Return on investment (ROI)
175%

Net present value (NPV)
$1.59M

Prior to using Meraki MT sensors, interviewees' organizations predominantly used analog sensors in conjunction with frequent and costly physical inspections by IT and security personnel. Predictably, this caused the organizations to identify events late or to miss them altogether. In turn, this led to IT equipment downtimes, business disruptions, and losses of business assets.

After investing in Meraki MT sensors, interviewees' organizations were able to:

- Monitor their critical infrastructures and business assets via a single dashboard.
- Significantly reduce network downtime and resultant business disruptions.

- Reap the benefits of easy-to-install and easy-to-configure IoT sensors through lower deployment costs.
- Reduce energy consumption through smart monitoring of IT infrastructure.
- Interface to the sensors through centralized cloud management.
- Obtain firmware updates automatically.

"Meraki is one of the best investments we have made. The Meraki MT sensors give us full visibility and reduce engineering and travel time, and [they] reduce downtime because we proactively know what's going on in all of our markets.
Senior director of networking and telco, audio media platform

"There is nothing like this [Meraki MT sensors] in the data center monitoring market. It's a market that needed disruption, and I think that is what Meraki is doing."
Infrastructure architect, global advertising agency

KEY FINDINGS

Quantified benefits. Risk-adjusted present value (PV) quantified benefits include:

- **Reduced loss of business assets by 35%.** Business assets — whether they're product inventory or critical IT infrastructure assets — are vulnerable to environmental conditions, usually from failing or leaking heating, ventilation, and air conditioning (HVAC) systems. Using traditional sensors and manual physical monitoring, an organization could potentially lose the business assets at a given location between check points. Meraki MT sensors dynamically monitor these assets and provide timely alerts. For the composite organization, Meraki MT sensors reduces business asset loss by nearly $770,000.
- **Reduced unplanned downtime by 43%.** IT infrastructure is the lifeblood of nearly every business. Downtime for maintenance and updates can be scheduled to be as non-disruptive as possible. However, unplanned downtime (often due to environmental conditions like overheating, water damage, or theft) can be very detrimental and disruptive. Interviewees said real-time monitoring with Meraki MT sensors enabled their organizations to significantly reduce downtime. For the composite organization, this is worth savings of nearly $365,000 in reduced unplanned downtime.
- **Energy savings of 17% to 27%.** The world has been going green with rising intensity, and just the IT equipment for a large, global corporation can consume as much energy annually as a midsize city in the US. Interviewees' organizations are adopting pragmatic techniques and utilizing temperature sensors on server racks that trigger the on/off functionality of air vents. This allows them to use the cold air outside to drastically reduce their energy usage. For the composite organization, Meraki MT sensors yield energy savings of more than $155,000.

- **50% lower installation costs compared with other IoT sensors.** Interviewees identified three costs associated with installing their organization's environmental monitoring system: cost of hardware, labor cost of installation, and network downtime associated with installation. Depending on the site configuration, interviewees said their organizations installed Meraki MT sensors in half the time and with nearly half the number of technicians that other solutions would have required. They also said there is no planned network downtime associated with their organizations' Meraki MT installations compared to many hours or several days of downtime with alternative solutions. Including savings around planned downtime, the composite organization saves more than $1.2 million in costs that it would spend deploying another IoT sensor solution.

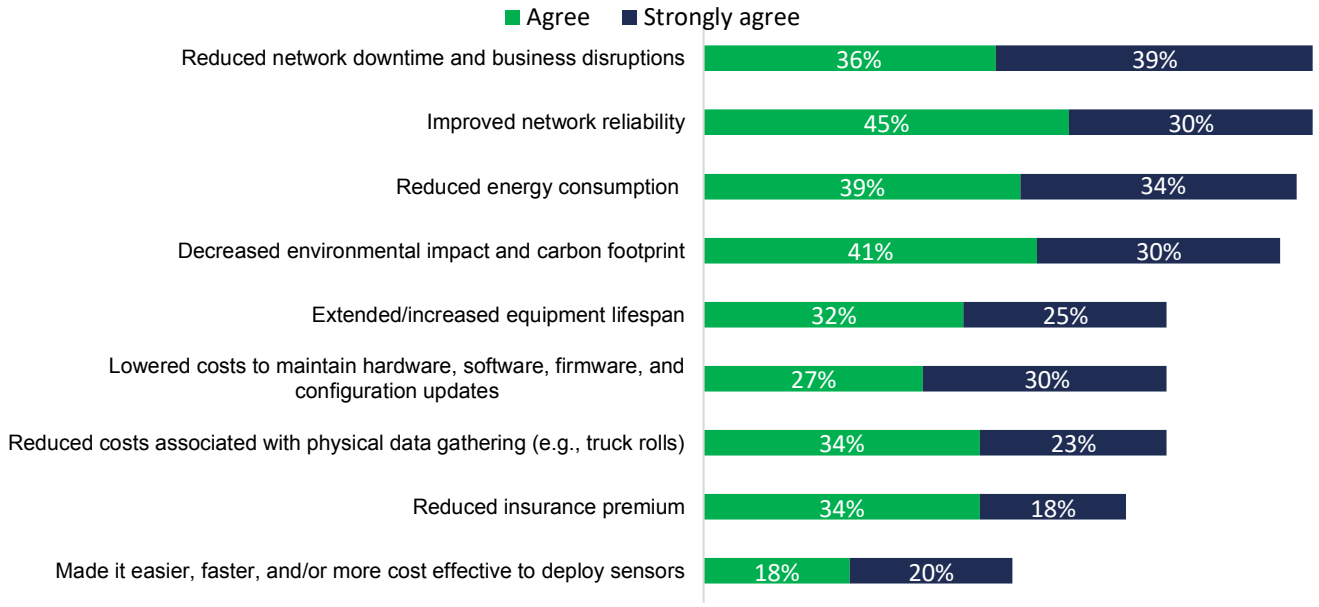
"I would definitely say that it [Meraki MT] has been a great investment. It took us down a more innovative path than we've attempted before, at a critical point, and it paid off."
Program manager, retail pharmacy chain

Unquantified benefits. Forrester defines unquantified benefits as those advantages that are not built into the financial model because interviewed customers could not quantify the benefits, or they underpin quantified benefits. Benefits that are not quantified for this study include:

- **Improved network reliability.** Seventy-five percent of survey respondents said they agree or strongly agree that Meraki MT sensors improved their organization's network reliability.
- **Extended or increased equipment lifespan.** Fifty-seven percent of survey respondents said they agree or strongly agree that being able to detect overheating or water leakage situations before they become problems likely leads to the prevention of equipment damage and may also extend the usage period of IT equipment.
- **Lowered overall maintenance costs.** Fifty-seven percent of survey respondents said they agree or strongly agree that Meraki MT sensors lowered maintenance costs at their organization. These costs include those for hardware maintenance, software and firmware updates, and various organization-specific configuration updates.
- **Reduced insurance premium.** Fifty-two percent of survey respondents said they agree or strongly agree that their organization would be able to reduce insurance premiums for critical business assets (including IT equipment) with Meraki MT.

"When we told our executive team, 'We can do all this in one product family and one dashboard,' they were blown away. They loved it!"
Senior director of networking and telco, audio media platform

"How much do you agree with the following benefit statements about your Meraki MT environmental monitoring system? My organization's Meraki MT environmental monitoring system has …"



Base: 44 buyers and/or decision-makers from organizations that use Meraki MT who are involved with choosing environmental sensor solutions for their organizations
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, August 2021

Costs. Risk-adjusted PV costs include:

- **External costs.** In Year 1, the composite organization pays $560,000 for 1,156 assorted Meraki MT sensors and 216 gateways or cameras. Additionally, it costs $35,000 to install the solution and air intake vents in 36 networking rooms and two data centers.
- **Internal costs.** For the composite organization, internal costs include the installation cost of Meraki MT sensors and gateways which are approximately half as much as the labor costs for alternative solutions. This category also includes the annual cost of inspecting and maintaining the sensors.

The financial analysis which is based on the decision-maker interviews and survey results found that a composite organization experiences benefits of $2.50 million over three years versus costs of $910,000, adding up to a net present value (NPV) of $1.59 million and an ROI of 175%.

"What is great about the Meraki MT journey is that we were given budget for monitoring our data centers and server rooms, and [we] created an entirely new use case for energy savings and reducing carbon emissions. The sensors paid for themselves in about a year and will continue to produce profit moving forward."

— Infrastructure architect, global advertising agency

ROI
175%

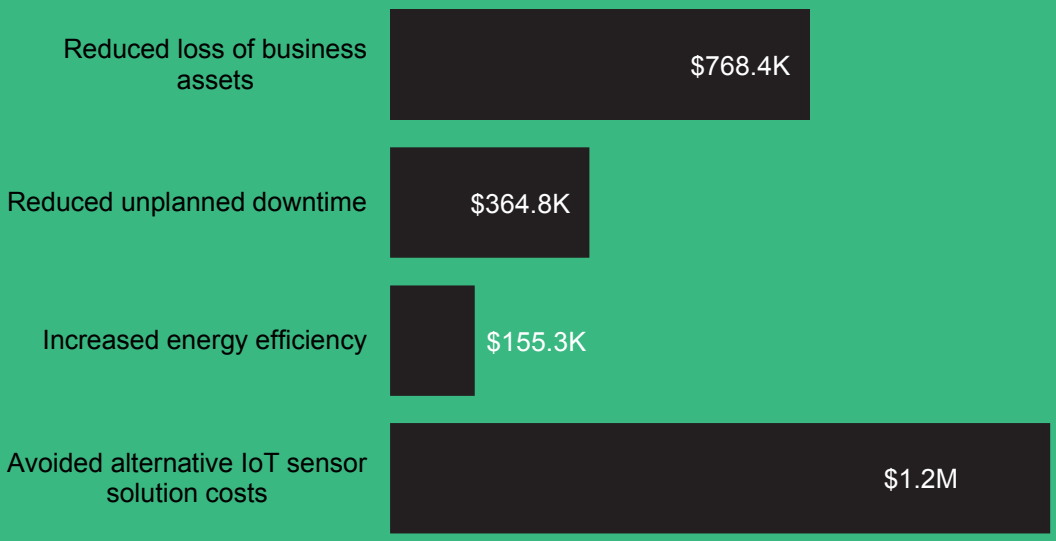
BENEFITS PV
$2.50M

NPV
$1.59M

PAYBACK
<6 months

ANNUAL REDUCTION OF GREENHOUSE GAS EMISSIONS
404 tons

Benefits (Three-Year)



TEI FRAMEWORK AND METHODOLOGY

From the information provided in the interviews and survey, Forrester constructed a Total Economic Impact™ framework for those organizations considering an investment in the Meraki MT Sensors.

The objective of the framework is to identify the cost, benefit, flexibility, and risk factors that affect the investment decision. Forrester took a multistep approach to evaluate the impact that Meraki MT sensors can have on an organization.

DUE DILIGENCE

Interviewed Cisco stakeholders and Forrester analysts to gather data relative to Meraki MT sensors.

DECISION-MAKER INTERVIEWS AND SURVEY

Interviewed four decision-makers at organizations using the Meraki MT sensors to obtain data with respect to costs, benefits, and risks. Surveyed 60 decision-makers at organizations using IoT sensors including 44 at organizations that use Meraki MT sensors.

COMPOSITE ORGANIZATION

Designed a composite organization based on characteristics of the interviewed and surveyed decision-makers.

FINANCIAL MODEL FRAMEWORK

Constructed a financial model representative of the interviews and survey using the TEI methodology and risk-adjusted the financial model based on issues and concerns of the decision-makers.

CASE STUDY

Employed four fundamental elements of TEI in modeling the investment impact: benefits, costs, flexibility, and risks. Given the increasing sophistication of ROI analyses related to IT investments, Forrester's TEI methodology provides a complete picture of the total economic impact of purchase decisions. Please see Appendix A for additional information on the TEI methodology.

The Cisco Meraki MT Sensors Customer Journey

Drivers leading to the Meraki MT Sensors investment

Interviewed Decision-Makers

Interviewee	Organization	Region	Employees and locations
Program manager	Retail pharmacy chain	US	225,000 employees at 10,000 stores
Infrastructure architect	Global advertising agency	Global	100,000 employees at 4,000 offices
Senior systems engineer	Retail and hospitality services firm	New York	350 regionally concentrated employees at 20 affiliated business locations
Senior director of networking and telco	Audio media platform	US	18,000 employees at the organization's headquarters and 150 radio stations

KEY CUSTOMER CHALLENGES

Forrester interviewed four senior IT professionals and surveyed 44 decision-makers with experience using Meraki MT sensors at their organizations. The survey included a total of 62 participants. For more details on these individuals and the organizations they represent, see Appendix B.

Prior to deploying Meraki MT sensors, two of the interviewees' organizations did not have environmental monitoring systems other than surveillance cameras with regular physical checks. Similarly, 52% of survey respondents said their organization only had surveillance cameras in its prior state, and half were greenfield deployments.

The decision-makers noted how their organizations struggled with common challenges, including:

- **The cost of manual inspections.** Each interviewee said their organization faced challenges with regularly performing manual inspections of server rooms, network closets, and other IT spaces to ensure that equipment did not overheat or that HVAC equipment didn't cause damage with water or condensation. This pain point was equally applicable for companies that stored products that could not withstand high temperatures or be subject to potential water damage. The problems were compounded at more remote locations that took longer to access for facilities or security personnel. Aside from the cost of manual inspections, interviewees said their organizations would not catch incidents in time or miss them altogether.

> **"We are going to save about 1,000 person-hours per year [by] sending people around to monitor sites [and] emailing automated reports to managers. These resources can now interact with customers and improve customer service."**
> *Senior director of networking and telco, Audio media platform*

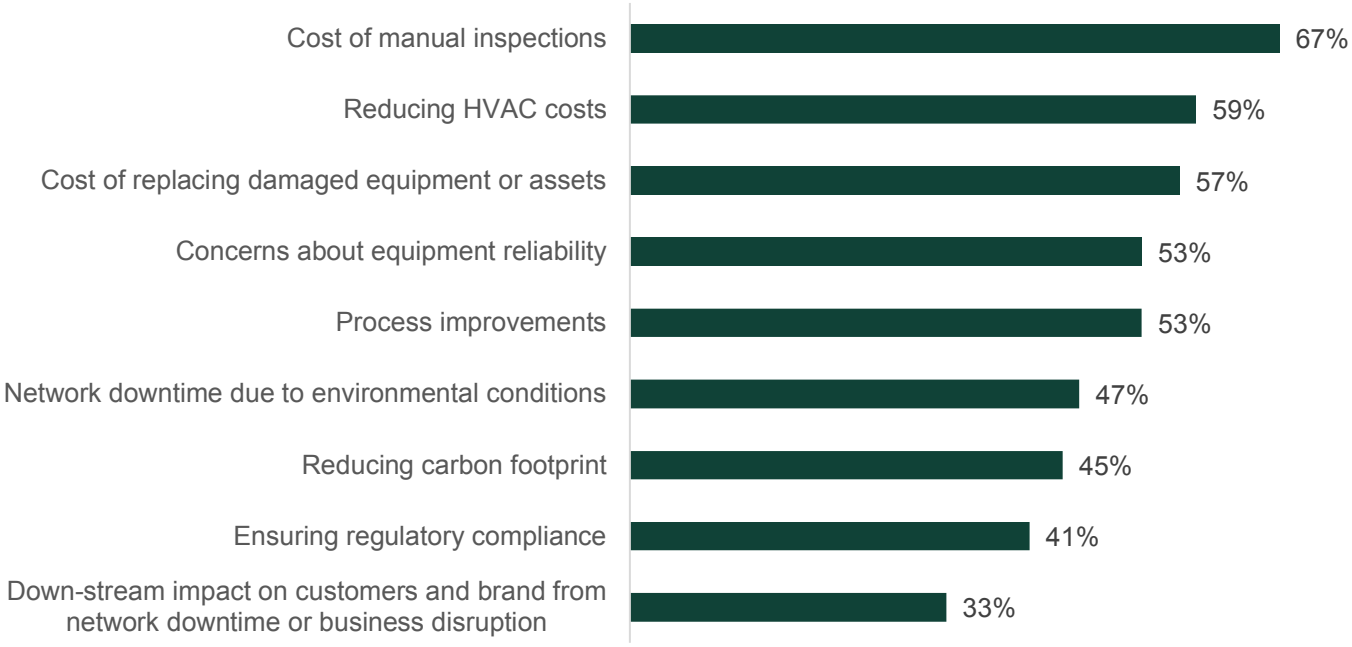
"Our [previous] IT infrastructure consumed about 6.5 megawatts annually, so I strategized how we could impact energy consumption. Air conditioning is the greatest energy consumer, so the Meraki MT temperature sensors became central to our plan."
Infrastructure architect, global advertising agency

- **Reducing energy costs and carbon emissions.** Each interviewee said their organization is continually focused on reducing energy costs and wants to be more conscious about the environment. One interviewee said their organization's previous annual IT energy load of 6.5 megawatts was more than some cities consume. Despite using more energy-efficient IT equipment, interviewees said their organizations are trending toward keeping server rooms and network closets warmer to reduce HVAC usage while still adhering to the standards of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE). While interviewees said reducing energy costs and carbon emissions was lower on the scale of priorities when their organizations searched for a solution, they said reducing their organizations' carbon footprints was an investment driver.
- **The cost of replacing damaged assets.** Interviewees and survey respondents consistently said their organizations paid costs to replace damaged equipment, business assets, and inventory. One interviewee said their organization saw multiple instances of supplies being damaged from overheating or due to water leaking from HVAC systems, usually on the weekends. Interviewees and respondents from organizations with product inventories that are susceptible to environmental conditions said the business impact of replacing damaged IT equipment easily outweighed the costs of the equipment replacements.

"I can use the Meraki devices to proactively send me alerts because the IT equipment alerts are not very configurable, and usually it's too late once those alerts start triggering. It gives us a great deal of leeway when something goes wrong."
Senior systems engineer, retail and hospitality services firm

- **Unplanned network downtime.** Survey respondents said network downtime due to environmental conditions was one of the pain points that drove their organizations to deploy environmental sensors. And interviewees said the business cost of unplanned downtime was detrimental.

"What challenges led you to considering and implementing your current temperature and humidity sensor system?"



Base: 58 buyers and/or decision-makers involved with choosing environmental sensor solutions for their organization
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, August 2021

SOLUTION REQUIREMENTS/INVESTMENT OBJECTIVES

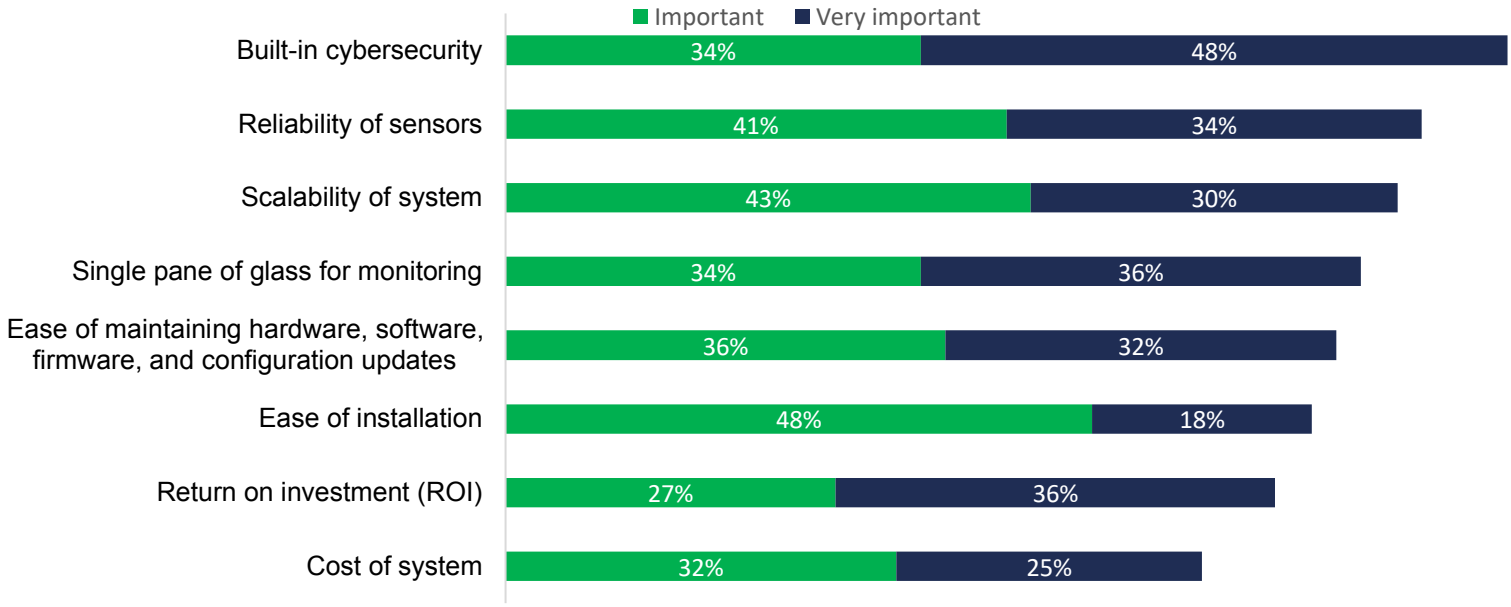
In looking for a solution for their environmental monitoring system, interviewees' organizations searched for a solution that could provide various features and benefits. They wanted a solution that was:

- Ready to use out of the box.
- Easy to install and able to be quickly deployed.
- Provided single-pane-of-glass monitoring for IT and maintenance/security teams.
- Had built-in cybersecurity.
- Was highly reliable.
- Allowed for system scalability.

"We had a very tight timeline. Since we had Meraki cameras in my lab, the Meraki team suggested we try out the sensors. As we looked at the seamless integration, it made complete sense."
Program manager, retail pharmacy chain

While each interviewee relayed a unique journey and their own set of priorities for selecting their environmental monitoring solution, easy to install and quickly to deploy was a universal theme. An interviewee from a pharmacy company said their organization needed to fast-track its decision and deployment to meet the demands of Operation Warp Speed and that Meraki MT was the only solution that would meet the aggressive schedule.

"How important were each of the following attributes when choosing Meraki MT as your environmental monitoring system?"



Base: 44 buyers and/or decision-makers at organizations that use Meraki MT who are involved with choosing environmental sensor solutions for their organizations
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, August 2021

COMPOSITE ORGANIZATION

Based on the interviews and survey, Forrester constructed a TEI framework, a composite company, and an ROI analysis that illustrates the areas financially affected. The composite organization is representative of the four companies that Forrester interviewed and the 62 companies that Forrester surveyed and is used to present the aggregate financial analysis in the next section.

Description of composite. The composite organization is a global distributor of electronics components with $300 million annual revenue and four corporate campuses around the world. The composite has 60 locations globally, and each has a unique sensor configuration based on the type of IT equipment and product stocked there. Each campus includes about 200 employees, and sales and support offices average 10 to 15 employees with corresponding IT equipment needs.

Deployment characteristics. The composite organization conducts a greenfield deployment of environmental sensors based on the need for monitoring IT equipment and business assets against overheating and water damage, depending on location. Decision-makers also want to reduce the organization's energy use and carbon footprint.

Forrester assumes the following about the composite's Meraki MT deployment:

- The composite organization deploys MT10 sensors for temperature and humidity, MT12 sensors for water leaks, and MT20 sensors for open/close detection.
- Because MT series sensors communicate with low-power Bluetooth technology, the composite organization requires a room or localized placement of sensors to connect the devices to a physical network. This connection is established with either the MR36 gateway or an MV12 camera, which are both baseline Meraki products.

Key assumptions

- **$300 million in revenues**
- **1,500 employees**
- **4 corporate campuses**
- **60 locations worldwide**
- **4 distribution warehouses**
- **2 data centers**
- **50 regional sales and support offices**

- The composite deploys each MT20 sensor for open/close detection with a Meraki camera system. The detection event triggers a time-stamp for the camera recording for easy-to-identify events.

The composite organizations' deployment table, below, provides a summary of the number and types of IoT sensors and gateways deployed and built into the model.

Composite Organization's Meraki Deployment

Facility	Locations	MT10 sensors	MT12 sensors	MT20 sensors	MR36 or MV12 units
Corporate campus (4 buildings with 2 networking and storage rooms each)	4	56	24	24	16
Data center (20 racks each)	2	60	40	22	4
Warehouse (1 networking room and 2 loading docks each)	4	14	2	8	11
Sales and service office (1 small networking and storage room each)	50	5	1	2	2
Total (number of sensors per facility * number of facilities)	**60**	**650**	**234**	**272**	**216**

Analysis Of Benefits

Quantified benefit data as applied to the composite

Total Benefits						
Ref.	**Benefit**	**Year 1**	**Year 2**	**Year 3**	**Total**	**Present Value**
Atr	Reduced loss of business assets	$300,475	$309,489	$318,774	$928,738	$768,435
Btr	Reduced unplanned downtime	$146,692	$146,692	$146,692	$440,076	$364,802
Ctr	Increased energy efficiency	$62,453	$62,453	$62,453	$187,359	$155,311
Dtr	Avoided alternative IoT sensor solution costs	$1,219,662	$63,180	$63,180	$1,346,022	$1,208,467
	Total benefits (risk-adjusted)	$1,729,282	$581,814	$591,099	$2,902,196	$2,497,015

REDUCED LOSS OF BUSINESS ASSETS

Evidence and data. Fifty-seven percent of the survey respondents said the cost of replacing damaged equipment or assets was a key driver to deploying a temperature and humidity sensor system. And 80% said the top reason to implementing a water-leak detection system was to avoid network downtime due to damaged equipment.

Reduction in loss of composite organization's business assets

35%

All four interviewees said the cost of replacing damaged equipment was a key factor for implementing an environmental monitoring system at their organization, and two said using Meraki MT prevented business-asset losses.

- A program manager at a retail pharmacy chain said their organization could've potentially lost vaccines for COVID-19 if it didn't use Meraki MT to provide additional freezer door protection. In the interviewee's opinion, this was not only financially important, but critical for their organization's reputation.
- A senior systems engineer at a retail and hospitality services firm said their organization saw damage from condensation that had built up due to a faulty HVAC air filter and that it caused many gallons of water to drip over racks at its data center. The engineer also said Meraki temperature sensors alerted their organization about an air-conditioner failure at a convenience store, which allowed the firm to save that store's product inventory.

Interviewees' organizations saw varying levels of success by deploying Meraki MT sensors to protect business assets. Gaining the ability to quickly detect a problem and receive alerts allowed their companies to react almost immediately. But affected organizations still needed to fix the source of the problem (e.g., failed HVAC equipment) to get things back on track.

For situations involving overheating, organizations could usually save IT equipment by turning off the power. There would still be some network downtime while the HVAC equipment was being fixed or replaced, but the organizations meaningfully reduced overall downtime. However, for water leaks, it was inevitable that some equipment and product inventory would be damaged or lost.

Modeling and assumptions. For the composite organization, Forrester assumes:

- The composite's annual revenues are $300 million with 3% annual growth, earning a 24% gross margin and turning over inventory 10.0 times annually. This leads to $7 million of product inventory at any given time.
- The composite stores $1.5 million of its inventory at each of its four warehouses and it stores $20,000 worth of inventory at each of its 50 sales and support offices.
- To determine the likelihood of an over-heating or water leak event, the model calculates a probability of failure based on the mean time between failure (MTBF) for air conditioning units. For the warehouses, the composite installs 6,000 hours MTBF units, and it has a backup unit in place. For sales office the composite installs 5,000 hours MTBF units with no backup units.
- Based on a 24/7, 365-day schedule, the likelihood of an overheating or water leak event at one of the composite's warehouses is 6.00%.
- Based on a 12-hour, 220-day schedule, the likelihood of an overheating or water leak event at any one of the composite's 50 sales office locations is 65%.
- Event detection by Meraki MT sensors save 35% of the composite's at-risk business assets.

"The deployment of Meraki MT for Operation Warp Speed was a good investment for us and a good strategic move."
Program manager, retail pharmacy chain

Risks. The impact of this benefit will vary depending on:

- The organization's industry and business model.
- The type of business assets at risk of loss.
- Whether or not IT equipment is at risk (would be more relevant for businesses that do not sell physical products, like the composite organization).

Results. To account for these risks, Forrester adjusted this benefit downward by 15%, yielding a three-year, risk-adjusted total PV (discounted at 10%) of nearly $768,400.

Reduced Loss Of Business Assets					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
A1	Product stocked at warehouses	Composite	$6,000,000	$6,180,000	$6,365,400
A2	Probability of overheating or water leak event for warehouses	1.50% * 4 warehouses	6.00%	6.00%	6.00%
A3	Subtotal: Potential business asset loss for warehouses	A1*A2	$360,000	$370,800	$381,924
A4	Product stocked at sales offices	Composite	$1,000,000	$1,030,000	$1,060,900
A5	Probability of overheating or water leak event for sales offices	1.30% * 50 sales offices	65.00%	65.00%	65.00%
A6	Subtotal: Potential business asset loss for sales offices	A4*A5	$650,000	$669,500	$689,585
A7	Total potential business asset loss	A3+A6	$1,010,000	$1,040,300	$1,071,509
A8	Loss savings due to Meraki sensors	Interviews	35.0%	35.0%	35.0%
At	Reduced loss of business assets	A7*A8	$353,500	$364,105	$375,028
	Risk adjustment	↓15%			
Atr	Reduced loss of business assets (risk-adjusted)		$300,475	$309,489	$318,774
	Three-year total: $928,738		**Three-year present value: $768,435**		

REDUCED UNPLANNED DOWNTIME

Evidence and data. Seventy-seven percent of survey respondents said they agree or strongly agree that reducing network downtime and business disruptions is the top benefit of implementing an environmental monitoring system. And each of the four interviewees said their organization wanted to reduce unplanned downtime.

- A director of networking and telco at an audio media platform described how a cooling system for a location that supported six radio stations once went down overnight. They said that by morning, several servers had crashed and that all six stations were off the air. Engineering and facilities teams worked to get the air conditioning fixed, and new IT equipment was delivered overnight. Four of the six radio stations went offline for more than 36 hours, which put them at risk of potentially losing their audiences forever.

  The interviewee said this incident was a key driver to deploying Meraki MT sensors and that the incident never would have happened if Meraki sensors had been installed.

- A senior systems engineer at a retail and hospitality services firm described a similar scenario. The organization had a networking room that serviced two convenience stores and a gas station. It was set up with an automated intake vent that pulled in air from the outside. Late one Friday afternoon, the vent malfunctioned and a Meraki MT10 sensor tripped off at 80 degrees. But the interviewee said that without the sensor, it would have taken just 20 minutes for the temperature to rise to 110 degrees and overheat all the IT equipment.

  The interviewee said it would have cost the firm $30,000 to $40,000 in sales over that weekend, not including the cost to replace equipment. And

in that case, network downtime would have impacted gasoline sales and ATM transactions.

- Interviewees said timely detection and alerts allowed their organizations to react to threats almost immediately and greatly reduce any potential downtime. And survey respondents from organizations that use Meraki MT said their firms reduced network downtime and business disruptions by an average of 43% (weighted average).

Reduction in composite organization's unplanned downtime

43%

Modeling and assumptions. For the composite organization, Forrester assumes:

- Based on Forrester research, the average cost of planned network downtime for the composite organization is $400,000 per hour.[2]
- The average cost of unplanned downtime for the composite is $540,000 per hour, or about 35% costlier compared to planned downtime.
- The model assumes that the average cost of unplanned downtime for the composite's data centers is $540,000 per hour.
- The average cost of unplanned downtime for the composite's corporate and sales offices is scaled down by 75%, or $135,000 per hour, to be conservative.
- Because the average length of unplanned downtime for data centers in 2021 was between 4 to 12 hours and because interviewees said unplanned downtime with IT equipment damage could have a 24-hour impact, Forrester assumes the composite's average incident led to six hours of downtime for data centers and two hours of downtime for offices.[3]
- The model calculates a probability of failure based on the mean time between failure (MTBF) for air conditioner units. For its data centers, the composite uses high-end air conditioner units with 6,000 hours of MTBF and a backup unit.
- For its corporate and sales office networking rooms, the composite uses air conditioner units with 5,000 hours of MTBF and no backup units.
- Based on a 24/7, 365-day schedule, the likelihood of an overheating or water leak event at one of the composite's two data centers in any given year is 3.00%.
- Based on a 12-hour, 220-day schedule for offices, the likelihood of an overheating or water leak event at one of the organization's corporate campuses is 32%, and it's 53% at one of its 50 sales office locations.
- Deploying Meraki MT sensors reduces the composite's network downtime and business disruption loss by 43%.

Risks. The impact of this benefit will vary depending on:

- The organization's industry and business.
- The time the organization requires to recover from unplanned downtime.

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of $364,800.

Reduced Unplanned Downtime					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
B1	Unplanned downtime business impact for data centers	6 hours * $540,000 (Forrester research)	$3,240,000	$3,240,000	$3,240,000
B2	Probability of HVAC failure or water leak for data centers	1.50% * 2 data centers	3.00%	3.00%	3.00%
B3	Subtotal: Total projected downtime impact for data centers	B1*B2	$97,200	$97,200	$97,200
B4	Unplanned downtime business impact for corporate campuses	2 hours * $135,000 (Forrester research)	$270,000	$270,000	$270,000
B5	Probability of HVAC failure or water leak for corporate campus	1.00% * 32 networking rooms	32.00%	32.00%	32.00%
B6	Subtotal: Total projected downtime impact for corporate campuses	B4*B5	$86,400	$86,400	$86,400
B7	Unplanned downtime business impact for sales offices	2 hours * $135,000 (Forrester research)	$270,000	$270,000	$270,000
B8	Probability of HVAC failure or water leak for sales offices	1.30% * 50 sales offices	65.00%	65.00%	65.00%
B9	Subtotal: Total projected downtime impact for sales offices	B7*B8	$175,500	$175,500	$175,500
B10	Total projected downtime business impact	B3+B6+B9	$359,100	$359,100	$359,100
B11	Reduction in down time due to Meraki sensors	Interviews and survey	43.0%	43.0%	43.0%
Bt	Reduced unplanned downtime	B10*B11	$154,413	$154,413	$154,413
	Risk adjustment	↓5%			
Btr	Reduced unplanned downtime (risk-adjusted)		$146,692	$146,692	$146,692
	Three-year total: $440,076			**Three-year present value: $364,802**	

INCREASED ENERGY EFFICIENCY

Evidence and data. Seventy-one percent of survey respondents said reducing energy consumption is a key benefit of deploying an environmental monitoring system. Sixty-six percent said decreasing their organization's environmental impact and carbon footprint is the next most important benefit. And each of the interviewees mentioned a desire to leverage their organization's environmental monitoring system to reduce energy consumption for its overall IT infrastructure.

An infrastructure architect at a global advertising agency emphasized that their company has committed to be net-zero carbon by 2025. They said their organization's primary use case for deploying an

"For our pilot project, we got a 30% total energy reduction. This was great because before the deployment of the Meraki sensors and the air vents, [our] heating, ventilation, and cooling comprised 53% of our building's IT energy consumption. We subsequently got it down to 34%."
-Infrastructure architect, global advertising agency

environmental monitoring system for its global IT infrastructure is toward a dual goal of reducing both energy and carbon emissions. The organization's worldwide IT load prior to the Meraki deployment was 6.5 megawatts per year. And that is somewhere between the annual consumption of Denver and Washington, DC.[4]

The global advertising agency launched an extensive and well-planned pilot across 19 server rooms in its London campus to ascertain the impact of monitoring and modulating the ambient temperature. The organization installed three MT10 temperature sensors per rack. Additionally, it installed air intake grilles that are automatically triggered to open or shut based on the temperature outside.

The global advertising agency ran the pilot program for its London server rooms during three months by raising air conditioning temperatures above typical server rooms and monitoring the temperature differentials across each rack and across racks (based on the placement in the room, etc.).

At their optimized steady state, the global advertising agency calculated that with Meraki MT10 sensors, its annual energy cost for the server rooms (for the pilot project) dropped from $183,600 to $134,000 for a savings of 27%.

Similarly, survey respondents from organizations that use Meraki sensors reported an average of 26.1% energy savings.

Reduction in composite organization's energy costs depending on configuration

17.5 – 27.0%

Modeling and assumptions. For the composite organization Forrester assumes:

- Prior to deploying Meraki MT10 sensors and air intake grilles, the composite spent $2,000 on energy expenses per rack per year for networking rooms
- Prior to deploying Meraki sensors, the composite uses energy-efficient equipment in its data centers, so it spent $1,000 on energy expenses per rack per year.
- Each networking room on the composite's corporate campuses have two racks per room for a total of eight networking rooms per campus, and one networking room per warehouse.
- The networking rooms fitted with Meraki sensors and air intake grilles lower energy costs by 26%.
- Each of the composite's data centers includes 20 racks.
- Using Meraki sensors and air intake grilles yields 27% energy savings for the data centers.
- The networking rooms the composite uses in its 50 sales offices have one rack per room. And these rooms do not have the flexibility to be modified with air intake grilles.
- Using Meraki sensors without air intake grilles yields 17.5% savings for the data centers.
- Using Meraki MT, the composite reduces its energy use by 517,600 KWh and saves $65,740 each year.
- Based on the United States Environmental Protection Agency (EPA) Greenhouse Gas Equivalencies Calculator, the composite's energy reduction translates to a 404-ton annual reduction of greenhouse gas emissions.[5] More organizations are reporting their environmental savings to investors, usually as part of an Environmental, Social and Governance (ESG) score. Deploying Meraki MT sensors should enable organizations to derive carbon emissions savings and report them to their stakeholders.

Risks. The impact of this benefit will vary depending on:

- How the organization configures its data centers, networking rooms, and various IT equipment rooms.
- The cost of energy, which fluctuates over time and depends on the region.
- Based on the precision of the analysis done by the one interviewee and the corroboration from the survey respondents, it seems that 26%-27% energy savings is reasonable to achieve.

Results. To account for these risks, Forrester adjusted this benefit downward by 5%, yielding a three-year, risk-adjusted total PV of $155,300.

Composite organization's annual reduction in greenhouse gas emissions

404 tons

Increased Energy Efficiency

Ref.	Metric	Source	Year 1	Year 2	Year 3
C1	Total prior energy spend for vented networking rooms	36 rooms * $4,000	$144,000	$144,000	$144,000
C2	Reduced energy consumption for vented networking rooms	Interviews and survey	26.0%	26.0%	26.0%
C3	Subtotal: Energy savings for networking rooms	C1*C2	$37,440	$37,440	$37,440
C4	Total prior energy spend for data centers	2 data centers * $20,000	$40,000	$40,000	$40,000
C5	Reduced energy consumption for data centers	Interviews and survey	27.0%	27.0%	27.0%
C6	Subtotal: Energy savings for data centers	C4*C5	$10,800	$10,800	$10,800
C7	Total prior energy spend for basic networking rooms	50 sales offices * $2,000	$100,000	$100,000	$100,000
C8	Reduced energy consumption for basic networking rooms	Interviews and survey	17.5%	17.5%	17.5%
C9	Subtotal: Energy savings for basic networking rooms	C7*C8	$17,500	$17,500	$17,500
Ct	Increased energy efficiency	C3+C6+C9	$65,740	$65,740	$65,740
	Risk adjustment	↓5%			
Ctr	Increased energy efficiency (risk-adjusted)		$62,453	$62,453	$62,453
	Three-year total: $187,359		**Three-year present value: $155,311**		

AVOIDED ALTERNATIVE IOT SENSOR SOLUTION COSTS

Evidence and data. Survey respondents at organizations using Meraki sensors said they made sensor deployments 40% more time-efficient compared to their previous environmental monitoring sensors.

Three of the interviewees said their organization used a greenfield deployment for Meraki MT as an environmental monitoring system and later moved on to implementation.

They also said the cost of deploying an alternative IoT sensor monitoring system includes the cost of hardware and licensing, the cost of installation, the business cost of planned network downtime, and that the most impactful benefit of deploying Meraki MT sensors is having zero network downtime during installation compared to experiencing significant network downtime with alternative hardware solutions.

- An interviewee noted that their organization went through a relatively straight-forward deployment of Meraki sensors compared to estimates of what it would take to upgrading their legacy system. Deploying Meraki MT required the efforts of two on-site FTEs and a third working remotely for about 3 hours per location. With its legacy vendor, the process would have involved extra cabling, etc., so the interviewee estimated that deployments would require crews of at least as many FTEs working about 8 hours per location. Overall, the Meraki installation reduced the deployment rollout time by at least half.
- An infrastructure architect at a global advertising agency stated that equipping one of the server rooms the organization used in its pilot with Meraki MT sensors required one hour of work from two FTEs. The interviewee said using a traditional approach with its legacy vendor would have required one day of preparation, an overnight outage, and another day of getting back online with one FTE on-site and two FTEs on the vendor site. The infrastructure architect estimated that using the organization's legacy vendor to conduct a systematic rollout would have led to many hours of planned network downtime, including working hours.
- A systems engineer at a retail and hospitality services firm said their organization used a relatively small networking configuration and that it required him to spend 30 minutes installing seven Meraki sensors including the gateway at a data center (which is comparable to a networking room) at the organization's headquarters. The physical installation took just 10 minutes, and the engineer spent the rest of the time performing tasks like going into the dashboard to set up alerts, etc.

"The ease of deployment of these devices is the most amazing thing ever. It's really a magnet, and [the devices] go right on the rack. We already had Meraki cameras with the full central dashboard set up, so it was all there. We didn't have to set up anything new."
-Senior director of networking and telco, audio media platform

Composite organization's savings in planned downtime due to Meraki MT's ease of deployment

$765,000

Modeling and assumptions. For the composite organization, Forrester assumes:

- Using an alternative configuration at its corporate campuses would cost the composite $28,600 per campus, or about 41% less than a Meraki solution with three-year licensing.
- The cost of installation with an alternative configuration at its corporate campuses would cost $20,520 per campus, or about 128% more than a Meraki installation.
- The specific hardware and installation costs for each of the other configurations (data centers, warehouses, and sales offices) are shown in the benefit table. The costs of alternative hardware are 38% to 45% less than those for Meraki MT.
- The installation costs of alternative equipment are 26% to 163% higher with Meraki MT.
- Installing an alternative monitoring system during business hours requires an average of 9 minutes of downtime per networking room and 36 minutes of downtime per data center. The composite deploys over a period of weeks, so some offices only experience downtime over a weekend. On average, the time estimate is consistent with what was uncovered from customer interviewees.
- The average cost of planned network system downtime is estimated at $400,000 per hour.[6] To be conservative, the average hourly cost of network system downtime for the composite's data center is scaled down by 25% to be $300,000 per hour.
- The cost of planned downtime for the composite's networking rooms is $75,000 per hour. Again, to be conservative, this was scaled down by 75%.
- **Risks.** The impact of this benefit will vary depending on:
- The installation time and labor required for alternative solutions.
- Planned network downtime, which will vary by industry and the nature of the business model.

Results. To account for these risks, Forrester adjusted this benefit downward by 10%, yielding a three-year, risk-adjusted total PV of nearly $1.2 million.

> **"With the Meraki system, we have a single pane of glass for cameras and sensors. It all came together as a complete package practically right out of the box."** *Program manager, retail pharmacy chain*

Avoided Alternative IoT Sensor Solution Costs					
Ref.	**Metric**	**Source**	**Year 1**	**Year 2**	**Year 3**
D1	Hardware costs for alternative sensors and gateways	(4 campuses * $28,600) + (2 data centers * $30,700) + (4 warehouses * 8,300) + (50 sales offices*$2,400)	$329,000		
D2	Cost of alternative installation for campus configuration	4 campuses * 456 FTE hours * $45/hour	$82,080		
D3	Cost of alternative installation for data center configuration	2 data centers * 168 FTE hours * $45/hour	$15,120		
D4	Cost of alternative installation for warehouse configuration	4 warehouses * 146 FTE hours * $45/hour	$26,280		
D5	Cost of alternative installation for sales office configuration	50 sales offices * 30 FTE hours * $45/hour	$67,500		
D6	Subtotal: Installation costs for alternative sensors and gateways	D2+D3+D4+D5	$190,980		
D7	Cost of planned downtime for networking rooms	36 rooms *(9-minutes/60-minutes) * $75,000 / hour	$405,000		
D8	Cost of planned downtime for data centers	2 data centers * 36-minutes/60-minutes * $300,000 / hour	$360,000		
D9	Subtotal: Total cost of downtime	D7+D8	$765,000		
D10	Annual support for sensors and gateways	0.75 FTEs * $93,600	$70,200	$70,200	$70,200
Dt	Avoided alternative IoT sensor solution costs	D1+D6+D9+D10	$1,355,180	$70,200	$70,200
	Risk adjustment	↓10%			
Dtr	Avoided alternative IoT sensor solution costs (risk-adjusted)		$1,219,662	$63,180	$63,180
	Three-year total: $1,346,022		**Three-year present value: $1,208,467**		

UNQUANTIFIED BENEFITS

Additional benefits that customers experienced but were not able to quantify include:

- **Improved network reliability.** Surveyed decision-makers said improving network reliability was one of the top three benefits of using Meraki MT sensors. Seventy-five percent of survey respondents said they agree or strongly agree that Meraki MT sensors improved their organization's network reliability.

  This benefit is closely related to reduced downtime. A systems engineer at a retail and hospitality services firm said: "If we didn't have [Meraki] sensors, we have a building that would overheat in 20 minutes. Once that happens, things go down and shut down. It takes all business down. So, the sensors help with the reliability of our network, which is critical for our different retail businesses."

- **Extended or increased equipment lifespans.** Fifty-seven percent of survey respondents from organizations that use Meraki MT said they agree or strongly agree that extending or increasing equipment lifespans is a benefit. This is because temperature/humidity and water leak sensors identify events before the IT equipment is irreparably damaged.

An infrastructure architect at a global advertising agency said: “Having three temperature sensors on each rack in my organization’s data center allows us to run three degrees hotter, which is huge for AC energy savings. Having fine granularity of temperature measurement means we can do this without reducing the hardware’s useful life expectancy.”

- **Lowered overall maintenance costs.** This category includes the costs of maintaining hardware (i.e., sensors), software and firmware updates, and various organization-specific configuration and customization efforts. Fifty-seven percent of survey respondents said they agree or strongly agree that Meraki MT sensors have lower maintenance costs than alternative solutions.

  A program manager at a retail pharmacy chain said: “It was a quick turnaround, and installation was easy.”

- **Reduced insurance premiums.** Some interviewees mentioned reducing insurance premiums when discussing equipment loss and waiting for insurance reimbursements after certain events. However, most interviewees said they have very little insight into corporate-level IT equipment arrangements and insurance. Fifty-two percent of survey respondents at organizations that use Meraki MT sensors said they agree or strongly agree that reducing insurance premiums is a benefit.

FLEXIBILITY

The value of flexibility is unique to each customer. There are multiple scenarios in which a customer might implement Meraki MT Sensors and later realize additional uses and business opportunities.

- **Monitoring external infrastructure.** A director of networking and telco at an audio media platform said he submitted a capital budget request to retrofit his organization’s transmitter locations because some were six hours away.
- **Utilizing benefits of other Meraki technologies.** An infrastructure architect at a global advertising agency said deploying Meraki MT sensors required the installation of MR gateways and MV cameras. They said: “We are now starting to look at other things to do with our configuration that are significantly cheaper and easier to deploy.”

None of these future opportunities are included in the financial analysis.

Analysis Of Costs

Quantified cost data as applied to the composite

Total Costs

Ref.	Cost	Initial	Year 1	Year 2	Year 3	Total	Present Value
Etr	External costs	$594,200	$0	$0	$0	$594,200	$594,200
Ftr	Internal costs	$123,354	$77,220	$77,220	$77,220	$355,014	$315,389
	Total costs (risk-adjusted)	$717,554	$77,220	$77,220	$77,220	$949,214	$909,589

EXTERNAL COSTS

Evidence and data. Interviewees said the external costs of Meraki MT include upfront costs for Meraki sensors, gateways, and annual licensing.

- A program manager of at a retail pharmacy chain said they created a budget for full deployment of their organization's 380 primary pharmacy. They estimated that a similar deployment with the organization's legacy vendor's solution would have cost over two times more per store with internal labor costs.
- A senior director of networking at an audio media platform said they are pleased with their organization's initial deployment of Meraki MT sensors to 40 locations. The organization budgeted $700,000 for Meraki MT sensors during the next 12 months to increase the number of deployments to 120 locations. The organization earmarked an additional $1.5 million for a combination of Meraki MT sensors and MV smart cameras to cover transmitter locations and for installing water leak sensors to its 160 core locations.

Modeling and assumptions. For the composite organization, Forrester assumes:

- The composite organization pays just under $560,000 for Meraki MT in Year 1 for 156 assorted Meraki MT sensors and 216 gateways or cameras.
- The composite's corporate campuses and data centers have complex configurations, so external Meraki MT costs are $48,500 and $49,900, respectively. Warehouse and sales office locations have simpler configurations and cost less per location.
- For the 216 gateways (or cameras as an alternative), the model averaged the price of an MR36 gateway and an MV12 camera.
- The cost of air intake grilles and installation for 36 networking rooms and two data centers is $35,800. While not a Meraki expense, the combination of equipping data centers and key networking rooms with such air intake grilles, yields the optimal energy savings.
- The composite purchases and deployed all of its sensors in Year 1.

Risks. The impact of this cost will vary depending on:

- The organization's mix of IoT sensors.
- The organization's choice of gateway type.

Results. Forrester used a 0% risk adjustment factor for the external costs, yielding a three-year, risk-adjusted total PV (discounted at 10%) of $594,000.

External Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
E1	Cost of Meraki hardware for campus configuration (including 3-year license)	4 campuses * $48,500	$194,000			
E2	Cost of Meraki hardware for data center configuration (including 3-year license)	2 data centers * $49,900	$99,800			
E3	Cost of Meraki hardware for warehouse configuration (including 3-year license)	4 warehouses * $14,900	$59,600			
E4	Cost of Meraki hardware for sales office configuration (including 3-year license)	50 sales offices * $4,100	$205,000			
E5	Subtotal: Cost of hardware and licensing for Meraki sensors and gateways	E1+E2+E3+E4	$558,400			
E6	Cost of air intake grilles for networking rooms	36 rooms * $425/vent	$15,300			
E7	Intake grilles installation labor cost for networking rooms	36 rooms * $470/room	$16,920			
E8	Cost of air intake grilles for data centers	4 units * $425/vent	$1,700			
E9	Intake-grille installation labor cost for data centers	2 data centers * $940 / data center	$1,880			
E10	Subtotal: Cost of air intake ventilation with external labor	E6+E7+E8+E9	$35,800			
Et	External costs	E5+E10	$594,200	$0	$0	$0
	Risk adjustment	0%				
Etr	External costs (risk-adjusted)		$594,200	$0	$0	$0
	Three-year total: $594,200		**Three-year present value: $594,200**			

INTERNAL COSTS

Evidence and data. This cost includes the labor cost of installing and configuring locations with Meraki MT sensors and related gateways.

- An infrastructure architect at a global advertising agency said their organization typically installed Meraki sensors in server rooms in an hour. They said: "[Using] a traditional approach would have required one day of preparation, an overnight outage, plus another day of getting back online."
- An interviewee tasked with deploying Meraki MT sensors across many locations noted that time for deployment was critical.

  The initial Meraki rollout required three FTEs to dedicate about 3 hours per location, covering two locations per day.

  The interviewee estimated that the organization would have required 8 hours per location for at least the same three FTE crew with their organization's legacy vendors solution. They estimated that Meraki MT cut their deployment rollout timeline in half.

- A senior systems engineer at a retail and hospitality services firm said it took him 30 minutes to set up his organization's main server room and that included the time required to set up alerts. He said the physical installation took 10 minutes.

Modeling and assumptions. For the composite organization, Forrester assumes:

- The composite's Meraki MT installation costs are approximately half as much as the labor costs for alternative solutions.
- Based on actual timeframes and number of technicians involved data provided by interviewees, the model computes the installation and deployment costs on a per location basis.
- The composite requires different install times for gateways and cameras.
- The labor cost of the composite's Meraki solution is $18,000 compared to $36,000 for alternative solutions, which translates to savings of 50%.
- The composite's internal costs include the annual cost of inspecting and maintaining the sensors.

Risks. The impact of this cost will vary depending on:

- The number and types of sensors the organization installs.
- The actual time required for installation.
- Prevalent hourly wages.

Results. To account for these risks, Forrester adjusted this cost upward by 10%, yielding a three-year, risk-adjusted total PV of $315,400.

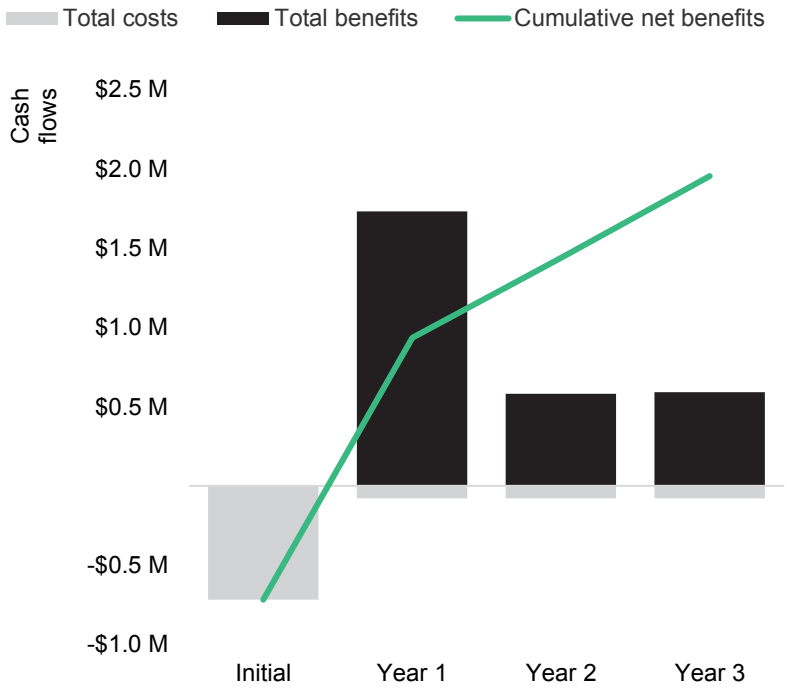
Internal Costs

Ref.	Metric	Source	Initial	Year 1	Year 2	Year 3
F1	Cost of installation for campus configuration	4 campuses * 200 FTE hours * $45/hour	$36,000			
F2	Cost of installation for data center configuration	2 data centers * 64 FTE hours * $45/hour	$5,760			
F3	Cost of installation for warehouse configuration	4 warehouses * 116 FTE hours * $45/hour	$20,880			
F4	Cost of installation for sales office configuration	50 sales offices * 22 FTE hours * $45/hour	$49,500			
F5	Annual support for Meraki MT sensors and MR/MV gateways	0.75 FTEs * $93,600	$0	$70,200	$70,200	$70,200
Ft	Internal costs	F1+F2+F3+F4+F5	$112,140	$70,200	$70,200	$70,200
	Risk adjustment	↑10%				
Ftr	Internal costs (risk-adjusted)		$123,354	$77,220	$77,220	$77,220
	Three-year total: $355,014		**Three-year present value: $315,389**			

Financial Summary

CONSOLIDATED THREE-YEAR RISK-ADJUSTED METRICS

Cash Flow Chart (Risk-Adjusted)



The financial results calculated in the Benefits and Costs sections can be used to determine the ROI, NPV, and payback period for the composite organization's investment. Forrester assumes a yearly discount rate of 10% for this analysis.

These risk-adjusted ROI, NPV, and payback period values are determined by applying risk-adjustment factors to the unadjusted results in each Benefit and Cost section.

Cash flow analysis (risk-adjusted estimates)

	Initial	Year 1	Year 2	Year 3	Total	Present Value
Total costs	($717,554)	($77,220)	($77,220)	($77,220)	($949,214)	($909,589)
Total benefits	$0	$1,729,282	$581,815	$591,099	$2,902,196	$2,497,015
Net benefits	($717,554)	$1,652,062	$504,595	$513,879	$1,952,982	$1,587,426
ROI						175%
Payback period (months)						<6

Appendix A: Total Economic Impact

Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

TOTAL ECONOMIC IMPACT APPROACH

Benefits represent the value delivered to the business by the product. The TEI methodology places equal weight on the measure of benefits and the measure of costs, allowing for a full examination of the effect of the technology on the entire organization.

Costs consider all expenses necessary to deliver the proposed value, or benefits, of the product. The cost category within TEI captures incremental costs over the existing environment for ongoing costs associated with the solution.

Flexibility represents the strategic value that can be obtained for some future additional investment building on top of the initial investment already made. Having the ability to capture that benefit has a PV that can be estimated.

Risks measure the uncertainty of benefit and cost estimates given: 1) the likelihood that estimates will meet original projections and 2) the likelihood that estimates will be tracked over time. TEI risk factors are based on "triangular distribution."

The initial investment column contains costs incurred at "time 0" or at the beginning of Year 1 that are not discounted. All other cash flows are discounted using the discount rate at the end of the year. PV calculations are calculated for each total cost and benefit estimate. NPV calculations in the summary tables are the sum of the initial investment and the discounted cash flows in each year. Sums and present value calculations of the Total Benefits, Total Costs, and Cash Flow tables may not exactly add up, as some rounding may occur.

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 NPV 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.

RETURN ON INVESTMENT (ROI)

A project's expected return in percentage terms. ROI is calculated by dividing net benefits (benefits less costs) by costs.

DISCOUNT RATE

The interest rate used in cash flow analysis to take into account the time value of money. Organizations typically use discount rates between 8% and 16%.

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.

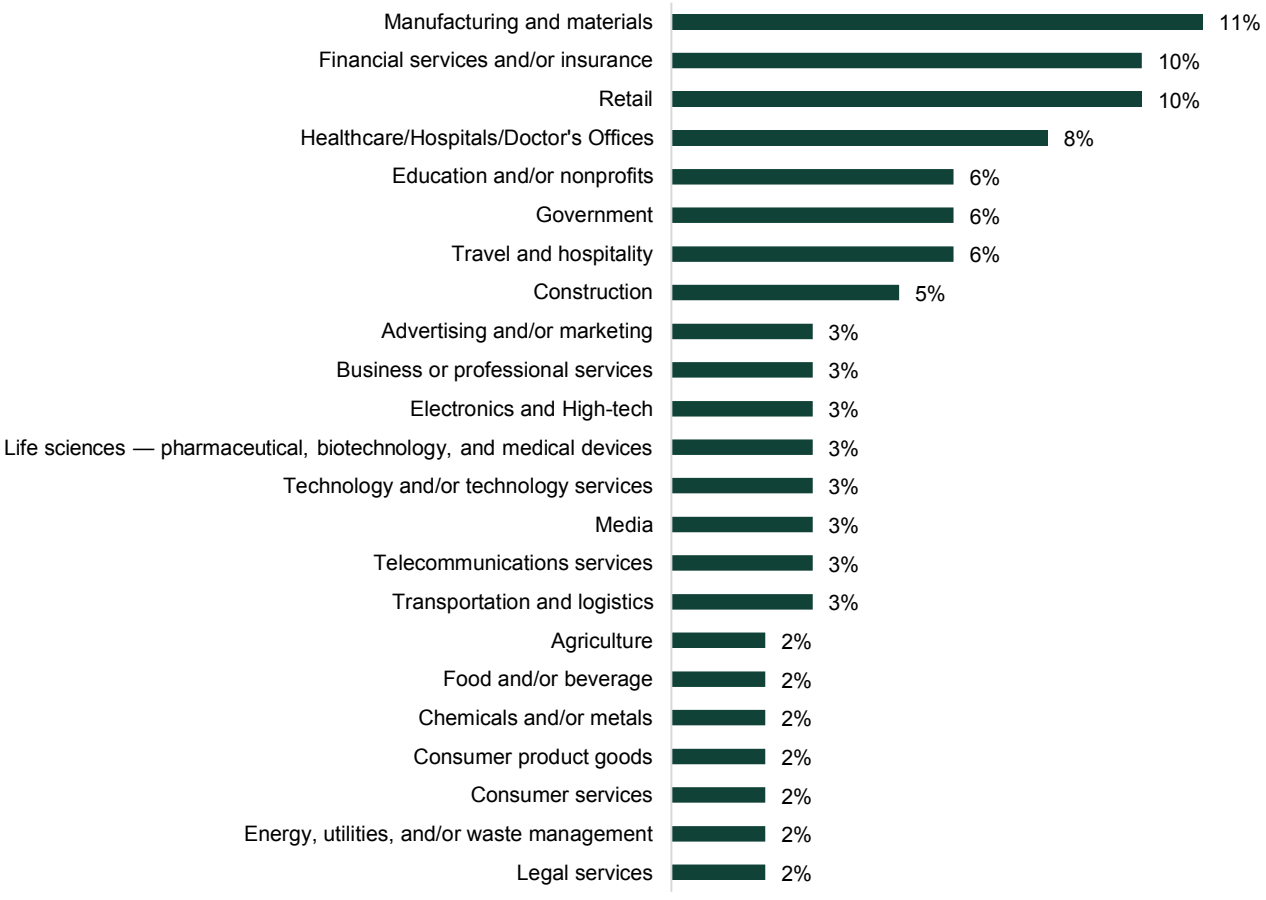
Appendix B: Interview And Survey Demographics

Interviewed Decision-Makers

Interviewee	Organization	Region	Employees and locations
Program manager	Retail pharmacy chain	US	225,000 employees at 10,000 stores
Infrastructure architect	Global advertising agency	Global	100,000 employees at 4,000 offices
Senior systems engineer	Retail and hospitality services firm	US	350 regionally concentrated employees at 20 affiliated business locations
Senior director of networking and telco	Audio media platform	US	18,000 employees at its headquarters and 150 radio stations

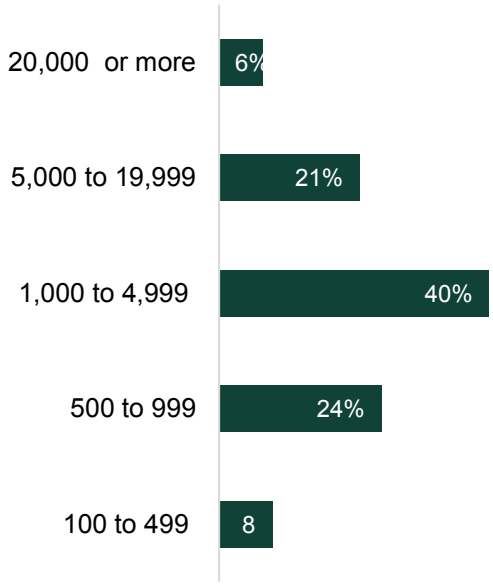
SURVEY DEMOGRAPHICS

"Which of the following best describes the industry to which your company belongs?"



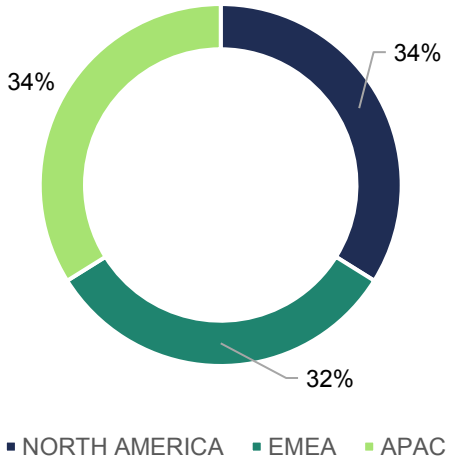
Base: 62 buyers and/or decision-makers involved with choosing environmental sensor solutions for their organizations
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, August 2021

"Using your best estimate, how many employees work for your firm/organization worldwide?"



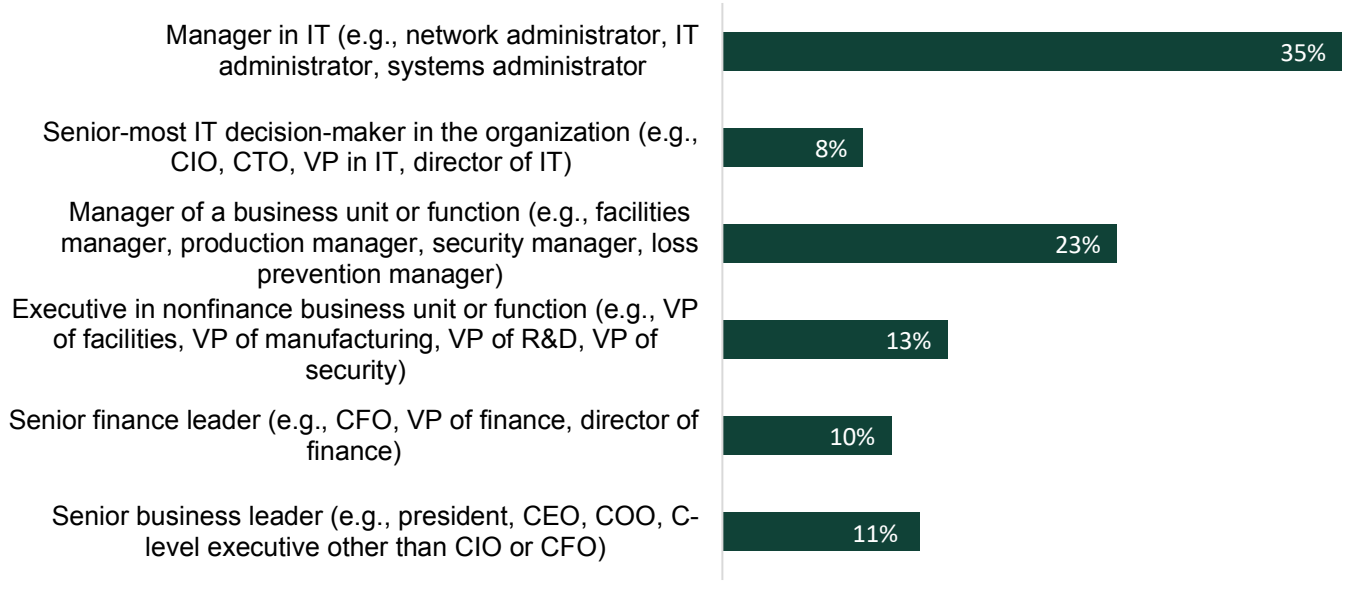
Base: 62 buyers and/or decision-makers involved with choosing environmental sensor solutions for their organizations
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, August 2021

"In which region do you work?"



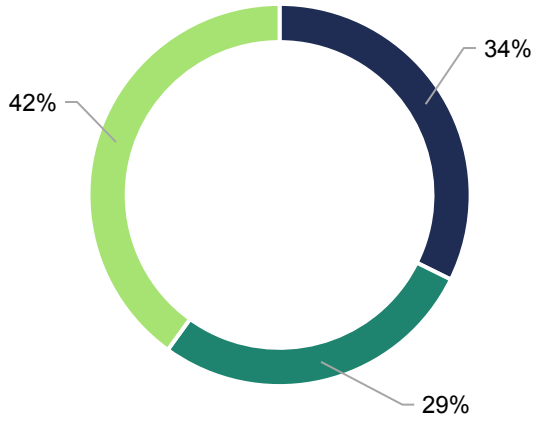
Base: 62 buyers and/or decision-makers involved with choosing environmental sensor solutions for their organizations
Source: "TEI of Cisco Meraki", a commissioned study conducted by Forrester Consulting on behalf of Cisco, August 2021

"Which title best describes your position at your organization?"



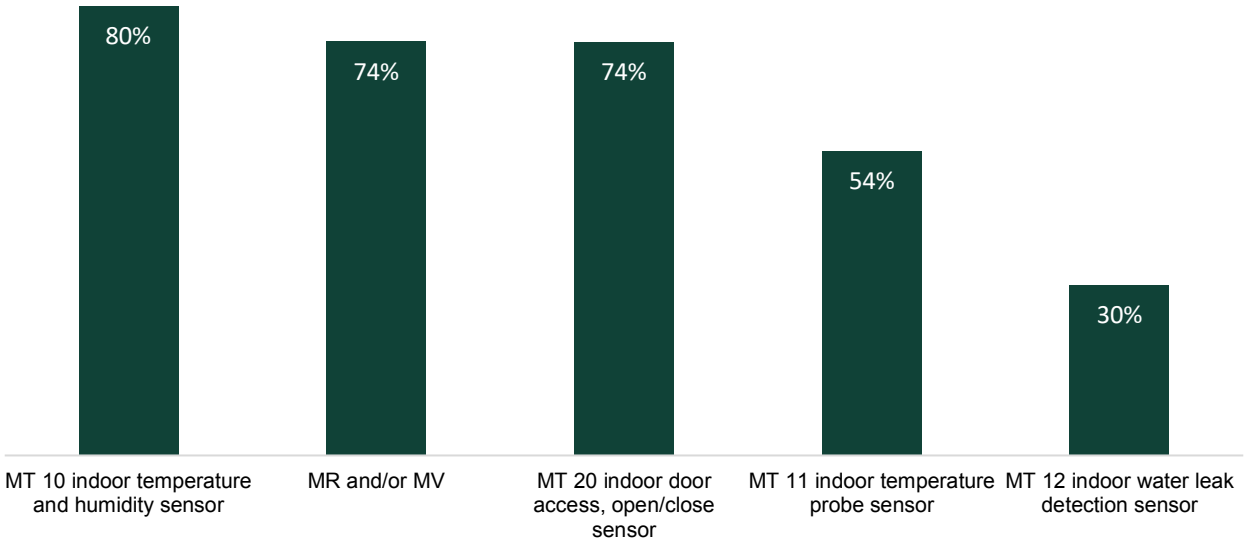
Base: 62 buyers and/or decision-makers involved with choosing environmental sensor solutions for their organizations
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, August 2021

"What is your level of responsibility when it comes to choosing an environmental sensor system at your organization?"



Base: 62 buyers and/or decision-makers involved with choosing environmental sensor solutions for their organization
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, August 2021

"Which of these Cisco Meraki products is your organization currently using as part of their environmental monitoring system?"



Base: 44 buyers and/or decision-makers involved with choosing environmental sensor solutions for their organizations
Source: A commissioned study conducted by Forrester Consulting on behalf of Cisco, August 2021

Appendix C: Supplemental Information

Related Forrester Research
"The Total Economic Impact Of Meraki MV Smart Cameras," a commissioned study conducted by Cisco, November 2021

Appendix D: Endnotes

[1] Total Economic Impact is a methodology developed by Forrester Research that enhances a company's technology decision-making processes and assists vendors in communicating the value proposition of their products and services to clients. The TEI methodology helps companies demonstrate, justify, and realize the tangible value of IT initiatives to both senior management and other key business stakeholders.

[2] Source: "Identify And Estimate The Costs Of Downtime On Your Business," Forrester Research, Inc., January 13, 2021.

[3] Source: Andy Lawrence, "Annual outage analysis 2021," Uptime Institute, March 29, 2021 (https://uptimeinstitute.com/annual-outage-analysis-2021).

[4] Source: "Average monthly electricity usage in the U.S. in 2017, by select city," Statista, February 2018 (https://www.statista.com/statistics/807951/average-monthly-electricity-usage-in-major-us-cities/).

[5] Source: "Greenhouse Gas Equivalencies Calculator," United States Environmental Protection Agency, March 2021 (https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator).

[6] Source: "Identify And Estimate The Costs Of Downtime On Your Business," Forrester Research, Inc., January 13, 2021.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