

White Paper

The Core Issue

Evaluating core solutions in the age of
cloud networking

Extreme Networks | HPE (Aruba) | Cisco

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The Core Issue

Introduction

Newton's third law seems very evident in the effects of COVID-19 on digital transformation: enforced massive business change in tough economic conditions have exerted years' worth of positive technological advancements in only a matter of months.¹ In other words, the pandemic threw its punch, and businesses everywhere rolled with it.

The impact has been huge. We've seen whirlwind adoption of video meeting platforms, online collaboration tools, centralised user access management, cost-effective MFA solutions, cyber threat detection and response, plus tools that digitise products or services to meet constraints of operating in a locked down market.

For technology vendors, the true successes have recognised brilliant technology is only part of the story. These businesses are responding to shifting needs brought by record-breaking change and delivering solutions with a clear focus on customer experience: simple and transparent pricing, flexible options for scaling, consistent innovation to meet evolving demands and no unnecessary costs. They realise that if they get this right now, future customer loyalty will take care of itself.

Networking is experiencing its own renaissance. Cisco, the long-term darling of the networking world now has two clear, hot contenders for a crown which many believe, has already slipped.

Cisco has made significant changes that have negatively impacted Customer Experience (CX), including pricing and delivery strategies that coincided with the pandemic, overhauling its training program and the end-of-life of one of its most ubiquitous core switching products, the Catalyst 6500 series.

The result is a compelling reason for businesses in the midst of fast-forward digital transformation to evaluate Extreme Networks and HPE (Aruba) in comparison to Cisco. Both alternatives have hardware that is either comparable or superior to Cisco's, and in the case of Extreme, far more clearly defined software paths and lower pricing.

In this white paper, we present the findings of our independent research into customer experience and value demonstrated by all three businesses. We believe there are very strong indications that this is the perfect time to evaluate your core networking options in preparation for Cisco's Catalyst 6500 series end-of-service-life deadline.

Digital transformation acceleration during COVID-19

Meeting the challenge of doing more with less

2020 has seen years of digital transformation in a matter of months. With businesses everywhere adjusting to new ways of working, remote access and cloud migration have become imperative. In addition, prolonged

COVID-19 related lockdowns have caused a tightening of financial constraints² throughout every sector. The graphics below illustrate this leap in adoption versus forecast reduced IT spend for 2020.

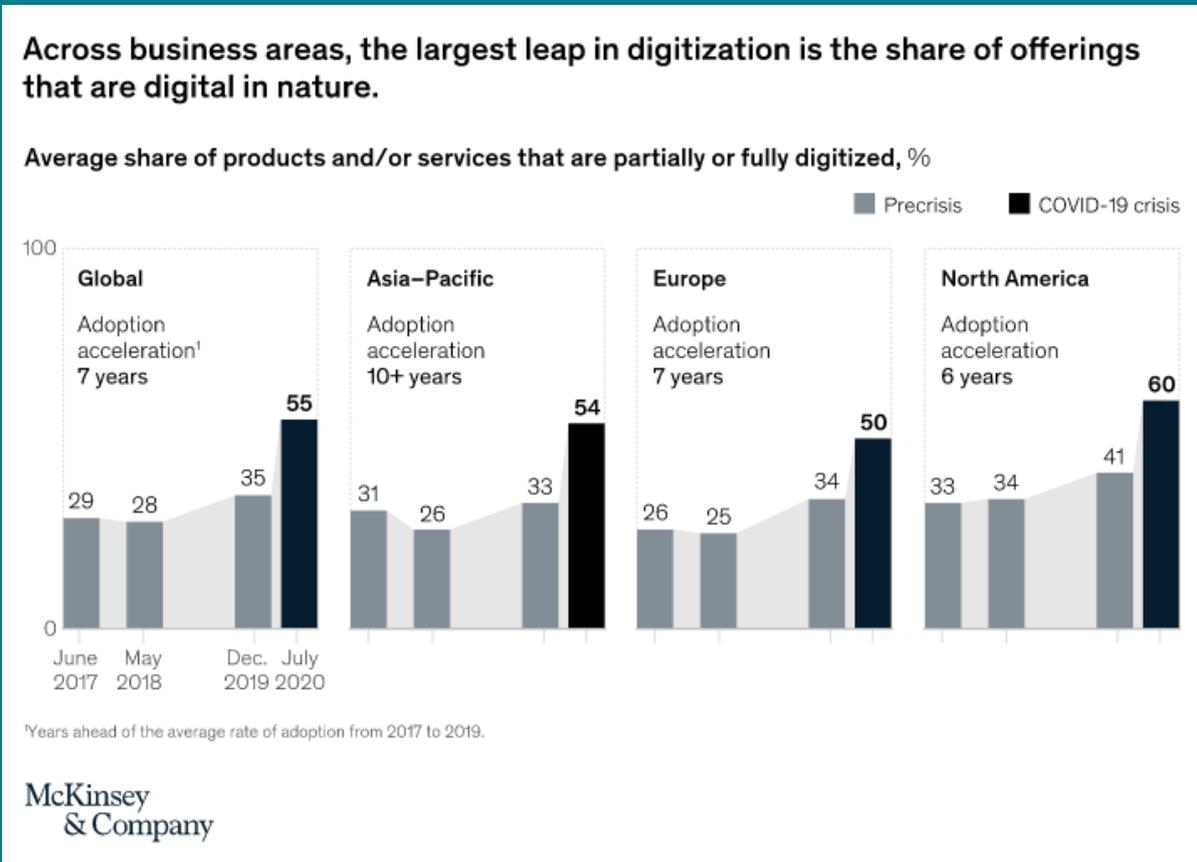


Table 1. Worldwide IT Spending Forecast (Billions of U.S. Dollars)

	2019 Spending	2019 Growth (%)	2020 Spending	2020 Growth (%)
Data Center Systems	211,633	0.7	191,122	-9.7
Enterprise Software	458,133	8.8	426,255	-6.9
Devices	698,086	-2.2	589,879	-15.5
IT Services	1,031,578	3.8	952,461	-7.7
Communications Services	1,357,432	-1.6	1,296,627	-4.5
Overall IT	3,756,862	1.0	3,456,344	-8.0

Source: Gartner (May 2020)

Save on networking and redirect spend into other strategic IT areas

No business can grow today without good core infrastructure. Yet, as we saw in the last graphic, spend has been reduced as an effect of the pandemic.

As digital transformation has accelerated, more possibilities have come to light. This in turn has inspired a change in executive mindset regarding the strategic importance of technology.

The challenge as we enter recovery will be to capitalise on this refreshed strategy with a tighter budget as business face the reality of delivering more with less. Modernising core

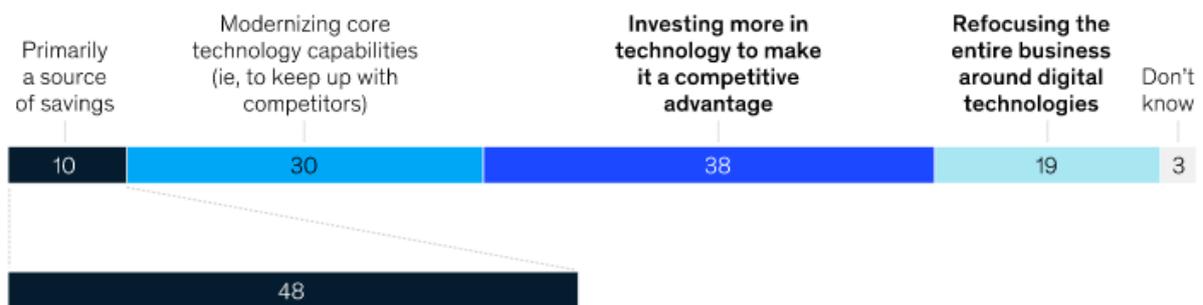
infrastructure is part of this strategy and approaching this investment with fresh eyes is key.

Networking is undergoing its own transformation, with long-standing behemoth, Cisco, facing stiff competition. Now is not the time to blindly go with a name simply because it's what you've always used.

In fact, it is now possible to get more for less in your networking infrastructure, freeing up valuable resource to invest in other technology that will give you a competitive advantage.

Executive mindsets on technology's strategic importance have changed radically during the crisis.

Organization's current strategic posture toward technology, % of respondents



McKinsey & Company

The time is now: Cisco Catalyst 6500 EOL milestones

If your network is one of the many using Cisco Catalyst 6500 series switches at its core, now is the time to consider a different option for three excellent reasons: cost, flexibility and quality.

The Cat 6500 series is now over twenty years old. Since its launch in 1999, hundreds of millions of ports have been shipped to tens of thousands of customers. During that time, the world has changed. Business needs have changed and so too, has Cisco's business model from hardware provider to SaaS.

Now, in what feels like the end of an era, Cisco has announced its Cat 6500 series is reaching end-of-life.³

The full list of end-of-sale and end-of-life products are:

Catalyst 6506-E
Catalyst 6509-E
Catalyst 6509-V-E
Catalyst 6513-E
VS-S2T-10G
VS-S2T-10G-XL
Plus bundles and accessories

The last day to order any of the above products was 30th October 2020.



Hardware replacements and licensing

There are a further 43 related product parts also being discontinued with no replacements offered and a further 20 with replacements suggested. Pricing for these replacements is not mentioned.

Migration options suggest that customers *may be able to* receive trade-in eligible products and receive credit towards the purchase of new Cisco equipment. The obvious implication here is that new kit will be more expensive. Otherwise, customers are offered the possibility of refurbished equipment but only on a first-come, first-served basis and only until the last date of support has been reached. At this point, purchasing new equipment is

going to be your only option. This will also mean purchasing new licensing through the DNA.

The new Cisco Digital Network Architecture (Cisco DNA) is touted as ‘an intent-based network that continuously bridges the gap between business and IT to facilitate innovation’. In reality, their DNA is incredibly complex and does away with customer choice regarding software licensing.

Originally, licensing was perpetual for the life of the hardware. Now licensing must be paid for on subscription, which equates to a higher total cost of ownership (TCO) over the lifetime of the hardware.

“[Cisco pricing] is becoming a dark art. The complexity around licensing options ends up hiding the true cost of deployment and management of networking infrastructure over its lifetime: because it’s so complex, because it’s always changing and because they are always trying to push you down the subscription route. It’s getting almost as complicated to license Cisco as it is to license Windows.”

Ex-Cisco Customer

Catalyst 6500 series end-of-life timeline

Milestone	Definition	Date
End-of-Life Announcement Date	The date the document that announces the end-of-sale and end-of-life of a product is distributed to the general public.	October 31, 2019
End-of-Sale Date: HW, Accessory	The last date to order the product through Cisco point-of-sale mechanisms. The product is no longer for sale after this date.	October 30, 2020
Last Ship Date: HW, Accessory	The last-possible ship date that can be requested of Cisco and/or its contract manufacturers. Actual ship date is dependent on lead time.	January 29, 2021
End of SW Maintenance Releases Date: HW	The last date that Cisco Engineering may release any final software maintenance releases or bug fixes. After this date, Cisco Engineering will no longer develop, repair, maintain, or test the product software.	October 30, 2021
End of Vulnerability/Security Support: HW	The last date that Cisco Engineering may release a planned maintenance release or scheduled software remedy for a security vulnerability issue.	October 30, 2023
End of Routine Failure Analysis Date: HW	The last-possible date a routine failure analysis may be performed to determine the cause of hardware product failure or defect.	October 30, 2021
End of New Service Attachment Date: HW	For equipment and software that is not covered by a service-and-support contract, this is the last date to order a new service-and-support contract or add the equipment and/or software to an existing service-and-support contract.	October 30, 2021
End of Service Contract Renewal Date: HW	The last date to extend or renew a service contract for the product.	January 28, 2025
Last Date of Support: HW	The last date to receive applicable service and support for the product as entitled by active service contracts or by warranty terms and conditions. After this date, all support services for the product are unavailable, and the product becomes obsolete.	October 31, 2025

HW = Hardware OS SW = Operating System Software App. SW = Application Software

Source: Cisco

For the complete list of switches, parts, bundles and accessories affected, please refer to Cisco's website

The fall of Cisco

Cisco, once preferred by businesses all over the world, is falling out of favour.

A few years ago, the mantra for many IT leaders was, 'You can't get in trouble for buying Cisco.'

According to our own research into customer sentiment, including interviews with former Cisco customers and forum posts, this is shifting to, 'ABC: anything but Cisco.'

The reasoning behind this shift boils down to four clear points:

- Cisco is demonstrating self-interest over customer interest
- Innovation is less important than dominating the market
- Customer loyalty is being enforced rather than earned
- Pricing and licensing are overly complex and geared towards Cisco

Cisco is demonstrating self-interest over customer interest

Cisco has lost some high-profile customers recently including The Pentagon, to HPE (Aruba). Yet its financials show revenue remains stable.

In August 2020, despite its stability, it was widely reported that Cisco plans cuts of \$1 billion, mainly in research and development. Robbins said: 'We're going to rebalance our R&D investment to focus on key areas that will position us well for the future.'⁴ In a world rapidly transforming digitally, cutting \$1 billion in R&D seems counterintuitive. Meanwhile, Robbins also said that 78 percent of total software revenue is now sold as subscriptions, beating its target

of 66 percent. When all of these aspects are taken into account, we can ascertain that fewer customers are paying more for the same technology.

Cisco makes a big deal about its CX program yet in 2018, when it was in the process of formulating its new transformation strategy, between 200 and 300 people were axed from its Customer Experience (CX) team via one-to-many email.⁵ These cuts occurred in November 2018, following CEO Chuck Robbins' August report on the company's biggest sales quarter ever. It seems clear that investor relations are the key focus here.

Innovation is less important than dominating the market

Cisco's M&A record is long. Since its first acquisition in 1993, acquisitions have constituted 50 percent of Cisco's business activity. The list now contains over 200 businesses.⁶

Cisco is not alone in having a proactive M&A strategy, of course. Extreme Networks, founded in 1996, is twelve years younger than Cisco and also acquires businesses that complement its technology and solutions. Extreme is far more selective, however, with five acquisitions to date.

Whilst many of their businesses, such as WebEx, acquired in 2007, now constitute key Cisco products, many have also simply disappeared. In truth, many of Cisco's acquisitions have been bought for their patents or to simply

close down the competition rather than to drive innovation.

Compare this with Extreme's strategy. Recent acquisitions of Zebra Technologies, Avaya, Brocade and Aerohive are being added to their solutions offerings in order to give customers a choice of software, with analytics as standard, that can be run on their choice of Extreme hardware.

These two strategies illustrate two very different attitudes when it comes to business acquisition. One focuses on delivering for the customer, while the other wants to dominate the market sometimes to the detriment of innovation.

"We switched to Extreme Networks because it was so easy to work with them. Their technology is market-leading and so scalable, which is what we were looking for. But what really sold them to us was the clarity and simplicity of engagement. You pay a set price, there's simple licensing. That's it. Done."

Ex-Cisco Customer

Customer loyalty is being enforced rather than earned

If customers are not happy with the new subscription model, why are they not simply walking away?

A huge reason for this lies in the heavy investment they have already made in Cisco hardware and training⁷. Surely, it's fair to expect reward for this level of loyalty, at least dispensation or support.

Yet, coinciding with the pandemic and their escalating prices, Cisco also overhauled their certification program in 2020, retiring 20 certs entirely and re-organising the new list of 158.

While new technology will require some elements of updated training, retiring multiple certs at once seems heavy handed. It incurs cost and yet more financial commitment for both customer and partner; it also removes another layer of choice.

Certifications are a massive part of being a Cisco customer or partner and achieving them is not cheap. Training costs start at \$299. The most expensive courses run to tens of thousands.

There are five levels of training, with multiple certs on each level. Achieving the top level of Architect requires a huge financial and time commitment.

This is designed to nurture technical excellence, of course. Managed well, training programs educate engineers to the point where they become career progression tools. This has certainly been true of Cisco's certs.

However, a sceptic will also see this particular program as a means of enforcing brand loyalty to the point of coercion. Following such a costly, time-consuming commitment, and with business leaders perhaps entrenched in their view of Cisco as still the best-known tech, IT leads can feel 'over a barrel' at the point of upgrade or replacement.

Prices might be high, and choice limited, but if the powers that be insist on Cisco based on prior investment, IT leads may not feel they can even look at alternatives. We found no evidence of automatic benefit to being a long-term Cisco customer. Without additional negotiation, there is no discount or even price freeze, even when it's necessary to replace EOL equipment as with the Catalyst 6500 switches.

Customers are simply informed of the new subscription model and sent a bill that includes extra licensing costs.⁸

Pricing and licensing are overly complex and geared towards Cisco

Since Cisco switched to their subscription model, customers are reporting a hike in prices as a de facto part of any contract refresh.

One ex-Cisco customer we spoke to said that despite being a customer for years, only seeking replacement parts, the new subscription model had pushed his costs up significantly.⁹

Other vendors are proving that networking delivery is actually getting cheaper, not more expensive, so

standard price hikes are very difficult for Cisco to justify. Indeed, as you'll see in the price comparison section of this paper, Cisco's list price for switches appears very competitive. It's only when you take into account the hefty charge for software licensing on top that the true cost appears.

Gartner has published Cisco's confusing price, sales and support structures as a point of caution on its Magic Quadrant.



Evaluating Extreme, HPE (Aruba) and Cisco

For the sake of direct comparison, we've used the Gartner's Magic Quadrant and peer-to-peer insights to present more reasoning behind our findings. You will see that in line with our other research, Gartner has also identified Cisco's non-unified product lines, layers of sales and support and inconsistent pricing as points of caution.

Gartner Magic Quadrant broken down

All three vendors are Leaders on the Magic Quadrant for Wired and Wireless LAN Access Infrastructure¹⁰ and very closely placed in terms of completeness of vision and ability to execute. Below the graph, we break down each vendor into strengths and cautions for a more detailed view.





According to Gartner, Cisco’s strengths lie in its multivendor architecture, global reach and delivery of marketing messaging: no surprises there. Gartner caution customers against the many layers of sales and support for each product line, and inconsistent pricing strategies.

This mirrors our findings, that Cisco is good at acquiring new technologies and ensuring its products are known and sold across the world. Customer experience, however, is not recognised as a priority.

Strengths		
Programmable Architecture	Geographical Reach of Direct and Indirect Sales Channel	Strong Market Messaging and Diversity of Marketing Vehicles
Cisco provides a campus infrastructure with multivendor integration and analytic insights with open, programmable APIs that are designed to allow flexibility between different applications and components.	Cisco’s global reach as a campus networking vendor gives it the capability to provide solutions effectively to any geography. Its ability to provide campus networking to any client, anywhere, continues to be a strength.	Cisco continues to be a strong voice and influencer in the market. The combination of brand marketing, the developers network (DevNet) and social media assures that Cisco’s market positioning is delivered to its target markets.
Cautions		
Separate, Diverse Product Lines	Separate Overlay Sales and Support Organisations for Each Product Line	Inconsistent Pricing Strategies
Cisco has two separate product lines to address campus connectivity requirements, including wireless access points that are not interchangeable, which can limit investment protection as needs change. Application functionality also differs, with each solution having a different management platform, implementation of IoT virtual segmentation, assurance and analytic insights through AI and ML.	Enterprises must be aware that Cisco has separate sales and support organizations for its IBN (Catalyst) and Meraki products. Customers must evaluate potentially confusing proposals, which can affect components and functionality provided as well as the future migration path.	Cisco Digital Network Architecture (DNA) for IBN (Catalyst) has a different pricing strategy than Meraki for the same or similar functionality, such as network management or analytics. This can cause confusion when the vendor or its channel partner proposes both product lines. Clients should ensure they get a clear, detailed pricing and feature breakdown when they require both solutions.



Gartner says Extreme's strengths are a converged and simplified platform that extends end-user installations while providing a seamless migration path, a refreshed product portfolio that adds value, not cost and marketing messaging that resonates directly with issues identified by the market.

Customers are also able to select the applications and hardware address specific business issues. This allows a lot of flexibility when it comes to scaling. Cautions reflect the work that is currently going into platform and product line development, plus global reach challenges.

Strengths		
Converged and Simplified Platform	Refreshed Product Line	Solid Market Messaging
Successfully moving to integrate the fruits of several acquisitions, Extreme has delivered convergence onto a multipersona hardware platform that can be loaded with differing applications but continues to move to a universal platform. This extends existing end-user installations while providing a seamless migration path.	Customers have access to an expanded, diverse set of products because Extreme has refreshed the platform portfolio and evolved the management and cloud offerings of its portfolio. This includes the launch of its ExtremeCloud IQ platform and the differentiation of Fabric Connect, which allows for OT and IoT devices that don't natively support Extreme's fabric to utilize the benefits.	Extreme's marketing campaigns resonate on the issues that clients consistently emphasize to Gartner. This includes the "Elements" campaign, which allows enterprises to select the applications and hardware that address their specific business issue, and also includes "Simplify, Verticalize, Cloudify," which addresses end-user issues in their targeted vertical markets.
Cautions		
Global Reach Challenges	Migration Concerns	Product Gaps
While Extreme has global reach, in-country presence in some areas of Asia or Latin America may vary depending on the vendor's go-to-market strategy. Enterprises need to verify that product, support and services are available in the deployed geography.	As Extreme continues to converge and consolidate, clients report that some functionality is falling behind or missing. Enterprises need to ensure that required capabilities are part of the roadmap, especially when migrating from a legacy solution that was part of an acquired entity to an updated product.	Vertical market requirements such as indoor location services are still under development, which is especially important for pandemic-related applications such as contact tracing. Additionally, co-pilot and autopilot AI/ML capabilities are developing slower than competitive offerings.



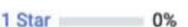
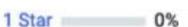
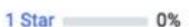
Aruba’s strengths, says Gartner, are its ESP cloud-driven platform, consumption-based pricing and again, strong marketing. HPE’s reverse integration of Aruba in 2015¹¹ shows it was thinking in a different way about the market and capitalizing on its new innovation.

Global reach is listed as a caution, plus portfolio complexity and some implementation inconsistencies.

Strengths		
Comprehensive and Unifying Campus Architecture	Consumption Pricing for Campus Networking	Strong Influencer and Voice in the Market
Aruba’s ESP is a comprehensive cloud-driven platform that unifies, automates and secures the campus, branch and remote network while maintaining an open programmable API that provides flexibility. The functionality of Aruba ClearPass and AirWave continue to set the bar for the market, while NetEdit lays the foundation for new capabilities in network configuration and validation management.	HPE GreenLake provides differentiating capabilities to clients by offering the Aruba product line as a consumption-based pricing model as part its network-as-a-service offering. This is separate from leasing or “as a service” models, enabling clients to pay for only their actual use of the infrastructure.	From its Aruba Atmosphere user event to a strong social media presence, Aruba continues to be an influencer of competitive trends in the market.
Cautions		
Global Reach Challenges	Portfolio Complexity	Inconsistent Implementation Between Cloud and On-Premises Offerings
Although HPE has a large reseller channel, getting Aruba product coverage to all market opportunities globally can be a challenge. Enterprises need to verify that product, support and services are available in the deployed geography.	Client discussions with Gartner report that the number of part numbers for hardware and software associated with campus components can cause confusion. Enterprises must seek clarity on hardware accessories and software subscriptions to ensure the right configuration.	Aruba is still evolving while migrating the functionality from its on-premises applications to Aruba Central. Enterprises need to be aware that the implementation of functionality may differ between the two platforms.

Gartner Peer Insights

Customer reviews place Extreme Networks as favourite overall and in every category below. When we interviewed Extreme customers their comments supported this rating with both flexibility and value for money being mentioned repeatedly.

	 HPE (Aruba) + Show Products (6)	 Cisco + Show Products (8)	 Extreme + Show Products (6)
Overall Peer Rating	4.7 (63 reviews)	4.7 (83 reviews)	4.8 (56 reviews)
Ratings Distribution	5 Star  70% 4 Star  30% 3 Star  0% 2 Star  0% 1 Star  0%	5 Star  73% 4 Star  20% 3 Star  6% 2 Star  0% 1 Star  0%	5 Star  84% 4 Star  16% 3 Star  0% 2 Star  0% 1 Star  0%
Willingness to recommend	90% Yes	90% Yes	95% Yes
Product Capabilities			
Overall Capability Score	 4.7 (63) 4.7	 4.7 (83) 4.7	 4.8 (56) 4.8
How satisfied is your organization with the value the product provides	 4.6 (32) 4.6	 4.8 (43) 4.8	 4.9 (48) 4.9
Customer Experience			
Evaluation & Contracting	 4.6 (63) 4.6	 4.6 (83) 4.6	 4.8 (56) 4.8
Pricing Flexibility	 4.4 (57) 4.4	 4.3 (70) 4.3	 4.7 (53) 4.7
Integration & Deployment	 4.7 (63) 4.7	 4.6 (83) 4.6	 4.7 (56) 4.7
Ease of Deployment	 4.6 (59) 4.6	 4.6 (77) 4.6	 4.8 (53) 4.8
Service & Support	 4.6 (63) 4.6	 4.7 (83) 4.7	 4.8 (56) 4.8
Timeliness of Vendor Response	 4.6 (60) 4.6	 4.6 (76) 4.6	 4.8 (54) 4.8
Quality of Technical Support	 4.6 (60) 4.6	 4.5 (76) 4.5	 4.7 (53) 4.7

Pricing model comparisons

A true like-for-like replacement of Cisco's 6500 switch would require two switches, so this is how we've priced up these comparisons. A single switch would simply be half the price listed below.

Model	CORE		
	Extreme	Cisco	HPE (Aruba)
	X695-48Y-8C	C9500-48Y4C	JL624A
1G ports	48	48	48
10G ports	48	48	48
25G ports	48	48	48
40G ports	8	4	8
100G ports	8	4	8
3 Year TCO List Price PSUs, fans, software and Layer 3 licensing + 24x7 replacement / support (2 switches)	£59,360	£72,270	£59,552
Typical Partner Pricing Typical deal reg discounts applied with standardised mark up (2 switches)	£27,710	£43,956	£38,314

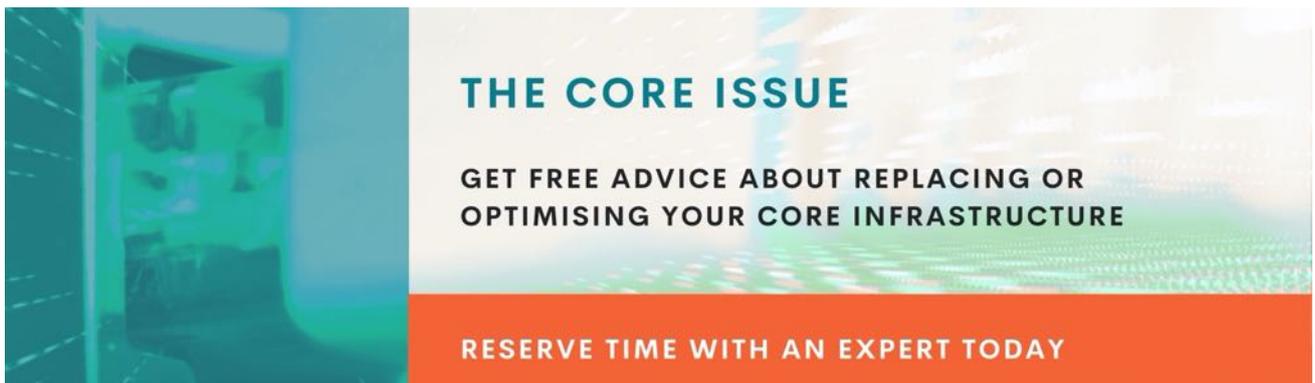
Model	Performance Edge / Distribution		
	Extreme	Cisco	HPE (Aruba)
	5520-48T	C9300-48P-E	JL072A
1G ports	48	48	48
10G ports	12	4	4
25G ports	12	0	0
40G ports	2	0	0
100G ports	0	0	0
3 Year TCO List Price PSUs, fans, software and Layer 3 licensing + 24x7 replacement / support (2 switches)	£15,476	£28,702	£19,108
Typical Partner Pricing Typical deal reg discounts applied with standardised mark up (2 switches)	£7,205	£16,581	£10,748

Conclusion

If your business is affected by Cisco's Catalyst 6500 series end-of-service-life announcement, we hope this white paper has helped you see this compelling event as an opportunity rather than a concern.

While Cisco has demonstrated excellent customer service in the past, our research leads us to conclude that this is not currently the case. Ex-customers felt trapped by the Cisco training program rather than empowered and were left confused and disappointed by complex pricing and unexpected costs.

Based on our research, Extreme Networks offers the best combination of innovative technology, choice, pricing and customer experience. HPE (Aruba) comes in as a close second, but Extreme demonstrates best value overall, with more transparent performance data, clear pricing and better peer ratings.



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² <https://www.forbes.com/sites/martingiles/2020/05/13/gartner-it-spending-will-plummet-in-2020-as-cios-slash-budgets/?sh=71f86e4611ca>

³ <https://www.cisco.com/c/en/us/products/collateral/switches/catalyst-6500-series-switches/eos-eol-notice-c51-743096.html>

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⁵ https://www.theregister.com/2018/11/06/cisco_layoffs_customer_experience/

⁶ https://en.wikipedia.org/wiki/List_of_acquisitions_by_Cisco_Systems

⁷ <https://www.cisco.com/c/en/us/training-events/training-certifications/training-catalog/course-selector.html>

⁸ We sought the views of several Cisco customers during our research for this White Paper. They wish to remain anonymous.

⁹ We sought the views of several Cisco customers during our research for this White Paper. They wish to remain anonymous.

¹⁰ <https://www.gartner.com/doc/reprints?id=1-24KB3SSL&ct=201109&st=sb>

¹¹ <https://www.itpro.co.uk/acquisition/33836/why-hpe-s-acquisition-of-aruba-has-been-a-standout-success>