

# STATE OF SD-WAN IN INDIA

REPORT 2020



LAVELLE  
NETWORKS

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# PART 1

## Introduction

## Our motivation behind producing this report

As FY 2019-20 came to an end, the global outbreak of COVID-19 ushered in an age of unprecedented Internet usage for all of us to stay connected to our businesses and relationships. Measures planned for emergency business continuity became the new normal.

Meanwhile, we have experienced an amazing growth in Software Defined Wide Area Networking (SD-WAN) among the digital Indian enterprises, ever since we entered the market in 2017. All around us, we were privileged to have a ringside view of digital transformation among our customers and partners. The enterprise network was becoming a valuable source of insights, rather than just being data connectivity infrastructure. Business and employee productivity were being directly correlated to network availability, network performance and security. A great network meant more business got done, more results were achieved. Whether it was our customers servicing insurance policies at their branches, or an e-commerce giant shipping out goods by the second, it was all showing up in network visibility graphs and reports.

In 2020, COVID-19 drove home the point that internet and cloud connectivity is paramount to a business. The ability to remotely control their networks using SD-WAN made a big difference to customers who had adopted SD-WAN versus those who stayed on legacy networks.

We were provoked by the transformational change brought by SD-WAN to our customers, to research the impact of this technology to the Indian enterprise landscape. In this report, we bring to you a distilled analysis of the sweeping phenomenon of SD-WAN in the Indian enterprise market.

India is becoming the hot bed of action for SD-WAN. And continue reading to see why.



## Our Participants

Over the last few years we have been talking to numerous IT experts about SD-WAN for their business and we realized we had been interacting with the best of IT minds in India.

In order to analyze the state of SD-WAN in our home market we conducted a survey to understand this better. The majority of respondents were CIOs, IT Heads and IT engineers from India, specializing in IT services.

In terms of their length of time in the industry, respondents had varying levels of experience and held a range of job titles.



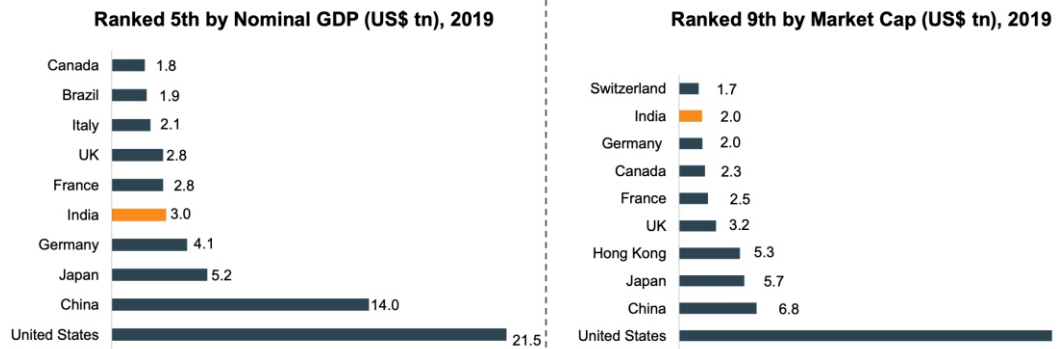
## Key Findings

- Using Network Insights for business intelligence is the major driving factor for SD-WAN in India. With nearly every business transaction being digital, using the centralized visibility of an SD-WAN solution is enabling much quicker decisions.
- Reducing Total Cost of Ownership, and improving IT Operational efficiency are the next most important factors to adopt SD-WAN.
- While retail and e-commerce adopted SD-WAN between 2017-2019, since 2018 the financial institutions have become the largest adopters of SD-WAN in India.
- Nearly all of our respondents said they are moving away from their legacy branch networks to SD-WAN.
- Technology use cases like hybrid WAN, local internet breakout and MPLS to broadband migration are most popular among the SD-WAN users.
- Customers are looking at implementing content security in the cloud, with traffic steering capabilities at the network edge. SD-WAN policies are becoming a key reason to simplify implementing cloud security.
- Public Sector enterprises (traffic & law, utilities, health care, State Wide Networks) are all looking at SD-WAN to fast track the vision of Digital India.
- Major telecom Providers are looking to use SD-WAN appliances themselves as the default MPLS edge router, for future proof customer networks.

# PART 2

## The Backdrop of Indian Economy

## India is now seen as, Top 5 Economy



-  We will be a 10 Trillion Dollar economy by 2030. That puts us in the Top 5 economies in the world.
-  We produce more steel, cement, two & four wheelers than most countries in the world.
-  We have the strongest agricultural base. We produce nearly every kind of food. We have 46 of the 60 Soil types in the world, and we have all the 15 major climates in the world.
-  No story of Digital India is complete without the story of Aadhaar – 65+ Million transactions on Aadhaar every day compared to 12+ Million transactions on much more “touted” Visa or MasterCard networks.
-  Our average age by 2020 will be 29 years, compared to China/US 37, and Japan 48
-  We are the 3rd largest startup ecosystem, 26,000+ Startups, 270% growth in 6 years, 130 Bn USD value created already



**Startups will lead India into becoming the 10+ Trillion Dollar economy”**

# PART 3

## State of Broadband and Internet in India



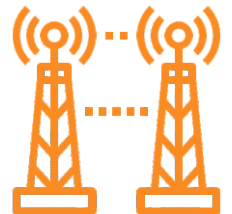
Broadband subscription in India has seen 36.53% YoY growth from 2018-2019 as per TRAI Annual Report. Bringing total internet subscribers in the country to 636.73 million. Internet growth in India is fastest in the world and with a huge surge in demand to adopt cloud services, Indian businesses are evolving their networks to keep pace with the outside world. Infact, Indian companies are making faster transition to cloud as compared to their global counterparts.



**636.73 million Internet Subscribers in India.**

With the advent of initiatives like the National broadband mission, the Government promises Broadband in all villages by 2022. The number of towers in the country which is about 5.65 lakh will be increased to 10 lakh to support this. This mission will enable strengthening of technological infrastructure for areas like education, health, entrepreneurship and development.

**1,156.44 million wireless Subscribers in India**



India is becoming digital due to faster adoption of technology. Technology is evolving at a pace which is not easy to match. What is in trend today may become obsolete later. The world is now shifting to cloud- probably the next tipping point post World Wide Web or internet. Digital India initiative is truly a humongous dream to achieve. It is still in an infant stage. To make India future ready every step should be disgusted to address challenges effectively and expeditiously. The need of the day is to build an exclusive fully firewalled Internet cloud that can provide a secure internet network and connectivity for the various needs of the country.

# PART 4

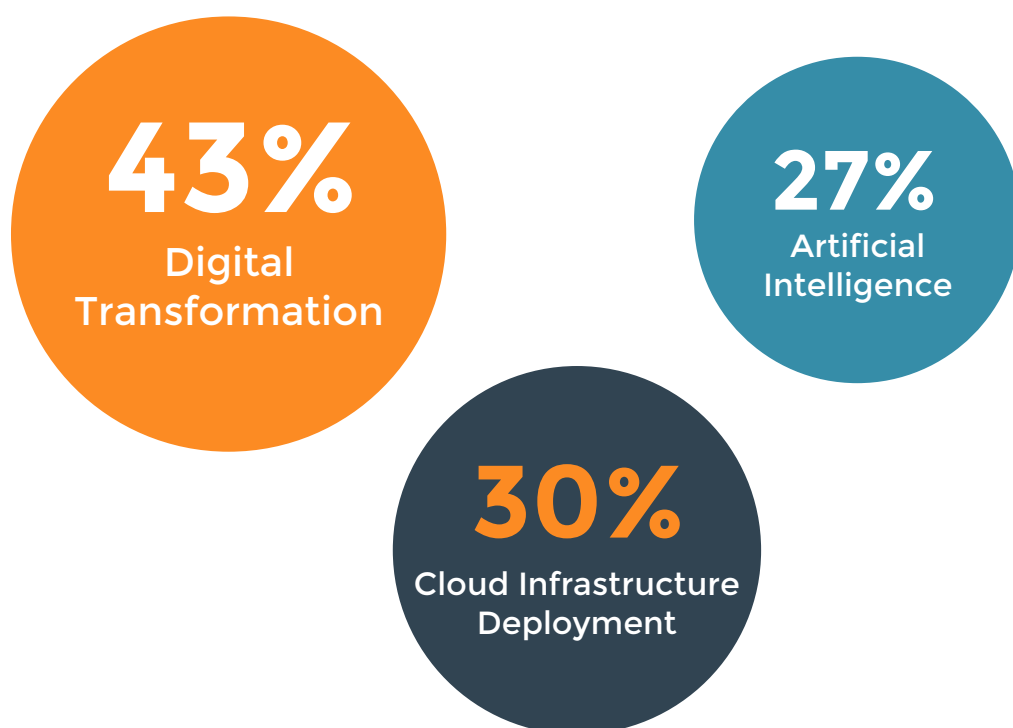
## SD-WAN opportunity in India

Industry analyst projections indicate an enormous pent-up demand for newer and better approaches to networking worldwide.

IDC predicted that SD-WAN technology will grow at a 30.8% compound annual growth rate from 2018 to 2023 to reach \$5.25 billion. In addition, SD-WAN traffic will grow five-fold from 2017 to 2022, a compound annual growth rate of 37 percent.

Organizations in India are under tremendous pressure to transform digitally and to deliver more agile, simple, scalable and cost-efficient services to their customers

According to our survey 43% respondents cited digital transformation as their top priority, followed by cloud infrastructure deployment (30%) and artificial intelligence (27%).



Indian CIOs reported their infrastructure is struggling to support the rapid adoption of digital technologies. They're under the pressure to make the most of the cloud and give users faster access to data as well as applications. To satisfy the relentless demand for more bandwidth from the explosion in digital devices and services. And to do all of this without compromising security.

As the backbone of an organisation's IT infrastructure, the network has been the key focal point for digital transformation.

More budget is being pumped into software-defined wide-area networks (SD-WAN)



## Making continuous changes to your network will be the new normal

Apart from Digital Transformation, rapid expansion of business demands for a more holistic and simplified approach to networking.

India is probably one of the few countries to witness Technology Leapfrogging- adoption of advanced or state-of-the-art technology in an application area where the immediate prior technology has not been adopted.

Even before MPLS got a decent foothold in India, SD-WAN has taken the lead of providing affordable, reliable, and dynamic connectivity that will render MPLS obsolete.

**Let's look at some of the drivers behind this boom.**



### Digital Transformation

While e-commerce giants like Flipkart and Udaan have led others with a digital-first approach as its primary business model, the biggest brands like Aditya Birla, Titan, Max Life, Kotak Bank, HDFC are now rapidly transforming every aspect of their business — from marketing to sales to advertising — into a digital-first model.

Because the Indian consumer has a mobile-first approach (over a billion mobile users in India now), every consumer-facing company — banks, insurance, automobiles, retail, healthcare — is turning to applications that deliver better engagement with the end user.

And in the B2B space, migrating from traditional desktop and server applications like Microsoft Office and the locally-hosted Exchange to applications like Office 365 are driving a boom in the bandwidth consumption and reliability requirements between the enterprise branches, headquarters, and the cloud. And with it, the need is rising for a cost-efficient way to enable this connectivity.



### Cloud First

India is well on the path to become the most populous country on the planet, and the increasingly connected Indian (straddling all stratas of society) is a big target for large and small companies alike. Many of these companies, like Flipkart, have been born in the past decade. Just like the skip from mobile technology directly over to 3G/4G, the adoption of cloud Infrastructure-, Platform-, and Software-as-a-Service (IaaS, PaaS, and SaaS) offerings have been dramatic with little to no investment in traditional data centers. This has driven the need for consistent and cost-efficient bandwidth as that is the lifeline to the cloud and the foundation for enterprises' business operations.

However, where this cloud-first approach becomes a real issue is when customers using (for example) SAP or Salesforce are rudely surprised when they move from dedicated MPLS connecting their branches to the headquarters to the cloud using traditional WAN. This is due to the promise of cheaper broadband over the Internet because of the unreliability of this WAN, and is where the need for SD-WAN arises.



### Telecom Deregulation

Unlike the Western nations, deregulation in the fixed line telecom sector in India is only happening now in stark contrast to the mobile deregulation, which happened over a decade ago. The most recent regulation change allows for voice-over-IP (VoIP) to call to public switched telephone networks (PSTN), which is likely to spur innovation and create a new wave of services for smaller enterprises. There will be a surge in Vonage-like organizations that are focused on providing unified communication services — one of the most popular use cases in the U.S. for VoIP — and these communication services will ride on the wave of the most cost-efficient and latency-sensitive backbone: SD-WAN.



## Broadband Everywhere

The largest private telecom in India, Reliance Telecom, and the incumbent public sector broadband enterprise BharatNet, a telecom infrastructure provider set up by the government of India under the Digital India initiative, are aggressively deploying broadband to every part of the country. BharatNet is targeted to cover more than 100,000 village administration units. India is well on the way to have the largest broadband density very soon. This will undoubtedly spur Indian enterprises to open shops anywhere they choose as they will have a reliable nationwide broadband backbone and will use SD-WAN as the primary connectivity choice.



# PART 5

## Top Networking Challenges faced by Indian Enterprises before SD-WAN

## Survey participants highlighted major Networking Challenges prior to SD-WAN deployment and why they moved to SD-WAN



**32%**  
**Network Visibility**

Key network performance indicators were impacted as IT lacked visibility into insights e.g. aggregated bandwidth consumption, bandwidth usage per application, link state, made traffic visualization a hefty task. As a result, managing and monitoring networks became a challenge.



**25%**  
**Load Balancing**

Before SD-WAN was deployed, the IT teams leveraged source or destination based load balancing. A weak WAN- link redundancy acted as the catalyst for performance glitches, cyber attacks and generated other root causes of downtime.



**20%**  
**Quality of Service**

QoS was not possible, impacting uptime for critical SaaS and enterprise applications. Poor network experience in turn resulted in poor user experience.



## Survey participants highlighted major Networking Challenges prior to SD-WAN deployment and why they moved to SD-WAN

**12%**

**Barriers to Global  
Rollout Process**

Extending enterprise WAN globally requires a policy-driven infrastructure. Traditionally, enterprise WANs were limited by MPLS. It did not allow the enterprise to leverage the Internet as a secure WAN. IT had to copy a physical network that relied on shared subnet addressing, point-to-point security, and so on. This also increased the time taken to troubleshoot issues and activate new policies due to complexity of the network.

**11%**

**Uptime of an  
Isolated Branch**

Branch uptime was a challenge. Network performance at locations became inconsistent. Each location incurred heavy cost of downtime, burnouts, and slowness as the network failed to keep up.

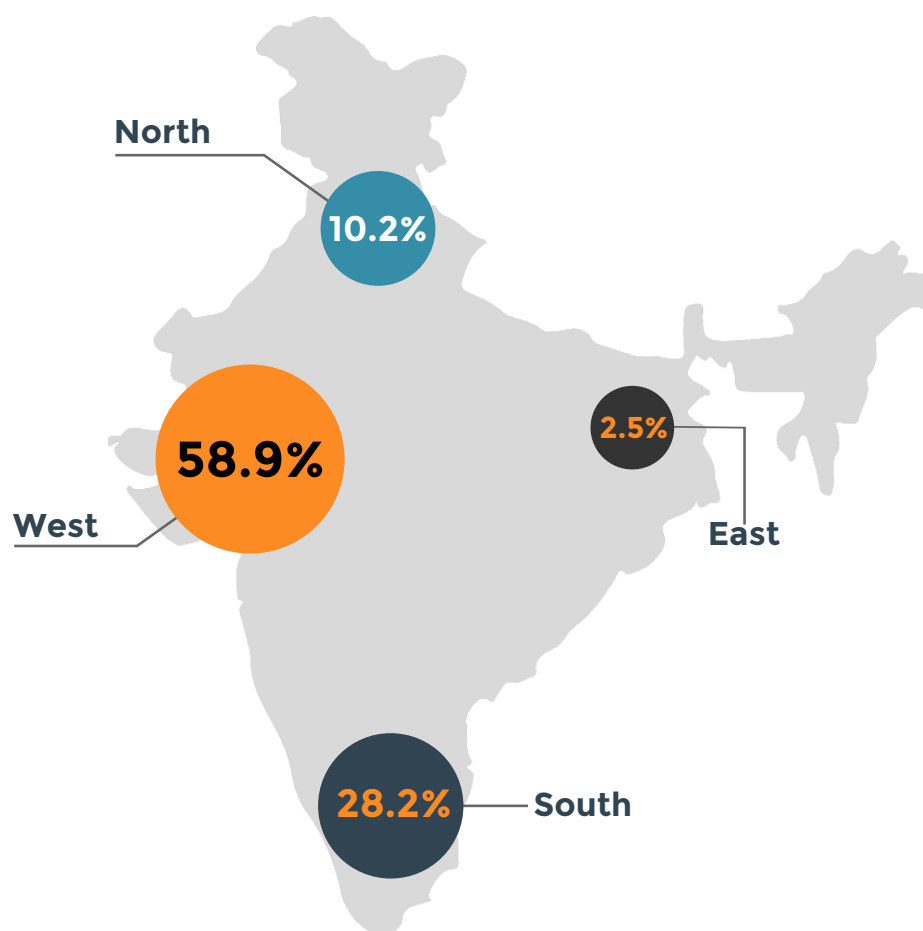
# PART 6

## India's Rapid Adoption of SD-WAN

## Region wise adoption of SD-WAN in India

West India has been the major adopter of SD-WAN Technology. More than half of the companies surveyed were headquartered in major cities like Mumbai, Pune and Ahmedabad. Technology has also seen adoption in South India, followed by North Indian companies, while East India is yet to move past the legacy network world.

### Regional distribution of SD-WAN adoption



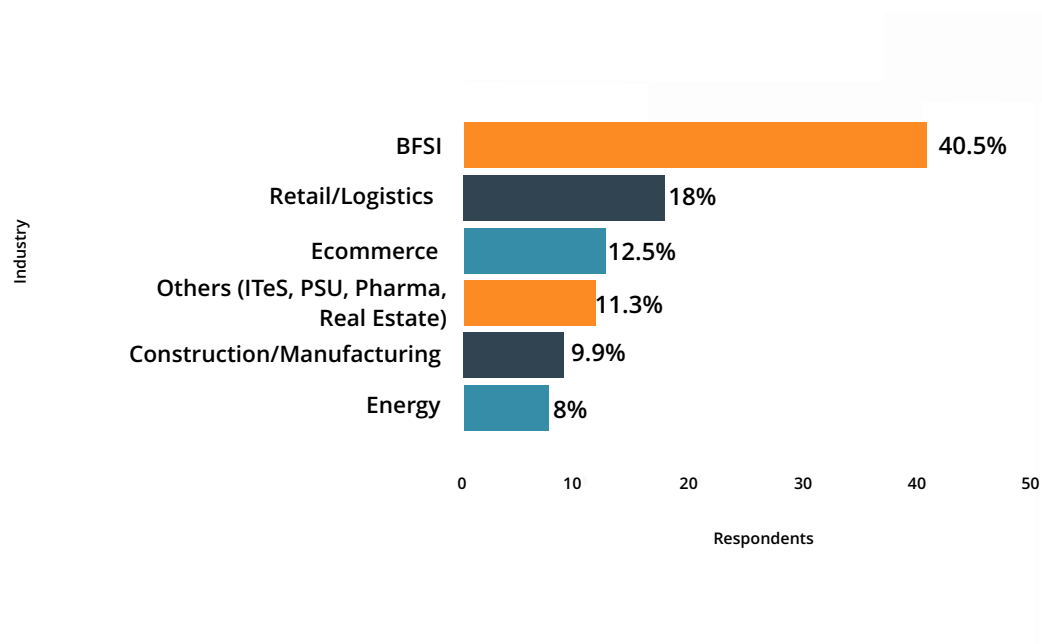
## Industries adopting SD-WAN in India

Banking, Financial Services and Insurance sector led the SD-WAN evolution with over 40% of adopters coming from this segment in India. Retail, Logistics and E-commerce also witnessed double digit progress in the technology adoption for Digital transformation.

Segments like Manufacturing, Construction and Energy are not behind as the nature of business demands for a connectivity for distributed infrastructure.

While few Industry segments (like ITeS, PSUs, pharma, agriculture business, real estate and commodity and collateral management) are beginning to gain momentum towards evolution of networking technology and will witness more SD-WAN adoption in coming years.

### Which Industry segment did our respondents come from?



## Business Problems driving SD-WAN adoption in India

As per the survey results we categorized the business problems into 3 major categories to understand CIO's perspective:

### Business Intelligence

Application visibility at each place of business and user, network performance analysis up to the second, and the ability to use modern policies instead of complex legacy configuration is becoming the biggest reason for SD-WAN adoption. Knowing the state of the network instantaneously is enabling tremendous agility and responsiveness for business decisions.

### Total Cost of Ownership

Ease of deployment and router refresh.

### Operational Efficiency

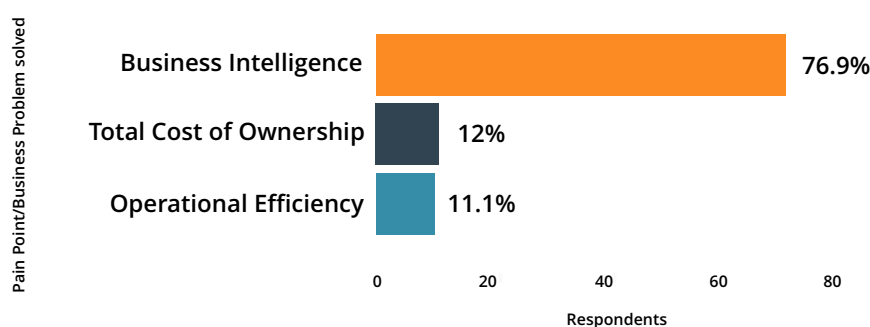
Improved bandwidth, application experience and load balancing

Close to 77% of the pain points cater to business Intelligence and helps us understand the value SD-WAN Technology has brought in for Businesses adopting it.

TCO has been another popular category with close to 12% respondents talking about the TCO aspect as a major pain point that SD-WAN has solved.

When it comes to increasing operational efficiency, close to 11% respondents highlighted it as the primary pain point that led to SD-WAN adoption.

## What business problem is driving SD-WAN adoption for you?



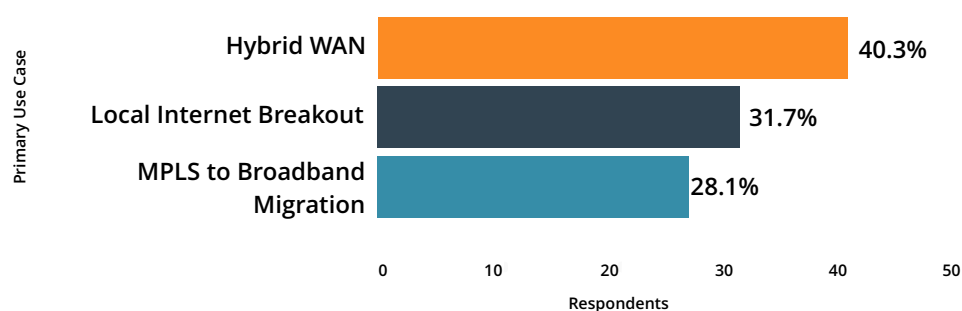
## Top Technology use cases of SD-WAN in India

As per the WAN conditions and infrastructure in India, most of the respondents (over 40%) wanted to utilize hybrid WAN support with SD-WAN as the primary technology use case.

Legacy network demanded a network hairpin setup to datacenter from branch offices in order to provide internet access to branch users. This has been a major barrier to application and user experience over the age-old branch networking technologies. Internet breakout has been most awaited and liked use case by various respondents with close to 31% considering it as a primary use case of the technology for their infrastructure.

Another favourite use case has to be MPLS to broadband migration with a popularity of close to 28%. The trend has been such that after deploying SD-WAN in their networks, 70% of the customers moved completely away from MPLS.

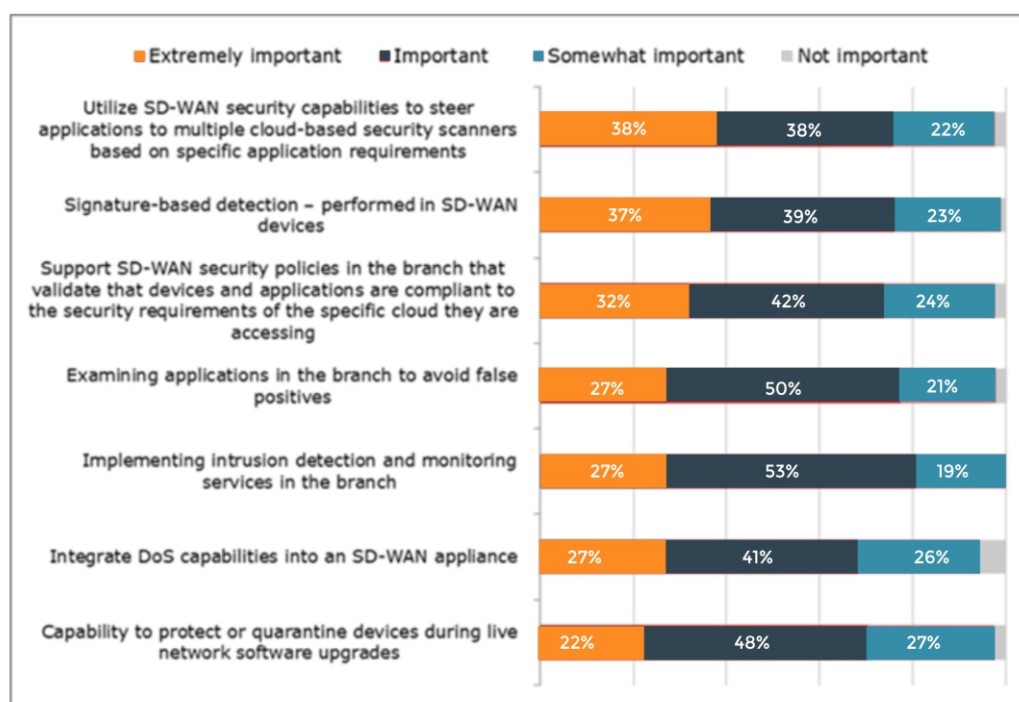
### What would you expect to be the primary use case of SD-WAN software or services for your organization?



## New Security Landscape with SD-WAN



### SD-WAN makes it easier to manage Network Security



In a survey conducted by Lavelle Networks and Heavy Reading, we asked customers to provide insight into which additional capabilities would enhance their security posture.

The highest ranked of these is the ability to utilize SD-WAN security policies to steer applications to multiple scanners based on specific application requirements (38%). The high ranking of this capability highlights the realities and challenges associated with moving to an application-centric cloud.

Second highest capability required was signature-based detection in SD-WAN devices (37%).

The shift to an application environment will demand the adoption of SD-WAN security services strategies that possess the richness to support a programmable and multidimensional application-aware security model.



# PART 7

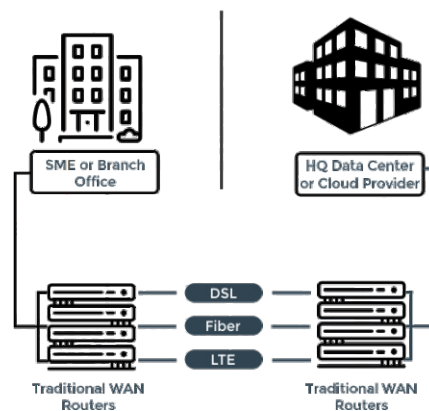
## The Future of Enterprise SD-WAN

As per our survey, while doing router refresh organisations are moving away from single function devices like routers and firewalls, to Software-defined devices with SD-WAN.

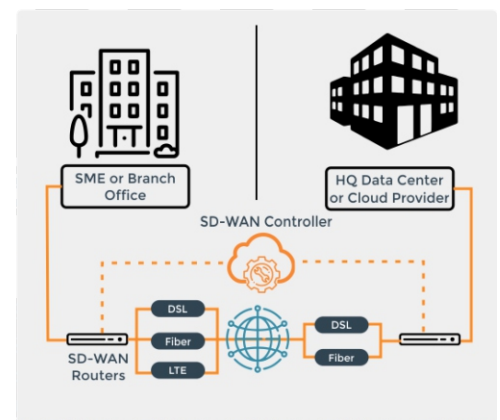


**100% of the respondents said they would like to move away from legacy network technology to SD-WAN."**

## Traditional WAN



## SD-WAN



# Our SD-WAN journey in India



**Lavelle Networks is the first SD-WAN platform to provide connectivity in 28 states and 8 Union Territories in India.**



**2017**

India's FIRST 1000+ SD-WAN network in Retail Segment.



**2018**

India's LARGEST successful SD-WAN network ever –  
1700+ locations at an e-commerce giant.

India's FIRST SD-WAN network in the Financial Sector.



**2019**

India's FIRST Bank ATM SD-WAN network.



**2020**

Asia's LARGEST ever SD-WAN BANK network rollout.

## Looking Ahead

In the past we have witnessed Private Sector companies being an early adopter of SD-WAN Technology in India.

Paving a path ahead of times – Virtual India – GOI's Digital India is at its full swing. With 3 key vision areas – Digital Infrastructure as a Utility to Every Citizen, Governance and Services on Demand and Digital Empowerment of Citizens – the programme is rapidly progressing in embedding the bedrock – India's Future Network.

As the emphasis on Digital Transformation is increasing and the government is taking the major steps towards "Atma Nirbhar Bharat", we are seeing many **Public Sector** companies evaluating SD-WAN and its benefits to embark on their Technology transformation journey.

**State Wide Area Networks (SWANs)** is yet another area where increasing digitization amongst States demands higher bandwidth. Hence, surge in demand of Network transformation through SD-WAN can be seen.

**Telcos** are moving away from routers and looking at deploying SD-WAN as the default edge device. In FY 2021 we can see many Telcos talking about SD-WAN and bringing in new technology use cases for SD-WAN.

## Final Thoughts

Between 2018 – 2020, the first set of enterprises have moved to an SD-WAN solution, the tsunami of adoption is now coming with hundreds of thousands of enterprises waiting to migrate from MPLS networks, and millions of small businesses waiting to go online. In the next few years, most if not all, will be on an SD-WAN platform.

India is on the threshold of a massive need for faster, safer and simpler network access technologies. SD-WAN has proven itself to be the network platform of choice, for a business to connect to its cloud, applications and customers.

An enterprise place of business will no longer be using legacy technologies like a router, or a firewall or a link load balancer to connect to the cloud. There will be unanimous and ubiquitous adoption of SD-WAN – as a single platform where using powerful cloud orchestration the right level of network functions will be implemented on the fly on your network.

The enterprise network is at the brink of becoming a valuable source of business insights rather than a simple infrastructure investment. And SD-WAN promises to help in this critical transformation.

**We are excited for FY 2021 and beyond to witness the next set of changes and transformation in the state of SD-WAN in India!**

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Accelerate Networks for the Digital Economy

Top Global enterprise brands are using Lavelle Networks SD-WAN platform for upgrading their infrastructure to next generation WAN and hybrid WAN Solutions.



ATM Networks  
of top Banks



Top Public Sector  
Mutual Fund Brands



Premier Co-operative  
Banks



Largest NBFCs



Top Insurance  
Companies



Largest e-commerce  
Networks



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