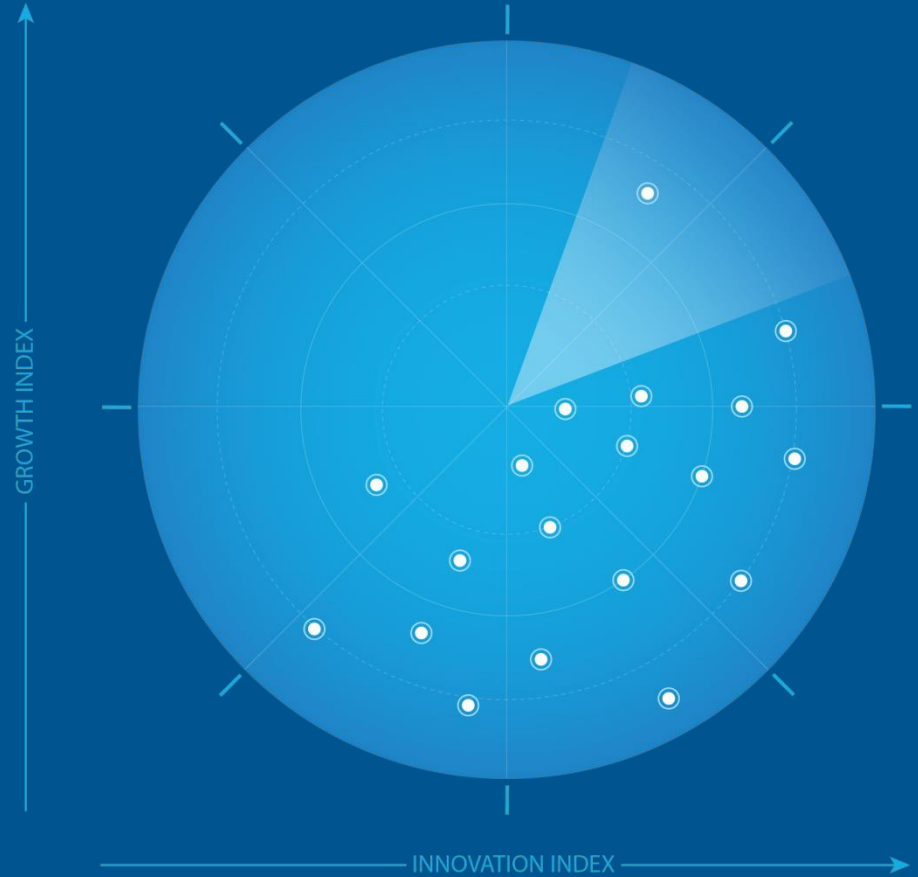


# Frost Radar™: Managed SD-WAN Services in North America, 2022

A Benchmarking System  
to Spark Companies to  
Action - Innovation That  
Fuels New Deal Flow and  
Growth Pipelines



FROST & SULLIVAN

# Strategic Imperative and Growth Environment



# Strategic Imperative

Managed software-defined wide area network (SD-WAN) services is a software approach to managing and controlling the underlying enterprise network technologies to optimize costs and application performance. Underlying technologies can include direct internet access (DIA), wireless, broadband, Ethernet, and multi-protocol label switching (MPLS).

SD-WAN abstracts control and management functions from the data or traffic flows, thus allowing the controllers and management mechanisms to be placed in the edge, cloud, or traditional data center. Like Internet Protocol Security (IPsec), SD-WAN has tunnels that connect end-user devices to the controllers where the “intelligence” of the software can define traffic routes, priority, and management. These tunnels are for management of the data plane, not the actual traffic/data itself.

SD-WAN allows enterprises to mix wired and wireless connections, directing traffic over the optimal network technology based on the application need. Overall, the growing mix of providers and technologies – and the complexities of managing them all – pushes enterprises to the managed services space for SD-WAN.

The top five drivers for implementing SD-WAN per the 2021 Frost & Sullivan SD-WAN survey are to optimize IT resources, improve business productivity, improve customer experience, increase operational efficiency, and better support remote working.

Source: Frost & Sullivan

# Strategic Imperative (continued)

Customer portals are essential tools and components of managed SD-WAN. Portals provide visibility, integration with enterprise IT service management suites, and tools to manage performance and service-level agreements (SLAs). The service provider and customer both benefit from portals, which track the customer journey from quote to order and help the provider by streamlining the quote-to-cash process and visibility.

Industry standards body MEF (formerly Metro Ethernet Forum) has established standards for SD-WAN service attributes. The providers that follow the MEF 70 SD-WAN standard and contribute to MEF 3.0 initiatives are the leaders in the space, providing the building blocks for this new era of software-defined networking (SDN).

In addition to MEF SD-WAN-specific efforts, the framework of Open Networking Automation Platform (ONAP) drives the integration of the portals. Per [ONAP.org](https://onap.org), “ONAP is a comprehensive platform for orchestration, management, and automation of network and edge computing services for network operators, cloud providers, and enterprises.” Customer portals and specifically SD-WAN reporting is the output of all these behind-the-scenes application programming interfaces (APIs) and integrations.

Frost & Sullivan found that most providers start their SDN journey with SD-WAN and then continue to offer more services including Secure Access Secure Edge (SASE), which represents the progression of SD-WAN, combining network services and security services such as firewalls, intrusion detection and prevention, and security gateways at the hubs and endpoints.

Source: Frost & Sullivan

# Strategic Imperative (continued)

All providers are currently integrating their security, voice over IP (VoIP), and unified communication as a service (UCaaS) services in the service point of presence (PoP), often referred to as edge as well. It is where the clients have their SD-WAN tunnels terminated for management and control of the networks but also where the provider deploys the infrastructure that supports the virtual services.

For deployment within the PoP or customer edge location, service providers are positioning their own universal customer premises equipment (uCPE) as a vendor-agnostic device pre-engineered with the provider's virtual network functions (VNFs).

As network function virtualization gains traction, the ability to configure VNFs on the uCPE, in the cloud, at the edge, or in any virtualized platform becomes crucial. Service providers are evolving the platforms to support network as a service (NaaS) thanks to the capability to seamlessly deploy and manage network functions on the client side or in the service PoP, as well as to connect and secure multi-edge compute platforms.

Worth noting is that most managed SD-WAN providers offer traditional security functions, including firewall, intrusion prevention system (IPS), and intrusion detection system (IDS) services, in both virtual and physical form factors. Most providers are offering or considering value-added security services as endpoint detection and response (EDR), managed detection and response (MDR), and overall extended detection and response (XDR) efforts. Artificial intelligence (AI) and machine learning (ML) tools give the provider visibility to the data and end-to-end network security and apply learnings from both the network they are observing and the collective knowledge of all customer networks.

Source: Frost & Sullivan

# Growth Environment

In managed SD-WAN, the service provider acts as a single point of contact for the complete SD-WAN solution, including the SD-WAN appliance, software license, WAN services, and managed services.

Provider responsibilities in a managed SD-WAN service include

- procuring, installing, configuring, and managing the SD-WAN edge device (physical or virtual) and software;
- installing and managing the WAN links (their own, from a partner, or provided by the customer) that support the SD-WAN solution;
- managing (at least partially) moves, adds, and changes across the SD-WAN solution;
- monitoring the service 24x7, troubleshooting, and restoring it in case of a problem;
- offering an SLA for the entire solution and ensuring that performance guarantees offered in the SLA are met;
- creating optional value-added services such as WAN aggregation and continuity configurations, third-party access management, additional security features, or WAN optimization;
- supporting IT managers with a self-service portal interface that provides a granular level of visibility and control; and
- billing for the service in a subscription-based model in which the customer pays a monthly recurring charge for the managed SD-WAN. Some providers bill managed SD-WAN services as a single monthly recurring charge for the edge device, bandwidth charges, and management fees, while others charge bandwidth fees separately.

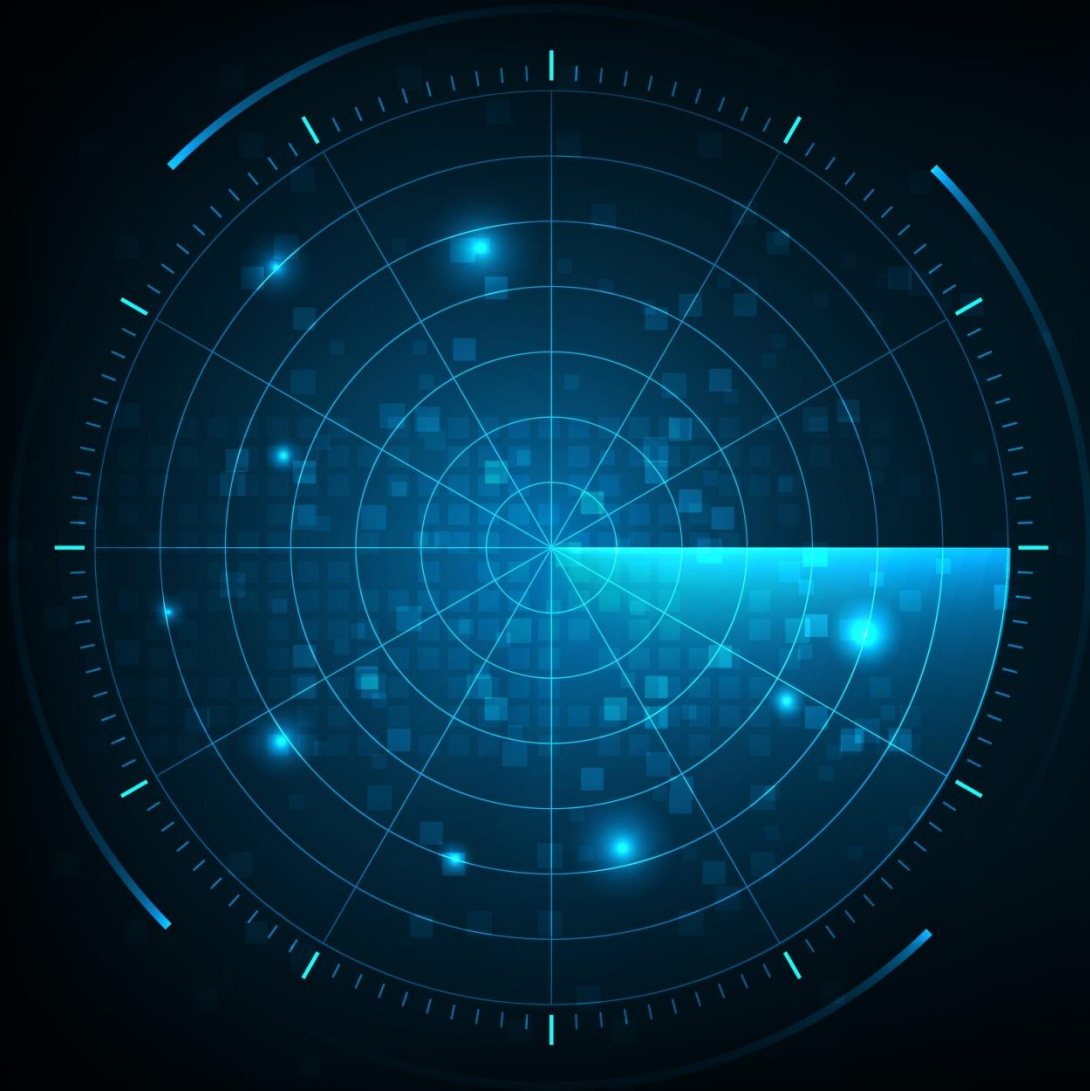
Source: Frost & Sullivan

# Growth Environment (continued)

Managed SD-WAN service providers comprise four categories:

- **Network service providers (NSPs)** such as AT&T, Lumen, and Verizon can combine their own network services with equipment vendors' solutions. Most often, the customer stands to benefit from network services owned by the provider because of tighter integration of SD-WAN solutions with the network and the provider being able to offer better SLAs and better visibility through the customer portals.
- **Managed service providers (MSPs)** such as Aryaka, TPx, and Hughes offer managed services for a plethora of enterprise solutions, such as network, security, unified communications, and cloud services. They generally have partnerships with several network and solution vendors and are in a position to combine SD-WAN with managed network services and offer optional value-added services as the end customers' needs grow.
- **System integrators (SIs)** have long been key participants in the managed network services space; large enterprise customers prefer working with SIs that can bring IT and network solutions together and reduce the burden of dealing with multiple network and solution vendors. SIs are quickly expanding their portfolios to include managed SD-WAN services in response to customer demand.
- **Value-added resellers (VARs)** have emerged as a key channel through which some enterprises prefer to buy managed SD-WAN. VARs can act as a single channel for procuring solutions that are from different vendors but that appear as one cohesive solution. It helps customers future-proof technology investments because VARs are in a position to migrate their customers to evolving technologies when needed.

Source: Frost & Sullivan

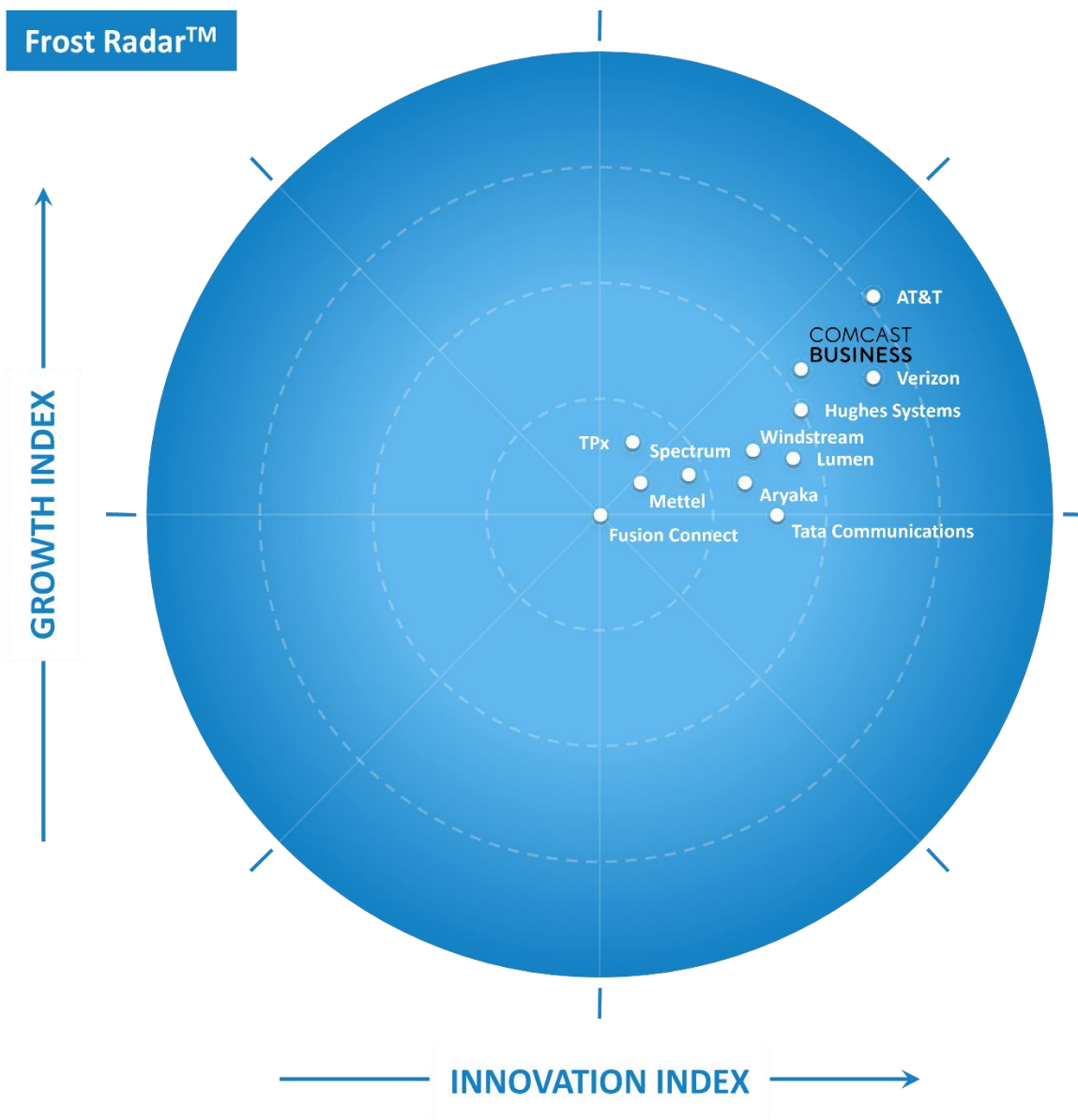


**Frost Radar™**

**Managed SD-WAN  
Services in North  
America**



# Frost Radar™: Managed SD-WAN Services in North America



Source: Frost & Sullivan

# Frost Radar™

## Competitive Environment

- The North American managed SD-WAN market is competitive with a mix of NSPs, MSPs, SIs, and VARs. Table stakes for each vendor is to have simple pricing models for small, medium, and large sites, competitive access (underlay) pricing, competitive SLAs, and a robust client portal for customers to view and manage the service.
- Of the hundreds of service providers in the space, Frost & Sullivan independently plotted the top 12 in this Frost Radar™ analysis. This report focuses on NSPs and MSPs that have full-fledged managed SD-WAN offerings.
- Service providers were primarily analyzed based on their managed SD-WAN portfolios, which include (but are not limited to) choice of SD-WAN vendor solutions; the underlay network choices; managed service support before, during, and after deployment; self-service portals and network management capabilities; and the ability to deliver value-added services (security, routing, VoIP, UCaaS).
- Frost & Sullivan has included companies that are either long-time NSPs or are considered national MSPs. Smaller MSPs that are focused on specific regions of North America and generally function as an agent/reseller to the larger MSPs have been excluded.

Source: Frost & Sullivan

# Frost Radar™

## Competitive Environment (continued)

- The Frost Radar™ measures growth rates in addition to absolute revenues and combines them with other factors (described [here](#)) to measure companies' performance along the Growth Axis.
- Formidable competitors including Comcast Business have the largest share of business network services, which extends to the share of managed SD-WAN.

Source: Frost & Sullivan

**Companies to Action:  
Companies to Be Considered First for  
Investment, Partnerships, or Benchmarking**

# Comcast Business | Masergy

## INNOVATION

- Comcast Business acquired Masergy in 2021. Its managed SD-WAN portfolio provides clients with a choice of partners including Versa, Fortinet, Cisco Viptela, Cisco Meraki, Aruba (HPE), and Palo Alto, and leading cloud providers including AWS, GCP, Azure, IBM, Oracle, and Alibaba. It is available in fully managed, co-managed, customer managed, and platform-as-a-service packages.
- The Comcast Business platform leverages automation and AI IT operations, with services as digital assistants for network, application, and security. These services monitor different events while making recommendations to enhance application performance, predict bandwidth needs, and optimize network throughput. For instance, during electrical storms Comcast Business can detect device damage and has options that can include a two-hour response time for such events.

## GROWTH

- Comcast Business is the second-largest provider of SD-WAN connections in North America by installed and managed customer sites. It has solid success with clients with 250 or more sites that are often replacing MPLS/T1 network technologies.
- Comcast Business has made strategic acquisitions and partnerships in the last two years. Its partnership with Nokia positions it well for 5G private network opportunities.
- Comcast Business's acquisition of Masergy added 1,400 clients and 100 countries to the portfolio, and the Defined Technologies acquisition in October 2021 strengthens its push into the government sector.
- Comcast Business has a soft launch into the Ingram Micro ecosystem, paving the way for a more robust, efficient, and frictionless channel partner program.

## FROST PERSPECTIVE

- Comcast Business is focused on winning global enterprise and Fortune 1000 business with strengths in the financial services, healthcare, manufacturing, retail, hospitality, and government verticals.
- While a leader in the small and mid-market segment, the company continues to approach the larger enterprise segments, where its white-glove approach and customer focus should translate well.
- Its integration with Masergy is helpful overall but will bring challenges in the short term as it blends a global company into what was traditionally a domestic provider. These synergies often take one to two years to fully synthesize. Masergy has a solid reputation, offering unmatched SLAs and leadership in customer self-portal technologies, so there should be synergies with this acquisition.

Source: Frost & Sullivan

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**Strategic  
Insights**



# Strategic Insights

1

NSPs are finally delivering on the promise of being platform-as-a-service providers, and behavior analytics will be the next frontier for MSP and NSPs. Now that providers can capture location, frequencies, device types, and numerous other variables from SDN, look for them to expand deeper into customer networks to derive insights from user behavior and traffic flow, which can be increasingly useful in industries such as retail.

2

SD-WAN drives professional services growth. The complexity mixed with reduced cost of transport allows MSPs and NSPs to capture more services growth. Professional services range from field services and device installation to full turn-up and optimization, with the installation then handed over to the client for ongoing management. Co-management creates cooperative partnerships with a client and more application visibility; this creates opportunity in the application performance space via professional services engagements.

3

As network and security converge, enterprises will move away from best-of-breed to single-vendor solutions in which architecture configurations and policy deployment create simplicity versus the complexity of managing and integrating multiple vendors. Both NSPs and MSPs will look for boutique security firms to bolster their security practices, either via partnerships or acquisitions.

Source: Frost & Sullivan



**Next Steps:  
Leveraging the Frost  
Radar™ to Empower  
Key Stakeholders**



# Significance of Being on the Frost Radar™

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Companies plotted on the Frost Radar™ are the leaders in the industry for growth, innovation, or both. They are instrumental in advancing the industry into the future.

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## GROWTH POTENTIAL

Your organization has significant future growth potential, which makes it a Company to Action.

## BEST PRACTICES

Your organization is well positioned to shape Growth Pipeline™ best practices in your industry.

## COMPETITIVE INTENSITY

Your organization is one of the key drivers of competitive intensity in the growth environment.

## CUSTOMER VALUE

Your organization has demonstrated the ability to significantly enhance its customer value proposition.

## PARTNER POTENTIAL

Your organization is top of mind for customers, investors, value chain partners, and future talent as a significant value provider.

Source: Frost & Sullivan

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# Frost Radar™ Analytics



# Frost Radar™: Benchmarking Future Growth Potential

2 Major Indices, 10 Analytical Ingredients, 1 Platform

## VERTICAL AXIS

**Growth Index (GI)** is a measure of a company's growth performance and track record, along with its ability to develop and execute a fully aligned growth strategy and vision; a robust growth pipeline system; and effective market, competitor, and end-user focused sales and marketing strategies.

## GROWTH INDEX ELEMENTS

- **GI1: MARKET SHARE (PREVIOUS 3 YEARS)**  
This is a comparison of a company's market share relative to its competitors in a given market space for the previous 3 years.
- **GI2: REVENUE GROWTH (PREVIOUS 3 YEARS)**  
This is a look at a company's revenue growth rate for the previous 3 years in the market/industry/category that forms the context for the given Frost Radar™.
- **GI3: GROWTH PIPELINE**  
This is an evaluation of the strength and leverage of a company's growth pipeline system to continuously capture, analyze, and prioritize its universe of growth opportunities.
- **GI4: VISION AND STRATEGY**  
This is an assessment of how well a company's growth strategy is aligned with its vision. Are the investments that a company is making in new products and markets consistent with the stated vision?
- **GI5: SALES AND MARKETING**  
This is a measure of the effectiveness of a company's sales and marketing efforts in helping it drive demand and achieve its growth objectives.

# Frost Radar™: Benchmarking Future Growth Potential

2 Major Indices, 10 Analytical Ingredients, 1 Platform

## INNOVATION INDEX ELEMENTS

### HORIZONTAL AXIS

**Innovation Index (II)** is a measure of a company's ability to develop products/services/solutions (with a clear understanding of disruptive Mega Trends) that are globally applicable, are able to evolve and expand to serve multiple markets, and are aligned to customers' changing needs.

- **II1: INNOVATION SCALABILITY**

This determines whether an organization's innovations are globally scalable and applicable in both developing and mature markets, and also in adjacent and non-adjacent industry verticals.

- **II2: RESEARCH AND DEVELOPMENT**

This is a measure of the efficacy of a company's R&D strategy, as determined by the size of its R&D investment and how it feeds the innovation pipeline.

- **II3: PRODUCT PORTFOLIO**

This is a measure of a company's product portfolio, focusing on the relative contribution of new products to its annual revenue.

- **II4: MEGA TRENDS LEVERAGE**

This is an assessment of a company's proactive leverage of evolving, long-term opportunities and new business models, as the foundation of its innovation pipeline. An explanation of Mega Trends can be found [here](#).

- **II5: CUSTOMER ALIGNMENT**

This evaluates the applicability of a company's products/services/solutions to current and potential customers, as well as how its innovation strategy is influenced by evolving customer needs.

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