



Channel Guide to Intent-Based Networking

By Martin Facia

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About the Author

MARTIN FACIA is a former network administrator and architect, and full-time nerd who is fascinated with technology and cutting through the waves of hype that plow through the industry. Facia has worked in the technology industry for more than 25 years, writing, testing and evaluating technology for the enterprise market.



Channel Guide to Intent-Based Networking

“ONE DAY YOU’RE IN, THE NEXT DAY YOU’RE OUT.” WE DON’T OFTEN THINK OF HEIDI KLUM’S PROJECT RUNWAY

tagline in the context of technology, but the world of fashion has one thing in common with silicon, software and networking: a constant, unceasing drive to have the freshest look or the bleeding-edgiest concept.

That fervor has led to plenty of declarations that we’re entering a whole new era in IT. Sometimes we are; more often it’s evolution. Occasionally it’s a shameless bid for attention from a pundit, analyst or technology CEO looking to capitalize on a real — or not — customer need. Still, channel partners need to be trend-aware lest they be perceived as out of touch or lacking in vision.

The trick is not being snookered into the tech equivalent of a fringed poncho.

Now that SDN has settled into [real-world use cases](#), the new hot data center trend is intent-based networking. Simply, it’s the next step in software-defined networking, where we advance beyond automation and orchestration. Intent-based

Effects On Staffing: Up Your Skills, Up Your Value

Will intent-based networking take jobs? The answer is yes — mainly from those who can't understand how automation and, ultimately, intent-based networking can make a veteran administrator's deep skills and institutional knowledge more valuable than banging away at repetitive tasks on the command line.

Automation is not a replacement for these folks. It's freedom to work on what admittedly are the harder, but also more interesting and rewarding problems. The only people in great danger of losing their jobs are those who refuse to grow and change and act as impediments, citing "the way things have always been done." This attitude on its face is out of place in IT, since technology is itself a churning whirlwind of change. Administrators and network architects are not going away; they are going to move on to network problems that require thought, expertise and the human component.

automation is where the requirements of the business — or more accurately, the intent of a high-level business policy — is translated into policy and automation for the network and devices on the network. Think "what," not "how."

Let's talk about some examples of how intent-based networking might work. Today, MSPs or a reseller's CIO and IT manager make SLA agreements with the business regarding specific applications. With intent-based networking you would, in the first future iterations of these systems, instead provide metrics to meet.

Let's take as an example the production ordering system app, or PoSA. The business intent is the PoSA will be up not only 99.995 percent of the time, but it will also be highly responsive, to ensure salespeople do not experience lag while dealing with customers. Early intent-based networks will likely need numbers defining "responsive," such as milliseconds response times or other thresholds to work with. The AI, or artificial intelligence, in the system will use its real-time knowledge of the state of the network to route around problems and even slow other traffic to give the PoSA system priority service to fulfill the business intent.

Later (much later) intent-based networking might even be able to understand human-language input, such as "the production ordering system app must be up and must be fast for the end users during business hours," translating the business intent into not only QoS and rerouting, but dynamic rearchitecting of the virtual plane of the network, but only during work periods.

The level of human intent the underlying AI can translate will only get better as time goes on.

How Do We Get There?

On a technical level, intent-based networking includes intelligence, a form of self-driving we have heard about for years but in practical terms have not experienced at any scale beyond traffic routing. Intent-based networking watches the network, with real-time awareness of the condition of the network, end to end, at all times. When an error occurs, the network corrects it based on a set of business intentions

and desired business outcomes, without intervention. Taken to the logical conclusion, corporate networks would operate with automation and self-determination similar to a self-driving car, and for most networking administrators, with the same mix of heart-pounding fear and wonder as barreling down the freeway at 55 with no hands on the wheel.

Gartner Research Vice President Andrew Lerner defines intent-based networking [in this blog](#): “Intent-based networking is not a product, or a market,” Lerner says. “Instead, it is a piece of networking software that helps to plan, design and implement/operate networks that can improve network availability and agility.”

At this point, intent-based networking is just that — intent. But vendors and standards bodies are paying attention and working to lay the foundation for products and services.

One of the first companies to announce an initiative is current networking market share leader Cisco Systems, which in June announced its [“The Network. Intuitive”](#) campaign, the umbrella marketing moniker for enterprise intent-based networking systems.

Many claim, completely correctly, that intent-based networking is not a Cisco invention. It’s been talked about for some time by standards groups, including the [Open Networking Foundation back in 2015](#). Startups [Apstra](#) and [Veriflow](#) have built their businesses around the concept. Purists may even argue that the notion of translation of intent to policy and action dates to the ’90s or before.

In the end, none of that matters to partners, because it doesn’t matter to your customer. Nobody decides that GM or Toyota is a lesser entity to buy cars from because Henry Ford invented the assembly line. Or was it Ransom Olds? No matter.

Yes, but How Do We Sell It?

Gartner analyst [Andrew Lerner suggests](#) SD-WAN vendors will start adding intent functionality to their products — a logical move given that it’s the next evolutionary step in SDN. Cisco’s purchase of Viptela makes it an obvious first mover. How will Aryaka, AT&T, CenturyLink and Verizon respond? Partners with SD-WAN practices should ask their suppliers for roadmaps.

Business Benefits

Specialist Veriflow [lists some selling points](#), saying intent-based networking ensures that the network supports the digital business, rather than standing in the way. Specifically, it promises to:

- ▶ Improve network availability and agility, which are key concerns as organizations transition to digital business.
- ▶ Save a significant amount of time and some money by reducing management complexity, improving automation and reducing the workload on networking teams.
- ▶ Increase the robustness of the network, improve network security and help maintain regulatory compliance. Intent-based networking helps the network go from fragile to agile. Intent-based networking takes a top-down approach and starts by asking the question “What is the desired business outcome?” and then continuously manages the network in a closed feedback loop.

In technology, being the inventor may bring some first-mover advantage, but the reality is that intent-based networking is nascent. Gartner says enterprises will not install true intent-based networks in any real quantity until 2020. Smaller customers will be later, and the changeover is likely to be gradual. So don't get drawn into pointless arguments about who did what, when. What matters is the ability to answer clients' questions, fulfill business requirements and create end-customer satisfaction.

Today, enterprises are working through network automation, stemming from software-defined initiatives in the data center. [Software-defined access](#), or SDN for the enterprise edge, is coming on strong, despite gloom-and-doom predictions that we'd have to pry their command lines from networking administrators' cold, dead fingers.

Then there's reality versus expectations.

Intent-based networking does not, as of yet, fulfill the magic qualities that Gartner's Lerner defines. Right now, these products deliver networking policy and control, a polished version of automation, and [service-chaining](#). The next stage: deep real-time analytics that can bring us to the promise of real-time state in the network.

Okay, So When?

We see mainstream adoption of intent-based networking happening closer to the 2020 timeframe. Right now, the challenges are in fine-tuning automation and increasing our ability to identify the status of the network and its traffic in real time.

We also need to bridge a disconnect between "business intent" and the translation into actual network policy on an automated basis. Today, it's the administrator translating that intent and creating network policy and architecture. The artificial intelligence and machine learning systems available today are up to the task of enabling intent-based networking, but it will take time to get them trained.

An Explosion of Gobbledygook

So what happens if intent-based networking isn't the next big thing?

It almost doesn't matter because the business arguments for automation and real-time monitoring are clear, today, and make sense to IT and the business. If "intent-based networking" or "IBN" becomes a term used only by Cisco and a few startups, your customers will still be much better off with transformation of their static networking environments. Similarly, if intent-based networking becomes the next everything-label, like "cloud" or "software defined," you are still on firm ground with the customer — if not looking a bit prescient. As long as the customer's business goals are being met in a responsible way that allows them to grow and change, you really can't go wrong.

For now, to get prepared:

Step 1: Educate your own house. Change the mindset.

Take a look around: How many of your salespeople, support folks and implementers have gotten behind the idea that network automation is the future? We're not talking just paying lip service to the idea. What your organization doesn't need is a naysaying

old-timer undermining your discussions with customer CIOs by telling their staffs that nothing will ever replace the command line — or worse yet, whispering that automation and intent will destroy their jobs.

In fact, intent-based networking, and the automation and monitoring that go with it, creates opportunities for people with the right knowledge to shine in non-repetitive tasks that, importantly, can directly boost the company's bottom line and digital business success.

And just selling intent-based networking isn't enough. You need buy-in, and you need to work with your entire team, most senior down to the junior level, to make them understand that just like the SDN opportunity, intent-based networking needs to be understood in the shop before it can be explained to the customer.

Ultimately, your staff needs to think the way intent-based networking flows: Business needs are translated into sound network design and technology that produces the right results quickly and with a minimum of cost and potential for error. That mindset is past due already.

Step 2: Start outreach.

For customers, you need to market intent-based networking as a goal, and a long-term one at that. For those who have had experience with networking automation and service chaining, it's not hard to get them to see the next step. For customers who treat the network as a set-it-and-forget-it appliance, the job is going to be quite a bit more challenging.

As companies realize the need for digitization, including for IoT, they will come to accept that they need more than a static configuration. Add to that the challenges of security, including the necessity for segmentation, and the logic of intent will become clear.

Engage at the management level. Discuss what the network does today and lead business leaders to understand what the network needs to do tomorrow. It's not necessary to sell them completely on intent-based networking right now, and whatever you do, don't start in about northbound interfaces or ACLs. Center the pitch on a growth path that provides the business flexibility for a digital future.

Step 3: Face down fears.

Your staff and customers, both the technical and business persons you deal with, are going to have misgivings about this level of automation. Remind them that getting to intent-based is a journey, and likely a long and incremental one at that. Each step gets a review before moving, testing, approval and sign-off. The bottom-line message is that yes, there are risks to automation — but the risks of never evolving operations are far greater.

Intent Can Wait — for a While

The good news is, the length of the network technology adoption cycle and the early state of network automation affords the luxury of time to take these steps. Use it wisely. Cisco's and others' marketing machines are revved up; it's only a matter of

time before the mainstream print, online and TV ads start flowing. You need a plan to get your team ready to discuss and evaluate intent-based networking offerings and approaches. At the very least, you need to be able to talk about it intelligently and explain your strategy. To do otherwise risks being cut, and there's no Tim Gunn save.

Related Reports



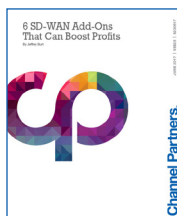
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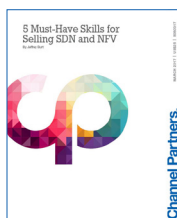
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