

Where's your supply chain workforce headed?

Demystifying your future supply chain workforce with Skills Ontology



The supply chain workforce is about to become one of the biggest and most acute challenges chief supply chain officers have ever faced.

Across our research and client work, we see numerous signs that the typical supply chain skills prevalent in most companies today aren't the ones companies increasingly need to compete and grow in the future. For instance, 82% believe their organization needs to develop more employees with broad-ranging skills, rather than narrow technical competence, to enable them to solve complex, cross-industry problems.¹ Furthermore, only 38% of CSCOs believe their organization's non-IT/non-technical workforce is mostly or completely ready to leverage the technology tools provided to them² and just 44% said they have sufficient specialist talent (e.g., data scientists) to support their ability to understand the future.³

It's almost as if, to use an old expression, CSCOs are expected to change the tires on a moving car: They're working hard to digitally transform their supply chain to be more resilient during uncertain times, relevant to customers and employees, and responsible toward the environment and society while trying to ensure they have the right skills in place to make that transformation successful. It's a difficult proposition, especially when

change is happening so fast and it's not always easy to determine precisely what supply chain skills they need and how and where to get them.

That's why chief supply chain officers must act now to start building, buying, and borrowing the skills they need for tomorrow. And as they do, they should think about the value they can get by taking incremental steps to build new skills—with an eye toward the larger changes they'll need to make for the future. "As they look at digital transformation, many companies today are designing roles that only unicorns can fill," observes Dana Stiffler, a vice president and supply chain talent analyst at Gartner Research.

"Instead, supply chain leaders should understand that there are really meaningful steps forward their companies can take to make a big impact along the way—they don't have to jump directly from A to Z."

- Dana Stiffler, Gartner Research

The urgent need for new supply chain skills

So what supply chain skills do companies need to flourish today and in the future? Three key trends point to the types of supply chain skills companies increasingly need to develop.

01 **First, companies are finding a growing need for greater technology understanding and data literacy.**

As supply chains become more intelligent through the deployment of advanced technologies, companies need individuals who sit at the seams between deep AI/ML expertise and the business, and understand how to use these revolutionary capabilities and other technologies to solve the business's problems. In other words, they're the translators between technology and the business. Similarly, companies also need people who have the skills and inclination to make data-driven decisions and leverage predictive and reactive tools to manage the complex requirements and inevitable opportunities and disruptions modern supply chains face. In other words, it won't be enough for a person to just understand his or her functional area anymore. Everyone in the supply chain workforce needs to have some level of digital proficiency, and the need for "AI coaches" in every discipline will increase.

02 **Second, there's an accelerating move toward end-to-end supply chain thinking and problem-solving.**

While deep specialization in procurement, operations, manufacturing, and logistics will always be important, there's a growing need for more cross-supply chain thinkers—individuals who can solve for important outcomes like greater resiliency, enhanced business responsibility, and significant and sustainable cost reduction. Those big-ticket items aren't easily solved by siloed functional teams executing a series of transactional activities that—fingers crossed—connect together in some way at the end. The answers come not from an inventory specialist, demand planner or warehouse manager working in isolation. Rather, they require creativity and individuals who can see the big picture, understand dependencies and influences, and work across the supply chain to solve problems. And that includes what's outside the four walls of the company—driving strategic ecosystem partnerships to help address bigger issues.

03 **Finally, companies increasingly need elevated, orchestrating supply chain leaders.**

The supply chain has been elevated to the highest levels of the business, meaning leaders need the right business, finance, and supply chain acumen to be credible at the board and C-suite levels. At the same time, as the lines are blurring between the CFO, CSCO, COO, and CSO, CSCOs will be increasingly expected to connect the dots between integrated business planning, integration with customers, on-demand sales and service, talent rotation, and new skills—driving greater collaboration and shifting from "doers" to "orchestrators." It's a complex dual shift that CSCOs need to make for the supply chain to fulfill its promise in the future.

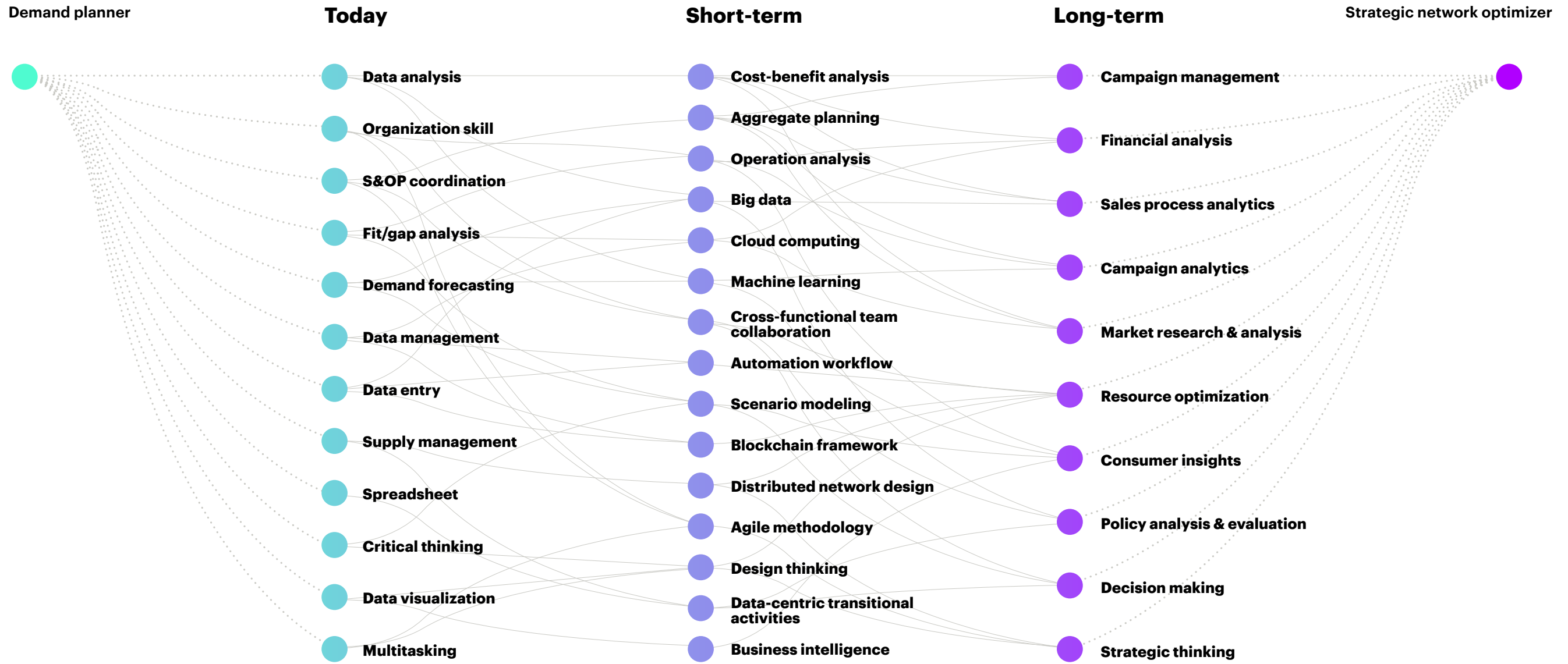
Massive changes on the horizon for traditional roles

These three trends also suggest there are big changes in store for many, if not all, supply chain roles. For instance, as the supply chain becomes increasingly intelligent, traditional supply chain roles will evolve significantly and new ones will emerge. Consider, for example, the Demand Planner, which in the next few years will become a “Network Planner”—a unique role with a special blend of analytical and statistical skills and an enterprise-wide focus. Comprising parts of the financial planner, sales/marketing planner, and supply chain planner roles, the Network Planner will emphasize communication, facilitation, and collaboration to orchestrate the sharing of information, and will build even deeper partnerships with sales, marketing, manufacturing, and executive teams within the organization—all while forging strong connections with data scientists to develop and refine the algorithms to support predictive, data-led decisions. The adoption of advanced planning solutions using AI and ML will accelerate to the point that the system handles most of the planning activities.

The role of the Network Planner will further evolve into a Strategic Network Optimizer, who is responsible for ensuring the system is solving for the right strategic goals for every segment of the market. The Strategic Network Optimizer will need a high degree of AI-based solution knowledge to continually adjust the technology and meet ever-changing business requirements.

This evolution of planning isn’t mere conjecture. It’s based on extensive research Accenture has conducted into what we call Skills Ontology, which demonstrates how current skills associated with a particular role could map to the skills needed as the role evolves over the short and long term (see figure illustrating the evolution of the demand planner role). Skills Ontology uses AI and machine learning to match “proximate” or similar skills from old roles to new roles and, subsequently, chart a pathway to effective skilling across the supply chain.

Demand planner role pathway



Early adopters are using Skills Ontology not only to map the future skills they need, but also to understand who in their current organization has the best matching profile to be trained up in these new areas. One of our clients has piloted this in the procurement department and is now deploying this way of thinking to other areas of the supply chain. Others are refining their talent strategy to determine which skills can be built internally, which should be bought through new talent-sourcing methods, and which they might be able to borrow through adaptive talent pools. Such pioneers are getting a big head start on their slower-moving competitors by, for instance, creating cross-functional teams and assessing their employees' digital fluency to address short-term needs while taking a hard look at their talent strategy and learning system to ensure they deliver what's required over the longer term.



Workstreams from Skills Ontology research can help CSCOs address the skills challenge

Through our Skills Ontology research, we've been able to identify how supply chain roles will evolve; the skills new roles will require; and how current skills relate to the new ones. Using this knowledge, a company can then define future-focused work and skills that enable optimal human value with machine augmentation; develop and align role-based learning, taking into account different levels of skills and willingness to learn; and create on-demand digital learning experiences to accelerate the speed and scale of effective training.

Our research consisted of three workstreams. Through this effort, we gained a number of surprising insights about supply chain skills and roles.

Skills Ontology Research Workstreams

- Collect talent demand data (job postings), supply data (employee profiles), and secondary data (recognized benchmarks such as International Labor Organization and International Standard Classification of Occupations, as well as reports from multiple professional summits) from the past several years.
- Apply machine learning algorithms to the data collected to create skill profiles of current and future roles.
- Use Skills Ontology to graph the interrelationship of current roles and skills with future ones and score skill proximities to identify skill needs and pathways.

Insights

1

Your people may already have the skills they need, or similar ones to build on, but they just don't know it.

When we broke down and analyzed the skill sets of select roles to understand where skills overlap across roles and where there are gaps, we found something very interesting: Not only do roles typically have hidden skills that people don't readily identify, but also in some cases, a person would only need to pick up a few additional skills to switch disciplines entirely. In fact, we found that people consistently underestimated the number and type of skills they used in a particular role. For example, when people self-report on their skills, they tend to have a very narrow frame of reference, typically identifying, on average, 11 skills for a particular role. With AI, that number more than triples, to 34. In other words, people are selling themselves short and their companies are overlooking important skills that could quickly translate to new roles.

2

There's a far bigger overlap in core skills between certain roles than is apparent to the naked eye.

Just as people themselves have limited visibility into the number of skills they use in a particular role, it's not easy to see that certain roles, while on the surface are very different, actually require many of the same skills. For example, skills-matching data in a pilot application of Skills Ontology for a World Economic Forum initiative⁴ showed that an IT manager can relatively easily become a product manager because 50% of the skills required to do each job overlap. Similarly, the data showed a 63% skills match between the roles of inventory replenishment manager and e-commerce manager. These relationships aren't readily apparent if you just look at the roles at a higher level, and most workers would never have even considered the relationships were possible.

3

Even reskilling for completely different roles can be done far more quickly and effectively than is possible through traditional training.

In the World Economic Forum pilot, Accenture used skill matching between several target roles to identify the key skills needed, then built reskilling pathways with learning content and experience design components to prepare people for readiness in new roles. The goal: show that these pathways are viable and, as important, that it's fast, practical, and cost-efficient for companies to support them. The result: On average, we found people could be reskilled for new roles in completely different functions in just six months' time. That's because, by being able to identify all the skills a person has and doesn't have, and exactly what they need to move to a new role, a company can quickly create more tailored interventions to close the gap.

Insights

4

All supply chain roles will require digital fluency.

Although many supply chain roles today involve greater use of technology than they did even a few years ago, the leap in digital fluency required in the next several years will be huge—and will spare no one. Everyone from the line operator to the C-suite will need to be proficient in the basics of emerging technology. All roles will need to be comfortable with and adept at using intelligent machines that help them make decisions or, in some cases, make and execute decisions on their own. And in many instances, roles will make the transition into being technology-centric such as an AI/ML coach who works closely with the algorithms to continually refine and enhance their ability to solve increasingly complex supply chain problems.

5

Technology, automation, and AI aren't reducing the need for people but, rather, are creating new and exciting career paths.

Many people think machines are putting people out of work, but technology's impact on jobs is dramatically overblown. True, some jobs are natural candidates for automation, and always will be. But the loss of those jobs is far outweighed by the new ones these technologies create. The World Economic Forum, for instance, found that deep learning technologies will eliminate 75 million jobs over the next several years while creating 133 million new roles—a net gain of 58 million new jobs.⁵ CSCOs certainly recognize this: 86% said it's important for their organization to build new skills among their workforce, as more traditional forms of work become obsolete or are replaced by technology.⁶

The path forward: Practical steps to build skills for the future

Given the accelerating digital transformation of the supply chain, as well as the new mandate for the supply chain to become more resilient, relevant, and responsible, CSCOs need to begin addressing their skills challenge today. To that end, there are a number of short-term steps they can take that require minimal investment but also can deliver substantial benefits quite quickly. There also are some longer-range actions with a higher price tag CSCOs will have to take to position the supply chain for success in the future.



Some easily executed short-term steps include the following:

Create cross-functional working teams. When we look at the supply chain as a system—not in a technology sense, but in an interconnected way—it means companies can no longer have siloed functional teams handling a series of transactional elements that they hope connect together at the end. Instead, CSCOs need to build teams that can work collectively. When they do this, the teams can solve for bigger outcomes like resiliency, sustainability, and cost management. Cross-functional teams, when set up well with the right authority, will increase the collective understanding of the system, more proactively solve problems, and minimize the “data latency” challenge that plagues siloed decision-making.

Assess digital fluency. Companies should evaluate their workforce to identify how to increase digital fluency across all people in their organization. For example, Accenture has developed a program centered around a Technology Quotient, which helps employees understand the major technologies that impact their current and future work so employees are better prepared to use them effectively. Digital fluency allows people to build on technological foundations and not just work alongside them, but also unleash newfound creativity and ways of working. This helps explain why, according to Accenture research,⁷ digitally fluent organizations are about three times more likely to have experienced high revenue growth in the past three years and are overwhelmingly seen as a great place to work by employees and as leaders in innovation.

Broaden employees’ horizons. A system of rotating assignments among the various supply chain departments is an effective way to help everyone see the bigger picture. For example, demand planners’ eyes will really be opened after a three-month stint in logistics, manufacturing, and procurement. This deeper knowledge of connections and interdependencies will not only improve demand planners’ performance in their current roles, but also will help prepare them for the move toward a future network planner role.

Share the knowledge. New supply chain workforce skills are vital to the growth and prosperity of the larger enterprise, so it’s critical for CSCOs to spend sufficient time with the board and management team to discuss what they need to get those skills. Plus, sales and marketing, IT, and finance are experiencing similar shifts in skills. Setting up a shared approach, and role-modelling some of the interventions at the very top of the company, will send clear messages to the organization and will start the development of the “continuous learning” culture at the board and executive levels.

Talk to HR. Of course, the skills issue is a big concern for HR. CSCOs should collaborate with HR in two key areas: preparing the HR infrastructure (e.g., defining anticipated future roles, understanding and mapping proximate roles, refreshing job descriptions, and reviewing learning curricula); and starting to engage employees about the need to continuously refresh their skills (whether they’re a young dispatcher or a seasoned operator).

Longer-range actions include:

Assess the talent strategy. It's critical for CSCOs to identify how to realize the supply chain's transformation—which skills should be built, bought, and borrowed? This talent strategy, combined with strategic workforce planning to quantify opportunity areas, will help companies make conscious decisions about where recruiting is required to fast-track the filling of some of the skills gaps and where contractors should be leveraged to backfill people who need time to invest in their learning journey.

Identify future learning needs. Ongoing learning will be vital to continued success. Companies need to create a fit-for-purpose learning system that helps employees in targeted ways find both virtual classroom courses and job-rotation assignments to develop the skills they need to be successful in one of the emerging supply chain roles.

Engage with and educate unions. It's critical for companies and unions to build a deep, shared understanding of the job changes on the horizon and the new opportunities digitization creates over the long term. Discussing upskilling options and the implications for “learning on the job,” communicating early and often, and co-creating a realistic plan to help the workforce make the transition are three key ways to keep unions informed and engaged—and avoid surprises.

Start preparing for the future supply chain workforce today

There's no doubt that in the coming years, intelligent technologies will continue to make inroads across enterprises, automating more and more activities and helping people make faster, better decisions. And as they become more pervasive, these technologies will gradually reshape various roles in the supply chain and, in turn, drive the need for new skills in the supply chain workforce—skills that are vital to the success of supply chain transformations.

In fact, people have never been more important to a company's success. This may sound counter-intuitive when we're talking about machines doing more and more work across the supply chain, but it's true. People are at the heart of transformation. Without them—fully engaged, with the skills they need to excel—no transformation has a chance to succeed.

The changes in the skills supply chain workers need, in many cases, will be quite significant, and employees will need considerable help to successfully make the transition. That help needs to start now. Getting started today is important as the future of technology is already here. And as organizations embrace more, and more advanced technology, they must acknowledge that their workforce is what will set them apart from the competition. **Companies that make it a priority to prepare their employees for the future—with the help of such tools as Skills Ontology—will emerge as leaders in what will surely be a disruptive next several years for the supply chain.**

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