Empowered by analytics

Procurement in 2025

EY

Building a better working world

Contents

Preface

Along with risk, sustainability and transparency, EY's 2015 paper, *Infinite possibilities: Procurement in 2025*, identified analytics as one of the most disruptive forces that procurement functions will face over the next 10 years. This paper explores how big data and analytics will change the procurement function over the coming decade.

The rapid development of digital technologies in recent years has completely changed the business world. And over the next decade, digital will continue to evolve. In part, its future is inherently unpredictable, as technology continues to develop very swiftly.

So, it may well be the case that in the next 10 years, procurement teams will be dealing with an entirely new set of digital opportunities. Nevertheless, it is certain that digital technologies, and the advanced analytics that they enable, in whatever form, will continue to be a disruptive force for procurement.

As analytics improves, larger quantities of data will be collected – in increasing detail and often in real time. The chance to interpret this data will be invaluable for procurement, enabling smarter and more accurate decisions on spending, managing suppliers and designing better strategies.
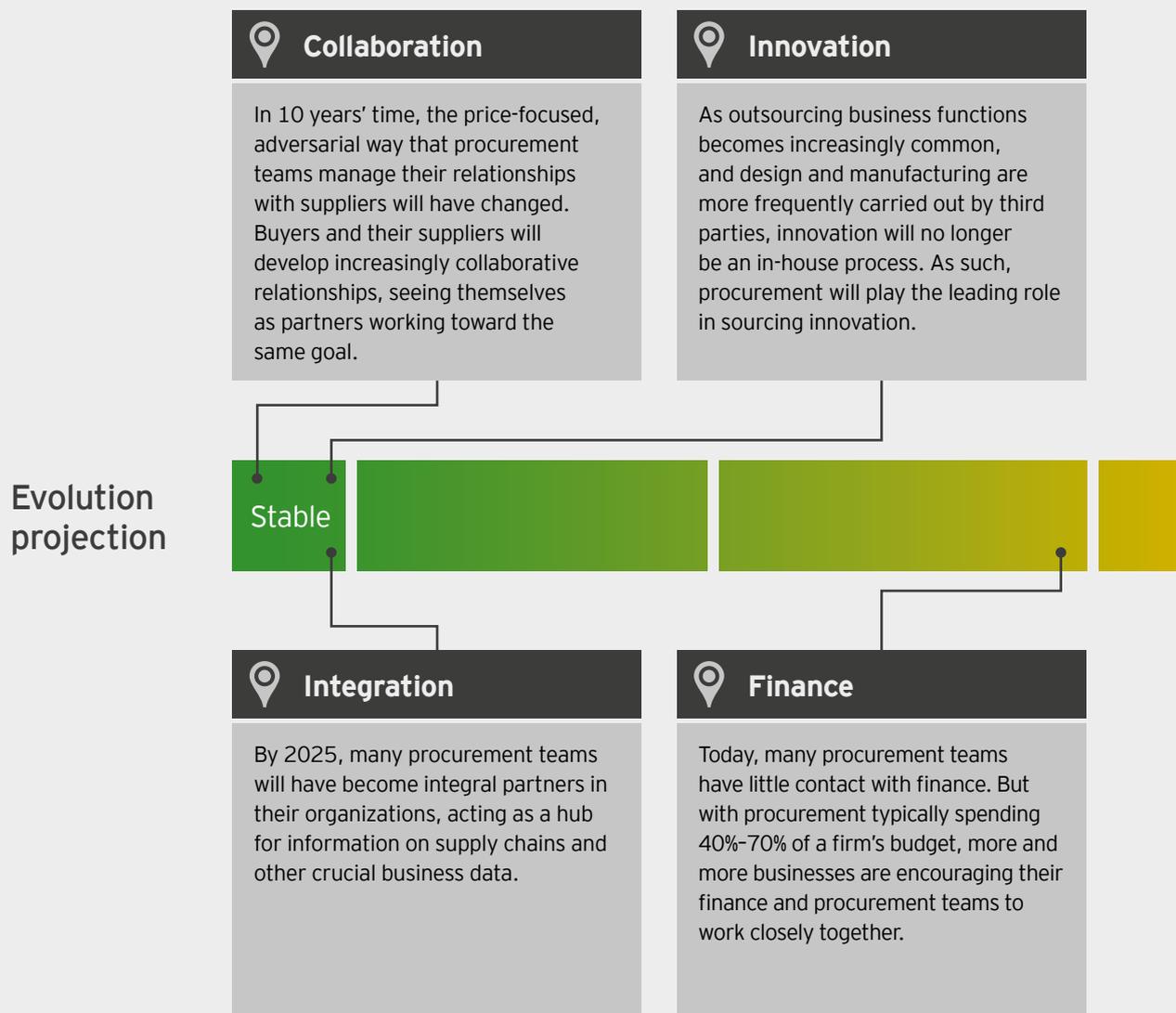
By 2025, we expect procurement decision-making to be significantly influenced by high-quality data analytics. This might sound very technical, but in essence it means that leaders will be able to do an even better job on their most fundamental tasks: meeting demand, cutting costs and managing risks.

And as analytics becomes more powerful, procurement will become increasingly central to business decision-making. We also expect that the most successful companies will begin to implement analytics technology across other functions too. As such, the skills of procurement leaders will be in demand throughout firms.

This means that the procurement leaders of the near future will need a new set of skills. So teams should think about what skills will be required for tomorrow as they recruit today. As well as being at ease with the complexity of data and analytics, future procurement professionals will have to be comfortable taking a more active role in overall business strategy and leadership. Indeed, we expect to see C-suite positions opening up to people with a background in procurement.

Advanced data analytics offers major opportunities to procurement teams and businesses as a whole. We hope that this paper helps you to prepare for the changes and challenges of the next 10 years.

EY's 2015 paper, *Infinite possibilities: Procurement in 2025,* outlined 10 change dimensions for procurement in the next decade.

Collaboration

In 10 years' time, the price-focused, adversarial way that procurement teams manage their relationships with suppliers will have changed. Buyers and their suppliers will develop increasingly collaborative relationships, seeing themselves as partners working toward the same goal.

Innovation

As outsourcing business functions becomes increasingly common, and design and manufacturing are more frequently carried out by third parties, innovation will no longer be an in-house process. As such, procurement will play the leading role in sourcing innovation.

Evolution projection

Stable

Integration

By 2025, many procurement teams will have become integral partners in their organizations, acting as a hub for information on supply chains and other crucial business data.

Finance

Today, many procurement teams have little contact with finance. But with procurement typically spending 40%–70% of a firm's budget, more and more businesses are encouraging their finance and procurement teams to work closely together.

Globalization

Procurement functions need to be ready for a new distribution of power in the global economy of 2025. Chinese consumers will be a major purchasing force. Western Africa will emerge as a manufacturing hub. And Latin America will wield greater economic power.

Sustainability

A generation raised with high ethical standards is approaching its economic majority. As a result, today's linear economic model of resource exploitation, consumption and waste will be outmoded. It will be replaced by a "circular economy" of continuous use and reuse.

Risk

Over the next decade, risk management in procurement will change substantially. Today's qualitative approaches, focused on major potential disruptions, will give way to quantitative approaches focused on monitoring day-to-day risks.

Disruptive

People

As procurement changes over the next 10 years, the people working in the function will also have to change. It will need people from a wide range of backgrounds, who are able to deal with a new mindset and even a fundamentally different concept of cost.

Transparency

As social media becomes more powerful, and concerns about both individual and corporate privacy become a thing of the past, the procurement function must be prepared to operate with perhaps complete transparency, and the chief procurement officer (CPO) will assume a very public role.

Analytics

Infinite possibilities identified analytics as perhaps the most disruptive force for procurement. This paper explores the future of analytics in detail.

1 Availability and technology

In the coming years, advanced data analytics will give procurement teams more insight and more power than ever before, as advanced analytics tools – chiefly based on applications of social media, cloud, big data and mobile technologies – fundamentally change the function.

Evolution projection:

Stable   Disruptive

The future of analytics

Over the next decade, digital technology will improve the quality and utility of analytics for procurement teams. For a start, the management of more and more procurement functions will be done from cloud-based applications. This will include spend analysis, e-procurement, contract management, and supplier management. In addition, broadly speaking, as technology improves, it will allow analytics to get closer to "real-time" analysis. In the past, spend analytics has only been able to work with historical data and, as such, decisions are based on out-of-date information. Some companies are already offering real-time analysis – and this will become more common over the next 10 years.

Artificial intelligence

The development of more sophisticated artificial intelligence (AI) can take analytics beyond even real-time operation. AI can carry out "predictive" analytics, which means that automated decisions are made based on vast amounts of data from past experience. Although the technology itself is certainly not cheap, it's also true that, currently, the experts employed to make sense of analytics data are also a substantial cost to businesses.

Clearly, a major trend for procurement is the movement toward automated processes and virtual tools. The rapid evolution of the internet of things (IoT) – the connection of machines and other objects to the internet – will exacerbate this. The IoT has the potential to be useful to procurement in a variety of ways. For a start, it will make it easier for people to gather real-time feedback from customers. This ability to collect live, as-it-happens data

> "A major trend for procurement is the movement toward automated processes and virtual tools – and the rapid evolution of the internet of things will exacerbate this."

from objects also means that procurement teams will be able to manage their contracts in real time; for instance, IoT-connected devices in warehouses will keep track of a very high volume of deliveries. The individual performance of suppliers can then be tracked with great accuracy. If particular suppliers are consistently late or inaccurate with deliveries, then changes to contracts can be made very swiftly, even automatically.

Payment will also become much more automated in the near future. Firms should expect to see the automation of the complete payment cycle, where a system automatically processes e-invoices from various suppliers and compensates them by depositing money (real or virtual) – completely without the need for human interaction.

Virtual payment options, such as virtual cards, mean that suppliers can expect quicker payments from customers. Early cash receipts mean an improvement in working capital for suppliers. Furthermore, on-time payments can improve relationships between buyers and suppliers, which in turn may be beneficial for the purchasers' businesses.

Core technologies

Social media, the cloud, big data and mobile are the four technologies that will underpin the analytics revolution in procurement: the increasing sophistication of these technologies will reduce costs, speed up access to information, increase flexibility, unleash innovation, provide more accurate intelligence, and enable procurement platform solutions.

▸ **Social media** is a hugely disruptive and unpredictable force. It allows procurement teams to enhance their communications with suppliers, regulators, interest groups and others. In turn, this presents opportunities to cut costs, foster innovation, mitigate risks and enable responsible procurement practices. But the inherently spontaneous and unregulated nature of social media – which is precisely its strength – also increases reputational risks for businesses.

▸ **The cloud** represents real opportunity for procurement. Primarily, it allows procurement teams to instantly access digital procurement tools that have hitherto been prohibitively expensive at a much lower cost. More broadly, the cloud promotes collaboration between procurement teams and their suppliers, and encourages transparency in purchasing. It allows teams to integrate applications, platforms and social media instantaneously.

▸ **Big data** means that, today, every business has access to more information than ever before. But without analytics capabilities to interpret the data, it is meaningless. Companies need to find analytics tools that deliver useful procurement intelligence, enable timely decisions and facilitate full integration with their e-procurement platforms for maximum efficiency.

▸ **Mobile technology** connects people across many platforms – wherever they are in the world. This enables flexible working and means that communication is more effective and efficient than ever before.

Digital tools for procurement teams

These core technologies will give procurement teams access to a vast array of powerful new digital tools. The following is just a small selection:

▸ **Virtual company malls** are cloud-based shopping centers that allow internal customers to choose goods and services. Their selections will be guided by a company's purchasing policies, preferred suppliers and contracts.

▸ **Virtual payment cards** function in a similar way to debit or credit cards; the difference lies in security and control over transactions. Virtual cards provide an option to specify an upper limit for every transaction. With certain virtual card accounts, buyers can specify precisely the amount for each purchase, and hence, gain complete control over transactions.

▸ **Supply analytics dashboards** allow procurement and other users to interpret data-driven analytics in order to solve specific procurement problems.

▸ **Virtual supplier rooms** mean that company representatives can interact and collaborate with strategic suppliers.

▸ **Virtual category rooms** allow category managers to keep track of in-process projects.

▸ **Supplier networks** are broad platforms that enable a company to connect with its supply market, integrating the tools described above.

2 Decision-making

As analytics gets more dynamic, procurement teams will have the data they need to make better decisions than ever before. This will mean that procurement finds itself becoming increasingly involved in the development, rather than merely the execution, of business strategy.

Evolution projection:

Stable ———————————————————— Disruptive

Powered by data

Procurement teams make some of the most important decisions in business – and good decisions require good information. Analytics can be the source of this information.

Analytics can help teams to get to grips with spending by processing a high number of very large data sets, sources and variables. Meanwhile, managing suppliers is made much easier through detailed analytics, which can track non-conformance reports, point-of-sale data, customer complaints, deliveries and more, and allow teams to track best and worst performers. Furthermore, access to the cutting-edge technology of predictive analytics and data science can help procurement teams to design better strategies as they harness and utilize a more comprehensive understanding of market trends, demand patterns and resource availability.

The crucial point is that, in the near future, procurement decision-making will be transformed and enhanced by data. Effective analytics will revolutionize how leaders manage their supply chains. Ultimately, good analytics will enable procurement leaders to be even better at their jobs: planning purchase timing and inventories to meet manufacturing and/or consumer demand schedules, identifying cost savings, and predicting future risks. And this will also mean that procurement leaders become indispensable for strategic planning.

Optimizing today

The future of procurement depends on analytics. And in order to capitalize on the technology that the future has to offer – and to mitigate the risks of an unpredictable world – businesses need to make sure that their procurement teams are making the most of

analytics today. At present, only 28% of businesses have some kind of big data initiative in place. And only 15% of firms have a database with a capacity of more than a petabyte (1 million gigabytes).[1] Furthermore, it is IT leaders who are leading big data initiatives at around half of the companies that have them in place. Our experience suggests that it is preferable to have a line-of-business leader in charge of data or analytics projects. And it is also worth noting that those businesses that have strong competencies in master data have a better understanding of the importance of data and analytics to their futures, and are more likely to be well placed to make the most of this in the future.

How can analytics help procurement choose the best suppliers?	
Supplier analysis	▸ Making better decisions on suppliers for strategic product categories ▸ Assessing new suppliers for existing product categories ▸ Predicting supplier-attrition risk ▸ Providing insight on fraud-detection frameworks and predictions among suppliers
Category analysis	▸ Understanding suppliers' raw-materials requirements ▸ Facilitating what-if scenario analysis – e.g., what are the potential costs of changing suppliers?
Contract analysis	▸ Optimizing supplier compliance – e.g., cost, lead time, quantity ▸ Improving contract management – i.e., optimization of contract duration for single-source versus multi-source contracts
Payment analysis	▸ Optimizing supplier payments and credit periods
Other scenarios	▸ Carrying out sensitivity analyses – i.e., supplying cost required toward incremental increase in customer base and market serviceability ▸ Optimizing product-specific supplier networks based on environmental factors – i.e., market demand, production planning, raw-material demand

"In the near future, procurement decision-making will be transformed and enhanced by data. Effective analytics will revolutionize how businesses manage their supply chains."

A financial focus

Procurement functions of the future will get closer and closer to the strategic leadership of a business. As such, procurement teams can expect to have a role to play in financial thinking and analysis. Currently, the function is already involved in the analysis of various macroeconomic indicators, including capital and currency markets. A number of leading-edge procurement teams are applying this knowledge to help them understand how third parties impact their businesses, and in the future we expect this to become much more common.

In addition, we expect to see procurement teams taking responsibility for the development of credible financial business cases and what-if decision-making frameworks that are based on financial factors, such as capital, compound annual growth rates and shareholder value metrics. Finally, it's important to note that without a robust data set – sourced from integrated procurement and other technologies – none of this enhanced capability is feasible.

1. Lora Cecere, "Welcome in the Big Data Opportunity," *Supply Chain Shaman website*, 9 July 2013, supplychainshaman.com/uncategorized/welcome-in-the-big-data-opportunity, accessed 18 April 2016.

3 Integration

Analytics will give firms unprecedented access to valuable data about both their suppliers' businesses and their customers' priorities. Future teams will begin to integrate the supply chains of both their suppliers and customers.

Evolution projection:

Stable ← → Disruptive

Advanced analytics gives businesses insight up and down their supply chains: that is, enhanced understanding of both their suppliers and their customers. This allows a company to make better decisions for both suppliers and customers, and to understand how making connections between the two groups can bring both real-time and long-term business benefits.

Firms that have successfully integrated analytics into their operations can optimize their inventories, customize buying options for their customers, and support innovation in their supply chains. And the procurement team, which will take the lead on providing these analytics, will be the natural hub for a business that relies on analytics insights in this way.

Supplying information

Analytics can connect all of the supplier data for any given business. Our experience suggests that Supplier Information Management systems (which provide businesses with detailed data about their suppliers) will grow very swiftly in the immediate future. We expect to see more and more businesses incorporating analytics into supplier management. As they do this, firms must focus on getting the process right, taking into account current and possible future trends.

> **"In the future, advanced data analysis will allow firms to understand their customers in much more depth, and then to align their supplier decisions with customers' priorities."**

Customer data

In the past, a firm's customers and its suppliers have typically been fairly distant from one another. However, with increasing transparency and public scrutiny on all aspects of business, a company must think carefully when selecting suppliers about how this will impact its core brand identity – and how its customers will respond to this. For instance, high-profile firms often come under pressure for enabling or turning a blind eye to unethical practices in their supply chains.

In the future, advanced data analysis will allow firms to understand their customers in much more depth, and then to align their supplier decisions with customers' priorities.

Cross-functional analytics

Making the most of the insights that analytics can provide into both suppliers and customers – and into the many other facets of business where it can be useful – requires analytics to be used across all business functions. Indeed, despite the fact that analytics has been around for some time now, few firms feel satisfied by the return on their investment (ROI) in analytics. Our experience suggests that those companies that are most satisfied with their ROI tend to be those that have invested in using analytics technology in every part of their organizations.

To integrate cross-functional analytics successfully requires a firm's IT team to work in close collaboration with line-of-business leaders, who are able to provide a broadly spread, end-to-end analytics presence. Our experience also suggests that the number of firms investing heavily in enterprise-wide analytics is also increasing – and will continue to do so up to and beyond 2025.

Integrated, not serving

As increasing numbers of business functions start to make use of analytics, procurement teams, with their early-adopter experience of analytics, will become more and more prominent. And this is only one way in which we expect procurement to become more important.

It used to be the case that the C-suite expected procurement to simply identify high quality and competitively priced suppliers. But as the function becomes more powerful, thanks in part to data and analytics, more CEOs will turn to procurement to assume a leading, strategic role. This is because procurement analytics has the potential to support many different business functions – from helping R&D departments confirm that suppliers test new items, to assisting engineering teams in qualifying new vendors. And visibility into supply markets helps firms to forecast margin and prioritize new product or innovation decisions.

Indeed, several business models built around procurement have met with great success. For instance, Amazon and Costco changed the face of retail by perfecting the art of managing a complex network of suppliers. Both firms realized that procurement could shape their strategies and allowed their CPOs to lead initiatives for change. Elsewhere, the Ford procurement team's focus on collaborating with its suppliers on innovation ultimately led to significant savings compared with the traditional alternative of negotiating for lower prices on new products from suppliers.

The potential for procurement and supply chain management to lead to substantial business change is not limited to particular sectors: all CEOs must engage with procurement leaders in order to approach business strategy creatively. Effective data and analytics strategies help procurement teams to fulfill their potential, moving decisively from "serving" a business to being a truly integrated part of its management and long-term strategy.

4 Risk

Data analytics will give procurement teams a much more thorough understanding of supply chain risks in the future. But this means that future procurement professionals need to be comfortable working with quantitative risk management tools.

Evolution projection:

Stable ──────────────────────────────────── Disruptive

As we've seen, advanced analytics will enable procurement teams to bring significant opportunity to their businesses over the next decade. But they will also be able to take the lead in protecting against risk. By 2025, advanced data analytics will allow procurement functions to assess risks with much more accuracy, including risks arising from business continuity, outsourced business processes, regulatory compliance and cyber threats.

Facing supplier risk

Over the next decade, firms will face five major sources of risk in their supply chains:

1. Execution
Supplier failure can mean that a buyer has to stop operations because they don't receive the necessary tools on services on time and in the right location. There can also be risks if suppliers fail to meet safety and environmental regulations in relevant jurisdictions.

2. Commercial
Failing to keep track of whether or not suppliers comply with contractual terms and bill appropriately is also a source of risk.

3. Continuity
Suppliers' financial stability is an obvious source of risk, as are unavoidable natural disasters.

4. Competition
There is also a risk that some suppliers could steal intellectual property and/or have a conflict of interest.

5. Compliance
It is also crucial to know that suppliers comply with necessary legal and regulatory requirements, such as labor laws, tax laws, anti-corruption legislation, and domestic government requirements.

> "By 2025, advanced data analytics will allow procurement functions to assess risks with much more accuracy, including risks arising from business continuity, outsourced business processes, regulatory compliance and cyber threats."

- Supplier processes
- Political stability, natural disasters and other risk factors in suppliers' countries
- Information system failure or other compromises at suppliers' facilities

These capabilities will allow organizations to have a vastly improved understanding of quantitative risks, such as: the total cost of risks at the supply chain, category and supplier levels; total risk-mitigation investment required across the supply chain; and the right prices for risk transfers to suppliers, customers or others. Keeping track of third-party risk is also a very high priority for procurement teams — and will continue to be in the future. For instance, the risk of a cybersecurity breach at a supplier is something that can be difficult for a buyer to manage; analytics can help to keep track of and manage such risks.

Analytics provides the tools to tackle these and other risks. Advanced analytics techniques give procurement teams greatly enhanced predictive power, making risk modeling much more reliable. In addition, as analytics improves, procurement will be able to monitor an increasing number of risk developments in real time.

Procurement teams that want to thrive in this new environment will need to pay close attention to recruiting the right people — they will need specialists who are able to work with quantitative risk tools and techniques. This will be as important — and as significant a change — as the need for supply chain professionals to learn about combinational mathematics for network optimization 30 years ago. And in large corporations, it is likely that procurement functions will have entirely new teams of people dedicated to quantitative risk management.

This enhanced insight into the past, present and future will strengthen procurement's ability to make evidence-based decisions, as well as providing substantial savings in risk management.[2] EY's Total Supplier Reliability program is designed to help clients anticipate and deal with avoidable risk, while mitigating the impact of unavoidable risk.[3]

Predictive analytics also help buyers to develop more complex relationships with suppliers, which in turn reduce risk. For instance, predictive analytics facilitates the analysis of a large volume of data, helping buyers to identify the best suppliers. Firms can then target these suppliers with favorable contracts; the buyer can even identify whether or not they are a preferred customer for their chosen suppliers and make adjustments accordingly. This level of insight and visibility into the supply chain helps to control risk.

Managing everyday risk

There are also more immediately tangible ways in which analytics can help procurement teams to control day-to-day risk in their supply chains. Analytics can track:

- Early and late deliveries
- Deliveries to the wrong destination
- Deliveries of the wrong product or in the wrong quantity

> "Managing risk is now a top priority for procurement executives, along with ongoing cost reduction. However, the science of risk management is still evolving, as firms learn how to shift their mindsets from maintaining compliance, to achieving competitive advantage."
>
> **Niul Burton,** Procurement Lead, Americas, EY Advisory Services

---

2. Arnold Veldhoen and Stéphan De Prins, *Applying Big Data to Risk Management: Transforming Risk Management Practices within the Financial Services Industry*, Avantage Reply, December 2014, p. 3.

3. For more on EY's Total Supplier Reliability program, see *The evolving world of supplier risk*, EY, 2012.

5 Talent

As the procurement function changes, it will need to recruit people with new skills. Apart from being comfortable with data, future procurement professionals will need to be prepared to lead – rather than simply serve – their businesses.

Evolution projection:

Stable — Disruptive
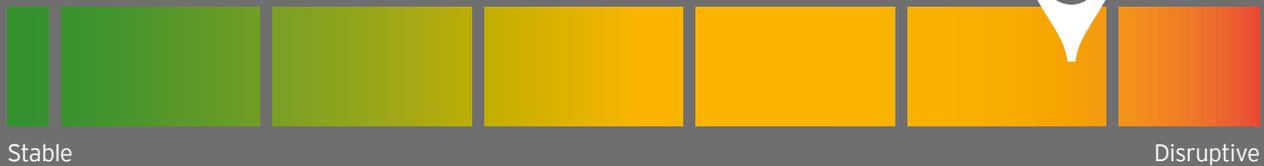
Even if procurement comes to lean on analytics with increasing weight, any business function is only as good as its people – and particularly its leaders. But the new generation of procurement leaders will need new skills. And since the leaders of tomorrow are the recruits of today, procurement teams need to think carefully about the future as they make recruitment decisions.

A recent e-Sourcing Society survey identified the biggest talent gaps in procurement recruitment as:

▸ **Data analytics skills** (according to 50% of respondents)

▸ **Category expertise** (35%)

▸ **Innovation and collaboration skills** (35%)

▸ **Negotiation skills** (15%)[4]

It's no surprise that the highest number of respondents identified data analytics skills as the most important talent gap for recruitment today, as this will be such a fundamental part of future jobs. Future procurement leaders need to be comfortable looking at complex categories, information on suppliers, and third-party data on supply chains, suppliers and markets.

Beyond the technical issues, more traditional skills in category expertise and negotiation will still be essential. The ability to collaborate and build lasting relationships with innovators is also central.

---

4. Kelly Deacon, "The Future of Procurement Lies in its People," e-Sourcing Society, Intesource – a PROACTIS company, 11 June 2015, e-sourcing-blog.intesource.com/the-future-of-procurement-lies-in-its-people, accessed 4 April 2016.

Plugging the gap

As procurement teams try to fill this skills gap, they will have to look for people from a wider range of educational backgrounds. Procurement already tends to employ people form a variety of backgrounds, but, in the future, we expect statisticians, physicists, social scientists and financial risk specialists, to name but a few, to join the ranks. As such, we see procurement becoming one of the most intellectually diverse functions in business – something that brings huge advantages, as long as the management challenges are adequately met.

It's also worth bearing in mind that the working world of the future will be much more global, so teams from all functions will be made up of people from – and will need to be mindful of – a wide range of different cultures.

Finally, the procurement professionals of the future will be from a generation that is uncompromising on issues of sustainability and ethical practice. They will operate in an economy that is increasingly based on reuse, rather than waste. As far as procurement is concerned, new economic mindsets will be matched by new thinking when it comes to purchasing. Already, the best buying teams are becoming more subtle in the way that they think about cost, and moving away from an absolute focus on not leaving any "money on the table."[5]

From support to leadership

Leaders will certainly need different skills to run procurement teams in 2025. But a more fundamental shift in mindsets will also be required: whereas today, in many firms, procurement takes its direction from the C-suite, in the future, procurement can expect to take a more prominent leadership role itself. The best procurement leaders will be expected to be able to turn the vast amounts of information at their disposal into ideas that can help drive business strategies.

Therefore, those at the top of future procurement teams need to be ready to think of themselves as business, rather than simply function, leaders. As such, we expect to see new C-suite positions – such as chief data, analytics or technology officers – open up for people from supply chain and analytics backgrounds.
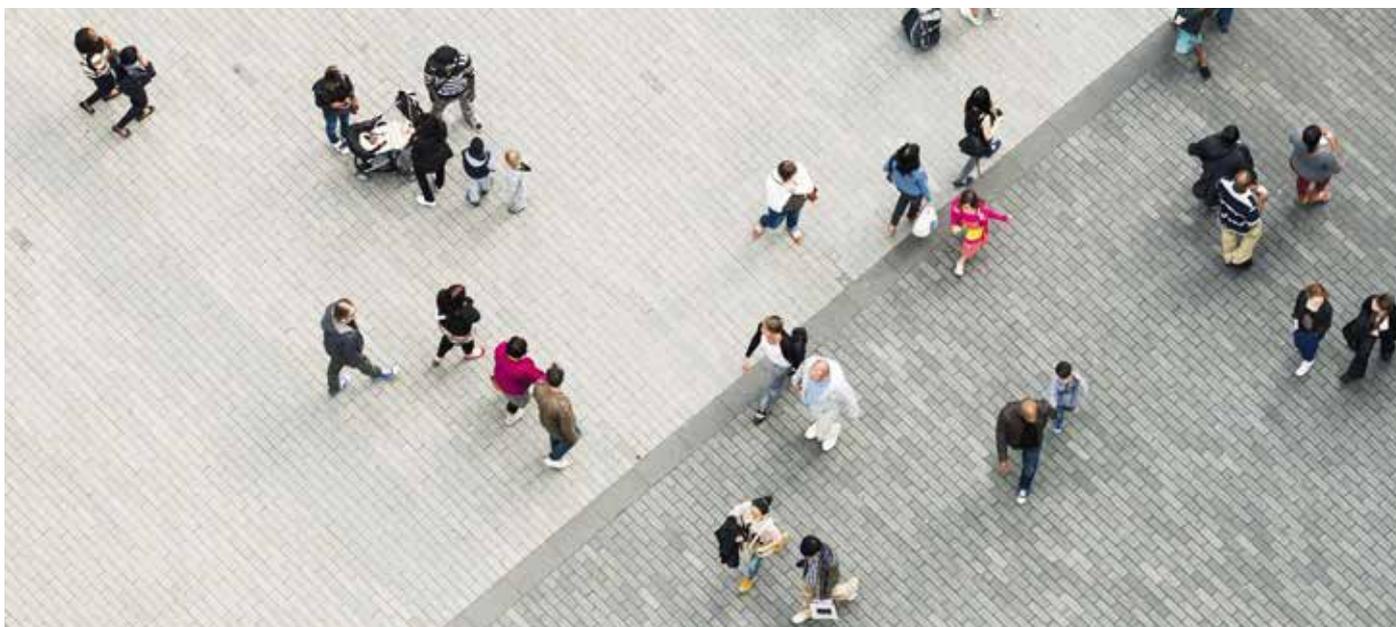
Jeff Piluso
Executive Director and Americas
Procurement Analytics Leader
EY Advisory Services, PI –
Supply Chain & Operations
jeff.piluso@ey.com

Matthias Leimer
Senior Manager
EY Advisory Services, PI –
Supply Chain & Operations
matthias.leimer@ey.com

Kiki Zhang
Senior
EY Advisory Services, PI –
Supply Chain & Operations
kiki.zhang@ey.com

EY | Assurance | Tax | Transactions | Advisory

About EY

EY is a global leader in assurance, tax, transaction and advisory services. The insights and quality services we deliver help build trust and confidence in the capital markets and in economies the world over. We develop outstanding leaders who team to deliver on our promises to all of our stakeholders. In so doing, we play a critical role in building a better working world for our people, for our clients and for our communities.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. For more information about our organization, please visit ey.com.

ey.com