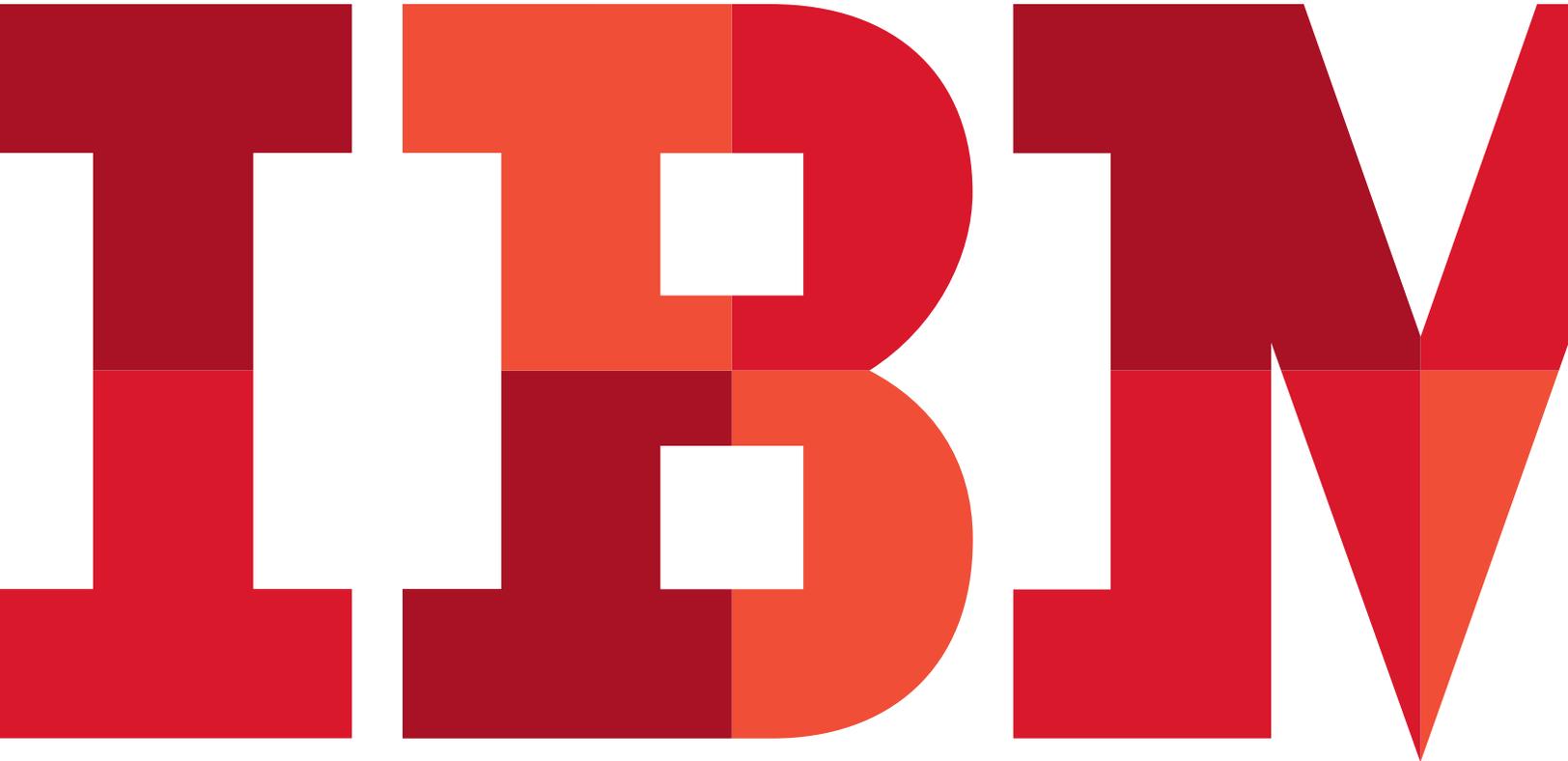


Procurement analytics: Enabling the journey to value

Insights and best practices from CPOs





“It is important to have meaningful data. But what you do with it is the issue. Can you form insights that are actionable? That is the real question!”

— Chief Procurement Officer,
Fortune 500 insurance company

Making procurement relevant

Many procurement executives seek to drive transformation in their organizations, only to fall short. There seems to be a noticeable gap between the stated intentions of procurement executives to create value for the business and the documented results of their efforts.

Organizations often struggle to create a cohesive methodology for controlling supplier proliferation and tracking spending levels across categories of purchases. Multiple forms of uncontrolled buying channels make it difficult for procurement to segment and measure spend under management.

Efforts to engage with stakeholders are often impeded by a lack of credibility, due to a lack of metrics and data, and the resulting absence of a business case. As a result, procurement is often brought in at the last minute. Annual budgeting becomes a guessing game, with little input solicited or provided by procurement. Whether it's due to a lack of data or to procurement's inability to anticipate and gather the data required, this disconnect is causing significant challenges for businesses.

The IBM Institute for Business Value study of over 1,000 chief procurement officers (“The journey to value”) identified three key traits that set procurement role models above the rest: their level of stakeholder engagement, their ability to align with the overall business strategy, and their use of advanced tools and technologies.

Technologies that drive sourcing analytics, risk management, supplier lifecycle management, and market intelligence will become critical to building effective procurement transformation. However, the connection between the underpinning technologies and these focus areas is not well understood in the procurement community. As a result, when seeking procurement value transformation, many procurement leaders have trouble developing these three key traits.

“For years, procurement has been struggling for relevancy. The way you make yourself relevant is tying yourself to a broader corporate strategy.”

— Biopharmaceutical senior executive

Many of the executives interviewed in the course of this study emphasized the need for change. The progressive procurement organizations we met with are increasingly moving toward an analytics-centric world. As one executive who was interviewed for the study said:

“Many procurement organizations do not yet have the capacity to look at things analytically. In my experience across a number of organizations, what is consistently missing is a combination of the ability to ‘dig in’, and to come in wearing a consultative hat. Too often, people come in as procurement professionals seeking to drive X dollars of improvement, and are missing opportunities to open up new areas to drive improvement.”

Yet another executive, a CPO at a Fortune Global 500 furniture company, noted that his organization was moving toward becoming entirely analytics-focused, and much less product-focused:

“Our procurement strategy revolves around four key areas: developing talent for the future, global scale and local agility through global material strategies, using technologies to standardize and automate global procurement processes, and bringing advanced analytics into global procurement to make it part of our DNA. These four areas are closely tied together, and are in fact inseparable. The fact is that we are an analytics-driven global company first, and a furniture company second. Analytics, technology, globalization and talent are the core foundations upon which our competitive posture will emerge.”

So what can executives do to build relationships with stakeholder groups, support business strategy and bring valuable insights to the table?

This question formed the basis for our follow-up study, in which we conducted in-depth interviews with 24 CPOs and senior procurement executives from leading enterprises across a broad range of industries. These individuals all had extensive experience working in procurement for multiple companies. They shared some of their key insights into the nature of transformational change, and helped uncover the role of analytics in driving strategies that support the business and align with stakeholder requirements.

Which came first?

1. Establishing stakeholder confidence will help make a business case for systems investments.

Procurement transformation



- Engaging with stakeholders to have the right conversations
- Bringing credible data to the table
- Making a solid business case for the enterprise

Investment in systems capabilities



- Cleansed master data
- Spend analysis
- Contract management systems
- Risk metrics
- Supplier lifecycle systems

2. Improved systems drive more reliable data, which provides the basis for additional insights and engagement.

Figure 1: Relationship between transformation and systems capabilities

Introducing innovative data leveraging: A key factor in driving procurement success

As a result of this study, we found one common process that every executive cited as critical for engaging stakeholders and building analytical insight: we call it “innovative data leveraging” (IDL). Innovative data leveraging is a fact-based, data-driven approach to driving change and influencing stakeholders to create procurement value for the business.

The IDL process was described in different contexts, but the common thread in each case was that cross-functional engagement was deeply embedded in stakeholder influence through analysis and presentation of data. Of course, leveraging analytics is difficult without some prior investment in procurement systems such as transactional spend analytics, contract management, and supplier performance management. However, our analysis also showed that the IDL process is possible in any procurement environment.

A common misperception is that procurement transformation cannot proceed before an organization invests in systems. The insights gleaned from this research suggest otherwise, as shown in Figure 1. Analytics plays an important role, regardless of the stage at which an organization is in its procurement transformation.

In multiple cases, we found that when procurement leadership led a team of managers that worked with the business to scope out the right questions and uncover effective analytical insights, this led to positive outcomes that produced further levels of integration. This helped create a business case to feed the growing appetite of stakeholders for deeper analytical insight.

This situation suggests a conundrum: can a supply chain organization produce supply analytics without a robust set of spend, contract, and supplier lifecycle data? Many executives we interviewed responded “yes.” Was it more difficult without a strong spend-under-management profile and a cleansed master data set? Certainly. It is also more difficult to produce clean data covering suppliers, contracts, and spend without the right procurement systems in place. However, it’s rare to find organizations that have achieved a high level of data integrity across all of their business units.

The message is clear: Procurement must seek to build analytical insight in the absence of perfect data. In this report, we identify a number of cases where this occurred, and derive some of the key lessons learned in each case.

In classifying organizations into different levels of supply management maturity, we used three criteria:

1. Spend under management
2. Level of systems investment
3. Tenure of the current CPO leading the transformation

Companies in the early stages of transformation typically had about 30 percent of spend under management, with CPOs in their first six months of tenure. Emerging companies had roughly two-thirds of spend under management, with a one-year CPO tenure. Mature companies had over 90 percent of spend under management, and CPO tenure of six years or more.

I have a business problem I need help with.



Business challenge

- Deep understanding of the context of the business problem
- Leads to identification and context on the nature of the problem
- What are different ways of thinking about the scope of the problem?

What is the question you are trying to answer?



Hypothesis development

- What would the “ideal” analytical insights look like?
- What is the proxy data?
- Do we want:
 - Historical insight?
 - Real-time views?
 - Long-term trends or forecasts?

What data can be leveraged to guide decisions?



Building an analytics platform

- Establish sources of data
- Enrich and cleanse data
- Understand key data distributions
- Create initial platform
- Build platform for ongoing data updates



Figure 2: Innovative data leveraging process

A process for creating innovative data leveraging

Innovative data leveraging is a process that starts with procurement engaging with the business to understand and define the key aspirational elements of the business strategy. This is followed by a working session to define the key procurement contributions to that strategy, and determine potential relationships that can be examined through analytical insight. Finally, these relationships are tested through data collection. Eventually, an analytics platform can be used to make this a repeatable process.

Before engaging with stakeholders, it is important to establish some key insights relative to the current supply base. Companies, especially those in the early stages of procurement transformation, often struggle to understand where they are buying products and services. Gathering preliminary facts prior to meeting with stakeholders is a good way to anticipate questions they may have.

The three stages of innovative data leveraging are shown in Figure 2.

Step 1: What is the business challenge?

In each of the organizations we studied, procurement executives discovered a variety of challenges facing their business stakeholders. These challenges were often driven by access to reliable sources of supply, outsourced capabilities and technology, regulatory issues, or globalization. Regardless of the level of procurement maturity, a common theme across every case is that procurement managers were able to create valuable insights for stakeholders, despite the barriers of limited procurement systems, a lack of software tools, and unreliable data.

Proactive procurement executives start out by understanding the business problems, as well as the context and root cause of those problems. The business issues that are expressed by stakeholders are often not well defined in an initial meeting, and may require additional working sessions to dive in and understand the root cause.

Procurement organizations need to build effective relationships with their business partners and understand the nature of the problems they face. These types of conversations are essential to establishing procurement value for the business. The business unit or individual at the receiving end of your supplier's product or service has very specific concerns. If they're not receiving the level of performance they need to effectively run their part of the business, procurement will be seen as a barrier, not an enabler. In such cases, procurement will never be viewed as a value-added function — ever.

In companies that were successfully engaging in innovative data leveraging, there was a good amount of diversity in the types of discussions senior procurement executives were having with stakeholders.

“It’s the dialogue when teams review analytics that’s most insightful. Data without context is useless.”

— Senior manufacturing supply chain executive

The types of business problems that stakeholders face are far-reaching. Approaching stakeholders by first seeking to understand the problem can lead to discussions that eventually help drive the right types of data collection, including leveraging proxy data, external data from other sources, or existing data that's incomplete or not yet enriched.

Step 2: What question are you trying to answer? What is your hypothesis?

It's important to note that the questions identified by business stakeholders don't always have an obvious analytics answer. Procurement executives need to get more creative to uncover the true nature of the issue. This might mean having a more in-depth working session with the stakeholder team to identify the context, the types of questions that need to be addressed, and the root causes of the problem or opportunities that require analytical insight.

This process of contextualizing the problem can lead to the development of hypotheses, which are predicted relationships between different supply base or customer attributes, processes, or activities in the supply chain. Engagement with stakeholders involves understanding how to form the right hypothesis, which provides clues as to how to frame the analytical investigation.

A good example of how to develop relative hypotheses was provided by a procurement executive at a large oil and gas company:

“Our existing systems and ways of gathering data and information are adequate for the category management process—the pre-award work. We can tell you what is happening in terms of how much we spend in this category, what business unit-level spending we have, or what types of things we are buying. We can also derive ‘good enough’ information to do strategy work and enough consumption information to negotiate volume tenders around the world.

But where we fall down is where we believe more than 80 percent of our opportunity for continuous improvement exists, which is in the brown-field, post-award stuff. For example, do we have the information on when we are buying energy? During peak hours or not? How is the service or consumption information being used in real time at the asset to drive savings, and where is the analytics for that?

Even if we spent a lot of money to build an information dashboard for category managers, I am not sure that it would enable the continuous improvement we are all talking about. A person who owns or manages the supplier contract has to be able to know what the big commercial levers are. They have to find a way to derive feedback on complex materials and services going on at the asset. If we could understand that earlier in the process, category managers could set people up to be successful as these big projects roll out.”

A good way to initiate the discussion around hypothesis-building is by asking the following questions:

- What is the business problem, and can we turn this into a question?
- What are the relevant indicators that provide evidence of this problem or opportunity?
- Can we collect data at the source to provide greater insight into this opportunity?

To deal with complex business problems, organizations are recognizing the need to create shared analytics measures and visibility into predictive information. It is this context of “what does good (or bad) look like?” that leads to the most important insights. In procurement, analytics that provides data without a basis for improvement, deterioration, or meaningful comparison with other data is perceived as being of little value. To be relevant, procurement analytics also needs to cross not only functional boundaries, but also enterprise boundaries.

It’s helpful to think in terms of three types of analytical insights: historical, real-time, and predictive.

Historical procurement analytics examines what happened in the past. Examples include spend analysis of accounts payable data, contracts, and spend under management. Reviews of key performance indicators (KPIs) are typically backward-looking and often seen as a “check-the-box” measurement, which is why they can be of limited strategic value. Where the real insights begin to occur is when information presented in the context of baselines and trends emerges, leading to quick identification of deviations, variations and trending patterns that could quickly lead to team reviews and action items.

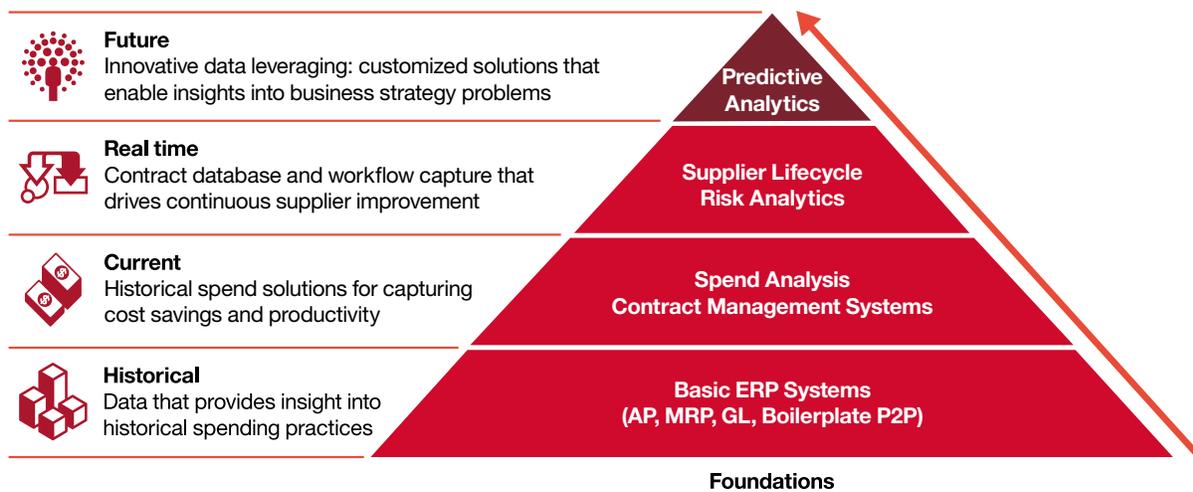


Figure 3: Innovative data leveraging builds on increasingly higher levels of data

Real-time analytics enables procurement executives to respond more quickly to different conditions, and allow for localized decision-making when it comes to variable customer needs, production schedules, logistics and delivery requirements, and local supplier capabilities. Real-time risk metrics that provide notification of a change in a supplier's condition can also trigger mitigation efforts.

Predictive analytics is one of the most important but least understood types of insights. It must be formulated against a question: what is it we want to know? What is our hypothesis on what we think will happen? A well-developed set of predictive analytics can provide indications and forecasts of issues before they happen, and drive strategic actions, especially at the category level.

The enterprises we met with recognize a new type of agile network structure is needed—one which allows some level of agility at the local level, but also provides a global process standard against which decisions can be measured, using analytics as the basis for this decision-making. Figure 3 provides insights into the source of such analytics.

Step 3: Creating data to address the business questions

Most CPOs want to move from having few good sources of data to a fully transformed and mature procurement organization. However, the journey involves a lot of conversations and a continuous demonstration of value creation, as opposed to simply building an organization. This was emphasized by a CPO who had gone through a prolonged transformation process at a major consumer goods organization:

“We were able to effectively triple the level of value to the enterprise over 13 years by using spend analytics tools. We were always recognized for the cost takeout we achieved, but what we weren’t always recognized for was securing supply streams, managing market dynamics, hedging in commodities, and all the things that add value to the corporation. Part of my journey as a procurement leader for this organization was interacting with the CFO and CEO, and helping them understand how procurement can help drive cash.”

Companies in the early stages of procurement transformation often struggle to create insights with limited data—especially if those companies have grown by acquisition and have multiple ERP systems. The IDL approach flies in the face of arguments that expensive procurement systems are required to enable effective decision-making in every case.

Typical complaints in this environment include the following:

- “Our data isn’t clean. We can’t use most of it.”
- “Our systems don’t capture spend in a way we can use.”
- “Our ERP system doesn’t have a good master data system that allows us to use the data.”

In each of these cases, despite the challenges of poor data, we found organizations that were able to extract the required data to meet a specific need identified by a key functional group. In multiple instances, procurement executives and category managers created opportunities that began with the right sets of conversations with internal stakeholders. This led to the right sets of hypotheses, which in turn led to the pursuit of data that could support better decision making. As noted by one executive:

“There are plenty of systems out there that you can bolt onto your ERP system. But what you need are systems that take the inertia out of analytics. You don’t want to bolt on a system and then think about what you want to do with it! You need to have very specific ideas about the analytical views that you require, and that will help you derive value for the business.”

Building a strong master database often occurs through an initial data cleansing effort, followed by deployment of a structured procure-to-pay process. This is a menial, challenging task, but is absolutely fundamental to building a solid baseline. Once an initial data cleansing is conducted, organizations must then think about how to maintain a robust process that controls data entry through a rigorous sourcing process. As one executive noted:

“Our spend accuracy is in the high 90th percentile, but we didn’t get there by accident. You can’t procure materials here without using a standard process. The process ensures that we are gathering data in a methodical way. We have codes established at the enterprise level. You can’t add a supplier without going through a formal process review, which is key for supplier consolidation. All of our processes require you to add data in a precise and specific way.”

We found that IDL was being employed in a variety of contexts to drive insight into questions that originated with the business. We found that ERP systems can help to provide baseline data, and when well-structured, can be used to drive investments in spend analysis and contract management systems. These investments can provide enriched data sets, which offer an increased ability to drill down and gain insights.

Layered over these are cloud-based systems that allow supplier registration, supplier performance evaluation, and supplier lifecycle analysis. In this space, organizations are also exploring innovative new performance management systems to drive supplier performance measurement, increased insights into supplier risk, and associated platforms to bring together new types of analytical data.

At the top, we find organizations doing something very interesting: **predictive analytics**. At this level, organizations are building their own set of customized applications that build on different data sets, either internal or external, to pursue predictive insights to support stakeholders. These activities don't always rely on a solid spend and contracts platform, although clarity and the ability to drill down are significantly improved when such systems are in place.

To effectively drive change, procurement analysts need to be creative in identifying the best available proxy data and approaches that can lead to significant and reliable insights. In some cases, stratified sampling can be employed to derive analytical insights, as opposed to having a structured database producing massive amounts of poor-quality data. As noted by one executive: "Six ounces of 'truth-y' data is better than one hundred pounds of garbage."

Building a case for system investment

The quality of the insights produced is somewhat limited by the availability of data, particularly for organizations that have not deployed a strategic procurement system. However, the early wins derived from limited data sources will provide a solid grounding for building confidence in procurement's capabilities and its role as a trusted advisor. This in turn will lead to increased willingness to make system investments, which will drive even better results.

Below, we'll illustrate the different stages of procurement transformation.

Early stages of transformation

ERP and master data can be leveraged to provide a high-level view of total spend, number of suppliers, and opportunities for consolidation. Some organizations may only be able to conduct manual analytics on a monthly or quarterly basis, due to the high level of manual effort required to pull data from multiple buying channels and drive it to a standard format. Functional stakeholders are often astounded at how much they are spending, and how many suppliers are in their supply base.

The opportunity here is to make sure business leaders understand how procurement can support them in tightening budgets without a whole lot of pain. Most of the analytics at this stage is backward-looking in nature, showing "here's what we did." The effort may require some investments in third-party data cleansing services, particularly if it involves an acquisition or merger activity. This level of engagement may lead to a business case to justify investment in a procure-to-pay system, or at minimum, a bolt-on spend analytics or contract management system to enable effective deep dives into internal ERP data sources.

Emerging stages of transformation

In emerging stages, organizations can begin to access more detailed spend data, using taxonomies that may not be perfect, but nevertheless allow clustering of data into what can be defined as “spending pools.” These pools may eventually emerge into specific categories or subcategories. The benefit of spend analytics systems is that more frequent current state analyses can occur to monitor spending trajectories and determine whether spending targets are being met.

A supplier lifecycle system can provide a standardized format for suppliers to be registered and entered into the system, thereby driving improved control on the front end and halting the proliferation of new suppliers into the system. Contract management systems can be used to better forecast and manage workflow, especially around upcoming contract negotiations. This can provide more advanced notice for market intelligence and cost modeling, resulting in more productive outcomes. As current state insights emerge, additional modules can be added to create supplier scorecards based on surveys and internal perceptions of supplier performance.

Having robust master part and supplier lists can yield low-hanging fruit for organizations in the emerging stages of their procurement transformation. Many of these opportunities can be driven by looking at redundant part numbers, contracts that haven’t been reviewed in a year or more, and spending that is going to suppliers with no contract to cover it.

Mature stages of transformation

In mature stages, organizations can begin to rely on supplier lifecycle management systems and more advanced contract management capabilities to capture the nuances of different supplier activities. This can help drive insights on sources of innovation, emerging supplier capabilities, and new market-shifting technologies. Utilizing a solid platform of spend data, contract management, and supplier performance data, it’s possible to use predictive insights to enable new opportunities, budget forecasts, risk incident prediction, and higher levels of business insight.

One executive at a major electronics manufacturer noted the change of business landscape and operational focuses brought by the new analytics capabilities:

“The data is coming in live, so my supply chain is on a meter telling me what is happening now, not what happened a week ago. I can defrag my supply chain as quickly as possible. It has predictive components that provide me with trend lines and order patterns, which could eventually be cognitive. My planning and order management systems can relate to one another in a relational way that is different.”

In mature transformation initiatives, procurement takes part in stakeholder teams, business reviews, staff meetings, and ongoing strategy debates. As part of these teams, procurement can gain insights on business challenges and begin to understand what leaders want to predict. Best-in-class organizations have established a dedicated analytics team to produce predictive models.

There is a huge amount of data that runs through procurement systems. However, only a small fraction is used by existing analytics solutions, which means that significant business value remains hidden. Organizations with mature transformation strategies rely on strategic procurement solutions that have analytics fully embedded. This helps procurement completely align with enterprise business strategies, engage with stakeholders, improve efficiencies, and give the enterprise a significant competitive advantage. These advanced solutions streamline and centralize category data, supplier data, contract data, and performance data. Using such advanced analytics technologies, companies can turn data into valuable business insights like never before.

Important insights from the study

1. IDL was found to be important during any stage of procurement transformation maturity.

In the early stages, preliminary insights on spend may provide opportunities for deeper involvement in functional sourcing initiatives, creating a platform for further engagement and integration. In emerging stages, organizations can drive significant insights into total cost of ownership and working capital improvements that go above and beyond simple price leveraging capabilities. In advanced stages, predictive analytics (using both structured and unstructured data) begins to emerge, producing insights into revenue forecasts, supplier risks, emerging market opportunities, and other value drivers.

2. The development of IDL capabilities depends on successful initial business engagements, especially when reliable procurement systems and data are lacking.

In multiple cases, we found that managers in companies in the early stages of procurement transformation could effectively leverage data by engaging with stakeholders as soon as possible in order to produce rough-cut analyses, employing whatever limited data was available.

Successful early engagement led to an improved appreciation of procurement by the business; in fact, procurement was seen as a trusted advisor. Our interviews suggest that access to a broader set of business-level problems is a function of investment in procurement systems and access to improved data, which in turn leads to more mature levels of analytical insight and business strategy contributions.

3. Advanced analytics in the form of predictive capabilities is the most highly evolved form of IDL.

Predictive analytics is still relatively new in procurement, but it's increasingly important, particularly in organizations that have already been through the cycle of spend analytics, supplier leveraging, segmentation and consolidation.

Prediction requires a deep understanding of the technical and commercial attributes of the supply chain ecosystem, as well as advanced statistical and modeling capabilities. This provides the ability to forecast revenue, mitigate disruption, identify market opportunities, and much more. It is often built on a strategic platform that provides data visibility and near real-time availability, as well as advanced data warehouses for collection of relevant third-party data sets. They can also deliver an in-depth view into supply chain operational outcomes that are not readily apparent to executives in the business.

Furthermore, prediction requires highly sophisticated procurement analytics modeling capabilities. This represents an important opportunity for organizations: to harness the power of cognitive computing systems, which enable the convergence of data pulled from machines, systems, and social media into a powerful real-time predictive system of the future.



“Fueled by analytics, procurement can derive insight from disparate sources of information and uncover intelligence for competitive advantage. This paves the way for us to develop an even deeper understanding using cognitive technologies that will help us further transform the procurement landscape as we engage across our supply base and with business partners to unlock value from all types of data that have been hidden in the past.”

— Bob Murphy,
Chief Procurement Officer, IBM

Conclusion

In this report, the IDL process was described in different contexts, but the common thread in each case was that it provided a data-driven approach to driving change. Of course, leveraging analytics is difficult without some prior investment in strategic procurement systems. However, the IDL approach can help organizations at all maturity levels build a solid path toward an analytics-enabled procurement, in their pursuit of value and excellence.

Big data and analytics can have a truly transformative effect on procurement—and entire organizations. As companies continue to expand around the globe, supply chain complexity grows—and so does procurement-related risk. Forward-thinking procurement organizations can reduce complexity and risk by using analytics to capitalize on the wealth of data throughout the supply chain. The right analytics approach can provide real-time visibility and predictive insights to enable seamless collaboration with stakeholders across the business. With data analytics fully integrated into every process, procurement can lead the way to a brighter—and more profitable—future.

	Spend analytics	Price and cost models	Supplier and contract management
Marketing and sales	<ul style="list-style-type: none"> Local content requirements Minority and diverse supply spending Addition of new features and capabilities for specific market segments Economic impact of local spending for regulatory agencies 	<ul style="list-style-type: none"> Cost and technical support on major RFP/RFQ bids Support on pricing for new product development Value analysis with suppliers Cost to serve (TCA) Supplier suggestion programs 	<ul style="list-style-type: none"> Supplier ideas for new products Guidance on best partners and alliances in new markets Supplier capacity for new product launches Supplier-driven customer solutions to penetrate markets
Legal	<ul style="list-style-type: none"> Support Sarbanes Oxley compliance Supplier risk metrics and visibility Local economic impact studies 	<ul style="list-style-type: none"> Contractual obligations Avoid predatory pricing Price/cost index and renewal mechanisms 	<ul style="list-style-type: none"> Code of conduct compliance Regulatory risk exposure Liability exposure - no contracts IP issues relating to NPD
CFO, finance, and accounting	<ul style="list-style-type: none"> Opportunity analysis for direct and indirect cost savings Budgeting objectives AP - Spend under management GL codes linked to spending codes 	<ul style="list-style-type: none"> Working capital targets Payment terms Should-cost models to reduce commodity volatility exposure Currency risk 	<ul style="list-style-type: none"> Spend under contract Product costing and pricing Contract exposure to global risks Country-level risk exposure
Operations, business, division leader	<ul style="list-style-type: none"> Supplier leverage/selection Reducing supply lead times Part/component standardization Vendor managed inventory Supplier capacity issues Delivery/quality improvements 	<ul style="list-style-type: none"> Tariffs/border delays Packaging compliance Transportation and logistics planning and modeling Should-cost targets Inventory and material handling 	<ul style="list-style-type: none"> INCO terms Supplier performance Avoid "shutting us down" Business continuity plans Supply disruption mitigation planning
Engineering, R&D, major projects	<ul style="list-style-type: none"> Emerging substitutes and threats on product and process technology Value analysis and standardization Reducing duplication and parts proliferation Major projects scheduling and turnarounds 	<ul style="list-style-type: none"> Should-cost and supplier cost savings ideas Supplier catalogues New product development technology solutions Technology/software solutions Design for manufacturability 	<ul style="list-style-type: none"> Cost downs Project risks IP ownership Supplier innovation and integration Collaboration on project rollout and workflow management

Table 1: Procurement discussions to identify business problems

Case studies

Case 1: A leading global high-tech company uses big data to solve big challenges



Overview

This technology organization developed and implemented an application with advanced analytics capabilities to gather supplier and spend information—from a number of internal and external sources—in order to provide a holistic view and deep insights about suppliers. The application helps the organization greatly reduce procurement risk and optimize sourcing strategies.

Situation

Ensuring a dependable supply base is extremely challenging—but it's vital to business success. Understanding the past performance and future strategic intent of suppliers is key. Is this supplier planning any mergers or acquisitions? Is another company planning to acquire them? How financially solvent are they? Early detection of potential problems is critical, but difficult. Even if a problem is detected, it can be hard to find an alternative supplier quickly enough to prevent a business disruption.

The procurement team in this organization was collecting and analyzing a huge amount of supplier and spend data using disparate tools and labor-intensive manual processes. The team spent an exorbitant amount of time gathering and analyzing critical information to generate the necessary insights to take action.

What they needed was a 360-degree dynamic view of supplier, spend, and contract information, and an easy-to-use dashboard. They needed to gain visibility into the data in order to identify new opportunities, as well as to perform deep supplier assessments that could ensure the supplier's viability as a continued source.

Analytics solution

Using a new application called “Supplier IQ” which is based on IBM Watson technology, the team gained a complete view of supplier-centric analytics, performance benchmarking, financial insights and strategic analysis. Simply by entering a company's name into the one-stop-shop system, the team was able to see a comprehensive, real-time profile of the supplier, including financial reports, KPIs, products and services, contacts, competition, major customers, strategic alliances, significant events, current and historical contracts, spend data, and current relationships between the organizations.

The profile includes news articles that are automatically categorized using content analytics powered by leading-edge cognitive computing capabilities, so it's easy to uncover exposure and risks. It once took sourcing teams hours, if not days, to consolidate and analyze all this information manually. Now it takes seconds, and the report can be quickly updated at any time.

Results

This organization's vice president of procurement put it this way: “This is a game changer. The improvements to procurement—to enable a full and virtually instantaneous supply base understanding, and management—are incredible. The buyers of today's generation will wonder how their predecessors coped.”

The team has seen over \$10 million in savings and 70 percent reduction in the end-to-end process cycle time for supplier assessments. Procurement has improved the supplier selection process, streamlined the supplier assessment process and made onboarding more efficient.

Case 2: An insurance company drives decisions with initial spend analytics



Overview

Many companies in the early stages of procurement transformation can make excellent progress using data from a number of different sources, especially when spend data is unavailable or not well-developed. Systems help build credibility by providing fact-based analysis. However, if they don't have systems in place, supply managers should start with whatever resources are available. Significant decisions can be made with imperfect data, although there is certainly a cost associated with doing so, as we see in the case of a major insurance company.

Situation

The company just went through a major acquisition, and procurement was asked to size up opportunities for savings.

Analytics solution

The CPO of this company stated: "The organization we acquired used no P2P system, so we downloaded all of their accounts payable and claims management system data and coded it in Excel using a third party. It was nothing fancy and didn't provide a granular solution."

Results

Through brute force and a labor-intensive effort, they sized up \$150M of savings opportunities.

Spend analytics and contract management then became the first steps in the development of the transformation journey. The company is currently exploring the adoption of a contracts database to improve workflow planning and prepare for future contract consolidation across the merged companies.

Insight

The CPO at this insurance company identified an important insight: that spend provides the basis for thinking about *where* to look for opportunities, while contract management systems provide the insight on *how* to deliver them.

Spend can highlight fragmentation and opportunities to drive supplier consolidation. But understanding what contracts you have makes it possible to see the details around the service descriptions, and what's contained in those relationships with suppliers. With a collaborative tool, you can engage clients more successfully.



Case 3: A financial services company performs innovative invoice analysis to capture savings



Situation

A major financial services organization recognized that its current suite of homegrown contract management and project management tools were not delivering the right level of accuracy and precision for driving cost savings. The CFO put it this way: “How do I trust your numbers? What are the real savings, and can I actually take those figures out of our expenditures for next year?”

Analytics solution

To address this, the CPO used a concept suggested by internal cost accountants for tracking price changes or volume changes for any given savings project, and measuring the true up delta (change) in these levels as they appear in invoices. This involved an in-depth analytical approach to collect all the line items on the invoice before the negotiated deal, as well as the actual values on the invoice after the deal was completed. The true value of the savings could then be derived and reported to the CFO.

Eventually, this tool was migrated into a database that was used to mine all invoice level details, match them to a deal number, and roll up the figures into a taxonomy that was directly mapped to the general ledger (GL). This tool broke down purchase orders into line item details, and mapped them onto the GL taxonomy before and after every negotiation. This process captured the true savings that occurred, either through price or volume reductions.

For example, an invoice for painting services would include a dollar per hour cost for labor, as well as a material cost for paint, brushes, and other supplies. This allows comparison of invoices to determine if one supplier is charging more per gallon of paint or more per hour of labor, and mapping these savings onto the GL taxonomy.

Results

This tool enabled this organization to influence stakeholders, because the team will always start with a baseline and gauge the true savings a year after the contract is completed. It also helps build up the pipeline of upcoming contract renegotiations by collecting baseline data about these contracts, including conversations with the right stakeholders.



Case 4: An oil and gas company uses should-cost analysis to drive new opportunities



Overview

In order to reduce costs and increase profitability, a major oil and gas company took advantage of should-cost models based on data collected for all rigs operated in the Gulf of Mexico. These averages include not only their own rigs, but also those of competitors with whom they collaborated to collect this data. The data is used to drive post-contract award collaboration meetings with suppliers.

Situation

The oil company recognizes that the standard approach for collecting supplier spend data—driving a tender and taking the lowest bid—is no longer effective in today’s procurement environment. Most of the low-hanging fruit has already been picked, and price analysis based on bidding is no longer an effective strategy.

Senior procurement executives recognize that the major opportunities for driving cost savings are through productivity improvements, working capital reduction, and driving out waste from current processes. Since most of an upstream company’s processes are outsourced to suppliers, it makes sense that suppliers should be part of the collaborative effort to drive out cost.

Analytics solution

The current operating costs for a particular rig are compared to average costs for all rigs, and variances are identified. The cost model is used as a basis for open discussion with suppliers to establish opportunities for cost savings. Suppliers are asked to identify opportunities for productivity improvement that do not detract from their own profitability.

Opportunities to improve workflows, reduce waste, and increase safety were mapped against cost models, and in almost every case, the data provided validation of the opportunities.

Results

The analytics solution provided significant cost savings across a number of different operating projects in the Gulf of Mexico. The cost models were used to drive discussions with key on-rig suppliers, and mapped to best practices in maintenance, production, and operating practices. These best practices were then deployed globally across rigs to exploit the insights derived from the cost-modeling approach.

Insight

Success for the CPO is to deliver benefits that are aligned to enterprise value: sustainable savings, working capital optimization, and revenue growth. Strong tracking and measurement tools are required to deliver and demonstrate these benefits. Procurement can become a fundamental part of the business only when it focuses on total cost of ownership, not price.

Case 5: A biopharmaceutical company mitigates supplier capacity risk through predictive analytics



Overview

Many organizations need analytics that can predict risks and identify issues that may arise in the supply chain. This is an advanced analytics capability that some organizations are just beginning to understand.



Situation

A biopharmaceutical company partnered with a student team from North Carolina State University to develop a predictive model for understanding supplier capacity risks. A scenario was mapped where current products undergoing clinical trials were identified with a probability of being approved. Then, the associated bottlenecks in supply capacity were identified under a variety of different scenarios. In the worst-case scenario, a large number of products in clinical trials were approved, leading to severe production bottlenecks for suppliers of raw materials and contract manufacturing capabilities.

Analytics solution

The student team developed a risk analysis tool and used a tornado diagram to understand which factors would be most at risk for capacity shortfalls. The insights provided by this simulation analysis led to a significant shift in contracting and relationship management strategies, including non-traditional contracting strategies such as bartering with competitors.

Insight

End-to-end and supplier-centric supply chain visibility is critical for procurement intelligence. The organization plans to create a data bank that combines multiple resources and data sets on suppliers, capabilities and performance. Suppliers are normalized throughout the system, so that it's easy to source information. This combined data set will be used to run predictive modeling to drive insights into the future of business.

Case 6: An energy utility company applies analytics in social responsibility actions



Overview

A major utility's sourcing organization made progress in establishing analytics to understand spending patterns. They also began building category strategies for major segments. Sourcing leadership has also sought to improve corporate responsibility, including supplier diversity, sustainability, and community impact.

Situation

The company's CPO challenged his team to develop an enterprise sourcing strategy that invests in the communities they serve and recognizes the impact that their footprint has on these communities. As a result, a project was launched to broaden the scope of supplier evaluation and award criteria to include community impact as a formal measure, in addition to technical and commercial elements.

The object was to develop a sourcing tool that includes a total value assessment through a more rigorous analytical exercise, and highlights how the company's enterprise spend contributes to state and local economies.

Analytics solution

This project was undertaken with a team of university academics. The team used current spend data and the IMPLAN (Impact analysis for PLANning) methodology to develop the analytical modeling. It measured the direct and indirect multiplier effects of the utility's enterprise spend on various economic sectors in the five states that the utility services. The modeling outputs were used to develop an analytics tool that enables sourcing managers to compare supplier bids.

Results

The tool compares the economic impact of the dollars spent for each spend category in the local community, as well as the dollars spent outside the state that still impact the state in some way. The project also provides recommendations for other groups within the company. These recommendations describe the benefits of using the method within the sourcing process. They also show how the output can be used to promote the corporate brand and provide insights to the community and the legislature.



About the author

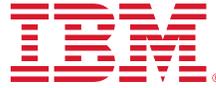
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