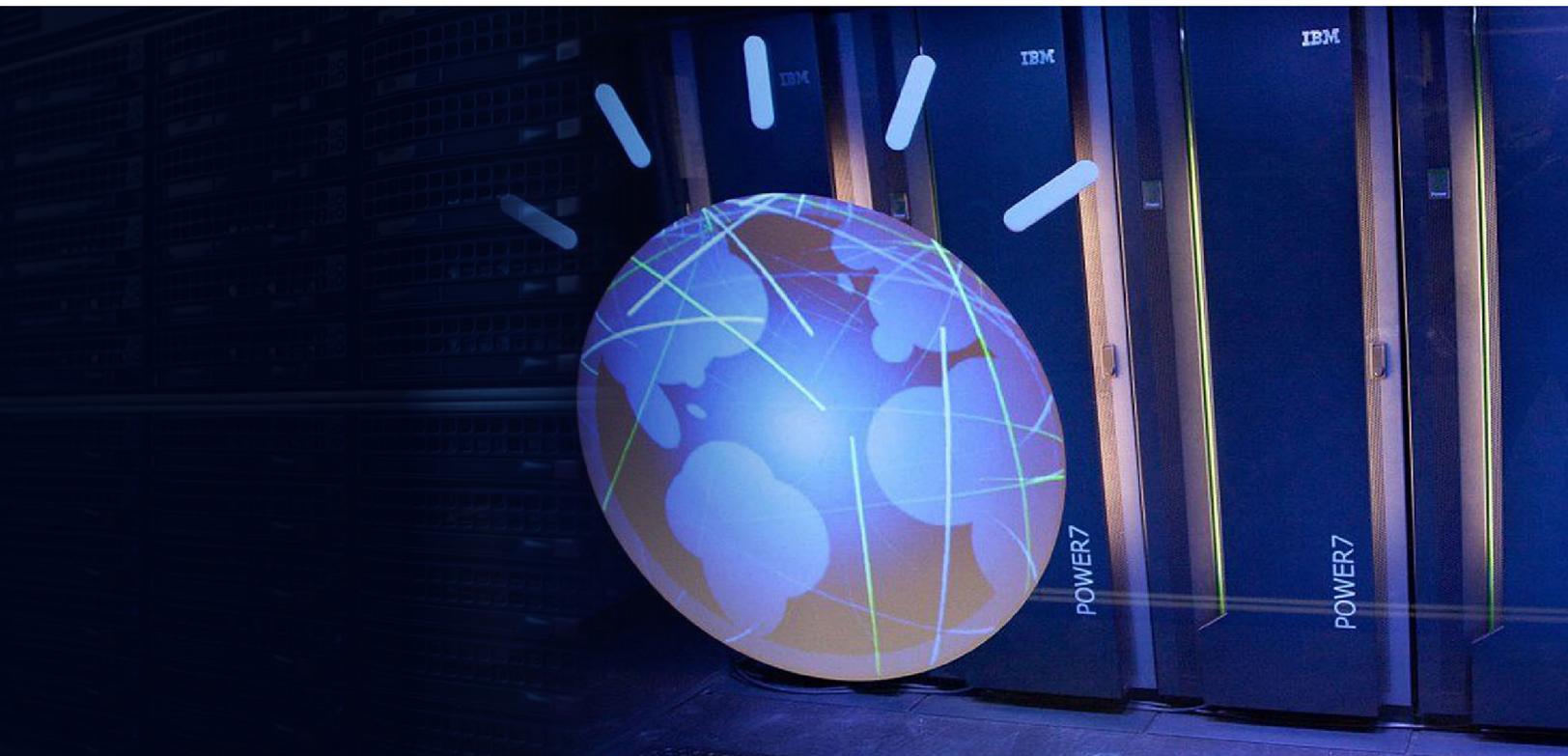


What are the success factors in cognitive and analytics strategies and adoption?

There are many factors that require careful consideration to bring about effective, scalable and sustainable analytics and cognitive solutions. This paper highlights the key areas of consideration.



Introduction

Intelligence is at the heart of every business and its decisions—and a differentiator as well as the lifeblood necessary for business survival.

In this context, I define intelligence as being the conversion and enrichment of data into meaningful business insights. It is a little like an orchestra: you can get good sound from one instrument, but correctly managed, you get a symphony from the entire orchestra. Likewise, one element of data reporting or analytics can provide some good insight, but you need a collective effort to deliver real, sustainable business value. We need to orchestrate the various components from data acquisition through enrichment, management and distribution to effectively benefit from this asset. This is particularly true in a more distributed, self-empowered and agile organization to

help ensure the business has what it needs with the speed that it needs to avoid wasted effort through rework. It further helps ensure the organization does not become so insular or siloed that it loses the ability to understand and effectively manage the global business. With appropriate planning, organization and technology, this can be achieved and enable the agile organization.

All too often, there is a focus on creating that “quick win” of a dashboard or visualization at almost any cost. While the urgency and need for speed is completely understandable as businesses must act quick to stay relevant, the lack of foundation building and ensuring sustainable, efficient and effective solutions will ultimately limit competitiveness and ability to truly leverage data and value beyond an initial quick win.

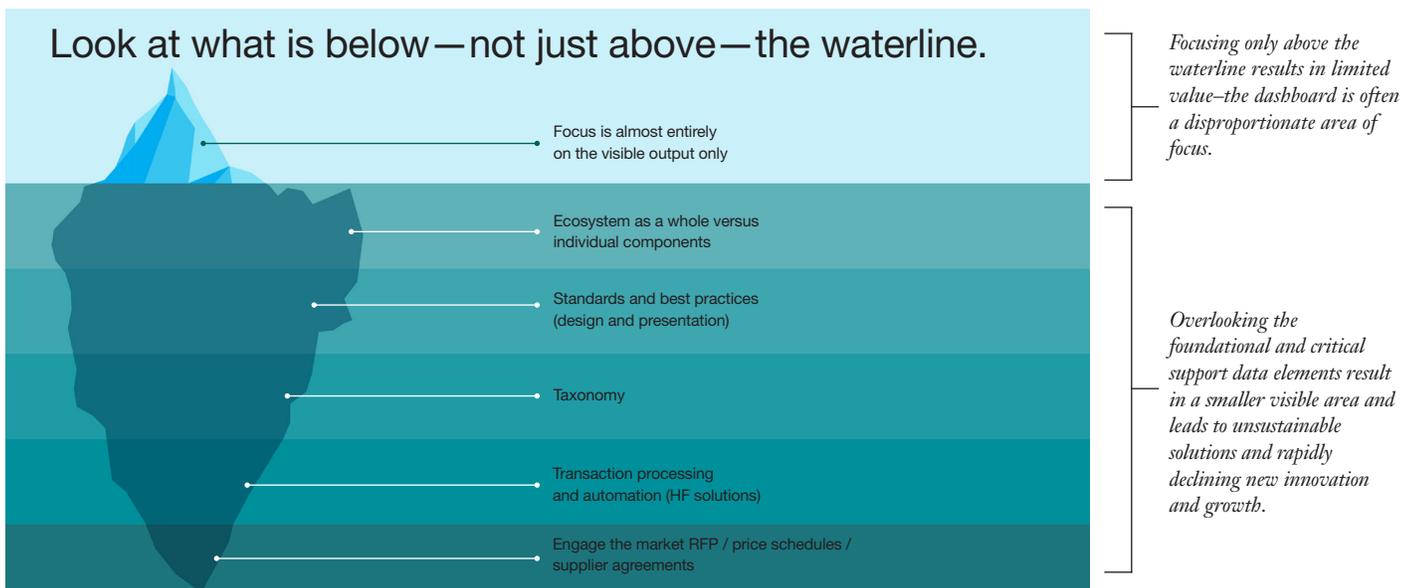


Figure 1. To successfully implement agile and other development techniques, look beneath the visible output.

There is a lot of focus on the visible part above the waterline, and what lies below is often ignored in the context of developing sound analytic strategies until it is too late to avert significant setbacks and rework. Implementing agile and other management and development techniques do not alleviate the need for strategic data planning throughout the procurement engagement lifecycle.

Influence and effect change based on information provided and ideally before the event takes place.

What makes data so powerful?

Data, while potentially powerful and valuable, has somewhat limited usefulness until transformed into information that is provided in the right context and at the right time, to the right audience.

Context	Timing and delivery method	Audience
<ul style="list-style-type: none"> Context means different things to different people, and understanding this is crucial to establishing what kind of data transformation is required. Context requires an understanding of not only what data is required, but also how that data is going to be consumed and what value is to be derived from it. The right context also requires a synergy between internal and external data to create value. There is a tendency to value external data by “number of items for which I have a price” or “spend coverage for which I have market intelligence,” but without the right understanding of how this data will drive value, this is a false sense of economy and wasted resource and effort. The right context also includes ensuring that the information is “fit for purpose.” A poorly constructed analytics model or out-of-date data may result in a spectacular looking dashboard or chart, but lacks the credibility required for subject-matter experts (SMEs) and leadership to base business decisions on with confidence. 	<ul style="list-style-type: none"> When is the right time to provide information? What is the communication technology and communication method to be used for delivering contextual data at the right time so that it is easy to consume and act on? The right time is not about frequency of reporting—it is about acting on information within the valuable shelf life of that data or within the right timeframe of the business lifecycle to effect change. Do we push information or do we expect the consumer to pull the information, and what platform do we use to share information? 	<ul style="list-style-type: none"> Delivering information to the right people sounds obvious, but for many reasons it is often overlooked. The “right people” means providing contextual information to the people that can influence and effect change based on the information that is provided and ideally before the event takes place. Better still, the information needs to be what the practitioner needs for the specific point they find themselves at in the transaction lifecycle (context). Is the data better served in the hands of the client rather than procurement? Often, practitioners shy away from giving tools to clients for fear of losing control or seeming to have delegated control of spend, but this may be the more appropriate audience to effect change. What about providing some of these insights to suppliers?

Success factor 1: Procurement process and acquisition of data need to evolve to meet data needs

The effectiveness of data acquisition for analytics and cognitive solutions starts with procurement strategy and process. How does the organization acquire data?

It is not unusual for procurement practitioners to not fully absorb the data impacts resulting from decisions made on how to engage suppliers and clients. In many cases, it is evident that data acquisition and use does not factor into the procurement strategic decision process or design. This awareness has not been historically expected from practitioners, but is a transformation that needs to happen quickly.

The effectiveness of data acquisition for analytics and cognitive solutions starts with procurement strategy and process.

Preparing and maintaining a communication and stakeholder management plan that is tailored to the needs of the organization (in other words, not overbearing and cumbersome) is essential to ensure success of analytics and cognitive solutions as well as stakeholder support and adoption. This could be formal or informal depending on specific needs, and should be simple to maintain. These plans also become an input into user story creation and management, enabling the creation of solutions suited to business needs.

Having experienced practitioners develop solutions is critical. Place these practitioners alongside the technical team and, in fact, have the solutions led by both clients and practitioners.

Practitioners must consider all sources of data—suppliers, clients, customers, market, and so on. Naturally within each of these categories, there are many facets. For example, supplier data include RFX activities, such as quotes, invoices, price lists, contracts, supplier product publications, or technical information.

- Practitioners need to look at and consider all these data and understand how they can help build business insights.
- The linkage and usefulness between data elements within this pool of data sources need to be documented and aligned to the business value they can deliver.

This is a skill that is developed through practice and experience. The right partner can exponentially expedite this learning and delivery.

Category teams need to build a global data strategy that runs parallel to their supplier strategy. Here are some examples:

- A global data strategy at least implies a common approach to engaging spend of same or similar business areas, enabling analytics across these spend areas and geographical boundaries. How often do we see different approaches by geo, or even country or supplier?
- A global taxonomy, standard naming conventions for products and services, consistent approaches to pricing templates, sufficient transaction granularity to allow analysis, and so on.

Deciding where to store data: For example, you can apply good data standards for quotes, but if those quotes reside on individual laptops and cannot be accessed, they are useless for analytics. This requires solutions provided by the technical teams, but begins with the practitioners' understanding of the data elements and their usefulness.

It would be easy to put this global strategy aside “because we want to achieve a more agile organization.” But an agile or lean business and a global data strategy are not mutually exclusive; I would argue they are interdependent. Standards in naming conventions and taxonomy (see taxonomy section below), granularity of transactions and the avoidance of spend aggregation all enable an agile business model. Having these standards allows for nimble and effective sharing of data without the “heavy lifting” required when disparate processes are being mapped and tied together.

Practitioners must look at the information they need that is required for effective decision-making, and trace that data back to how it is acquired. Although this sounds logical, practitioners may overlook or not understand it. Choosing an inappropriate unit of measure or allowing an editable item description can render vast amounts of data useless for analytic purposes. Procurement professionals need to consider the question of what is asked for in quotes and price schedules, and how it is transmitted. We are not seeking to turn procurement professionals into data scientists or programmers, but understanding how they influence and bring data into the organization should be a core skill going forward for procurement practitioners. Organizations must create the bridge between technical and business skills through education and through hands-on support of cognitive and analytics champions.

Success factor 2: Implementation of an effective taxonomy strategy

What is taxonomy? Simply put, taxonomy is a hierarchical representation of data, products and services into logical groupings through the application of an alphanumeric scheme of sorts. Sometimes, these are industry standards and sometimes, they are locally-devised schemes to meet individual needs. These conventions are useful and for purposes of reporting spend or segregating categories into lower-level components. However, the world in which we operate is not hierarchical; it is more like a network of many disparate parts of an ecosystem that is constantly interacting and evolving, and that it needs to be intertwined together to drive value.

For taxonomy to be effective and feed a cognitive engine, the taxonomy needs to be multidimensional, flexible and situation-based. The focus needs to be on the attributes of spend rather than the magnitude of spend—hence, the need to expand on traditional hierarchical taxonomy.

- While being flexible, we want to be global.
 - To deliver spend analysis and insights, the taxonomy applied must be global for the respective areas in question. All too often, we see regional practices because they are all considered “best of breed.”
- Think multidimensional.
 - It could be a job role or skill set, Building Owners and Managers Association (BOMA) codes and other industry standards, combinations of part numbers and specific product attributes, item functions, and so on. It is unlikely that any one of these will address all relevant needs; real value comes from a combination of these and other considerations.
- It is not about how you buy, but rather what you buy. I would argue even further that an appropriate taxonomy is about identifying how you resolve a business problem through products or services.
 - Does that sound like mumbo jumbo? Let me explain further. Are we interested in the fact that we purchased a server with an (example) part number AB12345 at a specific cost, or that we delivered a solution with sufficient processing, memory, storage, connectivity and scalability at the best possible price to meet the customer’s need? Probably we want both, but the latter allows us to perform analysis across business needs, inject intelligence into the sourcing decision, scale and adapt to changing needs, and provide alternative solutions.

Teaming with the right technology and innovation provider, and selecting the right tools, are critical.

Success factor 3: Effective implementation and use of transaction automation

Transaction automation is a business necessity. We all want to spend less time doing repetitive lower-value work and use our skills to provide higher-value services to the business. However, as with many good things, badly applied transaction automation results in poor data and ultimately lost productivity and analytics effectiveness down the road.

Some practices that enable accelerated transaction processing and reduced involvement from procurement and business practitioners adversely affect data for analytics:

- Aggregation of spend: Multiple line items from a quote covering potentially different equipment, services and skills are grouped into one line of a purchase order to avoid replicating quote granularity in the purchase order (PO). Units of measure that are either “unit less” or allow for the aggregation of multiple line items of spend into one line further exacerbate this issue.
 - Unless we can link quote details to the resulting POs and invoices, the granularity of the transaction is lost and the data becomes useless for analytics. Even cognitive solutions cannot create or elaborate on data that does not exist.
- Catalogs or other automation processes that allow the editing of item description and price: This naturally creates flexibility and alleviates the need for multiple touchpoints or traditionally detailed catalogs, and while there are processes designed to support and enhance data created by these editable-item processes, this requires practitioners to be mindful of the data strategy and resulting output from their actions.

There is always going to be a trade-off between speed of execution and granularity of data. Finding the right balance again takes us back to developing an understanding of what data we need to achieve our desired cognitive and analytics state. There is no doubt that teaming with the right technology and innovation provider, and selecting the right tools, is critical to that balance.

Adopting and scaling analytics and cognitive solutions require innovative and committed leadership.

Success factor 4: Leadership driving adoption and adaptation

How the leadership works with the teams to remove barriers (operational, physical and psychological) will ultimately have a huge influence on the rate and pace of adoption of cognitive and analytics solutions.

Here are some of the common pitfalls leadership teams experience that impede adoption of analytics and cognitive solutions:

- Measurement systems that do not encourage change
 - Targets are easily achieved due to the measurement system, thus, not encouraging practitioners to seek and adopt insights to help them drive change because they see no need.
 - Measuring spend coverage or other less substantive metrics of analytics solutions versus measuring the effectiveness of driving change in human and business behaviors.
- The fear factor
 - There is no doubt that there is a concern that rich insightful analytics will show opportunities that imply the practitioners have historically failed in their jobs. There is also no doubt that there is fear that cognitive solutions could replace some of the activities currently carried out by practitioners.
- Lack of education
 - Education here refers to a quite broad set of skills and understanding, such as knowledge to overcome process and taxonomy issues identified earlier, ability to use the provided tools, and an understanding of the strategy and impacts it will have on the practitioners.
- Assigning appropriately skilled and strategic stakeholders
 - Stakeholders who put in category or business roles to deliver analytics solutions must be strategists with appropriate practical skills and the level of authority that can drive real business value. They also need to be responsible for execution and delivery of results once solutions are implemented.

Adopting and scaling analytics and cognitive solutions are no different than implementing something like an agile practice. It requires leadership behaviors to adapt and evolve from the traditional methodologies and tools. It requires leadership to avoid being “half in” and, instead, foster full commitment.

It also requires a commitment to removing fear and uncertainty. That is, it requires more transparency from leadership teams to ensure that psychological barriers are overcome. It also requires training and education centered around the practitioners’ role, but specifically designed to address data management within that role.

Success factor 5: Adequate and powerful standards and strategies

Like that orchestra example I mentioned earlier, all these data instruments need a conductor. In a fast-paced and ever-changing environment, some instability and churn is inevitable—even desired—but strategies and standards need to be managed or orchestrated to address the following key areas and bring the solution to fruition:

- A defined tool strategy: Too many tools and too many options—while great for innovation—is not good for the user experience or leveraging assets. There is risk of rework, confusion about the development platform, and data in too many places for practitioners to effectively leverage.
- The need for a single data strategy that is cohesive and—while being agile—is well-managed. This is because, in many cases, focus is only on the output and data strategy is loosely defined. There are instances where the data strategy is driven by the respective tool or product owner. A successful analytics and cognitive solution requires one owner of the data strategy, which can have multiple developers and product owners, but only one data strategy owner.
- Best practices and standards for dashboard creation: This requires little explanation. It is imperative to have standards to help ensure a good user experience where users want to use and, in fact, promote the use of a tool. This is no different from personal experience when using a website; people will not revisit a site with a poor or inconsistent user experience. This does not come at the expense of speed and agility in development, but it will be at the expense of user experience and adoption if not applied.
- The prioritization of quality over quantity: There is the need to stabilize and automate. The desire to continually add more spend and more views to insights risks never going back to actually automating and stabilizing the solutions or offerings. Again, these aims need not be mutually exclusive. There are many instances of data (both internal and external) being loaded into analytics tools through spreadsheets and manual loads. This is acceptable for testing and proof of concept (PoC), but allowed to continue, these manual efforts take away productive development time because developers are performing manual updates and data loads rather than focusing on new development. (In some cases, based on IBM’s experience, a significant proportion of developers’ time is refreshing data through manual data loads.) The solution requires more capacity, better funnel management and development monies to support the industrialization of approved POC and tested solutions.
- The agile excuse: There is no questioning the value of agile practices; there is a reason most of the world’s progressive companies are widely adopting the practice. That said, the transition to agile is painful while competencies and experience are being built. Agile used as an “excuse” to never make commitments and miss the few that are made is not uncommon and is something that needs to be addressed to help ensure successful solutions delivery.
- Right technology vendor and client tool integration: The right technology supplier is essential for success. Synchronized and understood strategic direction, agility in development and a “team” relationship versus an arm’s-length supplier attitude are key. Integrating with procurement clients’ tools provide more insights to enable better demand management, granularity, and transaction automation.

Bringing it all together

This complex procurement ecosystem can be challenging. Innovation is moving at paces never-before seen. Business and markets are transforming at ever-shorter cycles, and tolerance for ignorance, fear and uninformed business decision-making is extremely low. But these factors are huge opportunities.

Acknowledging the cognitive and analytics challenges and understanding the key success factors are critical to course correct and make the necessary adjustments to continue to grow and scale analytics and cognitive. But it is not only about scaling; it must also be about sustainability.

These standards and data practices have to accommodate agile practices—in fact, agile, if applied appropriately, can be the perfect vehicle to deliver these complex solutions, which would otherwise become too cumbersome in a traditional waterfall methodology.

You will be able to continue to innovate and remain relevant in the marketplace if you have developed the foundational base that allows you to focus on the new, rather than reinvent and recreate the old because you have ignored what is below the waterline.

Why IBM?

Teaming with IBM helps chief procurement officers (CPOs) digitize, predict the future and enable their talent to deliver savings and value—not just to keep up, but to get ahead.

Digitize processes

Transform from analog to digital for a more seamless, responsive procurement organization.

Drive insights

Enrich data for analytics and cognitive insights to make more-informed decisions.

Amplify talent

Elevate procurement capabilities and intelligence from ordinary to extraordinary, enabling skilled resources to focus on driving superior results for the organization.

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Marco applies more than 15 years of experience as a procurement practitioner and project manager to understand complex environments that separate the noise from real issues and determine near-term and strategic solutions in realizing business value. He leads a team that has saved IBM Procurement a significant amount in third-party costs and efficiencies through analytics data solutions and innovative sourcing strategies over the past three years. His team is also developing commercial analytics and cognitive procurement offerings leveraging data and technology for IBM clients' competitive advantage.

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