



# Tax, data and analytics — moving from control to transformation

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Cognitive computing. Robotic process automation. Probabilistic reasoning. For many tax directors, technological advances like these may seem like science fiction. But some forward-thinking global companies are already applying such advances to draw new value from their reams of tax data — and many tax authorities are exploiting data and analytic techniques to enforce compliance with accelerating speed and efficiency.

Most companies have strong processes for collecting tax data. However, transforming tax data into actionable, predictive insights — on tax obligations, process improvements and pricing, for example — seems out of reach and the value in their data remains untapped. What does it take to move a company's tax function beyond its compliance and regulatory functions to mine this hidden value and enhance the performance of the business overall?

To help companies capitalize on advances in data and analytics, this briefing offers a road map for creating a platform of tax knowledge to make better decisions and draw insights that can help increase revenue, enhance operating margins, optimize supply chains and more.

# Catching up with the tax authorities

Tax authorities are increasingly investing in new technology to proactively collect financial data in real time. New data and analytics technology enables tax authorities to quickly sort through millions of records to identify issues, risk-assess taxpayers and reduce timeframes for tax audits. As a result, they are swiftly improving their ability to reduce errors, prevent fraud and ensure corporate taxpayers meet their income, indirect and other tax obligations.

Tax authorities are also demanding more data from corporate taxpayers, and they often demand it sooner. These trends will increase as countries around the world continue to implement the Organisation for Economic Co-operation and Development (OECD)'s Action Plan on Base Erosion and Profit Shifting (BEPS) and its requirements for more transparency in corporate tax reporting.

As tax authorities embrace tax digitalization, it's never been more important for companies to understand every detail of the story their tax data tells, while ensuring accuracy and consistency. Companies that take a data-driven approach to tax are in the best position to meet tax authorities' demands globally and prevent costly errors.

Improving compliance is just the start. A data-driven approach can enable tax functions to:

- create a global view of compliance across all countries, and develop insights on how decisions in one country can affect other parts of the group

- identify the main tax attributes and risks across the organization's global footprint, with the ability to drill down into entities and relationships
- model different scenarios on the impact of BEPS and other tax reforms, globally and by entity
- review the permanent establishment risk of locations to determine any likely unknown taxable presence
- optimize working capital by analyzing value-added tax data and the timing of payments
- optimize cash management of intragroup loans by identifying mismatches between the tax rate of deductions for interest against assessable income
- offer predictive insights based on the analysis of supply chain data
- conduct automated analysis of all tax data — beyond mere sampling — to prevent or fix errors related to tax laws and regulations and other factors.

But the quality of these insights is only as good as the quality of the data. That's why enterprises need to ensure the accuracy, reliability and timeliness of their tax data throughout the business. Seizing control of your organization's tax data is the first step toward harnessing its strategic value.

# Where do you start?

To unlock the greatest value from tax data, organizations need to extract the right information from their systems, combine it with other sources, establish consistent data policies throughout the enterprise and leverage user-friendly analytics to reveal opportunities.

Gaining control over data starts with identifying how your data is acquired, where it is stored and how it is used. With this knowledge, you can then work toward organizing that data and centralizing data-related activities. This approach will give you a better picture of your organization's global financial landscape, so improvements can be scaled across the organization. For example, organizations that centralize all transaction-level data in one system can create a unified view of compliance across multiple markets. They can see how the

decisions of a single country or department — on factors such as transfer pricing or cross-border transactions — affect other parts of the organization.

The prospect of migrating all of an organization's data into a massive data warehouse is daunting, but data does not necessarily need to be consolidated before it can be used. With today's data management tools, organizations can extract data from almost any source, combine it in a separate environment or platform, and convert the data into tax-ready formats with ease.

Data integrity, however, is key: those with unreliable master data will almost always find that their insights are equally unreliable.

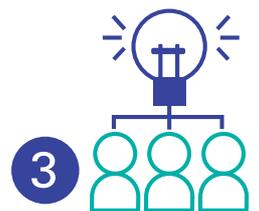
# How does tax data analytics work?



1  
*Tax and data specialists extract data from business systems.*



2  
*The data is cleaned, reconciled and loaded in data analytic tools.*



3  
*Exception testing, benchmarking and trending is conducted to report results, detect anomalies and visualize data.*

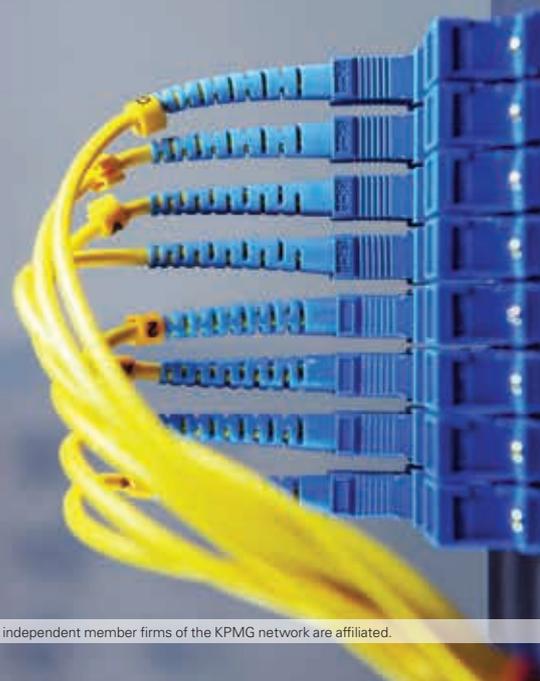
Source: *Discover the value in your Direct Tax Data*, KPMG in Australia, 2017

Once your tax data is in control, your tax function can begin to move toward the application of data and analytic tools. While the tactical implementation of a data-driven approach to tax compliance varies among organizations, markets and business models, most data-driven models work in the same way.

First, data is extracted from master data, finance and inventory management sources across the enterprise and — if necessary — fields are translated into a common architecture. Next, the data is validated against a series of tests that reflect the underlying tax principles and the unique circumstances of the organization. For example, where VATs are concerned, one set of such tests includes numerous accounts payables and accounts receivables tests that query every line of data to identify possible exceptions or errors.

The challenge then is to use that information to improve the compliance process. Clearly, not all exceptions identified will require full remediation. Organizations need to have the right insight and capabilities to understand which exceptions need to be elevated and which simply require ongoing monitoring. Then the most appropriate measures can be taken — based on solid data — to reduce the potential for audits and improve overall compliance.

Organizations at this stage are already well on their way to achieving significant improvements in their tax compliance processes. The next step is to understand how to translate that data into insights and ultimately convert these insights into value — not with a giant leap but through incremental steps to test the waters and gain confidence over your tax data and your ability to manipulate and use it.





# Start small, scale up

Stepping stones on the road toward more advanced predictive analytics for forecasting, strategic planning and tactical decision-making include building capabilities in tax analytics, visualization techniques, modeling and process automation.

These capabilities can first be tested in one or two discrete areas of tax to work out the kinks and refine processes before being scaled up for broader company-wide implementation. These steps could involve, for example:

- examining effective tax rates and cash tax rates to deepen your understanding of where tax costs and benefits differ from the statutory rates throughout the group
- analyzing intragroup transactions reported in transfer pricing master file documentation to ensure consistency among reporting jurisdictions
- reviewing recurring capital expenditure projects to automate the tax classification of capital assets.

## Tax analytics and visualization techniques

Companies face challenges completing comprehensive reviews of their tax positions due to sheer size and/or complexity of their tax data. This frustrates their ability to efficiently complete a ‘What If?’ analysis across many entities or jurisdictions and prevents the efficient identification and communication of tax trends, planning opportunities and risks.

Technology-enabled visualization techniques can vastly simplify complex datasets and provide tax teams with tools to help inform, make and communicate data-driven decisions across corporate groups. These techniques can produce a ‘single view’ of compliance positions across multiple markets and to understand where challenges and opportunities may occur.

Given the rapid shifts in today’s business environment, this visibility and insight can lead to improved business decision-making and flexibility. It can reveal hidden trends and highlight risks and opportunities within the tax data. It can also enhance planning and communication by producing C-Suite summaries and real-time dashboards that also allow users to drill down for detailed review.

## Modeling

Many tax teams struggle to effectively manage large and complex spreadsheets and maintain data integrity due to formula errors, stability and other problems. Moreover, there is often difficulty in supporting complex tax processes such as operational transfer pricing, provision, compliance and planning.

Modeling capabilities enable companies to review and build usable data. Improved spreadsheet and database models offer increased performance and flexibility, immediate business benefits, and functionality that can optimize the quality and accuracy of model outputs. They also provide custom tools and solutions that cleanse and convert data and provide analytics and visualizations, enabling flexible, robust tax models that can be designed and built to help to increase accuracy and speed with limited involvement of the company’s IT function.

## Process automation

Many companies that are looking to reduce labor costs are challenged by the need to deploy tax professionals on more strategic initiatives. They may find it difficult to achieve efficiency and consistency across redundant manual tasks.

Process automation improves efficiencies by automating and augmenting highly standardized activities traditionally performed by people in high volumes. This helps minimize and/or eliminate labor waste while empowering tax teams to focus on the tax skills that can add value to the company.

Further, with process automation, all of a company’s tax data — beyond mere samples — can be analyzed quickly and accurately for new insights. Automation also helps tax departments quickly fix or prevent mistakes, which is critical in the emerging data culture as accuracy and transparency become evermore critical. For example, automation software can be used to determine the proper tax codes and product classifications for an invoice, which otherwise are prone to human error, while also detecting problematic invoices.

# Options for outsourcing tax data and analytics

Of course, some finance and indirect tax departments are already using all their resources just to meet their business support, reporting and audit obligations, leaving little time and budget for more strategic pursuits. But implementing a data-driven approach to tax does not have to be expensive, complex or disruptive.

There are several outsourcing options that can deliver these services and analyze the resulting insights on a pay-for-use basis. For example, a platform may allow organizations to uncover insights for only a short time period, a select market or a discrete business. Alternatively, it can be deployed full time and worldwide to provide ongoing monitoring and analysis. This way, value can be achieved with reduced complexity and disruption and at a cost that meets the needs of the organization.

# Tax data and analytics in practice: Three examples



## Foreign loans, tax losses and credits

Many international companies have limited oversight of their foreign loans and how tax losses and tax credits were being used on a global scale. Historically, manual reports prepared by tax and finance functions made for cumbersome review processes.

With tax intelligence software, executives can view a global snapshot to review all loans and associated taxes. Previously unknown tax losses and tax credits can be uncovered in entities throughout the group structure. This can reveal opportunities for utilization, such as the transfer of losses and the potential for cost-base adjustments, leading to a more tax-effective structuring of loans and losses across the international company.



## Mining data from import declarations

By collecting and analyzing data from global import activity, tax teams can gain competitive advantage with immediate insight into how much the company spends on customs duty globally and by country, region, business unit, supplier and product. This can lead to a better understanding of potential customs exposure (on a loss of revenue basis for non-compliance) and identify opportunities to reduce top-line import costs.

By analyzing import data in combination with data on VAT or other indirect taxes paid on import, companies can (among other things) identify opportunities to reduce the risk of over- and underpayment of customs duties and VAT, better manage import VAT recoveries and cash flow, and potentially improve cash flow by sourcing materials from countries with lower duties and quicker refund processes.

Companies also can get new visibility on supply chain partners' performance related to tax compliance and other factors. With these insights, the tax function can work with the logistics department to develop key performance indicators for freight forwarders, customs brokers and others in the supply chain.



## Insights on global mobility

Another opportunity to turn data into value lies in companies' management of their global workforce. By gathering, centralizing and analyzing employee and international assignment data from around the world, you can create dashboards for managing regulatory and tax compliance for global employees. This data can be used to build hypotheses and predict outcomes related to such factors such as mandatory cultural training, career mobility, retention after repatriation and time required to start an international assignment.

The data can also help you assess and manage your total spend on international assignments for a given program, including tax, compensation, administration and other factors. It can also reveal, for example, the root cause of rising workforce costs in a region or business unit, or the reasons why employees of certain nationalities have high rates of attrition when they're assigned to certain countries. With insights like these, your company can then make strategic, evidence-based decisions about their global workforce.



# Tax, data and analytics: Science, not fiction

Advances in cognitive automation are allowing companies to make tremendous leaps forward by reducing costs, improving quality and managing compliance risk. Tax teams that adopt a data-driven approach are positioning themselves to understand and capitalize on the power of emerging cognitive systems to boost efficiency, reduce errors and make better strategic decisions. For example:

- **Cognitive computing:** Self-learning systems that use data mining, pattern recognition and natural language processing to simulate human thought processes — in other words, artificial intelligence.
- **Natural language processing:** Software that can understand human language and determine appropriate responses, allowing computers to accept and process unstructured voice commands rather than just coded in a programming language. Imagine being able to simply ask your computer, for example, to identify all transactions affected by a new tax treaty entered by two of your jurisdictions of operation.
- **Machine learning:** Software that can examine patterns within existing data so it can adapt and learn when exposed to new data sources. For example, this software can learn to raise alerts when an expense that could be a meals and entertainment expense with limited deductibility is coded as a fully deductible promotional cost.
- **Probabilistic reasoning:** Like machine learning, probabilistic reasoning employs logic, data and statistics to forecast likely outcomes to uncertain situations for use in decision-making. For example, these systems could help understand the likely outcome of a tax authority challenge in a new situation based on the outcome of similar challenges based on similar sets of facts.
- **Robotic process automation:** Software that combines artificial intelligence and machine learning and connects with other software to manage large numbers of repetitive, clerical tasks and that can be trained to correct errors, resolve exceptions and adapt to new situations. For example, a bot script could be written to not only spot information gaps on invoices, such as missing tariff classification codes, but also to retrieve and input that information without human intervention.

# From control to transformation: Where do you go from here?

As tax departments hone their ability to collect the right data and analyze it for insights, they have an opportunity to improve the business — both inside and outside of the tax function. To keep pace with regulatory trends and the growing imperative for data-driven approach to tax, tax directors need to invest in new technology, talent and protocols to ensure tax compliance while tapping new value.

This value can include above-the-line savings for income tax, indirect tax, transfer pricing, trade and customs — plus improved cash flow, a reduction in audits, optimized supply chains and more. Using data and analytics, tax departments can also see where they have overspent or under-planned — and how they can better contribute to corporate strategy.

In short, with a data-driven approach to tax, you stand to gain:

- full visibility of tax costs and leakage on a global basis
- the ability to review intragroup financing to identify and correct suboptimal lending
- full visibility over the utilization of tax losses and credits across all jurisdictions
- insights into intercompany transactions by entity and by country

- the ability to conduct scenario planning to model the impact of tax rate or law changes in particular jurisdictions and their implications for the company globally.

Of course, as tax functions use data and analytics to become more proactive and less reactive, they will need to work with finance and IT teams to develop better tools for data collection, analysis and sharing. And as they build their data and analytic competency, tax departments may need to seek new talent, such as data scientists and technology experts, while continuing to hire tax professionals with strong knowledge of tax authorities.

Ultimately, when it comes to making companies smarter and more compliant on tax, it's all about the data. Tax has always been driven by data, but in today's landscape of fast-changing regulations and instantaneous information sharing, it has never been more important to ensure the quality of that data and unlock insights that drive strategic decisions. The companies that capitalize on this opportunity are putting themselves in position not only for improved compliance — but also strategic advantage.



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