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**Indirect tax analysis and recovery**  
Analytics offers a new and better way

Almost every transaction a company conducts involves indirect taxes, regardless of whether the company is a buyer or seller. Sales tax, excise tax, value added tax (VAT), goods and services tax (GST), customs tax, fuel tax—these are among the dozens of indirect levies that companies can be obligated to pay, then often passing the cost along to their customers. Along with their effect on ongoing sales and purchases, indirect taxes have a major impact on organizational life events, such as building a new facility, creating a new product line, or operating in a new state, local, or country jurisdiction.

Indirect taxes also affect both cash flow and bottom-line results, and as companies grow and enter new markets, indirect tax collection and reporting requirements expand as well. With numerous tax types and jurisdictions involved, the process of fulfilling these obligations can become one of an organization's most voracious consumers of financial data.

The surging demand for indirect tax data highlights the growing importance of data analytics in understanding organizational tax obligations and preparing accurate, complete returns. This paper discusses the evolving role of analytics in addressing indirect tax requirements and current approaches to indirect tax management. While focused largely on tax regimes in the United States, it examines an innovative, technology-enabled, and data-intensive approach to fulfilling reporting requirements, reducing risk, and potentially increasing indirect tax recoveries that can be applied to any indirect tax regime.

## Significant dollars at stake

Indirect taxes are an enormous revenue source for US state governments, collectively totaling \$865 billion in 2014. Nearly 50 percent of total 2014 state tax revenues were sales and use tax related, while direct taxes—individual and corporate income taxes—generated only slightly more than 40 percent (Figure 1).<sup>1</sup> Given their size and role, indirect taxes are a predictable focus of state tax auditors.

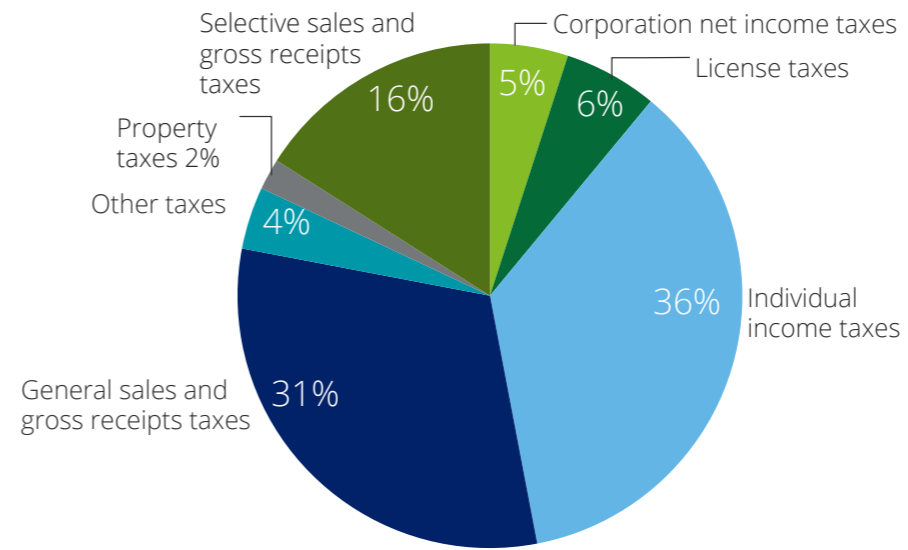
The United States has more than 9,600 sales and use tax jurisdictions spread across 45 states and the District of Columbia.<sup>2</sup> The expansion of digital trade and the continuing US shift toward more of a service economy are bringing significant changes to the indirect tax environment and new challenges for states.

Texas provides an illuminating example of the complex nature of indirect tax compliance. The state administers more than 60 separate taxes and, depending on the company involved, can require submission of up to 20 different returns or reports.<sup>3</sup>

More than half of the states have implemented some form of click-through or affiliate nexus<sup>4</sup> for remote sellers that require them to collect sales and use tax. Meanwhile, the federal government is considering legislation that would require remote sellers to collect tax in all states where they have sales based on certain state requirements.

The continuing increase in state collection of sales and use taxes and other levies, as well as the associated reporting requirements, point to growing complexity in meeting indirect tax requirements.

**Figure 1. Sources of state revenues**



Source: U.S. Census Bureau, [2014 Annual Survey of State Government Tax Collections](#).

<sup>1</sup> U.S. Census Bureau, [2014 Annual Survey of State Government Tax Collections](#)

<sup>2</sup> [Tax Foundation: State Sales Tax Jurisdictions Approach 10,000](#)

<sup>3</sup> Texas Comptroller of Public Accounts

<sup>4</sup> Click-through or affiliate nexus provisions typically require any retailers, regardless of their location, to collect sales or use taxes if they enter into an agreement with a person in the specified state for a commission or other consideration to directly or indirectly refer potential purchasers of tangible personal property to the retailer by an Internet-based link or website, or otherwise.

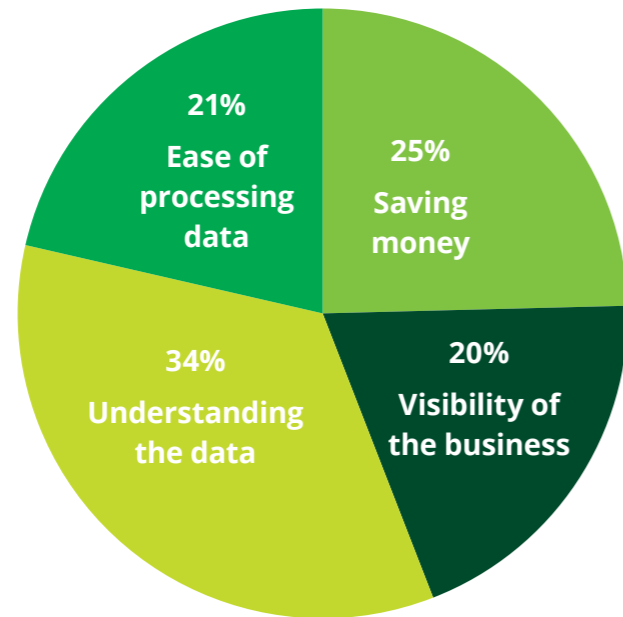
# How data analytics can transform indirect tax compliance and recovery

Tax data analytics combines tax technical knowledge and advanced information technologies with large sets of master data and transactional data to identify patterns and anomalies. Leading to deeper insights and greater understanding, tax data analytics can provide an array of benefits from uncovering errors, improving cash flow, and prioritizing indirect tax focus areas.

## Indirect tax data analytics benefits

|  |  |   |   |   |
|--|--|---|---|---|
|  <p>Provides opportunities through the record to report process</p> |  <p>Offers visibility into business scenarios</p> |  <p>Provides a complete view of a full population of transactions</p> |  <p>Manages risk</p>     |  <p>Allows users to quickly prioritize high-impact areas/ jurisdictions</p>                            |
| <p>Allows root-cause analysis of data and systemic errors</p>     | <p>Improves cash flow</p>                       | <p>Supports proactive data analysis</p>                             | <p>Reduces errors</p>  | <p>Permits users to quickly drill into the data in different ways through multiple cuts of data</p>  |

The results of a recent Deloitte Dbriefs webcast poll indicate that organizations recognize a variety of potential benefits from the use of data analytics for tax purposes.



Source: Polling results, "Indirect tax analysis and recover: There is a new and better way," Deloitte Dbriefs, March 18, 2015"

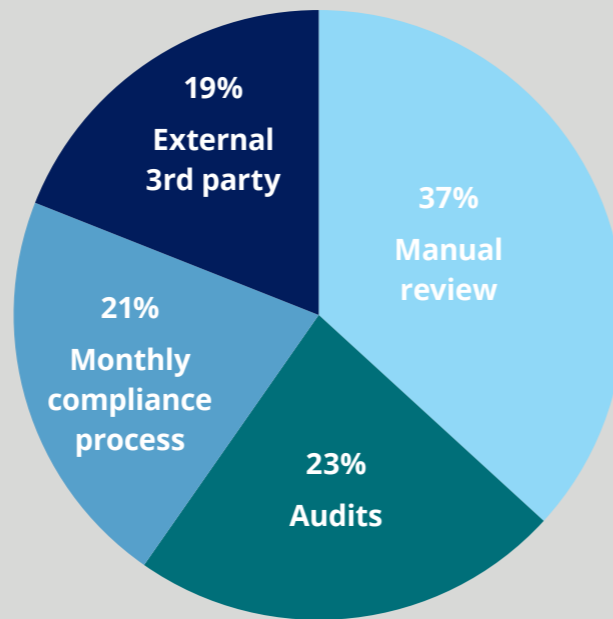
## Change the mindset from “what I need to do” to “what I need to know”

**Analytics can provide *hindsight* into historical tax positions and *insight* into current obligations. In advanced forms, analytics can provide *foresight* into “what-if” changes in tax conditions and liability and even indicate potential risk areas.**

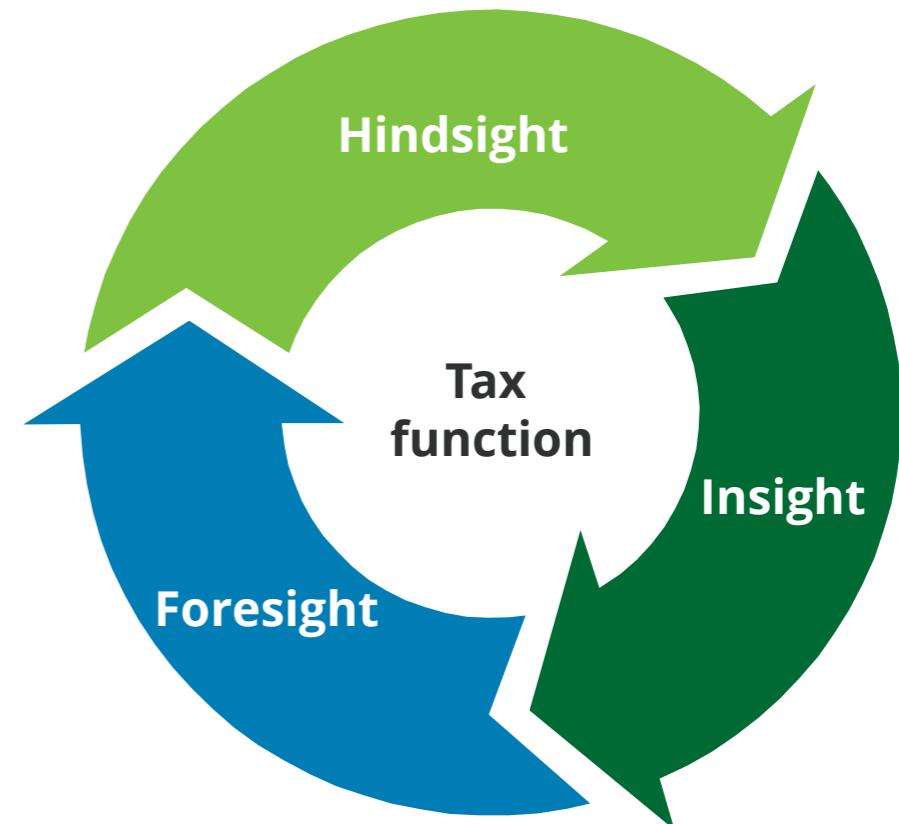
From an organizational perspective, tax data analytics can drive a change in mindset from “what I need to do” to “what I need to know.” This shift supports the tax function’s drive toward smarter, real-time decisions to improve performance and drive business strategy.

Today many indirect tax operations remain in a *hindsight* position, manually or semi-automatically mining disparate data sources to understand historical tax positions. When asked in a recent Dbriefs webcast poll about how they identify indirect tax recovery areas in their department, more than one-third of participants (37 percent) who offered an opinion indicated that manual reviews are the primary method. Often referred to as “reverse audits,” time-consuming manual approaches keep tax in a defensive state, retroactively remediating errors and mining for tax overpayments in what has been reported.

Use of advanced analytics can drive a shift from this look-back, operational reporting perspective to a future vision of predictive, fact-based planning—*foresight*. Tax professionals can model, simulate, and predict the impact of new business ventures or strategies and provide insight into what could happen if changes occur.



Source: Polling results, “Indirect tax analysis and recover: There is a new and better way,” Deloitte Dbriefs, March 18, 2015”



## Applying analytics to indirect tax

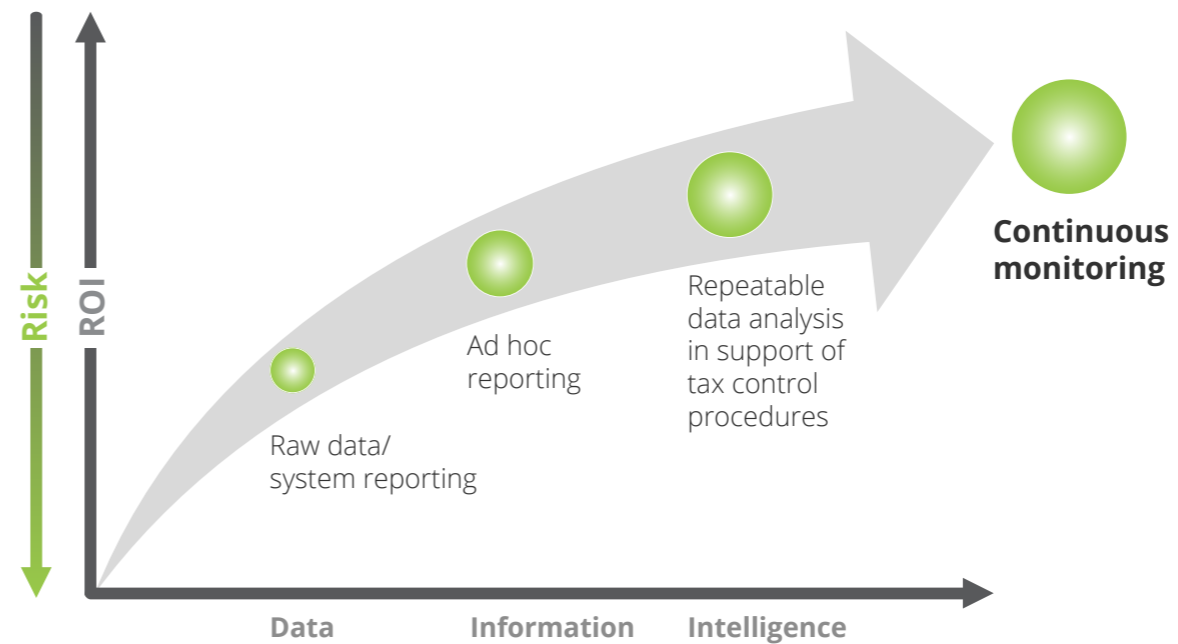
Because many, if not most, of a business' purchases and sales involve some form of indirect tax, and because those taxes can have such a large bottom-line impact, the analysis of transactions involving those taxes can provide significant details about, and insights into, the business. Where did the sale occur? Who was the vendor? What was the item?

Historically, transaction analysis involved using spreadsheets, raw data, and system reporting to build ad hoc reports that defend an audit or support compliance. Figure 2 depicts a maturity model for indirect tax analytics that moves beyond this rudimentary approach. Early applications of analytics in the past several years have involved use of visualizations to help understand data. Visualizations can be extremely valuable for monitoring and *hindsight*. However, more advanced approaches will take analytics beyond visualization into the realm of *insight*. Combining tax technical capabilities and advanced technologies facilitates this transition to repeatable data analysis that reinforces tax controls and procedures.

But what is the optimal path to that more mature state? The transactional nature of indirect tax makes it an ideal place to begin. Information technology (IT) teams already know where and how to extract data for state and local indirect tax audits, providing a strong foundation for piloting or prototyping analytics initiatives. Once that foundation is established, the use of analytics can be expanded more broadly into areas such as procure-to-pay and order-to-cash processes.

Consider the simple example of vendor transactions that flow through the procure-to-pay process in an enterprise resource planning (ERP) system. Dashboard visualizations can provide access to analysis of accounts payable (AP) transactions occurring within the ERP system—a capability previously unavailable to tax professionals. These visualizations can tap certain data

**Figure 2. Indirect tax analytics technology maturity**



elements, such as tax spend by general ledger account, top spend by vendor, and taxes by jurisdiction, providing visibility into various issues. For example, a disparity between what a vendor charged on an invoice and what an AP system or professional calculated on the transaction might surface, helping tax professionals determine where and how those differences occurred.

Analytics can also reveal whether a vendor failed to charge the required indirect taxes or highlight tax-exempt items on a multiline invoice. Such analysis can lead to potential areas of refund opportunity and risk mitigation.

## The indirect tax analytics life cycle

To capture the benefits of data analytics in managing indirect tax, it is important to address the tax life cycle from data setup through filing tax returns (Figure 3).

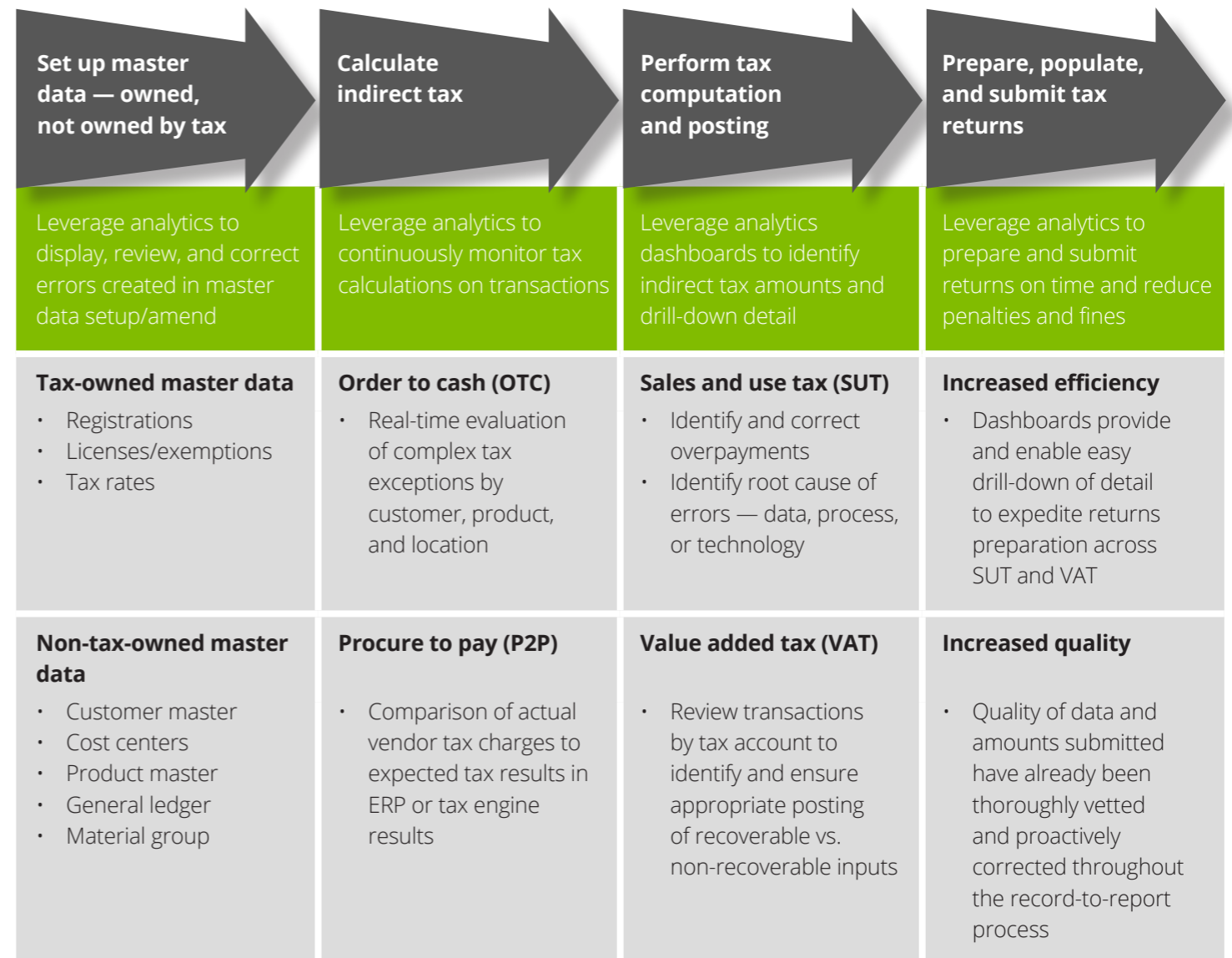
**Master data setup** for sales includes populating systems with records, such as customers, locations, and products. For purchases, it also requires capturing additional master data, such as vendor, plant, assets, and materials. None of this data is typically owned by tax departments, so it is imperative that this data be cleansed and organized at the proper level of granularity for tax calculation purposes. Beyond the sales and purchase data, tax-specific data is required, such as exemption certificates, licenses, tax rates, and rules. Leveraging analytics to display, review, and correct errors at this stage is critically important and can be done at the time of data setup, in the amend (or change) process when the data is cleansed and organized, or as part of master data validation.

**Indirect tax calculation** can take place within the ERP system or through an interface to a third-party indirect tax calculation engine. An invoice sent to a customer that contains a tax error is likely to end up in dispute, disrupting the supplier's cash flow and extending the accounts receivable cycle. Analytics can verify the calculation is correct at the time the sales or purchase order is created. Real-time evaluation of tax calculations when or before an invoice goes out allows corrective remediation, efficiency improvement, and brand image reinforcement.

During **tax computation and posting**, analytics conducted during master data setup and tax calculation are used to create dashboards for identification of tax amounts and overpayment and underpayment errors. This can help identify root causes of errors, whether data, process, or technology related, and thereby establish a basis for a forward-looking, offense-oriented approach to compliance audits.

**Preparation, population, and submission of tax returns** become more efficient as analytics provide clearer visibility into potential adjustment areas and help streamline the reconciliation process and tax department operations.

**Figure 3. The indirect tax analytics life cycle**





## Analytics-driven tax recovery innovations

Companies have historically addressed overpayments of indirect taxes during tax authority audits or through reverse audits where companies proactively file refund claims. As government auditors go about their business, the company's tax team may work with IT to extract data from the ERP system that is often incomplete, contains duplicative transactions, and is difficult to reconcile. In complex systems, accounting stream or general ledger data may be missing.

The data is then typically reviewed in spreadsheets for potential errors or anomalies. Teams may scour invoices manually and, when they find overpayments, populate information into spreadsheets to establish refund schedules. Discussions with the state tax authorities may follow to secure agreement on the schedules. The identified errors may or may not be corrected in the company's systems to prevent future overpayments.

Data analytics offer a new indirect tax overpayment recovery approach that can help recoup value across a wide range of enterprise spending (Figure 4). Working with the IT department, tax professionals can set up processes to obtain both structured and unstructured data on a monthly basis. They can also establish a centralized tax data warehouse to provide common tax data for use by tax-related personnel and processes across the enterprise. With anytime access to the data, the tax team can proactively address overpayment and underpayment reviews in real time.

Previously, jurisdictions and recovery opportunities were often assessed one at a time. Now, multiple opportunities can be analyzed simultaneously, taking advantage of datasets built on source data rather than the general ledger.

Continually improving optical character recognition (OCR) technologies enable invoice scanning and information extraction. Using predictive analytics to uncover anomalies, rule sets can be created to identify transactions with the potential for a refund. Visualization technology can aid in spotting trends and combing data for overpayments. Case management can streamline the refund process and help determine efficient ways to receive reimbursement.

Finally, steps can be taken to reduce future overpayments and underpayments. Tax engines and ERP systems can be configured to monitor payments and look for anomalies on a real-time basis, accelerating refunds.

**Figure 4. Recovery opportunity areas**

| Spend areas                              | Savings opportunities  |
|--|--|
| <b>Software</b>                          | <ul style="list-style-type: none"> <li>• Used in multiple locations</li> <li>• Used as a service</li> <li>• Used to control the manufacturing process</li> <li>• Electronically delivered</li> </ul> |
| <b>Information technology</b>            | <ul style="list-style-type: none"> <li>• Maintenance of hardware and software</li> <li>• Cloud computing services</li> <li>• IT and data infrastructure</li> </ul>                                   |
| <b>Marketing, advertising, and media</b> | <ul style="list-style-type: none"> <li>• Newspaper inserts</li> <li>• Items shipped to multiple locations</li> <li>• Promotional materials and printed sales messages</li> </ul>                     |
| <b>Fuels</b>                             | <ul style="list-style-type: none"> <li>• Fuel used in mobile equipment (e.g., forklifts)</li> </ul>  |
| <b>Construction</b>                      | <ul style="list-style-type: none"> <li>• Realty repair and improvement</li> <li>• Temporary storage of materials and equipment</li> </ul>  |
| <b>Telecom</b>                           | <ul style="list-style-type: none"> <li>• Data center exemptions</li> <li>• Sales for resale</li> </ul>   |
| <b>Utilities — electricity and gas</b>   | <ul style="list-style-type: none"> <li>• Used in manufacturing</li> <li>• Predominant use analysis</li> </ul>  |
| <b>Services</b>                          | <ul style="list-style-type: none"> <li>• Data processing services</li> <li>• Non-taxable labor services</li> </ul>   |

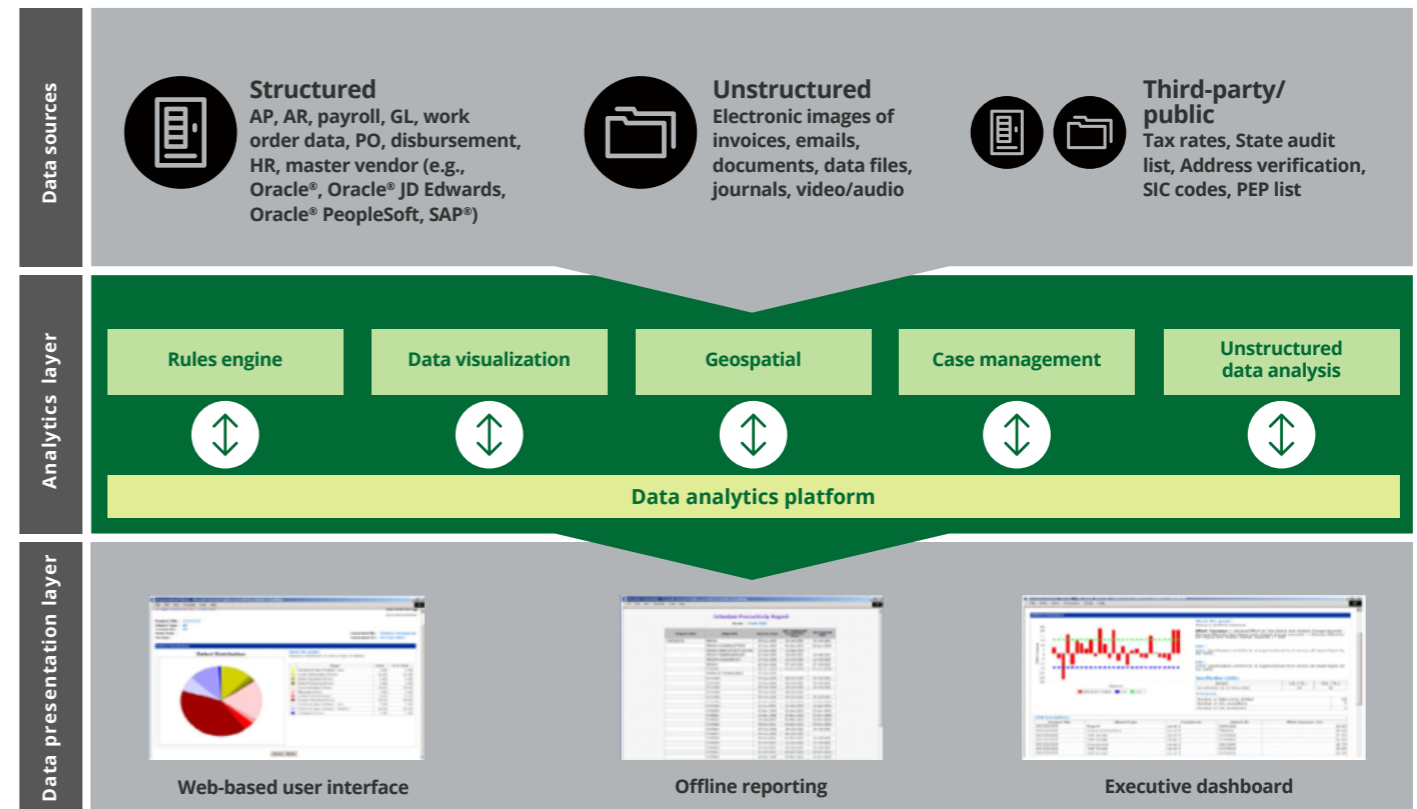
## Data analytics technology and platforms

As implied earlier, data challenges have historically been an important and pervasive impediment to meaningful tax analytics. Data has been hard to get and expensive to maintain, and processing it is a slow process. Now, technology advances are overcoming those challenges, making data a rich resource and enabling multitier analytics capabilities (Figure 5).

Multiple data sources are the beginning—ERP systems containing structured data, unstructured data from OCR systems, and third-party data from social media and other sources. These sources can be combined in an analytics platform that includes rules, visualization, geospatial, case management, and unstructured data analysis technologies.

The analytics layer subsequently informs users through a presentation layer, often using Web-based interfaces. Within minutes versus days, weeks, or months, data is visible and available for drill-down to uncover insights.

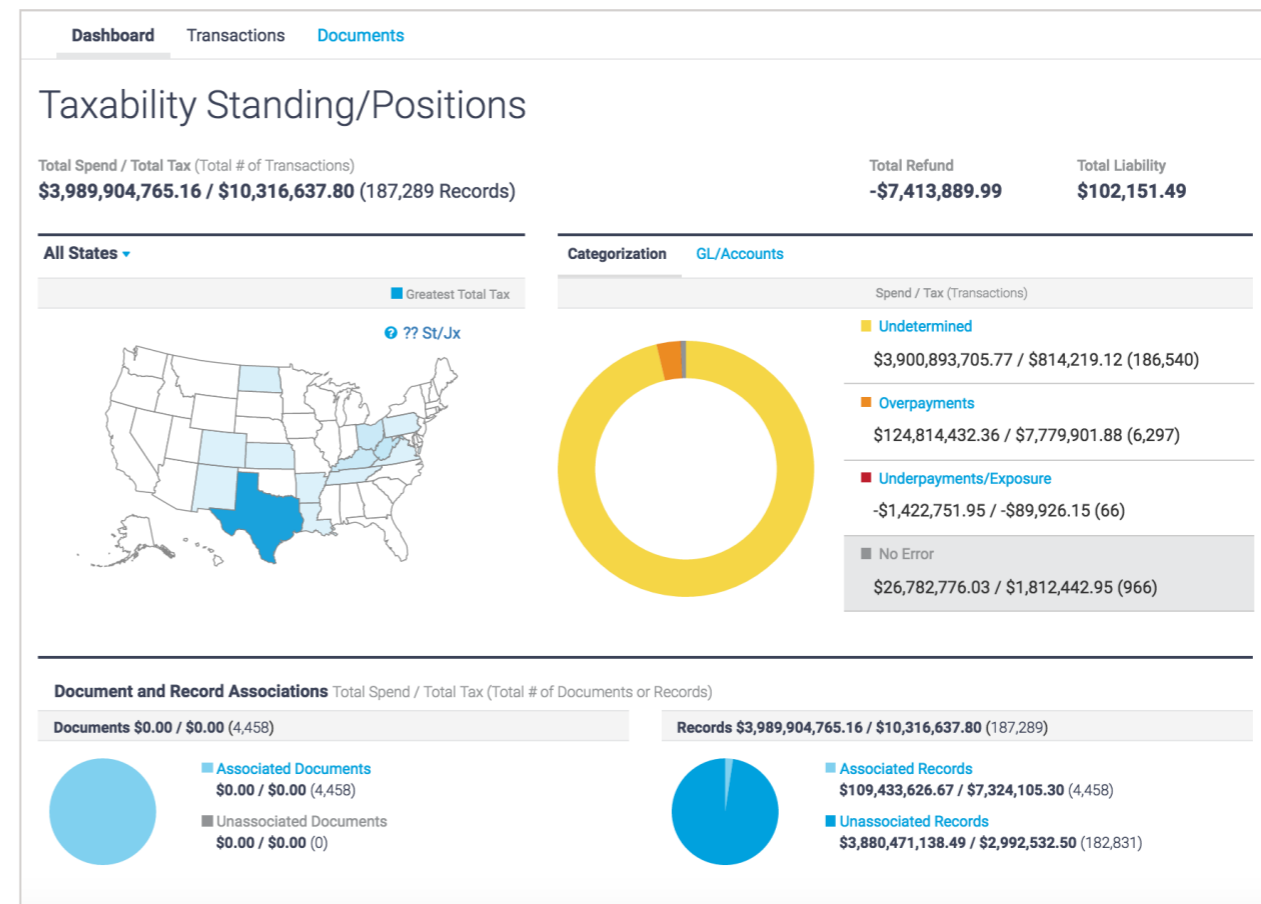
**Figure 5. Tax recovery analytics platform**



Multiple dashboards can be created based on user preferences. For example, the sales and use tax dashboard depicted in Figure 6 includes charts that help identify spend-related opportunities. Data can be exported into spreadsheets for offline review.

A variety of tests can be used to analyze data for potential anomalies, including AP spend, tax by jurisdiction or type of location, and procurement tax by general ledger or vendor. Also, analysis of tax payment trends can flag issues. For example, if the use tax category suddenly spikes, can it be attributed to a life event in the company? Is there a potential refund opportunity because of the spike?

**Figure 6. Tax analytics dashboard — US sales and use tax**



## **Get started**

A logical starting point for the application of analytics is the enormous amount of existing data within the tax department. New tools can provide great insight into this information.

Current indirect tax audits can be used to prototype an analytics dashboard and demonstrate its value. Next, look across the enterprise to identify other analytics initiatives already underway — for example, in procure-to-pay or order-to-cash cycles.

Explore where tax can tie into these efforts and tax analytics can be integrated into the overall organizational analytics scheme. Engage IT to identify analytics platforms that tax can perhaps benefit from.

## **A new view of indirect tax**

Indirect tax is a major enterprise expense, and managing it well is vital to cash flow and the bottom line. Data analytics technology offers powerful, promising new tools to help capture an accurate picture of liabilities, develop strategies to reduce overpayments, and even identify potential opportunities for tax refunds.

## Contacts

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