



Tax Data Management

**The hidden engine for future-proofing
tax management**



KPMG International

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Global tax reporting and technology trends

'Without data, you're just another person with an opinion'

— **W. Edwards Denning, US statistician**

Five years ago, we often cited Denning's famous quote to describe the importance of using data in our work and daily life. At the time, data and analytics were on the rise as a forward-looking trend through which we could set ourselves apart from the pack.

Now, in 2021, we would rephrase this quote as: *'Without trust in your data, you're just another person that consumes data'*. This shows just how far the use of data and analytics has been commoditized and become essential. Today we produce, consume and rely so heavily on data and algorithms that it's critical to have comfort that this data is accurate and transparent enough to drive real-time decision making. The world of tax has been lagging in terms of investment in, and adoption of, data and technology in a broader sense.

This seems odd. If there were only one area where data is crucial to support decision making, it might well be tax. Every single tax calculation — corporate tax, indirect tax or transfer pricing — is based on data that is produced somewhere every minute, in real time. This is not new for tax-paying organizations, but over the past several years, tax administrations around the world have started to undergo digital transformation, producing new data-related opportunities and challenges and requiring companies to sharpen their focus on tax data management.

Indirect tax

In the area of indirect tax, two main trends in tax reporting among the world's tax authorities are having a major impact existing compliance processes and the technological solutions that support them.

1. Increased frequency of tax authority transactional reporting requirements

Many tax authorities in Europe and other regions require companies to report full details of transaction-

level information, which often involves reporting more information than needed just for tax purposes. These types of reporting obligations are referred to as 'real-time reporting', although the term may be confusing since there may be no direct push of information from corporate IT systems to the tax authorities. Real-time reporting involves running a report (after the fact) and submitting lists of transactions to the authorities (e.g. via application protocol interfaces [APIs]). The frequency of submission is increasing from monthly to weekly to sometimes close to real-time. Such reporting requirements are already in place in Spain (SII) and Hungary (real-time reporting), while a number of other countries have introduced a Standard Audit File for Tax (SAF-T), including Poland, Portugal, Norway and Austria.

2. Government-controlled invoicing systems

Electronic invoicing systems have been adopted in many Asian jurisdictions and more recently in Latin America. In these systems, each seller's issued invoice requires a 'stamp' from the tax authorities before it can be submitted to the buyer. This is a powerful way to combat potential tax fraud involving deductible input value added tax (VAT) credits.

For example, China has implemented this concept with its 'Golden Tax' system. Other jurisdictions that have introduced these systems include India, Brazil, Mexico and most other countries in South America.

Electronic invoicing, or e-invoicing, is often associated with exchanging information between the buyer and seller directly (e.g. via XML) but in a tax context. The idea is that information (invoices) is shared with the tax authorities as an intermediary party for verification and approval.

Corporate tax

For corporate taxes, there has traditionally been less need to access transactional data to calculate taxable income and tax adjustments. However, tax challenges

arising from the digitalization of the economy are driving the introduction of new taxes and reporting requirements. These obligations require more detailed, widespread and complex data elements for tax calculation purposes. Examples are the introduction of digital services taxes (DSTs) in Austria, the UK and Turkey, Foreign-Derived Intangible Income (FDII) in the US, and the Pillar 1 proposals being developed through the Organisation for Economic Co-operation and Development's (OECD) base erosion and profit shifting (BEPS) project.

Changing data needs

We also increasingly see companies adopt a more centralized approach to global tax compliance, not just in management activities but also in data collection and compliance input.

All these compliance reporting trends have a few aspects in common for companies that increase the need for tax data management solutions:



Data needs to be accessible —
from a single trusted source



Data needs to be accurate —
preferably right the first time



Data needs to be complete and ready for reporting

Technology as an enabler

The significant uptake of technology is fueling the digital transformation agenda of companies. Technology solutions to automate manual processes and support smart decision-making processes are taking over human-led activities; something not thought possible even five years ago. Data and technology applications are facilitating the provision of pre-built data infrastructures to develop and roll-out data-driven applications.

These infrastructures — supported by advanced data processing technologies, such as in-memory computing — have the potential to make the concept of real-time data management a reality. The increased data volumes that companies need to produce, access and convert into reportable data outputs are no longer the show-stopper for data management they used to be when traditional data warehousing solutions were employed for running time-consuming reports. These solutions were extremely inflexible, and they did not allow for quick changes to existing reports to meet external and internal stakeholder requirements.

As more tax authorities impose electronic reporting requirements, the recent adoption of data technologies is a great opportunity for organizations to start outlining a solution framework to cover their rising tax data needs.

In the next sections of this report, we discuss how tax data management can provide a thorough solution to deal with the increasing data-driven nature of management of taxes. In particular, we answer:

- **Why is tax data management important?**
- **What does future-proof tax data management look like?**
- **How can you make tax data management work for you?**

Tax data management — why is it important?

As we outlined in the previous section, there is increasing pressure on companies to report information to tax authorities in greater detail and within shorter timeframes.

These trends can bring two key challenges:

1. Companies are not sure about the quality of the tax calculations. The tax authorities can challenge the outcomes due to the detailed level of information available in the reports.
2. Most of the required data is not available in standard reports produced by, for example, the ERP system. The required data may come from different modules or even different data sources. When combined with the increased frequency of reporting requirements — for example, in Hungary where the tax authorities require data to be submitted within one day after the invoice has been issued — this puts data accessibility high on the agenda of many companies.

This is where tax data management comes into play.

Tax data management refers to the strategy, technologies and available intelligent data models employed to extract, ingest, clean, transform and harmonize data from its source (where it's created) all the way to data outputs that can feed directly into the tax applications used by tax teams.

Obviously, tax data management is not new; every organization is already dealing with it in some way or other. However, in most situations, many of the activities

surrounding data management reside with tax teams, who often revert to the most commonly used tax technology solution globally: electronic spreadsheets.

Traditionally, there have been communication challenges between tax and/or finance teams and the IT organizations of companies, which sometimes led to bad experiences with IT as a trustworthy partner able to quickly deliver the reports required to manage tax. Therefore, tax teams have to work their way through the available data in the organization, using existing reports that usually come in various formats with limited interconnectivity. But what if reports need to be updated due to a tax change in a country? How would tax teams know whether and where the required data is available, how to obtain it and how to update their spreadsheet models to incorporate this change?

Various technical reconciliations are usually performed as an important control to ensure the data is complete before and after transformation. This is mostly done manually, consuming a lot of time but adding little value to the end-to-end process.

Since tax compliance and data analytics rely heavily on data from many different sources, amassed via different reports, tax teams may spend more than 70 percent of their time on data-related activities and 30 percent or less on actual compliance delivery. The time and effort needed to ensure data quality could become all-encompassing if compliance requirements continue to increase how much detail must be reported and, more importantly, the frequency of this reporting.

Most companies are dealing with tax data challenges in these six categories:

1	Limited access to data
2	Required data scattered and ambiguously defined
3	Poor data quality
4	Lack of tax-friendly technologies for data management
5	Increased data volumes
6	Inability to unlock data's value

You might expect challenges to differ among various tax types, such as corporate tax or indirect tax. However, in our experience, we often see a reactive approach to data management in various tax areas, and so data issues resulting from the six challenges above are not detected until after the fact. We are also seeing more common data requirements arising across different taxes (from summarized data to detailed reports), presenting common challenges for tax teams across different tax types.

How can data management help to overcome these challenges?

To comply with reporting requirements, tax teams need information to effectively manage end-to-end processes and make prudent, fact-based decisions. However, tax teams seem to be most comfortable with the traditional spreadsheet based methodologies. This is not sustainable, especially in light of the increased reporting pressure from tax authorities and other stakeholders. In the next section, we outline what a 'future-proof' data management concept looks like.

Future-proof tax data management

In the previous sections, we outlined typical data challenges and examples of how the traditional spreadsheet based approach is not able to provide a solution. We also discussed how new compliance obligations and reporting requirements may increase these current challenges in the near future. Fortunately, the same technology disruption that is driving tax authorities to introduce these new obligations also presents opportunities for taxpayers to deal with them and future-proof their tax data management. In our work with companies that are transforming their tax data management, we are observing four fundamental shifts:

1. From manual to automation

The biggest change in data management is going from manual data processes to a high level of automation. Technology can eliminate tedious activities like generating reports, making standard adjustments, and consolidating and reconciling data. The time saved by tax professionals — which can now be spent dealing with substantive tax matters — is often the biggest driver in business cases for improving tax data management.

2. From batch to real-time data

Driven by technologies like cloud and big data, the costs of real-time data and streaming capabilities are plummeting, paving the way for their use within tax. Having data available in real-time will help prepare organizations to deal with future tax obligations like real-time compliance. Real-time data also creates exciting opportunities for real-time monitoring, which could entirely shift the day-to-day operations of a tax team from reactive to proactive tax management.

3. From point-to-point to a single trusted source

Traditionally, we see data management activities incorporated into point solutions. Each tax process and tool uses different reports, with their data management dealt with separately. As a result, the same data is often used multiple times in different ways, creating the need for additional reconciliations.

Future data management will likely move away from these point-to-point solutions and use a single data repository. Data from different sources can be stored centrally with a common definition so it can be used for multiple purposes across tax types.

4. From fixed to flexible

Traditional technologies often work with fixed, pre-defined data formats. This is great for developers seeking to minimize redundancy and make technology more efficient. However, it can also require organizations to undergo lengthy development cycles when incorporating new data elements. This should be obvious to anyone who has requested a new or updated tax report and has had to wait months before it was ready to use. In a world where tax requirements are rapidly changing, tax data management should be just as agile.

What does future-proof data management look like?

When we look at the foundational shifts, it's easy to see that traditional spreadsheet-based approaches will not suffice in the future. Instead, organizations should consider a new approach that incorporates modern data technologies into a centralized, future-proof solution.

A wide range of technologies can be used to build a solution. In recent years, many data processing tools have become available, all with their own advantages and disadvantages. The following four main elements should be considered as part of any data management solution:

— Infrastructure

Infrastructure is critical for making real-time data management a reality. Modern architectures have features to ensure data is secure and governed by a global access control. These solutions are able to process and store large volumes of data quickly.

— Data models

'You can have data without information, but you cannot have information without data.'

— American computer programmer and science fiction writer

You can have all the data of an entire organization at your fingertips, but unless you can convert it into information that matters to the tax team, there is no point in having a data management solution. Tax information is hidden in ERP and accounting systems. Having tax-specific data models makes this information visible to the tax

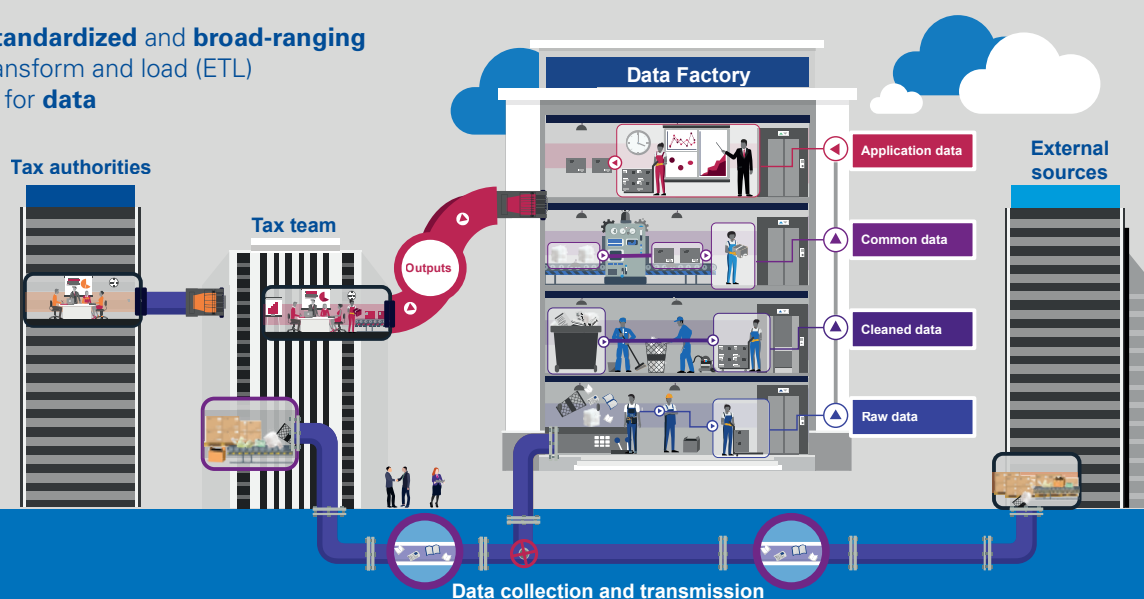
team. Having good data models can also allow data to be consolidated from different sources into a single repository.

— Consumption

Data management is pointless if you can't use the results. If you have a single repository for all tax data, it's crucial that you can use it to generate reports in the correct format, with the correct data, available to the right people. This also applies when connecting different technologies, like dashboards and compliance software, to the solution.

Simple, standardized and broad-ranging

Extract, transform and load (ETL) processes for data



Enabling the Tax Data Factory

KPMG has developed an industrialized approach to tax data management. The Tax Data Factory puts together years of experience of working with data from some of the leading ERP systems, commonly used tax reports and leading technology. The Tax Data Factory can be used by organizations as a service, or to accelerate the design and implementation of their own data management solution.

The Tax Data Factory contains a pre-built, highly automated data production line to extract, transform, clean and

reconcile data into a common data model, serving as a single trusted source for tax teams. The data outputs of the Tax Data Factory are stored in a centralized repository that tax teams can use as and when needed without having to be an IT or data specialist. This allows tax teams to shift the time spent on manual data processing to analyzing data and tax reporting, thus enabling them to do more in less time.

Making data management work for you

Now that we understand what future-proof tax data management looks like, the next question is how to make this a reality. Not surprisingly, this can be a real challenge for many organizations. While many tax teams know they have a data problem, they struggle to effectively tackle it with the right blend of technology and organizational change. As a result, we often see data initiatives that either fail to use adequate technology, or initiatives that solely focus on the technology and fail to create real benefits for the tax team. To support organizations, we suggest four steps that help to balance the different aspects of building a data management solution:

1. Identify the data challenges you want to solve

Building a tax data management solution should always start with identifying the data challenges the organization is currently facing, as well as future challenges that might result from new compliance and regulatory changes. It is best to have a broad vision and, for example, to look at general insights and data analysis requirements in addition to compliance requirements. The aim is to address all these requirements in a single data management solution that achieves as many synergies as possible. In other words, you should think big.

2. Define the data processes

Once you have the end goal in mind, it's time to design the required data processes. These processes should cover your data needs and how you collect, transform, store and consume this data. Some questions to consider:

Data needs

- Which solutions do you want to source from the data process?
- What data currently goes into these solutions?
- Are there synergies or overlap with data needs from other departments?
- What information needs to be stored for each data point?

Collect

- Where does the required data come from?
- Do you also need data from external sources?
- Will you need structured data, unstructured data, or a combination of both?
- How will the data be collected?

Transform

- Do you need to clean the source data before you can use it?
- How will you validate the data's quality?
- Is it possible to reconcile the data to prove its completeness?
- What must be done if the data is not accurate or complete?

Store

- What sort of data volumes are you working with?
- Do you need a data lake for unstructured data?
- How will you keep your data secure?
- How long do you want to store the data?

Consume

- Do you need to restrict access to the data to certain (sub-)teams?
- Is it possible to directly connect other solutions, such as compliance software, using APIs?
- How can you make access to data and analysis easier for the tax team?

3. Find the right infrastructure

Translating these tax processes into technology requirements and finding the right infrastructure can be challenging. It often requires someone with extensive knowledge of the tax challenges and the available technologies.

Nevertheless, it's important to select the right tools for the job. We often see organizations choosing either to completely outsource the technology or develop something themselves.

When developing a solution, it is important to align with the organization's technology roadmap and leverage solutions that are already in use. Whatever you do, make sure you don't wait for the perfect architecture for all your current and future needs. Instead, make sure the architecture is flexible and ready to evolve.

4. Start small

Sometimes the biggest challenge is getting started and not being overwhelmed by the possibilities. All change is difficult, especially when a tax team is used to the current

way of working. A crucial part of getting started is defining the knowledge and skills your team needs to understand and work with the data. You should start small, while keeping the bigger picture in mind. We often see an approach based on proof of concepts, where teams with an agile mindset start small, while keeping the end goal in mind. This helps to add value as soon as possible while remaining realistic. Technology will not yet (at this stage) fully automate the tax processes at the click of a button.

Side story

From spreadsheets to fully automated data-driven corporate tax compliance automation

A global financial services organization operating in more than 100 countries was primarily using spreadsheets and other manual approaches for its corporate tax compliance processes, with limited standardization and harmonization across different countries. This organization was seeking to implement a more centralized approach for collecting data and preparing it for compliance management in order to reduce the overall cost of compliance. By eliminating the spreadsheet layer, directly pulling the required data from where it's created (at source) and transforming that data to a common data model, including mapping to a common chart of accounts, the organization was able to build a single trusted source that local teams could access to gather the data they need for compliance management purposes.

As a result of this change in data sourcing, the company was able to:

- reduce the total effort for corporate tax compliance by 40 percent
- achieve a higher quality of compliance outputs due to fewer manual steps in the process
- standardize processes and reporting, which led to synergies in capturing process improvements across countries
- improve overall visibility for group tax by utilizing data analytics solutions and dashboarding data from a single source.

Data management as an enabler toward 'tax compliance by design'

Which business outcomes are we seeing among companies that have uplifted their data management foundation, and how do these outcomes result in overcoming the above-mentioned key challenges?

Having a single trusted source available in a tax data store helps to understand where all the data is coming from and what data is readily available for users via the specific tax applications, such as compliance engines and data analytics dashboards. This is especially important for organizations that operate multiple ERP systems — by business, region or company — because definitions for revenue, intercompany and legal entity may differ for each system. Complex data mapping is needed to help ensure that data is harmonized in the data store. A data audit trail should be available to provide transparency to users, so they know exactly what they are looking at. This is crucial in situations where tax authorities want to see that data has been reconciled and not changed while being transformed and mapped, for example, in the UK's Making Tax Digital program.

First-time right. We hear about this principle more and more, and it doesn't require further explanation in terms of its potential benefits. But to what extent is this really realistic and at what costs?

At first glance, 'first-time right' seems more relevant for tax calculation engines or data entry solutions such as optical-character recognition (OCR), but it also has a strong relationship with data management solutions. In the context of tax, the goal of first-time right is mostly driven by tax reporting frequencies. It's inevitable that data may be wrongly entered, resulting in wrong tax calculations. But the quicker you can identify and correct wrong tax data, the more assured you can be about the quality of your data when you need to use it, e.g. in the case of an unexpected tax audit.

A future-proof data management concept — built on the right technology components — can allow for (close to) real-time data checking at data entry — enabling you to take corrective action immediately after the fact and gradually.

Imagine a situation where every single transaction is exposed to 100 tax data quality checks, with transactions being classified into three buckets:

1. Very likely correct — based on a predetermined data accuracy threshold
2. Maybe correct, but further investigation required
3. Very likely incorrect.

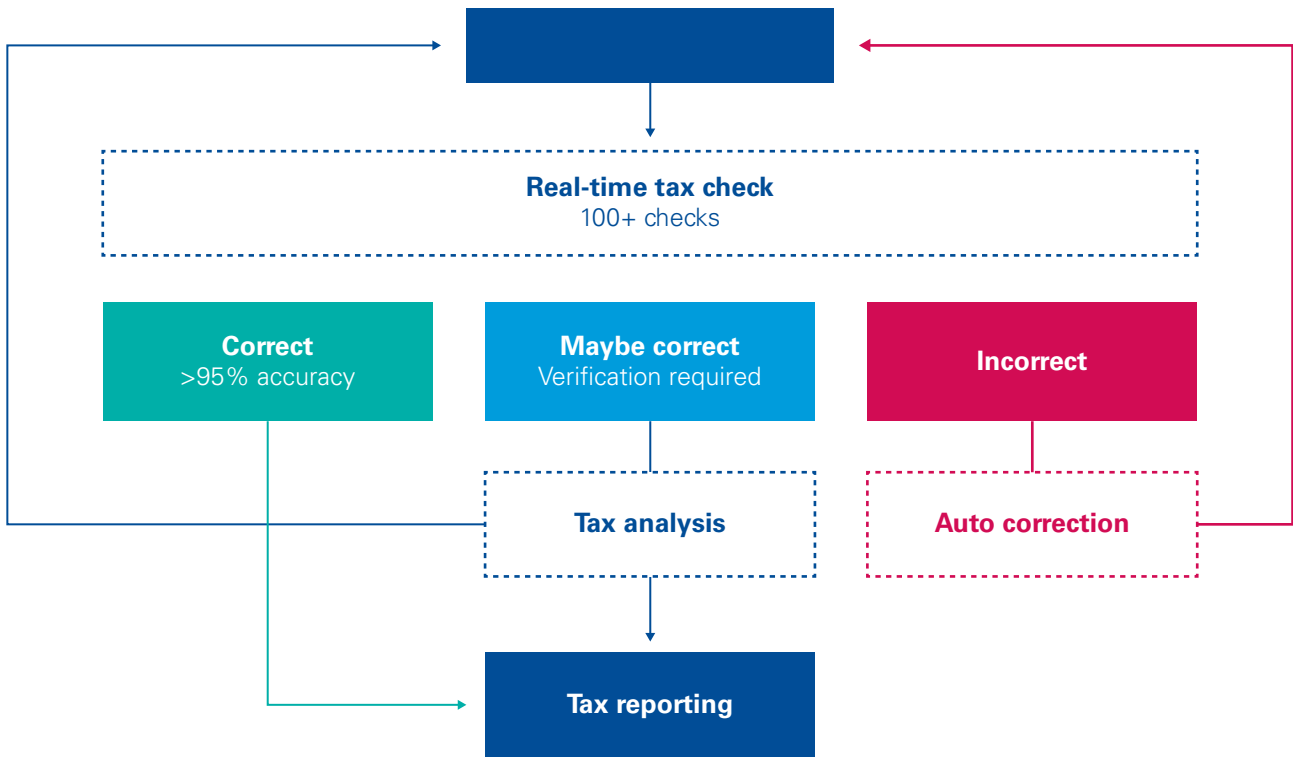
The transactions within categories (2) and (3) are then automatically pushed to the relevant follow-up workflow, or — one step further — automatically corrected at source. When you continuously control and monitor data, there's no longer any need for time-consuming reconciliations, manual corrections or data spot checks. In turn, this increases the level of trust in the data among the tax teams. And this trust in data is one of the most important cornerstones for the future of tax compliance — not only for taxpayers but also for tax authorities, where mutual trust between companies and governments is an important guiding principle.

We are already seeing some forward-thinking tax departments that are upscaling their investment in technology moving in this 'tax compliance by design' direction. This requires a significant change in the required skillsets within the tax department beyond core tax, as well as a cultural shift to become a more data-driven organization. We need to remember that tax always depends on other non-tax processes, as these create the data that tax needs as a basis for its tax calculations and reporting. Therefore, it's important for tax teams to take a more strategic position in the organization and act as a business partner for logistics, sales, supply chain, finance and HR departments.

KPMG's investment in technology: Investing in transformation

KPMG is investing US\$5 billion over 5 years in technology, people and innovation to accelerate the digital transformation of KPMG firms and clients. More than US\$1 billion of these funds will be invested directly in tax and legal technology.

Tax compliance by design



Takeaways for tax leaders

Over the past 5 years, tax functions have come to rely heavily on data and algorithms, and it's increasingly critical that tax teams can count on its accuracy, completeness and availability.

Tax authorities are driving this shift as they require taxpayers to report tax data more frequently and in more detail.

While tax reporting requirements differ widely from one type of tax to another, the data-related challenges and opportunities are common across all tax types.

By centralizing and standardizing tax data within a company-wide tax data management system, tax teams can overcome tax data challenges that stem from limited access, multiple data sources, poor data quality and rising data volumes.



As tax authorities demand more detailed tax data closer to real time and as companies engage in broader digital transformation, tax teams have opportunities to make a strong business case for a future-proof tax data management solution.

Designing and implementing such a solution requires the right mix of technology and organizational change management. For many companies, the best approach is to start small while keeping the big picture in mind, using a step-by-step approach as proof of concept and to add value along the way toward fully automated tax data management solution.

With a system that produces data right the first time, companies can eliminate much of the searching, correcting and converting of data that can now consume up to 70 percent of compliance time. This can free tax teams to make more strategic use of their company's tax data, deriving insights that can help improve business decisions and elevating the tax team's position as a valued partner to the rest of the business.

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