STEERING THROUGH THE COMPLICATED INDIRECT TAX (SALES) MAZE

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Understanding Taxes

Taxes are the involuntary fee levied on individuals or corporations by a government entity at the local or regional or national level on certain types of transactions. They are typically classified as direct or indirect taxes and usually the primary source of revenue for governments worldwide.

Direct tax is paid directly to the government by an individual or organization and includes income tax, corporate tax, wealth tax, gift tax, and expenditure tax. For example, corporate tax is levied on operating earnings after deducting expenses. In the US, the current federal corporate tax is a flat 21%, whereas it is 19% in the UK. Corporates in the US paid a whopping $230.2 billion as income tax in 2019 .

In the case of indirect taxes, organizations must collect and pay tax on the purchase and sale of goods and services. The end customer usually pays the indirect tax, and the intermediary collecting body transfers it to the government. Here again, there are two types of taxes – input tax and output tax. As the names suggest, input tax is

Corporate Income Tax Revenue
Fiscal years 1934 – 2019

Share of GDP

Source: Office of Management and Budget. Historical Tables. Table 2.3, "Receipts by Source as Percentages of GDP: 1934–2025."

applicable when an organization purchases goods or services for the business. In contrast, output tax is applicable on the sale of goods or services that generate revenue. Examples of output taxes include sales tax, excise duty and entertainment tax.

It is worth understanding how to arrive at the indirect tax amount. Consider the

example of a seller organization A (based out of France) and is value-added tax (VAT) certified. Organization A caters to customers within France, where it has a 20% standard tax rate throughout the country. Figure 2 explains the tax implications through a typical buy-sell lifecycle.

In this example, the key points to consider are the input tax, output tax and their variability owing to government regulations.

A good tax solution must be equipped to handle the following changes:

- Determine the tax rate applicable per country and product combination. In this example, the input and output VAT was 20%

- Track and automatically update new tax rates in tune with changes in government legislation. For the change to activate in the future, the solution must enforce the right tax rate. For example, in France tax rate changes from 20% to 22% effective from 01/01/2021

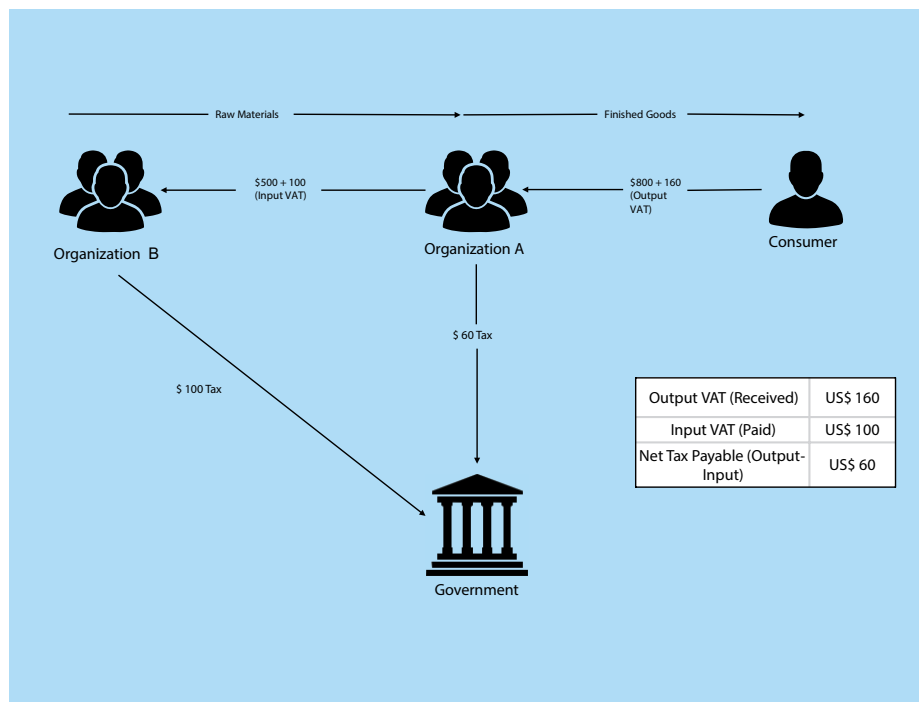- Consider taxes at the province level, applicable in countries like France.

Output VAT (Received)	US$ 160
Input VAT (Paid)	US$ 100
Net Tax Payable (Output-Input)	US$ 60

Figure 2: Indirect tax calculation at a country level

It's a tax maze

Globalization and business expansion have increased the complexity of tax calculations around the world. There is a clear need for a global tax engine to optimize computations and scale to support growth. In addition to variations in tax rates by geography, variations can occur across products. Taxes can vary by region, by country and within a country by state and also by city.

Figure 3 gives an overview of indirect tax paid at the city and state level. X and Y pay different sales tax based on several parameters like – customer destination address, the physical origin of the seller and the product sold.

Tax level	Tax %
State Tax (Illinois)	6.25%

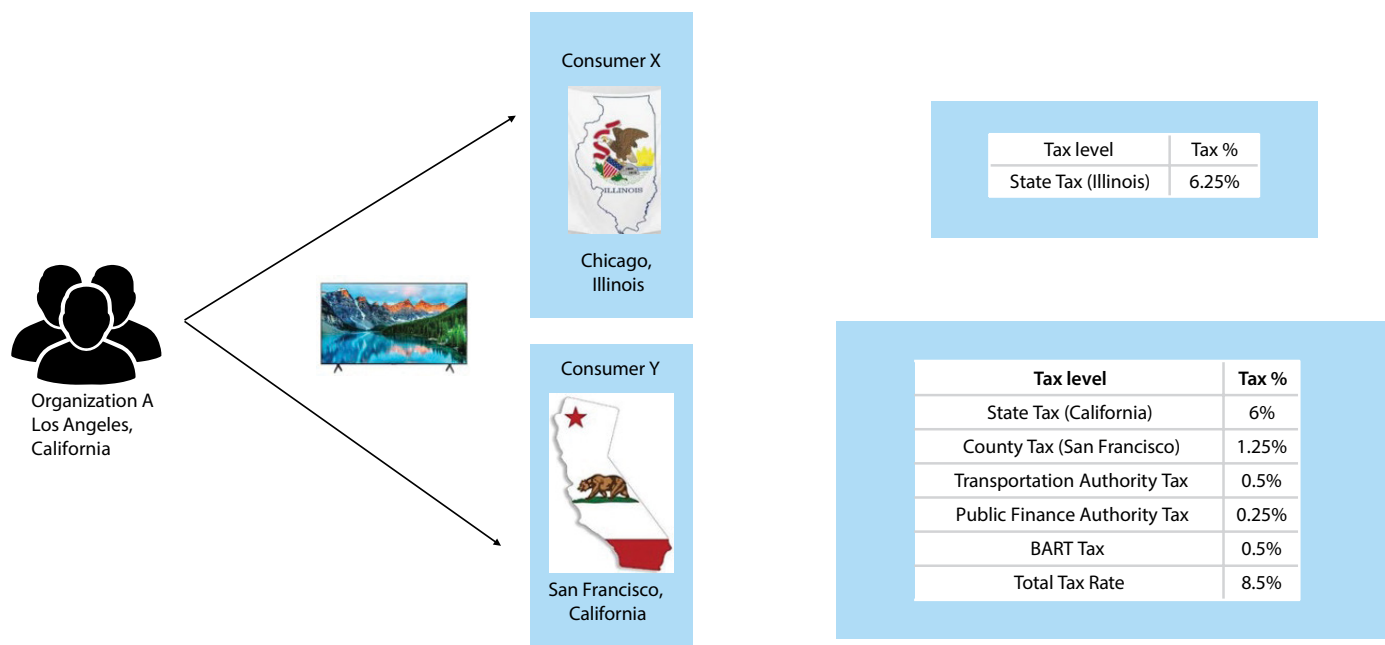| Tax level	Tax %
State Tax (California)	6%
County Tax (San Francisco)	1.25%
Transportation Authority Tax	0.5%
Public Finance Authority Tax	0.25%
BART Tax	0.5%
Total Tax Rate	8.5%

Figure 3: Indirect tax calculation at state and city level

The tax components applicable in each region add another degree of complexity

- The effective sales tax rate at the state level for Illinois is 6.25% while it is 6% in California for the electronics product category

- In San Francisco, sales tax is at various levels like state, county and additional taxes (cess). So, for a customer in Sacramento, California, 6% is the state tax but, others tax rates such as county, city and cess can differ

- In Illinois, irrespective of the customer's city, there is only a standard tax rate of 6.25% applicable at the state level

- In the US, taxes can also differ within a city based on the ZIP code of the customer

The tax solution is the custodian of all these complex tax rules and content. Whenever any legislation changes occur, the system will automatically update, ensuring accurate tax calculation. Cross-border transactions introduce further complexity as tax rates differ across countries.

In a world that is increasingly reliant on cross-border transactions, organizations must equip themselves to navigate through the maze of tax laws. Beyond managing business transactions,

organizations must also keep pace with the changes in the laws, which happen at short notice and periodically. These laws have a direct bearing on the movement of goods or services across borders. Between the US and Mexico, cross-border transactions amount to a massive $1.7 billion per day . Organizations, therefore, must ensure 100% tax accuracy and complete compliance with tax laws to safeguard business prospects. As organizations look for global business expansion, this becomes all the more essential as cross-border transactions will only increase (can go up to millions of transactions per day).

Figure 4 depicts tax calculation for cross-border transactions and uses an example of an Australian organization selling electronics goods and music subscription services to customers in New Zealand and Germany.
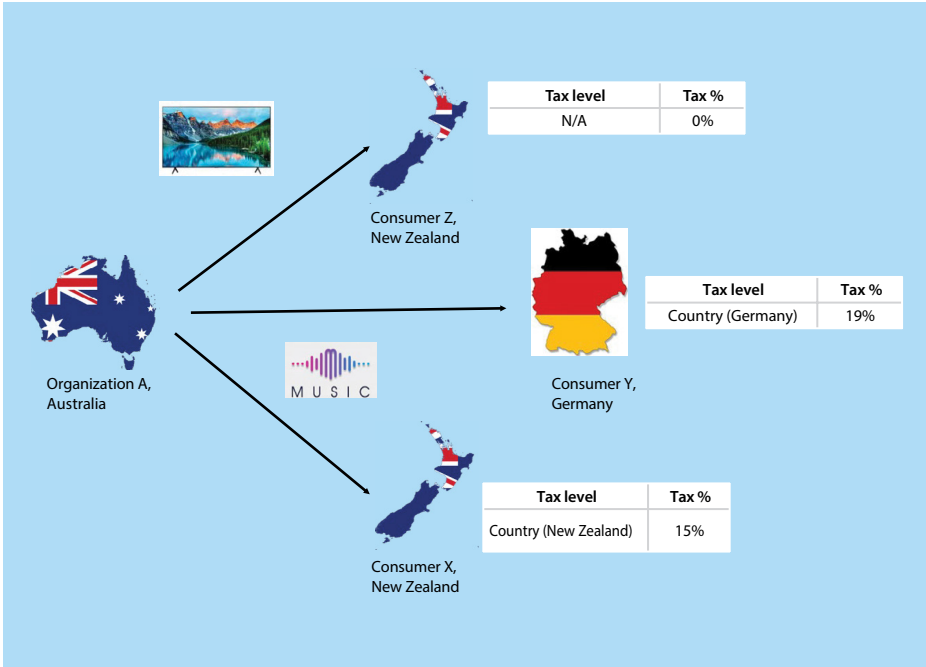

Figure 4: Indirect tax calculation for cross-border transactions

Some key points to consider during such a cross-border transaction -

- Music subscription is taxable at 15% in New Zealand jurisdiction and 19% in Germany; the consumer has to pay accordingly

- Consumer Z does not pay any output VAT (sales tax) for purchasing a television, as it does not apply to the export of certain products based on the agreement between two countries. However, there can be other applicable taxes like import duty or tax.

- Calculation of cross-border taxes depends on the countries involved and the product or services combination

In this example, Australia, New Zealand and Germany have tax rules defined at the country level. The regional presence within the respective countries will not impact the taxes. Organizations will therefore have to handle tax calculation based on the goods or services they sell.

In a complicated environment where missteps have serious ramifications, a robust system is mandatory to ensure accuracy and compliance.

It's not an easy maze

While a reliable software solution is necessary to handle the myriad tax transactions, it comes with its own set of challenges.

First, as organizations scale and grow their business, their IT systems should keep pace with the changes, especially those related to taxation norms and policies. Often these changes lead to massive modifications to in-use systems demanding significant efforts to maintain a stable environment without disrupting the business. Second, organizations have a large IT portfolio to process orders, billing, payments, reporting and other financial transactions that involve tax computation. Tax is computed differently across events (order, invoice), and hence inputs accessed from various sources make it more challenging to ensure accurate calculation, reconciliation, reporting and auditing.

Non-compliance can result in hefty tax penalties, going up to millions of dollars for large organizations. Besides, the damage to the brand and future business prospects is incalculable.

Navigating the maze

Undoubtedly, the tax calculation software must be top-notch and deliver accurate results every single time. IT departments can either continuously update the software to keep it current or switch to best-in-class products available in the market. With either alternative, they must evaluate if the system addresses these aspects –

Business Requirements	System Requirements
1. Update continuously with global tax content, automatically and periodically	1. Integrate with all systems – ERP as well as custom applications
2. Cover tax content across many geographies and products	2. Scale, be flexible and automated to the maximum extent
3. Act as a centralized tax system for all types of transactions	3. Provide a high performing robust system to handle large transaction volumes
4. Calculate direct and indirect taxes with 100% accuracy	4. Optimize the total cost of ownership– from licensing fees to maintenance
5. Ensure business can measure the business performance	5. Offer flexibility, especially during the testing cycles of the projects
6. Provide detailed documentation to help understand complex transactions and new tax laws	6. Ensure zero downtime with the application running 24/7, 365 days a year
7. Be easy to use, navigate and troubleshoot for end-users	
8. Allow faster go to market through the quick turnaround of implementation of taxes	
9. Maintain a complete change log or audit trail to be SOX compliant	

Options galore

Many tax solutions exist in the market with the same goal of effectively addressing the taxation needs of an organization. Some of the leaders include

Vertex - a Pioneer in tax technology for over 40 years and a leader in on-premise solutions. It caters mostly to the enterprise market and has many Fortune 500 companies as its client. It covers many countries and industries with its tax content. It provides built-in connectivity with ERP, eCommerce, POS and other such applications. It offers superior system performance and fast response time.

Avalara – A leader in cloud-based solutions, it works with over 25,000 global companies. Ava tax (calculation of taxes) and CertCapture (managing tax exemptions) from Avalara are effectively integrated for tax calculations

Thomson Reuters ONESOURCE – Like the others, ONESOURCE caters mostly to the enterprise market. It is a one-stop offering of a tax solution, research and financial advisory for the organizations. The tax logs are maintained at a more granular level, which helps during an audit. Further, it has a strong technical tax research team.

Sovos - Tax updates are published through a monthly newsletter, which makes it easy to understand. Sovos has used the inorganic route to strengthen its offering. It has acquired Taxware (specializes in sales and value-added tax) and Invoiceware (specializes in VAT-compliant e-invoicing in Latin American countries) in the last few years.

Software from these vendors addresses the standard features expected in a tax solution, and we have focused only on the key differences here.

Fitting the bill

Several tax solutions are available that handle the various challenges and complexities involved in tax computation and compliance. This paper uses the software from Vertex to illustrate in detail how it meets the taxation needs of an enterprise.

Preferred solution architecture

Figure 5 shows indirect (sales) tax computation in organizations while selling online. We have assumed that they use SAP.
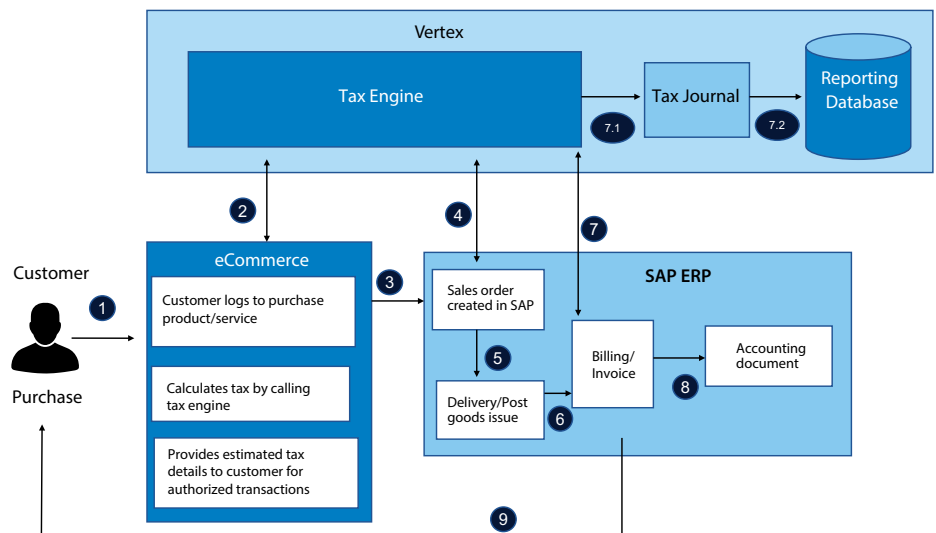

Figure 5: Data flow from eCommerce/SAP systems to (and from) Vertex

Understanding the various systems

System	Description and Purpose
eCommerce	a platform that allows customers to login and order goods or services online. It can be a standard solution available in the market like SAP Hybris or can be a home-grown application
SAP	Backend ERP system used for financial posting (along with tax component) and reporting and acts as a system of record for audit purposes
Vertex	Tax solution to determine, calculate and record transaction taxes
Tax engine	Calculation engine used to calculate tax rates and amounts
Tax journal	Journals are posted after tax calculation and used for audit and log purposes. Usually, journals are triggered at the time of invoice creation (actual tax) and contain tax attributes such as physical origin, destination, invoice amount, and detailed tax breakup. These details are needed at the time of audit or troubleshooting
Reporting database	Depending on the volume of transactions, tax journals are purged periodically (usually once a day) from journal to reporting database to cater to performance and storage limitations. They help with reporting and audit

Functional flow

1) Customer logs on to the eCommerce platform to order. Once the order is placed, the ecommerce system calls Vertex to determine taxes

2) Vertex calculates the taxes and provides estimated tax details back to the eCommerce system. At this point, the taxes shown to the customer are estimated (not finalized) as the transaction is only authorized and not completed.

3) The eCommerce system sends the order details to create a sales order in SAP

4) During order creation, SAP call Vertex to re-calculate the taxes. In both events (2) and (3), no tax journal is posted in Vertex

5) After the sales order, delivery and post goods issue are posted in SAP

6) Billing is triggered in SAP and Vertex is invoked to calculate the actual taxes

7) Vertex calculates the taxes, tax journals are posted in Vertex and subsequently moved to the reporting database. Taxes calculated at this event (invoice) is the actual tax the customer has to pay. The tax details are shared with SAP and reflected in the invoice

8) The accounting document is posted in SAP which includes the tax amount breakup

9) The invoice output is created in SAP to send the actual invoice and the tax break up to the customer in the prescribed format. The customer invoice has the actual tax amount.

Three events trigger tax calculation

1. Order placement (estimated tax)

2. Order creation in SAP

3. Invoice creation in SAP (actual tax amount charged to the customer)

Tax variances infrequently occur as the whole process from when the customer places an order to invoice generation is usually in a matter of a few hours or less. Turnaround time depends on the products or services the organization offers, and the selling process it has established.

A hypothetical example of when tax variance can occur – an order is placed on January 26 when the tax rate is 10%. From February 1, the rate will increase to 12%. Here, the estimated taxes will be computed with a 10% rate. However, on February 2, the billing and invoice issued to the customer will use the updated tax rate of 12%.

Points to consider during the design phase:

- The reporting database typically holds a few months of transaction data (based on the volume) before migrating to the organization's database

- For an on-premise solution, there is a limitation on the reporting database storage. Vertex hence recommends organizations to use their specific database tools to archive the data aligned to their specific business needs

- Audits will use the archived data. Regulatory compliance in some countries compels organizations to store several years of historical tax transaction data (can even go up to 10 years in some cases)

Final thoughts

Tax projects are highly visible and critical due to issues such as legal compliance, no margin for error, audit and reporting, which make it more complicated. Our experience has yielded these learnings -

- Understand the current business process of the organization and endeavor to meet the requirements of all business groups and stakeholders involved

- Arrive at a final system architecture (functional flow) to determine which systems must be directly integrated with Vertex and optimize the tax calls

- Decide on the hardware architecture on the server side, where it must support high transaction volumes within the defined SLAs and zero downtime

- Understand tax legislation and rules across relevant product lines and geographies to meet and implement all requirements

- Adopt **Agile methodologies** to accommodate continuous changes tied to evolving business needs or to optimize the solution

About the Authors

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Satish Suri handles a portfolio of multiple large and marquee customers in Infosys SAP Practice. He has over 24 years of experience in IT that includes more than 22 years of experience in SAP serving global customers in industries like manufacturing, automotive, pharma, engineering and logistics. His interests include thought leadership, innovation, building reusable artifacts and identifying customer pain areas as well as technical areas that drive benefits for the customers. Satish holds B.Tech in Computer Science from Andhra University and an MS in Software Systems from BITS, Pilani.

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