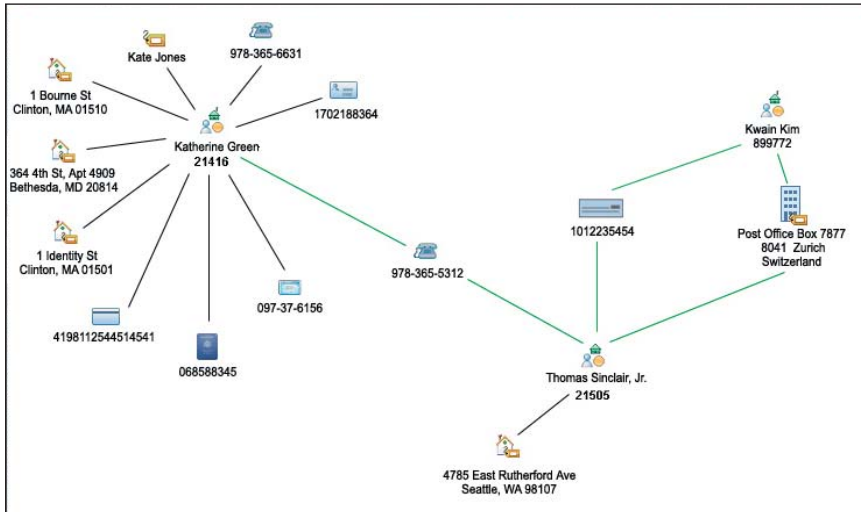**IBM**

Real time visualization of matched taxpayer identities and social networks

IBM Tax Compliance Intelligence with Relationship Resolution identities relationships among identities in various databases within your revenue organization. Alerts are generated when potentially non-compliant or positive taxpayer relationships are detected, ensuring that your organization has the information it needs to make informed decisions in real-time.

Highlights

■ *Real-time insight into taxpayer names, identities and relationships*

■ *Instantaneous response and non-compliance alerts*

■ *Support processing of both internal and external taxpayer data sources*

■ *Find high and low value taxpayer relationships*

■ *Determine 'network' value of the taxpayer*

■ *Organizational name matching including global company names*

■ *Anonymize taxpayer identity information for information sharing and prevent re-purposing*

■ *Advanced capabilities in handling multi-cultural names*

Strategic Issues

The most fundamental and important part of Government revenue and tax organizations is reducing the tax gap. There are multiple causes for the tax gap, including decreased compliance in reporting of net income from flow through entities, such as partnerships and S corporations, abusive tax avoidance schemes and other under-reporting or non filing situations. In order to address these non-compliance issues, knowing who you are dealing with is central to improving taxpayer compliance.

Multi-cultural name recognition and matching

Names are often times overlooked as miniature databases of knowledge, but that's precisely what they are. In our global society, the ability to accurately recognize and manage the building blocks of an individual taxpayer's name can provide the key to recognize identity across cultures, genders and meanings.

Through a combination of computational linguistics and advanced software engineering, IBM's Tax Compliance Intelligence Global Name Recognition tools takes into account alternative spellings, cultural nuances and other linguistic issues to more effectively manage global data sets or as part of an attempt to return the

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most relevant information for a search query, rather than a laundry list of close matches.

The technology can tell you the culture the name came from, the gender or marriage status of a person, the probable variations of the name in order of frequency, its literal meaning, and the countries in which it is most likely to be found. Revenue and tax agencies face a variety of risks and responsibilities to combat international fraud and money laundering. The global name management portfolio can trace the widest variety of names from the widest possible origins in order to cut down the chance of accidentally trading with a black listed name.

Resolve and match identities
With IBM's Tax Compliance Intelligence Identity Resolution, you can recognize the true identity and answer the question 'who is who?'. The identity resolution process determines whether multiple records, which appear to describe different individuals or organizations, are actually records for a single resolved identity, even with different name variations.

You can identify individual taxpayers sharing a common piece of information, and alerts allow for real time responses. A common phone number, bank account, address, etc allow your team to act immediately and provide the most appropriate response for the given situation.

True relationship awareness
With IBM's Tax Compliance Intelligence Relationship Resolution, you can identify and track taxpayers dynamic social relationships in real-time to identity and

manage a cluster of high value, closely connected taxpayers, which opens new doors for improved customer service and relationship management.

Real-time, self-tuning entity resolution
IBM's tax compliance solution can deliver accurate taxpayer identity information based on both real time and batch data. Critical decisions must be made using the freshest data, but warehouses and mining technologies cannot usually deliver up-to-date, accurate information based on the most recent knowledge. Using IBM's exclusive Entity Resolution technology. Relationship Resolution solves this problem by keeping an up-to-date identity repository that is incrementally built by each piece of incoming data. No purges, merges or reloads are necessary - Relationship Resolution only gets more precise as it continues to accumulate context over time.

Relationship Resolution easily adapts to your revenue organizations data to ensure a perfect fit through time. Any taxpayer name, number, address or other personally identifiable attributes can be used to match identities together in the system. And as new data is added, Relationship Resolution continues to self-correct past decisions in real-time. For example, if a new piece of data indicates that two taxpayer identities believed distinct are actually one person, Relationship Resolution automatically detects this and 'resolves' the two identities together in real-time.

Look at obvious and non-obvious relationships for a full view
Relationship Resolution takes taxpayer identity recognition beyond the

more obvious 360 degree view to the non-obvious. Relationship Resolution begins where most solutions leave off, extending the baseline 360 degree taxpayer view to identity and include non-obvious relationships among individual taxpayers and organizations. What you don't see are the non-obvious taxpayer relationships, be they other taxpayers, taxpayer service providers employees - or worse, persons on watch lists or known felons.

This unique capability enables a revenue organization to look beyond the bounds of data directly attributable to an individual taxpayer, to see their 'network value' or 'network threat'. Relationship Resolution seeks out and integrates non-obvious relationships between individual taxpayers to better determine potential value or potential danger - even if an individual is trying to hide or disguise his or her identity.

Anonymize identities to protect the privacy of taxpayers
IBM's Tax Compliance Intelligence with Anonymous Resolution enables multiple revenue agencies and tax service providers to share and compare proprietary taxpayer information assets in a de-identified format that allows the original data holders to maintain complete control over the flow of what information is revealed and what information is concealed. It allows revenue organizations to compare information to discover 'who is who' and 'who knows who'….anonymously?'

Anonymous Resolution achieves fuzzy-like matching properties including the ability to recognize ambiguities, misspellings, or partial records

within a data set and resolve identities, producing the highest possible levels of information accuracy. In addition, the software can detect non-obvious relationships between individuals inside of this same anonymized data space.

We automate the anonymization of personally identifiable attribute information about taxpayers so that when information needs to be shared with other organizations, it can be used to protect the privacy of individuals and meet local privacy laws and guidelines.

Information about tax payers is needed to successfully follow up on leads and process cases by the tax organization. The Information is usually provided by a tax payer themselves and does not itself represent privacy issue. Difficulty arises if elements of information are combined in ways that reveal more about a person's private life than intended. Sometimes privacy protections are an inhibitor to good tax compliance and service. Tax payers may be willing to allow privacy information to be shared if asked and to their benefit if they provide consent.

Persistent accumulating context repositories

Tax agencies need to determine if a tax payer of interest i.e are they 'compliant' or 'non-compliant' ideally prior to any revenue loss. And if the tax payer is deemed 'out of compliance' should they be audited and/or investigated. A primary reason is to establish the degree of risk associated with noncompliance. Then decide what to do and what resource(s) should be applied to the case. With IBM's Tax Compliance Intelligence we:

- Provide full attribution with a complete history of a taxpayer and never throw away data about them
- Real time updates and self correcting to provide a current and a more accurate view of the taxpayer
- Multiple degrees of separation relationship insight eg. taxpayer A knows taxpayer B, and taxpayer B knows taxpayer C. The three taxpayer(s) are related by two degrees of separation
- Segment taxpayers to detect who may be a higher risk to focus appropriate attention and resources where the suspect taxpayer profile suggests such attention

In your environment, the IBM Tax Compliance Intelligence process creates a resolved taxpayer identity repository which is available to be used in the following areas:

- Case management; more accurate correlation of the right taxpayer to right compliance program
- Risk management; more accuracy and integrity in the compliance process - targeting the right taxpayer
- Relationship management; more accurate and timely information about the individual taxpayer (s) to improve communications and support
- Resource management; overcome difficulty in conducting background checks of tax service providers, employees, consultants

Discovery and insight investigation tool

IBM Tax Compliance Intelligence allows searches through its search technology. This search allows for

the same algorithms that are used during taxpayer entity resolution to be employed when searching, providing the best results to search requests. The output of these searches is fully configurable, so sensitive information about identities can be automatically removed from search responses. Queries may be performed over a number of protocols, including files, queues, or SOAP-based Web Services.

Configurable alert rules

Identity and Relationship Resolution enables you to 'tune' alert rules to narrow your focus on areas that are truly relevant to your objectives. In near real time, Relationship Resolution enables revenue organizations to publish results to any of a number of vehicles, including e-mail alert, pager, cell phone, investigatory workflow system, or write back into the calling systems to alert the person as they complete data entry.

Configurable data quality management

Identity and Relationship Resolution includes a suite of data quality management configuration options ranging from standardized number formatting, to data range rules, to domain testing and transaction reasonability.

Full attribution data model

Most systems retain only the 'best' or most recent taxpayer name, address, more account information. This practice results in serious data survivorship issues. Valuable taxpayer history may be lost or overwritten. To solve this problem, both Identity and Relationship Resolution supports full attribution, which means that every taxpayer name, address, identifying number, etc. is retained with a pure reference

to each data source. Full attribution substantially enhances resolution accuracy and enables Identity and Relationship Resolution to be completely reconcilable to source systems. Of similar significance, full attribution eliminates the need for the repository to be completely refreshed from time to time, a serious yet common limitation of other repositories.

Real time alerts

Identity and Relationship Resolution provides instantaneous, real-time alerts when non-compliant taxpayers or positive taxpayer relationships are detected, so the information is immediately actionable. Think of this as a smoke detector within compliance and revenue management applications that goes off when a non-compliant taxpayer is detected, or a submission alarm triggered when a high value network taxpayer is identified.

Real time multi-source data processing

Identity and Relationship Resolution processes huge volumes of taxpayer data from multiple sources, enabling your organization to rapidly identity taxpayer relationships that might require attention.

Customizable sensitivity levels

Identity and Relationship Resolution can be configured to evaluate taxpayer relationships up to virtually unlimited degrees of separation. You can determine the degree of sensitivity with which to operate. This is accomplished with the IBM Degrees of Separation option.

Configurable publish and subscribe tools

Identity and relationship resolution contains configurable tools for subscribing to taxpayer data from source

systems, and for publishing findings to other parts of your organization and enterprise. These tools can read directly from source system databases via triggers, as well as from files or queues. These tools map source systems information into XML –formatted messages that are then cleansed and entity resolved. The resulting messages can then be published to any number of subscribers in an XML format. Additionally, Identity and Relationship Resolution can act as a SOAP-based Web Service to fully enable your enterprise with up-to-the-second taxpayer identity information.

A solid foundation: World class technologies from IBM

IBM is one of the largest providers of solutions to government agencies around the world. The IBM Tax Compliance Intelligence is built upon:

- IBM Global Name Recognition: recognizes names across multiple cultural variations
- IBM Identity Resolution: identities 'who is who'
- IBM Relationship Resolution: identifies 'who knows who'
- IBM Degrees of Separation for Relationship Resolution: identifies relationships across multiple degrees of separation
- IBM Anonymous Resolution: allows multiple organizations to share identity and relationship data anonymously that never exposes the identity of an individual

For more information

To learn more about these solutions, please visit: **ibm.com/db2/eas** or contact your IBM sales representative.

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