IBM

IBM InfoSphere Identity Insight

Highlights

- *Know what you know: Who is Who? Who knows Who? and Who does What?*

- *Trusted information in context: Integrates enterprise-wide data about people, organizations, and activity delivering extraordinary advances in business intelligence*

- *Actionable intelligence in real-time: Leverages fifth generation transaction engine to deliver proactive intelligence as data arrives rather than reactive, after-the-fact intelligence*

- *Self-correcting context: Perpetual Analytics™, virtually eliminates the need to periodically re-load the entire system to correct for "data drift"*

The importance of context

Information about people and organizations, by its very nature, is dynamic. Information about a person is in a constant state of change. People move, get new phone numbers, get married, take new jobs, open up new bank accounts, etc. Recognizing how current activity (new data) relates to historical activity (historical data) is necessary to understand the whole picture of who a person is, who they know, and what they do. This whole picture is the context.

While traditional approaches use techniques like merge/purge to develop a snapshot, IBM InfoSphere™ Identity Insight dynamically manages the context, whereby each new transaction incrementally builds on what was already known–in real-time. Placing real-time transactions into context first, enables new levels of business intelligence.

Whether a bank wants to more fully understand its customers or better asses risk, context is the key. When government organizations want to improve services to citizens or better protect their country, understanding information in context is essential.

Information in context is about unlocking the full value of enterprise data. This level of understanding provides key insight to your business by allowing you to know, for example, whether you are dealing with three people with three accounts or one person with three accounts, if the person subscribing to the online

newsletter is a close associate of one of your top 10 customers, or if your borrower's address changes to an address already known to be associated with recent criminal activity.

Organizations around the world depend on InfoSphere Identity Insight to improve customer service and to reduce risk. From financial services and insurance, to law enforcement and national security, whether these organizations need to perform perpetual vetting of employees or identify up-sell opportunities during Internet transactions, InfoSphere Identity Insight Solutions provides unmatched intelligence about people and organizations – who they are, who they know, and what they do.

IBM InfoSphere Identity Insight Solution overview

When it comes to analyzing data about people and organizations, InfoSphere Identity Insight analyzes the three most essential elements of context.

Who is Who?

Entity resolution is the process of identifying who is who (for people and organizations). For example, in criminal circles it is accepted that individuals may possess multiple identities: the role of entity resolution is to establish all of the transactions that pertain to a single
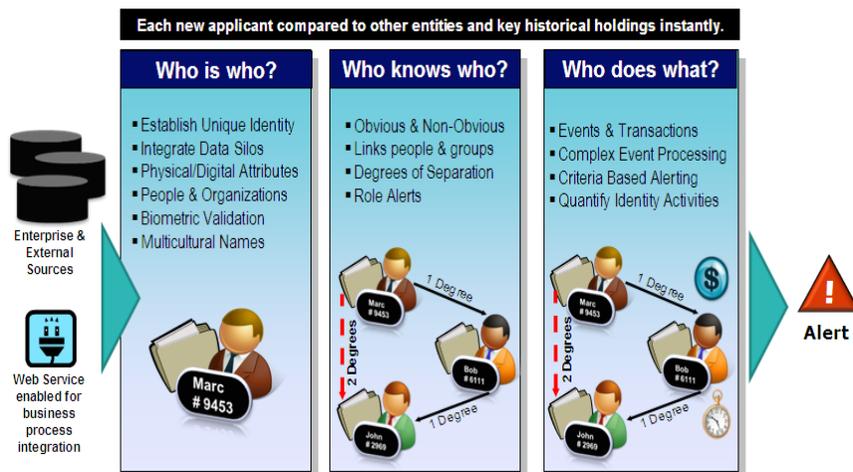

Figure 1. IBM InfoSphere Identity Insight

entity. In one extreme case, InfoSphere Identity Insight helped an organization determine that what appeared to be 120 distinct customer accounts were in fact associated with a single individual.

Understanding who is who is fundamental to understanding context. One major challenge businesses face is that information about entities is invariably inconsistent. Is Bill really William? Are the month and day in the date of birth backwards? Are the first and last names transposed? Is "S. Main Street" really supposed to be "South Maine Avenue?"

InfoSphere Identity Insight is able to resolve these discrepancies and collapse multiple profiles or aliases into one identity. Unlike the traditional management techniques that are common within data quality products, InfoSphere Identity Insight recognizes that when it comes to data about people and organizations, there is no single/ best version of truth. Rather these natural variations are all potentially valuable clues for future discovery. So while multiple profiles may be merged into one identity, the data from all profiles is maintained for future analysis.

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Who knows who?

Relationship resolution is the process by which InfoSphere Identity Insight establishes that a relationship exists between different individuals. For example:

- *Two people lived in the same house at the same time*
- *A new employee's emergency contact information (in the payroll system) is for a recently arrested criminal*
- *A large vendor has the same telephone number as an employee*

Admittedly, not every relationship matters. Just because two people live together, for example two customers who are also roommates, does not necessarily mean there is cause for concern. While InfoSphere Identity Insight learns of such relationships and remembers these over time, only discoveries of relevance, such as your purchasing manager living with the vendor, are issued as alerts. InfoSphere Identity Insight understands expressed relationships (a reference on an employment application) and detects unexpressed relationships (roommates or people sharing an address or phone number).

Understanding context in the form of who is related to who provides critical insight to reduce and prevent fraud, improve customer acquisition and retention, and mitigate risk.

Who does what?

InfoSphere Identity Insight offers real-time transaction/event processing capabilities based on customer-defined business rules. Using this capability, an analyst can receive an alert whenever a certain threshold is met. For instance, an analyst can specify that they want an alert whenever any one person makes three transactions worth $9,000 or more at different bank branches, within a 100 mile radius, within 30 days.

What about privacy?

Information sharing across organizations can raise significant issues, regardless of the application. Often reputation, privacy and security concerns present such formidable barriers to information sharing that information is simply not shared.

IBM Anonymous Resolution complements InfoSphere Identity Insight by answering the questions, Who is Who? And Who knows Who? in a manner that greatly reduces the risk of unintended disclosure.

IBM Anonymous Resolution helps organizations, both public and private, to:

- *Meet the demands of secure information sharing in a privacy-enhancing manner in such areas as medical studies, law enforcement, cooperative marketing, anti-fraud and watch list processing*
- *Overcome geographic, cultural, and policy barriers that prevent information sharing due to the risk of unintended information leakage*

IBM Anonymous Resolution allows data sharing to occur while increasing the protection of personally identifiable information, reducing the risk of unintended disclosure of an organization's sensitive information, and reducing the risk associated with data being repurposed for use in non-permissible missions. The ability to compare and correlate multiparty information anonymously, sharing only the information that is pertinent to a specific objective, holds with it the potential to vastly accelerate and shift the entire knowledge discovery process.

What makes IBM InfoSphere Identity Insight unique

Enterprise amnesia vs. enterprise awareness

It is humanly impossible to ask every important question about every piece of data that enters a system of record. As a result, information is not discovered or made available until the right questions are asked. Too often this information isn't identified until after the critical period of its highest utility has passed. This reality, known as enterprise amnesia, has rendered large data repositories ineffective when addressing real-time events.

Essentially, we don't know what we know, because we either don't know what questions to ask or we can't ask them quickly enough to make a difference.

Moving from enterprise amnesia to enterprise awareness requires persistent context. For example, the same person can interact with your systems of record multiple times using different identities. Unless those identities are resolved to a single entity, during any given interaction you have no way of discovering whether the person you're currently interacting with is a person of interest. However, by pre-constructing the context (resolving multiple identities to a single entity and recognizing how people relate), and by maintaining that context over time, what was previously undiscoverable now becomes discoverable in real- time.

3 principles of intelligent data discovery

1st Principle: If you do not process every new piece of key data (perception) first like a query, then you will not know if it matters until someone asks.

2nd Principle: Treat queries like data to avoid having to ask every question every day.

3rd Principle: Enterprise awareness is computationally most efficient when performed at the moment the observation is perceived.

Perpetual Analytics™

By implementing these three information management principles, InfoSphere Identity Insight creates an environment where "the data finds the data and the relevance finds the user."

In other words, as data is ingested, every important question is immediately asked about that new piece of data within the context of everything the system knows, and relevant alerts are instantly generated and sent to the associated analysts.

Full attribution

Over time, InfoSphere Identity Insight accumulates a history of each individual or company in its database as opposed to simply taking a snapshot of an identity's attributes. By retaining all attributes, the resolution process becomes increasingly accurate because there is more data with which to make comparisons.

World-class multi-cultural name recognition

InfoSphere Identity Insight integrates elements of IBM InfoSphere Global Name Recognition technologies to provide the strongest multicultural name recognition available anywhere. IBM's name matching technology is based on over 20 years of computational linguistics research which incorporates a knowledgebase leveraging close to 1 billion names. These technologies are based on empirically-derived linguistic rules mapped to the specific culture of a name to perform best matching, searching, parsing, and scoring.
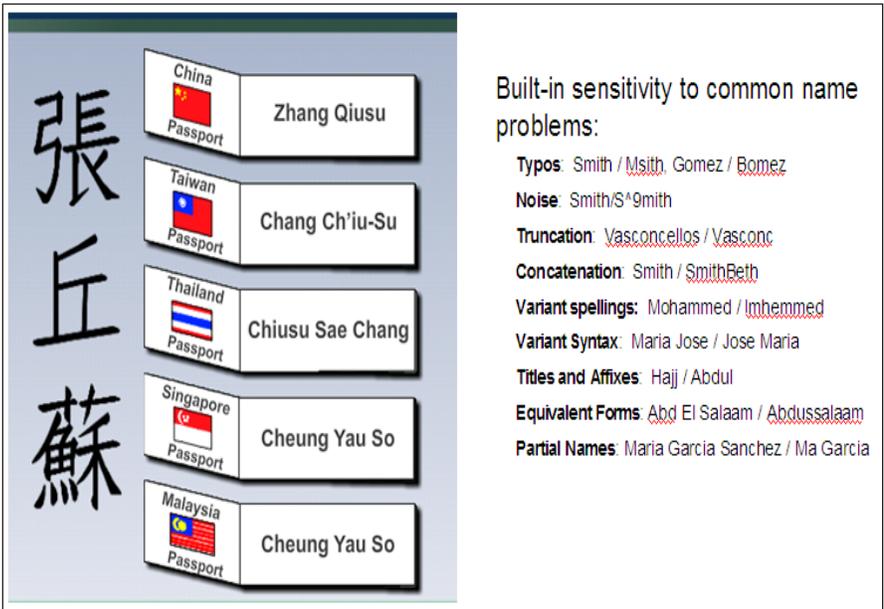
Figure 2. IBM InfoSphere Global Name Recognition

Every version of truth

All transactions processed by InfoSphere Identity Insight are maintained as discreet records. Therefore, instead of attempting to distill a single version of the truth, the offering tracks every version of the truth. Consequently, Identity Insight enables individual analysts to specify which data takes precedence. In this way, truth is in the eye of the beholder.

Real-time analytics

When a record is received, InfoSphere Identity Insight's relationship resolution functionality immediately compares it with its database to make the following evaluations:

- *Does the record reflect a new identity? If so, create that new identity*
- *If the record reflects a known identity, the new record is resolved into the known entity*
- *If the new record is resolved to a known entity and something new is learned about the existing entity, based on this new information, ask "have there been any decisions in the past that should now be reevaluated?"*
- *Has the new transaction revealed any non-obvious relationships? If so, define them*
- *Store what has been learned in the persistent context database*
- *Of what was learned, what is worth reporting as relevant*

Sequence neutrality

Using the real-time analytics process described above (particularly point number three) ensures that no matter the order in which records arrive, once the records are loaded, the end state (what context is known) is the same. Without this feature, data drifts from truth (i.e. new records in the database reflect errors in earlier conclusions) – and when this happens the only remedy is a database reload.

To understand the value of this feature to your business, answer the following questions:

- *How long can you afford for something relevant to go unnoticed?*
- *Can you afford to take the system down and reload to ensure nothing relevant was missed?*

InfoSphere Identity Insight is the only technology that can provide this level of data accuracy in real-time, against huge databases and at rate of 1,000's of transactions per second.

Attribute extensible

With InfoSphere Identity Insight, new data sources and new entity attributes can be introduced without having to re-engineer the application or the

database. Using configuration alone, new data sources and attributes can be defined and then immediately loaded. These new attributes are then cross-indexed and immediately available for entity resolution without having to take the system off-line for maintenance every time new information becomes available.

Relationship resolution

The relationship resolution feature records obvious and non-obvious relationships between entities by evaluating attributes that overlap, such as shared addresses or phone numbers.

Degrees of separation

This feature allows you to extend the recognition of undeclared affinity groups and networks of identities across customers, employees, and suppliers, as well as other relevant parties, by evaluating the strength of both obvious and non-obvious relationships. While sensitivity is defined by the user, this technology can assess up to 30 degrees of separation. No other commercially available technology enables streaming link discovery and "n" degree of separation link analysis on the scale of 1,000's of records per second.

Enterprise discovery

InfoSphere Identity Insight evaluates data streams for real-time discovery. New observations are reconciled and related to historical data. Context and discovery accumulate incrementally in real-time. Relevant information is pushed to users, rather than users having to define and perform queries. The system discovers relevance in real-time within streams of data and alerts users or systems of such insight.

For more information

To learn more about using IBM Identity Insight Solutions to get the most value from your information assets, please contact your IBM representative or IBM Business Partner, or visit:

ibm.com/identity

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