Model-based automation in reporting using AI

Accurate explainable information processing for business professionals

Expectations are on the rise for insights from business reports: more reports, higher levels of detail, and with increased quality. General-purpose financial statements and annual reports are machine-readable signals that intelligent agents read. What do poor quality signals indicate about a company? Accurate, factual, and explainable AI puts machines in the human loop. Imagine when computers will do most of the tedious reporting work for us, enabling verifiable and model-based business information, where facts and rules are structured to a model. This new way of working is possible, where the average business professional can author business rules with their domain expertise. What's ahead enables faster, cheaper, and better reporting than has ever been possible.

Twinfox.AI

The business reporting landscape is becoming increasingly complex, including for regulatory and statutory financial reporting. With the global deficit of 400,000 financial accountants today, it is imperative to make better use of the average business professional's efforts and increase efficiencies, but efficiency without quality is useless.

Most of today's reporting work is presentation-oriented, where computers do not understand the meaning of the information. At best, computers get used as advanced calculators through spreadsheets, or through specialized apps. Imagine orders of magnitude better capabilities for the average business professional, that offloads tasks to a computer that really understands the information being processed, and relationships between all information in a report. In the current paradigm, spreadsheets are too flexible with no guardrails, while apps and systems are far too rigid for generic work.

This shift requires computers to meaningfully process information within controlled boundaries. It brings the most significant potential for process improvement in accounting, reporting, auditing, and analysis since Luca Pacioli published his work on double-entry book-keeping in 1494. The current presentation-oriented reporting paradigm provides limited means for the average business professional to apply business rules to systemantically improve their reporting processes, such as during financial close.

The meaning-oriented paradigm enables business professionals to leverage computers effectively. The average business professional becomes able to specify guardrails for report construction, automate the creation work by referencing information from co-located or remote reports, verify relationships between sets of complex information, and automatically extract, analyse and verify information in reports by using standards-based business rules and standardized business information exchange formats.

Twinfox.AI is an elegant, easy-to-use, and standards-based software that is model-based and permits modifiable reporting models. It is built using a proven rules-based expert system technology stack which hides the deep tech complexities and makes business professionals effective. 100% of the conclusions are made to known lines of reasoning with explainable AI.

PURPOSE:
We enable high quality information processing

MISSION:
Enable business professionals to thrive in the information age through model-based tools.

VISION:
Provide the standard model-based engine for business information processing.

Benefits

Professional high quality machine-readable reports

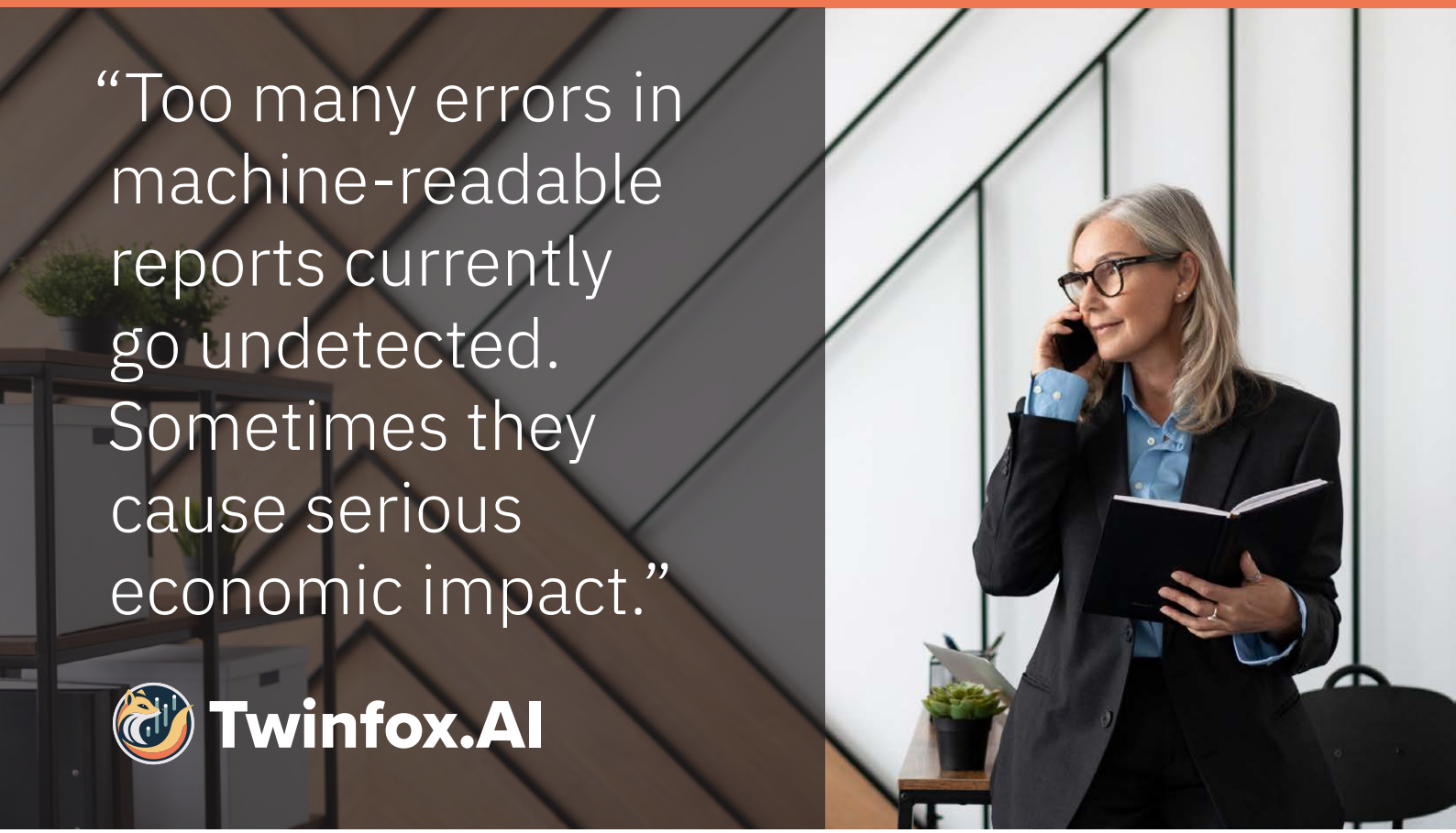
Specify, construct, verify, and analyse reports

Business information validation and verification

Sharable business rules for information processing

Version control, collaboration and synchronisation

Modern model-based spreadsheets.



We live in the algorithmic economy

Reports are increasingly becoming machine-readable information that digital agents read and understand, including for regulatory, statutory, and tax reporting. Such reports are readable by humans and machines and are also deployed for internal management reporting, external financial reporting, and cost accounting. What do intelligent agents conclude from companies that have poor and inconsistent information quality?

Modern standards for business information exchange emerged over the past two decades, now used by over 200 regulators globally. They enable intelligent agents to analyze and make decisions based on publicly reported information, market signals, because every fact is encoded together with an associated metadata model, that provides meaning and context such as which entity a fact belongs to and what currency it has.

It is possible to make the leap from the presentation-oriented, into a meaning-oriented, paradigm. What it takes is to adopt modern model-based reporting. The return is significantly higher quality, improved process flows and reduced costs, a great way to make more with less, ready for increased reporting needs ahead.

Machines in the human loop: An elegant software solution

The purpose of Twinfox.AI is to enable high quality information processing and enable business professionals to thrive in the information age with model-based tools. Our Standard Business Information Engine is positioned to become the standard model-based engine to help high quality business information exchange across business processes. It is a generic tool that enables business professionals to specify, create, verify, and analyse model-based information shared through machine-readable reports. Additionally, it is designed to provide integrators with the ability use the engine to extend existing systems.

Specify/Describe: Report models are described by report model authors such as regulators, that defines all the terms used in a report together with their relationships. They can also be loaded and then modified within the boundaries of a reporting scheme by business professionals to support their reporting requirements. Such models can be shared and distributed by other professionals through standard formats and reused where necessary by downloading, linking, or loading a file with the standards-based model of a report.

Create/Construct: Reports get constructed according to a specified model by either loading a set of information or by manually entering information, supported by the model. The engine understands all the relation-

ships between the report facts thanks to the model and helps contextually by running relevant verifications to ensure incorrect information is not entered without notices, warnings or errors being generated. To ensure that the business professional understands what needs to be done to fix the errors, lines of reasoning is provided.

"If we could get machines to understand the meaning of information, we'd let them do the tediuous work."

Validate/Verify: Report information and report models are verifiable through standards-based reusable business rules that business professionals can author themselves as part of metadata libraries, or source from libraries made available by the engine through subscriptions, or use libraries provided by others. Business professionals improve their process quality by specifying business rules for the verification of mathematical relationships, model configurations, high level conceptual crosschecks, wider-narrower model relationships, assembly/subgraph mechanics, full inclusion checklist, and additional or system-specific rules.

Analyse/Extract: One or multiple reports can be loaded side by side into a distributable portable information product for analysis using business rules that extract specific sets of information for analysis purposes. The analysis extraction is performed through business rules and the presentation is flexible ranging from raw presentation of figures, to being presented according to concept arrangement patterns or with more advanced visualisation capabilities. Reports are possible to extract into multiple exchange formats, including XBRL, HTML, RDF, JSON-LD and other report exchange formats in the future such as the upcoming SBRM from OMG.

Using model-driven software enables guardrails, both provided by the system, and by reporting teams, to prevent "wild behaviour" from financial accountants, by warning or even preventing ineffective use of the reporting model. This helps business professionals construct reports with high quality and cross-checked business information, which in turn enables business professionals to communicate business information with significantly higher quality than today at a lower cost. Teams get enabled with a significant ability to continuously improve their processes by "sharpening the saw" using a standards-based information hub to produce reports faster, better, and cheaper than what is possible without such an elegant software solution.

"Software of today does not offer this controlled flexibility: Excel is too unconstrained, apps and systems too rigid."

The state of the art engine

Twinfox.AI is a complete platform, built on top of the commercially available DFRNT® deep tech platform. The new engine is targeted for release to selected customers September 2024. It will enables business professionals to process business information to business rules.

Get enabled to construct and build metadata packages ahead of the market, and apply such rulesets for report verification tasks and to perform advanced analytics on reports that are either uploaded into the tool or loaded from public sources. Examples include finding report errors through consistency checks.

Contact the Twinfox.AI team to integrate this new capability and gain a competitive edge today.

Book your discovery call today:
https://bookings.dfrnt.com/#/discovery

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Faster, cheaper, and better reporting just arrived.

Are you ready?

Email your use case today and
get access to the extended whitepaper.

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