



BOARDWALKTECH

RADIUS ANALYTICS & COMPLIANCE DASHBOARD

MAKING STRUCTURED &
UNSTRUCTURED DATA SCALABLE AND
ACTIONABLE FOR FINANCIAL SERVICES
COMPANIES

**An Innovative Approach
to Enterprise Information
Organization & Management**

Boardwalk Radius Analytics & Compliance Dashboard |

The Promise of Better Operational Performance and Lower Risk

Unstructured data creates a unique challenge for organizations wishing to make their enterprise information actionable. Unstructured data comes in many forms including Excel-based User Defined Application (UDA) workbooks used for any number of financial applications, emails, PDFs, B2B documents, and web pages. This data can't easily be stored in a database and it has attributes that make it a challenge to search for, edit, analyze, and to align with other process data, so that it can be analyzed at scale and made actionable for all companies along the financial services value chain. These factors are part of the reason why this is such an important topic. If your organization is struggling to manage its unstructured data now, that problem is going to get worse over time.

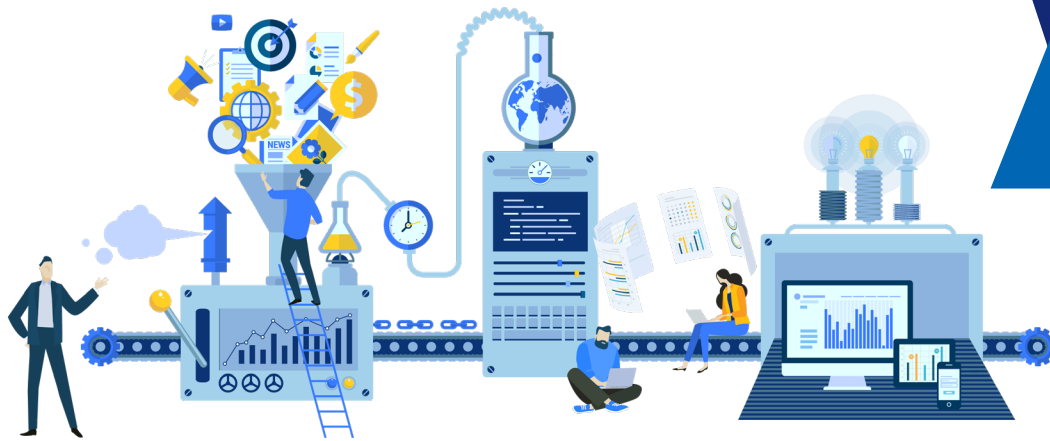
In today's world, financial services companies need to become far more digitized, global, and networked because the extended financial services value chain has more operating data - both structured and unstructured - than ever before containing vital information that can enable better insights, improve operational performance, ensure compliance, improve audits and lower business risk. An Analytics & Compliance Dashboard offers transparency, visibility, and access

into all this operating data which modern financial services companies can use to gain deeper, wider, and more timely access to both structured and unstructured data across their extended value chain enabling them to make decisions faster, lower operating costs, improve margins, and effectively navigate through compliance and risk uncertainty.

According to IDC, 80 percent of worldwide data will be unstructured by 2025. Many large companies have already reached that critical mass.

When traditional enterprise information management systems were invented, most companies were vertically integrated, and these systems were designed for the functional management of a single enterprise. However today, because of a complex and inter-dependent value chain, most of what determines a company's profitability lies outside of its four walls, an area that conventional database driven systems are simply ill equipped to manage. The result is that each value chain partner is forced to use its own system and aggregating operational data at the enterprise level can be a big challenge.

This means critical information that would be of use to the entire value chain and how this information changes overtime is siloed and effectively invisible. Since traditional database technology never addressed the need for a common, universal data environment that could work across all operational functions, it certainly cannot address the expanded scope of unstructured data seen in today's modern value chain. If you want to realize the promise of a digitally transformed value chain by gaining better transparency and visibility, it is time for a change in the way you manage enterprise information. This paper describes a new approach for working with structured and unstructured data that delivers a 50-80% improvement both in time to insight and reduction in digital transformation cost.



FROM REALITY - TO DOCUMENTS - TO DATA

A financial services organization in its purest form is reflected by its professionals, their intent, their knowledge, and their recorded documents. The document is a representation of what is true – whether it be a contract, renewal notice, pricing model, or one of the many forms of external data used to support the full spectrum of financial services applications.

Today's modern computing environment is operating on data that has been transformed multiple times on its digital transformation journey from a document representing reality, to the codification of the information contained in that document, and the automation of the business processes around it.

Further, there is massive investment in new big data infrastructure to handle the compounding growth of both structured and unstructured data with a focus on the digital transformation to structured forms – mostly SQL based - for query, analysis, data science, and integration into a multitude of applications across the enterprise.

McKinsey says a large incumbent could more than double profits over 5 years by digitizing existing business.

We got here through an evolution that started from early computing with files and limited memory and storage. The combination of advances in computing power and the drive towards software abstraction layers led to the relational database era along with data modeling and semantic representation of the real world with data structures. Although the industry has evolved significantly with other database methods, the fundamental idea of representing the real world through transformation to structured formats endures. But what if we could start today with the advances we have now? Are there other ways to tap into information at the source before transformation, *that would speed time to insight and capture a closer representation of reality?* But first, let's take a look at some of the challenges on the road to digital transformation.

DIGITAL TRANSFORMATION CHALLENGES

Let's explore each of these:

- 01** The Rise of Unstructured Data
- 02** Data Distortion and Corruption
- 03** History Ignored | Future Not Recorded
- 04** Relationships Reimagined, Lost, & Hardened
- 05** Warehouses and Data Lakes
- 06** Machine Learning



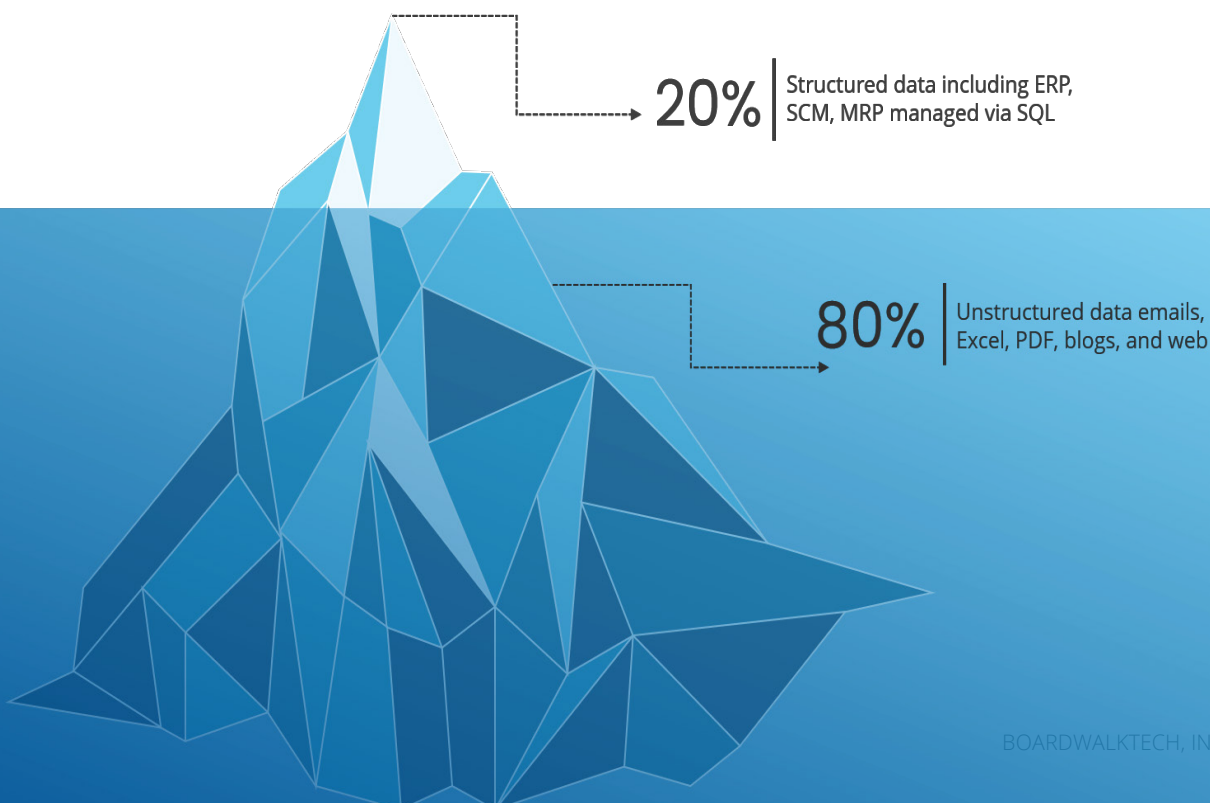
The Rise of Unstructured Data

01

Organizations are experiencing an explosive growth of unstructured data. This growth is driven by the ability of the business and associated users across a company's entire value chain to easily express their intent in a "document container" which is a container of data at a given time typically associated with some relevant business intent like an updated forecast, or the latest financial model scenario. With only about 20% of transactional, schema-oriented documents converted to a database schema, traditional database-driven systems ignore about 80% of the organizational knowledge locked up in these unstructured data forms. This means this unstructured data, such as emails, Excel files, PDF, blogs, and web pages, feature many data terms that are not actionable within traditional enterprise information management systems.

Even for common document container types, the organization receives a variety of data that reflect the nuances of the value chain organization, its size, and its business models. Most database schemas are a compromise of the lowest common denominator across all document containers. The result is a loss of fidelity for critical information. As these systems do not reflect the full breadth of the data pool, learnings from these systems are also neither complete nor trustworthy. The combined loss of information fidelity, lack of history and coverage, and increase in unstructured data results in increasing numbers of information blind spots impacting the business. This blindness breeds *compliance risk*.

Datamation reports
that unstructured data
is growing at 55-65
percent each year



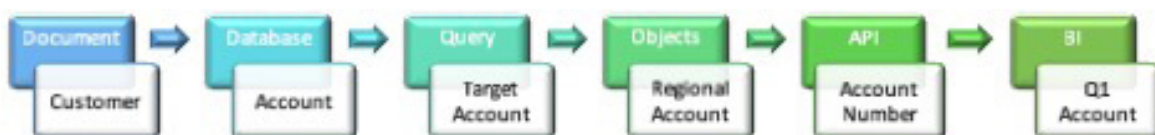
Data Distortion & Corruption

02

Organizations regularly invest in database-driven systems with the intent to transform, scale, or automate existing manual, document-based processes into a SQL environment to make them actionable. These transformation efforts can lead to the corruption of business terms across processes due to limitations of the technology, data granularity issues, short project times, insufficient process and data logic modeling capability, and lack of domain knowledge.

During the transformation effort, these terms can be changed, corrupted, and copied multiple times from:

1. Document terms to Database Column names or Table names
2. Database names to SQL Queries and Result sets
3. Result sets to Classes, Attributes, and Objects
4. Objects to APIs
5. APIs to BI systems, Data warehouses, ML engines



Although organizations strive for a universal data model as the target for these activities, it is rarely achieved. And more often their schemas represent a patchwork of shifting data models driven by evolution, changing inbound data requirements, or acquisition. Often, the more an organization tries to define a single schema, the narrower its definition gets as generally the scope was too big to begin with and the data explosion continues to expand. This leaves most companies with massive data alignment challenges, manual transformation work, data swamps, and the continued creation of User Defined Applications (UDAs) – typically in spreadsheets -- through necessity. Ultimately, the multi-step transformation to a single schema and associated alignment processes produce distorted, results delivering bad data which then drive decisions. All of this elevates the compliance *and operational risk* of the organization.

History Ignored | Future Not Recorded

03

When an archive of documents is digitally transformed to an enterprise information management system, the system rarely if ever captures a baseline of the past state of the organization's data. At go-live, the system simply compromises by locking in the initial values, resulting in loss of data history. Decision-makers are then at risk of repeating past mistakes and organizations face increased operating risk.

Once the system is deployed, the organization creates and receives new documents as part of its business processes. Due to the limitations of database technology, when new updates are absorbed, the old values are overwritten or multiple versions of the document are created, but not the data within the documents. Disconnected archive logs are sometimes stored but are generally unusable to the business. As the systems do not capture the full document nor data history at the right granularity, outcomes from these systems are neither complete nor trustworthy in many cases. This explains neatly why all business professionals today can only do searches which turn up millions of hits for a given phrase. Whereas what is really needed *is the ability to do research*—how is what I am searching for related to other curated data and, very importantly, how has it changed over time.

Legacy software designers treated control and governance as afterthoughts, or even irritants, in the financial modules of classic enterprise software. Control concepts are not as urgent as transaction processing, as visible as





Relationships Reimagined, Lost, & Hardened

04

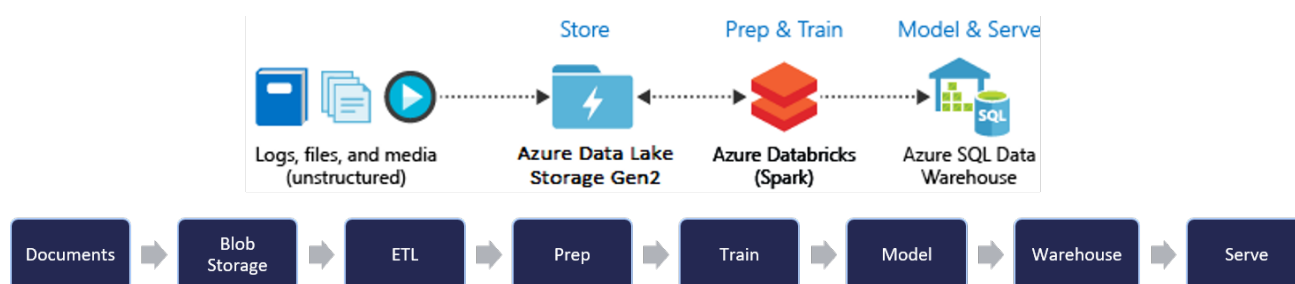
As every document and its related business information are reimagined in the database, so too are the relationships among these documents and information. Like natural terms, these relationships are also corrupted when they are copied, digested, and partially reflected in every system layer.

Business information, as it flows into the organization, comes in *ripples which flow across sets of enterprise information*. Due to the rigidity of these systems and their modeled/hardened relationships required for SQL, the systems do not accept the information in its incomplete form. This situation forces business users to create even more documents to store partial data as existing and new data flows into the enterprise, resulting in the further alienation of the user from the business.

05 Warehouses & Data Lakes

The traditional approach for an Analytics & Compliance Dashboard working with conventional enterprise information management systems calls for programming and ETL-based conversion of unstructured data to a data warehouse before it is usable by an analytics & reporting or machine learning environment. This approach is:

- Expensive
- Covers a limited set of data
- Transforms only a partial data set
- Needs schema modeling
- Requires tedious metadata mapping for every separate data source
- Supports only predefined queries limited by the schema



To get around this historical limitation of “have to get to SQL”, there has been a major push to use data lakes to capture all structured and unstructured data. But the data lake quickly turns in to a data swamp that collects unusable data in its raw state, quickly becoming old forgotten data, leaving the business user to navigate this unmanageable data set. This forces IT to invest significant transformation costs and time to convert this information into structured forms for reporting and querying.

The business user with a specific role is interested in their function, their assets, their people, their partners/customers, their events, their documents, their peers, and their connected processes. This turns out to be a few assets, a few customers, hundreds of financial documents or models, and a few events. As data lakes accumulate massive amounts of data, the ability for the business user to get their view of what is important in a timely way becomes increasingly difficult.



Machine Learning holds great promise to detect patterns and predict future events. However, Machine learning (ML) algorithms require clean, structured data, at the right level of granularity, over time to be fed to them. Structured data, as discussed above, represents a small percentage of the enterprise universe and it does not always capture the history at a granular level, nor the full fidelity of the information, nor with complete change provenance. The value of the insights and outcomes of ML algorithms will improve as they are able to ingest more comprehensive structured and unstructured enterprise information.

Most data analysts spend only 20 percent of their time on actual data analysis and 80 percent of their time doing tasks of little business benefit like finding, cleaning, and modelling data

Where We Are Today...

So, where does this leave us with traditional database information systems that interpret the business environment?

1. The SQL models and Data Warehouses reflect a partial view of the real world
2. The Objects Models (Java Layer) and Methods represent a partial logic of the algorithms in the real world

And as the real world becomes dependent on these information systems:

1. The rigid information systems cannot keep up and the business often drops the system and goes back to documents, manual processes, and UDAs
2. The business becomes bound by the system and the business starts to make decisions unduly influenced by the lack of proper timely information due to constraints of the system
3. Compliance risk goes up with the increased reliance on manual processes and UDAs
4. All this data in spreadsheets & B2B documents causes compliance issues for financial services companies - they do not know what is in the them and are operating at great risk

A Compelling Alternative

What if we could use what we know now to rethink the approach and take advantage of the advances in computing, and the learnings of the last 30 years to better manage enterprise information? How do we stand at the edge of the businesses looking out at the products, people, partners, documents, emails, chats, reviews, customers, and internet/IoT driven computing infrastructure, and envision a better way to capture business-critical information from the source?

We need a new way to organize and manage information; one that maintains a direct tie to the original information in documents, conversations, and business knowledge. And, this new approach must augment what we have today, while delivering on the benefits of digital transformation, scale, and automation.



Introducing Boardwalk Nucleus & Network of Words (NOW)

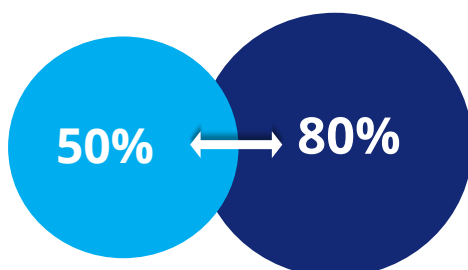
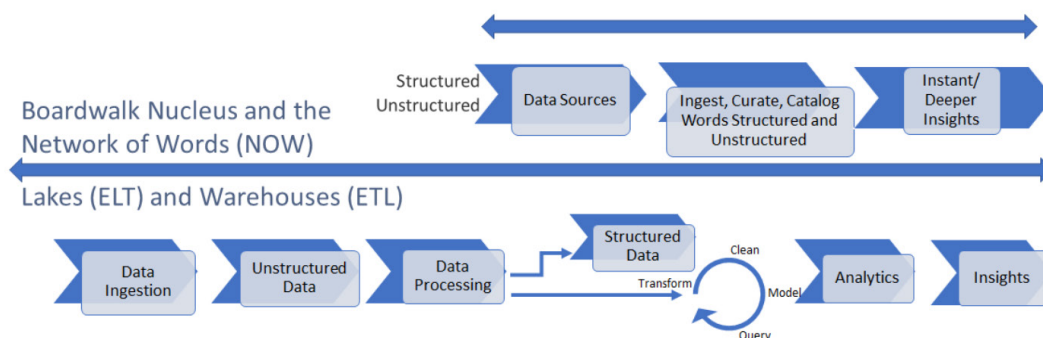
Words not Data

Boardwalk Nucleus leverages the Network of Words (NOW) patent pending technology that absorbs structured and unstructured data to illuminate blind spots, eliminates data transformations to SQL, and allows you to drive insights in a fraction of the time and cost compared to traditional methods.

Nucleus is a completely new way to represent, research, and correlate enterprise information. It seamlessly collects, correlates, and curates [Word Networks](#) that are sourced from structured and unstructured document containers, e.g., Excel models, PDF documents, images, videos, emails, call logs, SQL tables and many others, and makes them queryable for the organization without transforming to SQL.

Boardwalk Nucleus & Network of Words (NOW)— powerful new capabilities for enterprise information management:

- Short eliminates the typical data transformation cycle (ETL, ELT)
- Cuts transformation time and reduces data loss
- Cuts custom SQL query writing
- Slashes time to insight and cost of transformation



These powerful new capabilities result in a 50- 80% reduction in the time to insight by eliminating legacy data alignment and transformation challenges while at the same time delivering on the promise of expanding the visibility of the enterprise into all relevant domains accessed by business

Boardwalk Radius Analytics & Compliance Dashboard

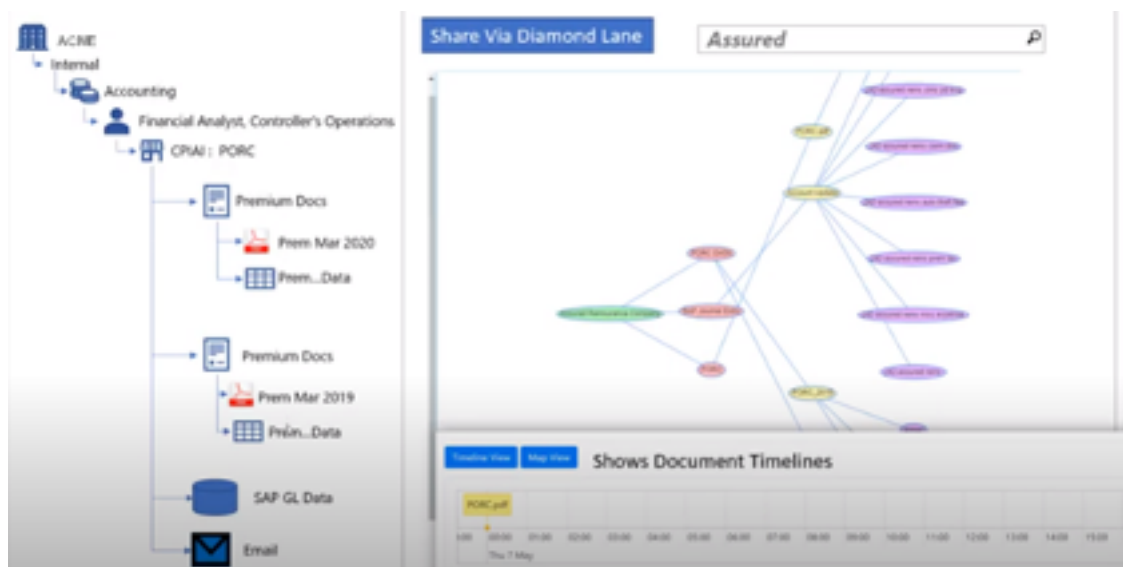


The Boardwalk Radius Analytics & Compliance Dashboard application applies the Boardwalk Nucleus and Network of Words (NOW) technology to speed the time to actionable visibility and reduce compliance risk.

1. An Analytics & Compliance Dashboard that correlates structured and unstructured information to give immediate visibility into financial services information across the entire value chain
2. An ability to create ad-hoc collaboration internally and across company boundaries for rapid alignment and decision making
3. Enable all enterprise data – both structured and unstructured - to be used for purpose driven, multi-party enterprise collaborations and workflows

What if we allow the business user to focus on their view of the enterprise and connect them to other views as needed? The Radius Analytics & Compliance Dashboard allows business users to operate within their span of control and business function.

1. Run searches against the NOW information store to correlate information across unstructured and structured documents – deriving key insights in seconds
2. Create a document timeline showing pertinent information and timing
3. Share information and access with others to advance business process steps

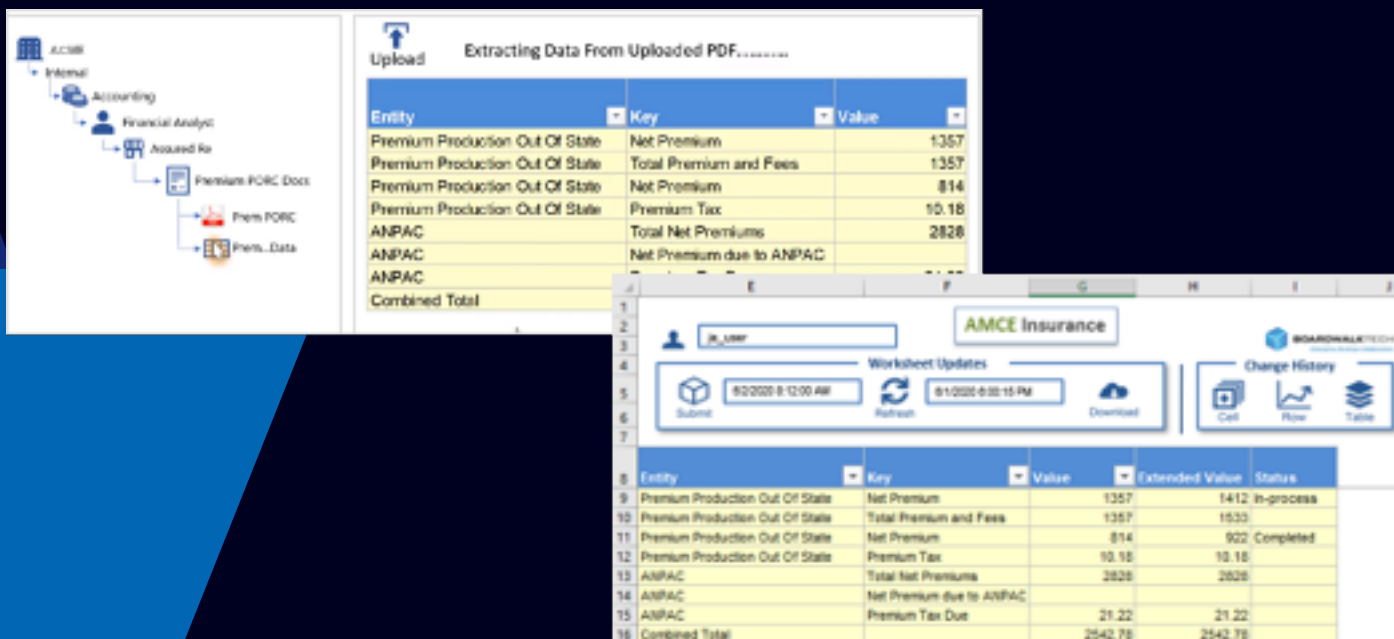
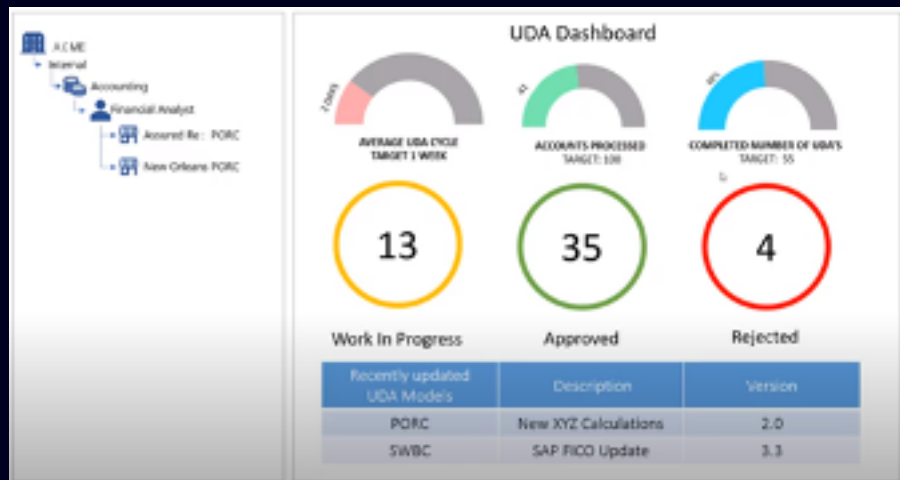


Comprehensive Analytics & Compliance Dashboard capabilities; marrying structured and unstructured information and presenting it visually with the provenance of all changes captured enables your organization to make faster, better decisions and uncover relationships that you did not know existing before because you could not effectively process the data.

MAKING ENTERPRISE INFORMATION ACTIONABLE

GAIN INSIGHT AND CONTROL ALL YOUR ORGANIZATION'S DATA

With a focus on workflow, exceptions, and variances, the Boardwalk Radius Analytics & Compliance Dashboard surfaces all active process information that needs to be addressed across multiple business dimensions.



TAKE ACTION

All information is directly actionable within the Radius Analytics & Compliance Dashboard so insights can be turned into collaborative exchanges to resolve operating issues and gain alignment on future state.

WHAT'S ACTIONABLE INFORMATION MEAN TO MY BUSINESS?
















The opportunity to make decisions faster, improve key operating metrics, reduce risk, and meet compliance requirements

- | | |
|-------------------------------------|---|
| 1 Actionable On-Demand Visibility | 4 Improved Customer Satisfaction Metrics |
| 2 Compliance and Auditability | 5 Reduction in Digital Transformation Effort, Cost and Time |
| 3 High Data Accuracy and Lower Risk | 6 Rapid Collaboration and Alignment |

BETTER INSIGHT, 50-80% FASTER

Some of the key realized advantages of Boardwalk Radius Analytics & Compliance Dashboard application with the Boardwalk Nucleus and Network of Words (NOW):

1. Slashes time to insight by >50% over batch data lake approach
2. Reduces loss of information fidelity by capturing the actual information rather than its translation – a challenge for analytics dashboards in general

	Control Tower (SQL)	Data Lake	Radius Control Tower
Unstructured Data Support			
Time-based Data Level Relationships			
Curated and Correlated Research			
Native Document Support Without SQL Transformation			
Directly Make Control Tower Insights Actionable/Collaborative			




The Boardwalk Radius Analytics & Compliance Dashboard application, Boardwalk Nucleus, and Network of Words (NOW), enables a faster, optimized financial services value chain and a faster value chain delivers right to the bottom line – along with improved customer outcomes.

To discover how Boardwalk Radius Analytics & Compliance Dashboard's rapid operational insights will enhance your enterprise information management strategy, reserve time with one of our operational specialists today by contacting us today.



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