New Ways to Resolve
the Document and Data Dilemma

Document management presents a major challenge to commercial real estate owners and managers. An ever-growing volume of documents demands solutions that drill deep into the intricacies of leases, rent histories and other property-level information while providing the ease of use that time-pressed professionals require. In this Yardi white paper, you'll learn how to achieve new levels of efficiency with strategies that combine real estate software capabilities with everyday business-oriented tools.

KEY TOPICS ADDRESSED

- Best practices for managing and sharing documents
- Emerging methods of using data to create reports and visualizations
- Using third-party tools to aggregate and leverage real estate data
- How these practices provide the foundation for machine learning-based forecasting
- Tips for moving large volumes of data securely and efficiently

YARDI

> *Yardi Document Management for SharePoint allows our clients to use all the capabilities SharePoint brings to the table, while also leveraging the implicit and explicit structure of Yardi tools.*

DAVID FRANKLIN
Industry Prinicipal
Yardi

In a perfect world, document management technology might be provided by a single solution that offers all things to all people—infrastructure, hosting and software. Yet for many property owners and managers, the most attractive solution teams a real estate-focused system with a familiar, established partner, enabling the end user to leverage the capabilities each provider brings to the table.

One such solution combines Yardi Voyager with Microsoft tools. In creating Yardi Document Management for SharePoint, Yardi leveraged Microsoft's SharePoint® software, which Yardi clients enjoy

access to through Microsoft 365®. Yardi's system uses SharePoint online for the document repository, or Yardi application storage.

"What that means is if I were to go into Voyager and attach a document, rather than it being stored in a Yardi proprietary system, it's actually stored in SharePoint," said David Franklin, Yardi industry principal for commercial real estate and artificial intelligence. "That allows our clients to use all the capabilities SharePoint brings to the table, while also leveraging the implicit and explicit structure of Yardi tools."

Yardi brings its expertise in properties, leases and their relationship; SharePoint contributes proficiency in document access, collaboration, sharing and editing. Integrating the two gives Yardi clients the capacity for automated document storage. That ensures it doesn't become a tedious process that taxes the patience of document handlers.

Creating a portable folder structure formerly represented the No. 1 challenge for Yardi clients wanting to use a third-party tool for sharing documents. Yardi's application overcomes the hurdle by automatically building that folder structure, Franklin said.

YARDI

> ## "
> *If you're an Office 365 client and a Yardi client, it's an ideal solution.*

KHANH NGUYEN
Vice President, IT Enterprise Applications
Kilroy Realty

ORGANIZATION STANDARD
KILROY REALTY

Among companies embracing Yardi Document Management for SharePoint is Kilroy Realty, the Los Angeles-based investor, developer and manager. Kilroy used a predecessor version of Yardi Document Management 10 years ago, recalled Khanh Nguyen, the firm's vice president of IT for enterprise applications.

Six years ago, Kilroy was an early adopter of a new version of Yardi Document Management that tied into clients' existing Microsoft 365, around the time that Kilroy was making the move to that Microsoft platform.

Yardi Document Management for SharePoint provided an out-of-the-box hierarchy for organizing Kilroy's property documents. It also seemed "kind of like SharePoint online," as Nguyen put it. Moving to such a solution is frequently disruptive; Nguyen recalls the first 18 months as "rough." But when the pandemic struck, the adoption of SharePoint drew considerable interest and Kilroy was able to move to the cloud-based solution, which Nguyen said offered a necessary foundation. The Yardi tie-in was a crucial piece of establishing a designated location for company records and provides a standard and template.

The dual Yardi and SharePoint security features and user-friendly accessibility are further plusses. "If you're on the road and need to make quick edits, you can pull it up real quick on your phone. I've anecdotally heard of people doing that," Nguyen reported. "It's kind of a one-stop shop. If you're an Office 365 client and a Yardi client, it's an ideal solution."

What's ahead? As the use of Microsoft Teams® expands, Yardi is developing Yardi Document Management for Teams. "The way people are now working within documents, eventually people will just work in Teams," Nguyen predicted. "That's because it is able to integrate with your email, your calendar and has a whole bunch of other tools."

⊮YARDI

BRIDGE TO INTELLIGENCE

Real estate enterprises are accumulating an ever-growing storehouse of data about properties, leases, occupancy, rent growth and more. A key benefit of the aggregated information is its potential to help forecast the likelihood of tenant lease defaults or expansion.

Yet those objectives cannot be achieved unless data can be moved from multiple sources to a format that allows it to be loaded into business intelligence tools. That step opens up a huge opportunity to slice and dice data in a way that powers company strategy. The tools not only provide a pipeline for moving usable data to business intelligence but can also create pipelines for tailored customer reports and dashboards.

As with document management, the best approach may be to partner dedicated property management technology with a business intelligence tool that is readily accessible to real estate professionals—and is familiar to them.

That was the strategy when Yardi developed Yardi Data Connect to enable a data transfer between Yardi Voyager and Microsoft's Power BI® tool. Power BI has shown an exceptional capacity to visualize data and aggregate it from multiple systems. In addition, Yardi has created a "starter pack" that allows Data Connect clients to hit the ground running with a stream of data, reports and visualizations recommended by Yardi. The solution enables users to create their own data pipelines to any additional information they want to include, then load that data directly into Power BI to build tailored customer reports and dashboards.

The implications are profound. Once companies have exfiltrated the data, they've created a huge opportunity for analysis. "A tremendous area of focus now is in using next-generation tools, large language models, generative AI and machine learning in order to dramatically enhance user experience and the capabilities of Yardi solutions," Franklin said.

EXPLORING THE POSSIBILITIES
BOXER PROPERTY

Many of these tools are being leveraged by Boxer Property, a Houston-based property management company serving owners in a wide variety of asset categories. Justin Segal, who oversees operations, marketing, leasing and technology for a national portfolio—and calls himself "a proud Yardi user for 25 years"—sat down recently with Franklin to discuss his company's experience with Yardi Data Connect. Besides offering data visualization and powering business intelligence, the platform has served as a launching pad, as when Boxer used Microsoft's Azure Machine Learning® to translate historical data into trend prediction.

"We've been using Yardi Data Connect and Azure Machine Learning to do some really cool things," Segal said. "When we thought about deploying AI as a Yardi user, we started with the application, (which) has data, logic and calculation, an interface and the option to deploy Yardi's new Virtuoso suite that has all kinds of very cool things in it.

"At the same time, we were looking at all the tools out there outside of Yardi, and wondering how we could connect. There seemed to be some tangled options and technologies."

The problem was solved by employing a suite of tools that started with Data Connect and Power BI, along with the Azure ML suite. Relay Human Cloud then assisted Boxer Property in staffing the project.

Since first leveraging Yardi's technology about a quarter century ago, Boxer has gone on to incorporate other kinds of operational technology, connecting Yardi to its central data. When the company started gathering building systems data, it also began seeking better visualizations and improved workflows. Boxer connected Power BI to its visualizations but struggled with AI until it found Data Connect. "That allowed us to have much better data visualizations, but also to power our workflows," Segal said. "It also allowed us to bring in Azure machine learning, which of course made Power BI better and made workflows better."

Combining Yardi Data Connect with Power BI gives Boxer a superior combination of operational data, building system data and the complex financial results made possible by Yardi Data Connect. The result: vastly improved data visualizations and

⊬YARDI

process automation, which Segal calls "the core value of Data Connect."

As a bonus, Boxer Property found it could incorporate Azure Machine Learning, with an easy-to-use toolset already integrated into the Power BI platform. Azure handled the entire deployment flow, ranging from dealing with the data to managing the computer training models and deploying them into Boxer's infrastructure. "If you think of Yardi Data Connect as a bridge, you can use any of these things with your Yardi data in a way that's far easier to use than it ever was," Segal said.

In Segal's view, neural network regression is the key value offered by the system. "If you're a very experienced property manager, you can probably look at a few properties and come up with ideas of what might happen," he said. "But if you wanted to ingest an entire portfolio of properties to

find patterns of activities or data or financial outcomes that map to very specific outcomes in the future, you (couldn't) really do it (without) an infrastructure like a neural network to train against known outcomes."

To cite a CRE-related example of a neural network, suppose you want to forecast a tenant's likelihood of defaulting on its lease or expanding its footprint. Yardi's toolsets capture such data as billing rent, square footage and work orders, the lease size and the tenant's business category, along with publicly available stock information.

The neural network is placed in the center, along with interstitial nodes that handle the network's operation. On one side, data values are dropped into the input nodes. On the other, output nodes report the likelihood of default or expansion. Training is provided to the model. "And then the model

starts experimenting with weights and variations in weights of different factors," Segal said.

The model runs through combinations of factors until it finds a pattern that matches the training outcome. It identifies a series of events that is correlated with a high likelihood of expansion. "And then we can take that data, push it back, and make predictions and apply them to our existing customer base." As it's fed additional information, the system can determine whether it will be predictive of a given outcome. "This is where Yardi Data Connect really gets interesting," Segal pointed out.

Those data points can be used to handle a great number of tasks, such as determining the likelihood that a property will sell or creating an accurate rent forecast. "Without the Data Connect data, these models are much less powerful," Segal said.

> *If you think of Yardi Data Connect as a bridge, you can use any of these things with your Yardi data in a way that's far easier to use than it ever was.*

JUSTIN SEGAL
President
Boxer Property

YARDI

"And without Power BI, it's much harder to get that data into a model because you'd need a bunch of data scientists" to do it. The combination of the two "has been very powerful for us," he added.

Boxer Property has begun deploying AI models to work through a mix of data that includes occupancy trends, financials and data marts. For example, the company can pull in information from for-sale properties and abstract it into a data set. Then it can come up with deals, offers and results, both from historical deals and the company's operational results. The data is placed into the Azure ML model, which can assess potential deals and come up with a score for the probability that it's worth a look.

"It's not buying the building for us or telling us how much we can offer, but instead is chewing through a huge number of submissions to find the things interesting for us," Segal said. He compares the model to a metal detector: "It doesn't dig around for you but tells you where to dig."

Leveraging Yardi Data Connect and Power BI, Boxer can use the Azure ML pipeline to spot exceptions, predict financial outcomes, forecast customer default and expansion,

01

WHERE WILL WE INVEST IN INVENTORY?

02

WHEN WILL WE CHANGE PRICES?

03

WHAT'S THE COMBINED EFFECT OF THESE THINGS?

predict occupancy and then summarize what's taking place for asset managers and other stakeholders. The results offer clarity on leasing and key marketing questions, such as:

- Where will we invest in inventory?
- When will we change prices?
- What's the combined effect of these things?

"They all need the raw Yardi data to really be rich analyses," Segal said.

In addition to Data Connect, Power BI and Azure ML, Boxer found that it needed to go beyond its internal team's assistance to leverage the help of Relay Human Cloud, whose staff has been trained on Yardi and is currently learning Yardi Data Connect.

Segal recommends starting by using Yardi Data Connect to provide a high-quality data set and enlisting people who understand how the tools work, such as those at Relay Human Cloud. Then, he says, start small. "Show us a dashboard. Show us some information that will change somebody's behavior. You don't have to start with machine learning. You can start with basics to be able to understand your work and move incrementally from there."

YARDI

MOVING BIG DATA

Companies with large amounts of data often need to move it from repositories to other end points, which may include data warehouses or data lakes such as Snowflake, AWS and Azure. A common task is to combine data from one source with other data from reports and analyses, then leverage third-party tools to analyze and report on the data.

Among the tools devised for such tasks is Yardi Replicate, so named because it replicates Voyager data to a separate endpoint. "It's been somewhat challenging for our clients to move the amount of data Yardi's system holds, which is millions and millions of records," noted Brian Sutherland, Yardi vice president of commercial. "It's not always easy to replicate records from Yardi Voyager to a data lake or data warehouse, (given the) amounts of data to be moved."

Yardi Replicate efficiently enables movement of data from Yardi Voyager to other cloud environments, while sidestepping performance issues often associated with moving large volumes of data. The tool uses Change Data Capture (CDC), a Microsoft SQL technology that tracks all changes in a data source. Once tables are mirrored, CDC looks solely for changes and will move only records that have been changed.

Finally, those records are moved. The result: faster and better performance. "Our platform

> *Our platform holds so much information our clients need and Replicate mirrors those records, identifies the changes and ships them off to a defined endpoint.*

BRIAN SUTHERLAND
Vice President, Commercial
Yardi

holds so much information our clients need and Replicate mirrors those records, identifies the changes and ships them off to a defined endpoint," Sutherland said. Available only to Yardi's largest clients on the Yardi Private Cloud, the tool went live in March 2024.

One of the multifamily industry's biggest opportunities is leveraging data. As a result, most Yardi clients have data lakes or data warehouses in motion. "This is really assisting them in these initiatives," Sutherland said. Yardi Replicate allows for real-time replication of Voyager data outside Yardi, he added, and gives clients control over the scope and destination endpoint they prefer.

Franklin sums up the potential of Yardi Document Management for SharePoint, Data Connect and Replicate this way: "These tools are the tip of the spear when it comes to third-party integrations and the future of the Yardi platform."

Contact us to discuss how Yardi's enterprise data solutions can meet your company's needs.

sales@yardi.com or (800) 866-1144