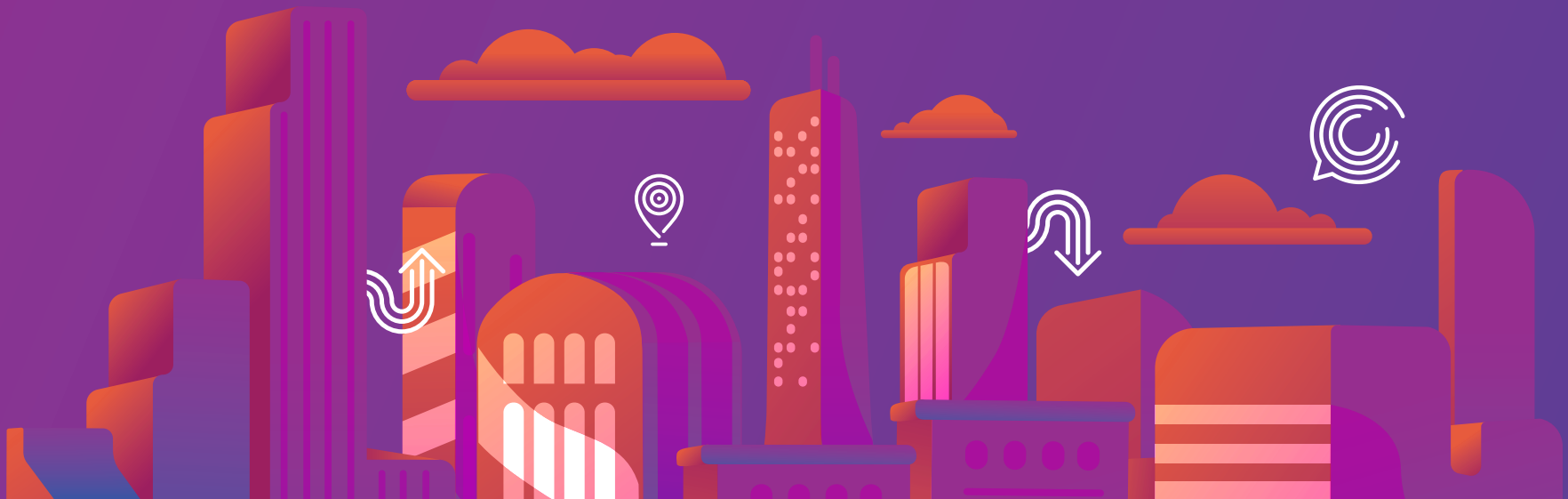




Everything is addressable

The Knowledge Fabric from
Pitney Bowes reveals the
insights that impact decisions





Introduction

Every meaningful thing on Earth exists in an actual location. Our addresses indicate not only where we live in this world, but also where we work, play, shop, eat, and learn, on street corners or in cyberspace.

An address is typically tied to physical location, but an address is more than that. It's the data that binds people, places and things together. That data tells the history and context of a space—the families who owned a home over the years, the businesses that flourished or failed, the changing/adjusted property line, the wildfire that did damage a decade ago.

It is easy to take the address for granted, and because of that we can miss the significance of the information that it provides. The address is how we identify ourselves and how others identify us—a point of authentication every time you get a license renewed, apply for credit, or create a new online account. It's authentic and authoritative. It's foundational and ever-present.

As a foundation of our identity, we bring our addresses with us everywhere we go. One-third of the human population uses social networks; many of us use several social profiles.

We use our phones to navigate and transmit GPS. Our digital addresses link together our behaviors, everything from our financial interactions to our shopping habits.

And even in the most literal sense, an address is never merely a street address. An address demarcates a building, a space, but how big is that space? How much is it worth? Who travels to it, passes through it, works in it, lives in it? What value does it have? Where does it sit on the flood plain? Who else owns an apartment in that building?

Addresses offer us the ability to predict behavior. When we talk about marketing powered by Artificial Intelligence and Machine Learning, using programmatic buying and matching algorithms, those audiences are “addressable.” We can assign them to a marketing opportunity the way we could to a location, deliver to them an ad experience, and know whether or not they received it.

Everyone, everyplace, everything is addressable.

A history of disruption: Pitney Bowes

In 1920, Pitney Bowes disrupted the mail system and transformed the way companies did business.

Founders Arthur Pitney and Walter Bowes joined forces to sell the first commercially available postage meter and invented the metered mail system. The metered mail industry allowed businesses to limit their trips to post offices, and eventually, Pitney Bowes pioneered a pay-by-phone system to bypass the post office altogether. By 1949, the year they refined the postage meter to fit on a desk, Pitney Bowes had already become a global company. Disrupting the mail system led to innovations like the first automatic mail sorter, the first bar code for postage, and the first automatic postage calculator.

Throughout this time of disruption and innovation, Pitney Bowes was collecting, distilling, and perfecting its knowledge of the world and the world's many addresses. Pitney Bowes today has more knowledge around the address than any other company in the world.

In fact, long before our identities included our addresses in cyberspace, Pitney Bowes was at our doorstep. They have always known that connecting people to their addresses is fundamental to the world of commerce, and facilitated that connection through innovation and continued investment.

Digital transformation has allowed Pitney Bowes to turn the envelope inside out, to connect the address on the outside with the customer on the inside, to map the relationships within and among addresses. The modern era of big data and algorithms that can contextualize and normalize vast amounts of information has brought this knowledge to life.

Pitney Bowes is now offering the keys to unlock a century's worth of knowledge and industry expertise to enable businesses to connect people, places and things and uncover insights that allow them to improve decision making, develop deep understanding of their customers, and increase customer engagement. They refer to this knowledge and expertise as the Knowledge Fabric.



The Knowledge Fabric from Pitney Bowes

The Knowledge Fabric from Pitney Bowes helps you surface relevant business insights by understanding the relationships between people, places, and things.

Envision an address—a building on a city block. The Knowledge Fabric from Pitney Bowes delivers layers of data and insights about the residents that live, have lived, and will live at that building. If you work in the public sector, you may wonder whether the road in front of the building needs repair, whether the streetlights provide enough light to deter crime, or whether the building was updated to the latest city building code. If you're looking for retail space, you want to know how many competitors share that neighborhood, price points for nearby retail, how walkable the sidewalks are. As an insurance company, you may wonder about the socioeconomic levels of the building residents, whether the building was retrofitted for earthquakes, or weakened by a fire. Financial institutions want to know what kind of borrowing needs the building's residents may have, their income levels, and banks and branches around the building.

Picture this building ensconced in a web of thousands of these attributes, in which each attribute is a thread. The point at which these threads intersect—where those attributes collide—that is Pitney Bowes' point of differentiation. The Knowledge Fabric from Pitney Bowes reveals insights that were impossible to see outside of the web.

Now picture that same building with that layered web of attributes—only it exists in more than 250 countries in the world. That's the Knowledge Fabric from Pitney Bowes helping businesses find and illuminate actionable insights across the globe. Pitney Bowes has cultivated this data over decades, honing the process by which these data points are pulled and applied. Your perfect customer profile can be woven in seconds. Your mission-critical business insight appears in real-time.



The knowledge that powers your business

Long before computers and algorithms, Pitney Bowes used every tool in the analog era to precisely locate and situate people and businesses. Mailing a letter was how a business reached a home, and Pitney Bowes was the conduit for companies to reach their customers. To succeed in the years before digital transformation, Pitney Bowes had to make sure they had not only the correct address, but the correct floor, suite, and office. Pitney Bowes was the thread that linked the 30th story of a downtown skyscraper with their rural farmhouse customer. That thread has survived for nearly 100 years, accounting for new offices, new homes, and new addresses.

And that thread is one of billions. Since they were founded, Pitney Bowes has validated four billion addresses globally, processed hundreds of billions of addresses, matched thousands of data points to each address, and ensured billions of pieces of mail reached their intended recipients.

Perfecting the process of connecting businesses to people has enabled Pitney Bowes to understand the variables that affect business and map the relationships between people, places, and things that drive decisions. Handling vast amounts of data propelled Pitney Bowes to develop new software technology that reaches dozens of different industries. Today Pitney Bowes is helping businesses prevent fraud, meet regulations, mitigate risk, identify opportunity, and expand to new markets.



And because Pitney Bowes business was built by facilitating connections between businesses and their customers, they have paid attention to helping businesses digitally transform their customer experience through rich insights, more accurate profiles, and personalized communications.

The thread between the business and customer remained unbroken because Pitney Bowes evolved to match the growing expectations of its clients and their customers.

All threads connect through the address. Pitney Bowes can pinpoint more than 181 million addresses in the US—even addresses the US Postal Service deems unreachable or those that have no phone service. Their geocoding software has rooftop precision in more than 100 different geographies. Those geographies can be wildly diverse, defined by mountains or city blocks, beaches or suburbs.

Nature doesn't respect boundaries, and insurers can't rely on manmade borders, census-designated neighborhoods or city limits to tailor their coverage offerings. In the insurance industry, location data must be accurate to the inch for actuarial scientists to make effective and evidence-based predictions.

Whether you're insuring a single-family home or advising a developer building two hundred new homes, managing risk is fundamental to success. That 25 of the world's largest insurance companies trust Pitney Bowes speaks volumes about the accuracy and effectiveness of their software and data.



Case study:
Insurance

Willis Re, one of the world's largest risk management firms, has partnered with Pitney Bowes to get a better view of their clients' risk. Willis Re deployed a solution using Pitney Bowes software and data to perform risk analysis and catastrophe modeling for their insurance clients in more than 150 countries. It allows Willis Re to undertake sophisticated analysis into a client's potential exposure based on the location and concentration of risk against a number of perils such as flood, wind, earthquake, explosion and bush-fire.

"By increasing the locational accuracy, our catastrophe modeling can now produce more precise estimations for a myriad of potential perils," said Nigel Davis, Executive Director at Willis Re.

Willis Re can now carry out catastrophe modeling and accumulation management with full control over the resulting models. This greater understanding and flexibility over the input data gives a more informed and precise view of a client's projected exposure.



Being accurate doesn't mean just knowing the physical location of an address—it also means knowing the customers associated with the address. In retail, getting the location right is fundamental yet only a first step. As more and more commerce occurs online, retail companies build and maintain large databases of customer information. How often do we return to old databases only to find the information outdated?

Without an engine on top of those databases, constantly cleaning and updating the information, these databases are not going to be very useful. Whether your company is delivering a product or an advertisement, meeting customer expectations means knowing as much as you can about the customer—be it their socioeconomic status, family demographics, purchase history, channel preferences, and more. You can then use this information to predict what product or service they may be interested in next.

This tells the customer that you know who they are. Pitney Bowes offers high accuracy in targeting customers with the most personalized and relevant offers.

When we think of a business typically associated with a street address, shipping and logistics companies come to mind. In order for these companies to devise optimal routes for deliveries, they must have accurate data on addresses. They must know streets and traffic patterns around that address, the side of the street that building is located on, and so on. Knowledge isn't just about having data points, it's about using them. By incorporating that data into maps and analytical models, companies can devise the most efficient routes and miss fewer deliveries. Using Pitney Bowes software and data one large international shipper avoids tens of thousands of route sequencing errors per day and millions of misrouted packages per year.



Case study:
Retail

Schwan's Home Service, the delivery business of The Schwan Food Company, manages thousands of customer records daily. These records come from orders placed by phone, online, and in person. To manage, standardize, and validate addresses and customer information within their enormous customer database, they partnered with Pitney Bowes. Creating a single customer record for all channels resulted in a 25% reduction in new customer duplicate data leading to significant cost savings of mailings and deliveries, and improved customer experience.





Contextually relevant insights for your business

Pitney Bowes understands that an address isn't just a location, it's the North Star in a constellation of attributes. For individuals, that address represents not just a roof over their heads but how they fit into society, from their tax bracket to their school district to their voting history. It's the property lines that have been drawn and redrawn, and the value of the home that has risen and fallen. An address goes beyond geography. It anchors the insights that allow your business to make choices based on thousands of verified attributes—decisions that will remain shrewd and relevant for years in the future.

Consider retailers looking to select the site for their next brick-and-mortar location. The process of selecting a new retail location involves numerous data points like nearby competitors, consumer behavior, and the cost of real estate—all fluctuating data that's hard to nail down. This is where the Knowledge Fabric from Pitney Bowes shines. Pitney Bowes not only has the fresh and accurate data, but also the analytical software and models to help businesses develop a framework for decision making. This framework can help shorten the time-to-value for a process that could be bogged down by entrenched internal opinions and potentially outdated information.



Case study:
Retail

Domino's is the largest pizza chain in Australia, which makes managing franchise territories complex and raises the risk of inadvertently creating territory conflict. Franchise areas and associated purchase prices are determined by the number of reachable households, overlaid with socio-economic data. Territory disputes are common. To minimize risk, Domino's must ensure its data is accurate.

Using Pitney Bowes software and data, Dominos deployed a solution to ensure that addresses within a territory are determined within minutes with a new list generated every quarter (or on-demand) allowing for territory adjustments due to fluctuations in the number of houses in a territory. It also helps increase Domino's delivery reach by providing the ability to keep up to date with any new builds, demolitions and changes to building use allowing for more targeted communications and saving money on wasted direct marketing to addresses that no longer exist.



As cities around the world grow, shrink, change and age, Pitney Bowes is the world traveler that has visited each of them. Local governments managing a range of public infrastructure—from buildings to bridges to street lights—must maintain infrastructure safety, determine where to build new structures, determine where private industry can build, and be transparent and frugal in their management. Strategic growth requires a deep understanding of the history of that community and the people, places and things that inhabit it.

The Knowledge Fabric from Pitney Bowes gives public sector managers the contextual data and tools to make strategic, evidence-based decisions about how to optimize taxpayer dollars. The technology behind city infrastructure data must respond to fluctuating conditions instantaneously. Static maps can't capture real-time geographical or infrastructural changes required to make rapid public safety decisions that work for a variety of families and businesses. In a world that moves faster by the minute, constituents, like customers, expect their governments to know them.



Case study:
Public sector

The Torfaen, Wales County Borough Council is working with Pitney Bowes to streamline, automate, and share city data. They developed informative, mobile-friendly interactive maps that saved taxpayers time and money by allowing agencies across Torfaen's government to pinpoint problems and act quickly to solve them. "We had a crack appear in one of our roads, and water was gushing out," said Donna Edwards-John, a geographic systems officer.

"Within minutes of receiving a phone call from a resident, the inspector was out there with her smartphone and could see straight away it was an adopted highway. It was actually a Welsh water main running underneath the road. With that data, she was able to deal with the problem on-site. We never would have been able to do that with the previous system."



Thousands of attributes, anchored by their address in the world, allow Pitney Bowes to weave a complex, in-depth profile of people, places and things. Layering the disparate threads of data from your customer's life together, Pitney Bowes offers a comprehensive view not just of the customer now, but of their history, their relationships—and their future.

You must be able to show your customer that your company understands what they need. What life stage are they in? What milestones have they met? With incomplete or static data, your company can miss rich marketing opportunities, lose customers, and waste valuable employee time reconciling out-of-date databases. It is not enough to recognize the attributes surrounding a customer. Those attributes must be crosschecked, verified, and consolidated into clear, accurate customer profiles.



Case study:
Finance

A US-based bank needed to solve data issues in four areas. First, customers signing on to mobile banking were not able to see all their services and required a separate login for a separate account; inconsistent data and varied data systems prevented targeted marketing; complaints about multiple sign-ons led to high call center volume; and IT employees spent valuable time maintaining old systems. A new approach from Pitney Bowes consolidates data from the bank's multiple outdated systems into a more flexible model so that both the customer and the bank have a single view with which to interact. This single customer view means the bank can conduct targeted, relevant marketing, reduce call center volume, and free up IT professionals to spend more time on work that drives business growth.

Telecommunication companies require the ability to combine precise locations with various layers of other relevant data, such as subscriber usage, network quality, and store locations. That explains why 40 out of 50 of the top global telecommunications companies partner with Pitney Bowes. Aggregating the various essential data into clear and multilayered maps helps telecommunications see both customer opportunities and challenges.



Case study:
Telecommunications

One of the largest telecommunications providers in the United States set out to prove the quality of their coverage by developing a crowdsourced coverage map. They started with a map of the United States, overlaid with a hexagonal grid. Each of those hexagons in turn were overlaid with network records from actual subscribers—19 billion records. And each of these records contain numerous bits of data, from the subscriber ID to the accuracy of their GPS to cellular signal strength. Using Pitney Bowes software and data, the provider generated this multilayered map in minutes—versus weeks—to demonstrate service coverage to potential subscribers.



**Build connections,
understand relationships
and engage effectively**

Good data is accurate, complete, authoritative, and standardized—and alive. Good data is dynamic. It changes because people's lives, relationships, and businesses change. When we look back through the history of Pitney Bowes as a company, we see the innovations Pitney Bowes made to weave and strengthen not only the connection between businesses and people, but also among individuals. With the right data, the right software technology can identify connections that can predict customer behavior.

The billions of threads of data that crisscross the world leading back to our physical and virtual addresses also carry our personalities, habits, and connections. Pitney Bowes software consolidates and stitches together these data points to develop a rich portrait of your customer. Relationships revealed through data cleansing, reconciling, and validation can act as a window to customer behavior and show patterns that can influence both your customer's decisions and your company's next steps.

Making the right connections between customers, accounts, and transactions, for example, allows financial institutions to monitor money laundering transactions and screen customers on various watch lists. Pitney Bowes helps financial institutions more accurately resolve identities by comparing millions of name variations, including nicknames and various spellings, across 143 cultures globally, to create precise customer profiles. Profiles that help these institutions identify bad actors, separate out legitimate transactions from illegal ones, and improve compliance as well as lower costs.



Case study:
Finance

Financial institutions have transaction monitoring systems to detect behavioral anomalies and outliers that could mean fraudulent or criminal activity. Unfortunately for one large retail bank in the US, these tools were generating far too many false positives because the bank did not have a single view of their customers across client portfolios.

This situation was wasting staff resources since regulatory compliance requires a financial institution to have investigators research every alert. Using Pitney Bowes software and data, the bank deployed a solution to resolve nicknames and other name variances and create a single instance of each individual across the bank's various systems. This solution offered a consolidated view of each customer, connecting each account to both the primary owner and the ultimate beneficiaries of the account. The solution also consolidated multiple alerts and cases for the same individual before alerting human investigators. As a result, the bank has seen 58% fewer false positives and saved an estimated \$10 million in investigator efficiency.

When it comes to connections, Pitney Bowes understands that it's not always enough to send information to a customer's address: you must address your customers. Pitney Bowes helps businesses know how, when and where to connect with their customers.

By increasing the accuracy of client data and customizing how and when that data is accessed, Pitney Bowes helps companies to communicate with their customers in the most relevant and engaging manner. Consider insurance policies as an example. Thick packets of paper detailing the minutiae of coverage, deductibles, claims and costs aren't customer friendly, but they are essential components of the customer's entire plan. Pitney Bowes software transforms these burdensome policy packages into interactive digital engagements.



Case study:
Insurance

Florida-based Security First Insurance wanted to make sure customers were happy and informed, but that can be challenging when they have to read long, complicated homeowners policies. "The average policy package can run 80 pages long," said Ben Bomhoff, Vice President of Enterprise Systems. "No one wants to read it." But everyone loves to watch an interesting video.

Since Security First deployed Pitney Bowes innovative interactive communication video, more than half of their customers open the policy and three-quarters of those watch long enough to get the most important messages.

Bringing it all together

All of the touchpoints—the thousands of minutiae that make up individual identities, properties, and organizations—are, on their own, insufficient. Pitney Bowes offers not only the vast data sets collected through diligent and meaningful work across dozens of industries, but also the software that makes that data work for your business.

The Knowledge Fabric from Pitney Bowes weaves together the data about people, places, and things to reveal insights into your customers' lives, locations, behavior and much more. In the end, Pitney Bowes's technology binds precision, context, and connections together to generate knowledge for your business.

At Pitney Bowes, we have always known that to know an address means to know more. When situated in the center of a constellation of facts, figures, histories, and attributes, an address reveals more than a location. It reveals your company's path forward.

**Everyone,
everyplace,
everything is
addressable.**

