Location Intelligence in Insurance

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pitney bowes

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IMPACT POINTS

- Based on interviews with 42 executives at North American and European insurance carriers and technology vendors, this report provides an overview of the location intelligence vendor space in insurance. Executives at P&C, life, and healthcare insurers unfamiliar with the space will learn about a wide range of solutions, while stakeholders that are already experts in location intelligence will learn about players or trends that have escaped their attention.

- Increasing use of location intelligence is a key step in insurers' journey toward digital transformation. Whether it's about bringing better mapping tools to human decision-makers or feeding geospatial insights to robots making decisions, location intelligence solutions have potential applications across a range of insurance processes, including marketing, distribution, pricing, underwriting, loss mitigation, claims, fraud management, and the supply of value-added services for policyholders.

- Although location intelligence solutions face several adoption hurdles, we expect them to have a spectacular impact in a few areas in the coming years, at least in North America. Starting with residential and commercial property underwriting and claims, location intelligence will drive greater automation of residential property underwriting, enabling more property insurers to offer instant quotes or at least get closer to offering instant quoting.

- The march toward greater automation of residential property underwriting could turn real estate portals (e.g., Zillow, Trulia) into formidable insurance distribution intermediaries, both competing with agents and brokers and becoming a major sales channel for them. Conceptually, those portals could become the place where the entire real estate transaction takes place, including insurance. Whether emulating the level of automation in car insurance quoting in property insurance will have a rapid and profound impact on how insurance is sold in the United States is still up for debate, though.

- Insurers should make more risk data available to their customers. Insurers are currently underutilizing the power of risk data in a marketing and sales context. Insurers need to make it easy, and that includes making things visual, for people to understand their risk.

INTRODUCTION

"Location, location, location" is the mantra not only of real estate agents and retailers but also of insurers. In many insurance lines, deep insights about a location can prove critical to business performance. In this report, we define location intelligence, also referred to as geospatial intelligence, as the ability to generate insights tied to a precise location on earth. These few words describe a vast ocean of use cases, from insurers applying machine learning to satellite imagery to accelerate residential property underwriting decisions, to a commercial property claims adjuster using a drone to scope hail damage on a factory roof, to a personal auto claim adjuster reviewing a map presenting an intersection where a crash occurred with traffic and weather conditions as well as traffic light status at the time of the crash, to a mapping tool that allows consumers to enter their home addresses to get quick assessments of the many risks their homes face and insurance recommendations.

The importance of location intelligence is not a new concept in insurance, but the surge of investment in insurtech startups, advances in data collection, and the rise of a range of new technologies—from drones to smartphones, the internet of things (IoT), machine learning, computer vision, user-friendly mapping and data visualization tools, and analytics—are creating new opportunities for insurers to improve their performance in a range of areas, including marketing, distribution, pricing, underwriting, loss mitigation, claims, fraud management, and the supply of value-added services for policyholders. For many insurers, stepping up their location intelligence capabilities is a critical building block in their digital transformation journey.

The full report is intended for insurance executives interested in gaining a broader view of the vendor landscape competing to help their vertical take full advantage of the latest advances in location intelligence. This report excerpt profiles Pitney Bowes' location intelligence capabilities.

METHODOLOGY

This report is based on interviews conducted between February and June 2017 with 42 executives at North American and European insurance carriers, and technology vendors actively targeting the insurance vertical with location intelligence capabilities.

THE MARKET

Location intelligence is a rapidly expanding field in insurance across P&C, life, and healthcare insurance, and is driven by opportunities to improve underwriting, claims management, fraud mitigation, loss mitigation, and other processes. This section outlines the forces behind the rise of location intelligence in insurance (Table A), the hurdles to adoption, the areas of insurance in which we expect location intelligence to have the most significant impact in the coming years, and the areas in which the jury is still out.

Table A: The Market

Market trends	Market implications
The supply of location intelligence solutions is expanding.	Location intelligence solutions are proliferating, creating new opportunities for insurers.
Insurers' current location intelligence leaves much to be desired.	Most insurers have considerable room for improvement.
Insurers lack a single view of their data.	Many location intelligence solutions are built to facilitate bringing all relevant data in one place.
Robots are coming in.	The rise of robots in insurance processes could bring up a considerable volume of location intelligence data previously not digestible by humans (e.g., underwriters, claims adjusters).
Imagery and sensing technology are improving.	Improvements in imagery and sensing technology are making it easier for insurers to consume geospatial intelligence.
Location intelligence dovetails with the trend toward pricing individual risk.	Location intelligence meets the growing demand to precisely underwrite individual risks.
There is a drive to become a customer risk manager.	Some insurers want to become risk managers for their customers. You can't help your client if you don't know where he or she is.
New sources of data are springing up.	New sources of data are creating new opportunities for insurers to differentiate.
Vendors are cooperating.	The significant amount of coopetition and cooperation in the location intelligence vendor community is easing the path of adoption for insurers.

Source: Aite Group

MARKET FORCES

Greater use of location intelligence in insurance is driven by nine factors:

- A growing array of technology, data, and services is available to insurers to cost-effectively bring more location intelligence into their processes. This report provides

many examples of established vendors with offerings that are getting better and better as well as new firms with fresh approaches.

- The insurance industry has considerable room for improvement in the realm of location intelligence. North American property insurers, for instance, often lack important data elements, such as the exact elevation of the building they insure. In vehicle insurance, the use of location intelligence remains primitive at many carriers. The good news is that the volume and accuracy of geospatial data is increasing (take the explosion of GPS-equipped smartphones, for instance), making it easier for insurers to establish a return over investment for using such content.

- Insurers suffer because they lack a single view of their data. Staff often need to access multiple systems to get a full picture of a property or individual. Bringing several layers of data into a single interface is one of the benefits offered by some of the vendors (e.g., SpatialKey, Digital Map Products, Pitney Bowes).

- The rise of analytics, machine learning, artificial intelligence, computer vision, and automation makes it increasingly compelling to bring vast amounts of location and contextual data into processes in which robots play a bigger role. While piling more data on top of an underwriter's desk may yield diminishing returns, robots have a limitless appetite for data. Robots can deliver insights and decisions to underwriters and claims adjusters to make them more efficient.

- Improvements in imagery and sensing technology across a range of capture mechanisms, such as satellites (e.g., the U.S. government declassifying sub-1 meter resolution images), aircrafts (e.g., vendors running more flights), drones (now easier to use, with automated flights and more software dedicated to insurance processes, and with friendlier regulation in the U.S.), smartphones (with apps that can measure buildings and detect roof and siding materials), and more (e.g., immersive media, street cameras), along with lower costs and greater integration in insurance processes, are accelerating the insurance industry's ability to consume geospatial data.

- Location intelligence dovetails with the wider trend in insurance of increasingly looking at risk from an individual standpoint and pricing accordingly. The more accurate a carrier's geospatial intelligence is, the more likely it is to out-segment competitors. Property insurers pricing based on ZIP or block codes (which is essentially demographic data) are likely to be put at a disadvantage against savvier carriers pricing based on the risk of each property.

- The savviest insurers are realizing that if they are going to shift from being risk managers for themselves to becoming risk managers for their customers, they will need to understand where their clients are and the conditions around them to assist them effectively.

- New sources of location intelligence data are emerging every year, creating new opportunities for insurers to refine their models and services. If historically insurers have heavily relied on government data, the reality is that the corporate world is increasingly representing a new data Eldorado. While some stakeholders expect

governments to make available more and cleaner data over time (e.g., cities feeding data to the Esri data mart), creating new opportunities for insurers, more and more large corporations are looking to monetize their own data. More big corporations are becoming data providers, from car manufacturers joining telematics data exchanges such as Verisk and LexisNexis Risk Solutions to car manufacturers putting their data out on an open platform (e.g., BMW), to banks and telcos feeding data to location intelligence vendors (e.g., Carto), to industrial firms feeding IoT data to their insurance partners (Munich Re has 50,000 IoT devices installed at commercial clients), to traffic camera providers (Vizzion Traffic Camera Solutions has 40,000 cameras live in 600 cities in 30 countries and hasn't secured an insurance client yet but has received lots of interest from auto insurers for claim purposes), and more.

- Considerable partnership and coopetition are happening in the location intelligence space. Because many vendors have niche solutions or simply lack critical pieces of the puzzle, partnering is part of the DNA of many location intelligence vendors. Many vendors' willingness to be at times a reseller and at times an original equipment manufacturer (OEM) considerably eases the ability for insurers to consume the software and data available off the shelf.

ADOPTION HURDLES

Meanwhile, the insurance industry's adoption of location intelligence is facing 13 hurdles:

- Many insurance executives don't realize how bad their current data is, including those at some very large insurers.

- Some insurance organizations have an uneven understanding of the location intelligence vendor space at large and, unaware of the off-the-shelf options, try to custom-build their solutions. This slows their ability to rapidly and cost-effectively take advantage of solutions already on the market.

- Some insurers simply lack the staff with the required expertise to effectively incorporate geospatial data. While they may have good actuaries, they may not be well-versed enough in geospatial data to develop models that will leverage the massive volume of attributes available. (Pitney Bowes, for instance, has 300 attributes per property.)

- Many insurers are still stuck with so many legacy systems that they struggle with the basics of data integration. The prospect of cobbling together even more outside data is daunting.

- Insurers closely guarding key metrics, such as claims data, and not sharing them with their location intelligence vendors can make it harder for the vendors to prove a return over investment, which in turn makes it harder for insurers to sort out the nice-to-have from the must-have solutions.

- Many insurers still don't understand that some of the location intelligence software available in the market could be used for master data management to underpin all

their other data (using software vendors such as Pitney Bowes or Esri). For instance, insurers could leverage location data to organize their customer base into households. They could combine geographic and demographic data to better segment their customers (using vendors such as Environics Analytics). They could use location intelligence to build their agent territory with a high level of granularity to avoid competition within their distribution channel. They could organize their supply chain to ensure better service and regulatory compliance. In California, for instance, where legislation requires that prevailing labor rates in a given area are applied to car repairs, insurers need granular location data to direct their customers to a convenient and cost-effective repair shop. Life insurers that are introducing IoT programs that leverage wearables (e.g., Fitbit) can leverage location data to understand the insureds' environments when they exercise (e.g., outside temperature, air pollution), and how one insured compares to his or her neighborhood cohort.

- Few insurers are ready to aggressively embrace robots and displace humans in their business processes. Insurers tend to have complex, entrenched processes in which human expertise plays a large role, and most insurers are likely to use technology to make their staff more efficient instead of letting artificial intelligence take over business processes that have resisted automation so far. Limited automation may slow the use of location intelligence, since there is only so much data humans can efficiently consume to make decisions.

- Compared to many other verticals that location intelligence vendors work with, the insurance industry tends to have a very high bar for precision and accuracy, and has an appetite for solutions that can be scaled across their entire businesses instead of introducing them piecemeal. In many instances, location intelligence solutions are very promising, but unless they are consistently accurate and can be efficiently leveraged across insurers' entire processes and territories, insurers will likely struggle with adoption. A great solution that works in just one state or for a fraction of the insurer's customer base, or that has a 10% error rate, is unlikely to cut it.

- No vendor can offer insurers a complete solution leveraging all possible location intelligence advances. Take drones: They are great for claims, but using them for residential underwriting is probably not an option, at least for now. To fully take advantage of all the progress made in location intelligence, insurers will likely have to work with several if not many vendors with disparate solutions. It's a massive integration hurdle facing insurers, and given how tied up many are in core system replacement, many insurers may not be able to jump in even if the appetite is there.

- Not all markets across developed countries present the same opportunity for embracing location intelligence in the same lines of business. Insurers in countries with low adoption of car insurance telematics may lack interest in location intelligence. Insurers in countries with government-subsidized product lines (e.g., flood insurance, earthquake insurance), in places where weather hazards are less of a challenge (in areas with limited risk of wildfire or hail), or in markets where the economics of insurance products make it hard to invest in new software and data solutions may not care for more location intelligence.

- The rivalry between vendors could slow down location intelligence integration into insurers' underwriting, policy administration, and claims systems. A highly consolidated vendor market in some areas, such as in U.S. property claims software (dominated by Verisk and Symbility), means entrenched vendors may not be in a hurry to integrate other vendors' solutions and make it easy for insurers to tap into competing location intelligence solutions.

- Adopting a wide range of location intelligence solutions from a wide range of vendors could add up quickly to massive costs, forcing insurers to focus on a few solutions and prioritize working with their large, incumbent vendors, which may lack a complete location intelligence offering.

- Out of customer retention considerations, insurers sometimes prefer to pay damages and overlook the ability to use location intelligence solutions to make an informed decision on a claim. Greater insight into a situation is sometimes not viewed as conducive to good business.

SIGNIFICANT IMPACT

Despite the hurdles, we are expecting location intelligence to have a spectacular impact in six areas in the coming years, at least in North America:

- We expect the use of drones to have a significant impact in property claims and commercial property underwriting, not merely because of their flying cameras but also because of their trove of sensors and rapid march toward flight automation (see vendors such as Loveland Innovations, Skyglyph). U.S. drone operators are now moving beyond the exploratory stage with insurers, and several are already in commercial rollout (e.g., PrecisionHawk). Until 2016, vendors had to secure exemptions from the Federal Aviation Administration (FAA) to operate drones. Now that it has become as easy to get a drone pilot license as it is to get a driver's license, the market is taking off in the United States. The combination of satellite, aircraft, drone, and smartphone imagery and data is likely to cut into the independent adjuster sector, allowing fewer adjusters to handle the workload more efficiently. Expect fewer adjusters in the field (with a drone, an adjuster could inspect 20 houses a day, up from the four to five houses today) and more adjusters working behind a desk assisted by artificial intelligence quickly sifting through loads of imagery and data.

- We expect insurers to use more location intelligence in residential property underwriting as newer solutions reach scale (e.g., Cape Analytics is going nationwide with its satellite-imagery-based solution for residential property underwriters), speeding up underwriting decisions.

- We expect that machine learning's massive progress toward extracting data from imagery (see vendors such as Cape Analytics, EagleView, Converge, Loveland Innovations) is going to drive greater automation in residential property

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underwriting and claims, enabling more property insurers to offer instant quotes or at least get closer to offering instant quoting.

- We expect a strengthening alliance between a wide range of small data brokers (e.g., HazardHub) and software vendors that also offer a data mart (see vendors such as Pitney Bowes, Esri, Carto, SpatialKey, Digital Map Products) against incumbent P&C insurance data and analytics providers, such as CoreLogic and RMS, ultimately leading to mergers and acquisitions.

- We expect the rise of location intelligence to participate in the trend toward consumers and businesses having a much better understanding of their risk levels, behaviors, and attributes. We expect location intelligence to be increasingly used by brokers and agents in educating their customers on the risks they face, to help them pick the right amount and type of coverage. This is particularly evident in residential property insurance, for which homeowners have historically had limited insights into their risks, and several players are now offering ways for homeowners to understand their risk position by simply keying in their address on a website (see players such as HazardHub, Delos). We expect location intelligence to contribute to making insurance an open book, much like consumers today have access to their credit scores and understand how their financial behaviors can impact their ability to secure lending.

AREAS IN WHICH THE JURY IS OUT

While there are some clear winning initiatives in location intelligence, the jury is still out on how location intelligence will unravel in select areas.

- The issue of whether technology is going to enable insurers to rely increasingly on consumers' self-servicing is up for debate. Smartphones are rapidly becoming a compelling option for property owners to record damages to support a claim. Some stakeholders believe that the granularity of smartphone imagery is now as good as if not better than what can be obtained with aerial imagery. Instead of perusing aerial imagery or sending an adjuster to the site, insurers could rely more on property owners sending recordings using their insurer's dedicated app, applying artificial intelligence to the content, and expediting claim settlement. Some vendors are actively working on offering such a solution (e.g., Verisk), but it's unclear if consumers would truly warm up to the idea.

- In the United States, at least, the march toward greater automation of residential property underwriting could turn real estate portals (e.g., Zillow, Trulia) into formidable insurance intermediaries, both competing with agents and brokers and becoming a major sales channel for them. Conceptually, those portals could become the place where the entire real estate transaction takes place, including insurance. Whether emulating the level of automation in car insurance quoting in property insurance will have a rapid and profound impact on how insurance is being sold in the United States is still up for debate, though.

- The location intelligence vendors debate about how location intelligence is best delivered. While some vendors say insurers should focus on empowering their staff with enriched maps, others believe the maps will quickly become irrelevant as insurers increasingly feed location intelligence data to robots. Some vendors add that some insurers prefer to feed such data via a search box or in table format instead of presenting it on a map. Yet some other vendors argue that underpinning all their data with location intelligence is what insurers should focus on.

- There is disagreement as to what matters most, the data or the software. Some stakeholders poo-poo the value of software, arguing that software is quickly commoditizing, especially as geographic information systems (GIS) vendors add business intelligence (BI) functionalities (e.g., Esri, Pitney Bowes), and BI vendors add GIS-lite capabilities (e.g., Tableau, Qlik). Others argue there are plenty of data sources, and the differentiation is now primarily around software.

- It's not clear how drones could be used in residential underwriting. Some believe drones have potential for underwriting, but others believe we are years away of seeing drones rise as a compelling option, given their lack of scale across a country.

- The rise of smartphone imagery could create an early challenge to drones. Some vendors believe that smartphones will displace drones or at least limit their growth, while others believe that drones and aircraft imagery will reign for many years to come. Some obviously believe vendors that offer a combination of all devices, from satellite to aircraft, drones, and smartphones, will prevail.

- The insurance industry hasn't started tapping in a meaningful way the vast volume of IoT devices being installed around the world. The jury is still out on how rapidly and massively the IoT and location intelligence will converge and reshape insurance. The simple ability to tap connected street cameras is just one example of an area in which location intelligence data could accelerate insurers' claims decisions.

VENDOR REVIEW

PITNEY BOWES

Founded in 1920, Pitney Bowes is a provider of global e-commerce solutions, shipping and mailing products, location intelligence, and customer engagement and customer information management solutions. Headquartered in Stamford, Connecticut, Pitney Bowes generated US$3.4 billion in revenue in 2016.

Pitney Bowes' location intelligence offering to the insurance industry consists of two main products: Spectrum, a server-based solution that deploys on-premises and opens in a browser, and MapInfo Pro, a Microsoft Windows desktop client.

Spectrum is meant to integrate via application programing interface (API) with big-data sources and allows a business user to easily create maps and manipulate data. Under Spectrum's hood is a robust master data management solution. In insurance, Spectrum is aimed at users that need a thin slice of mapping as part of their work but need a powerful platform to organize their big data and anchor it in a geographic context. Spectrum can be integrated into a ratings engine, for instance, in which a broker can identify perils associated with a residence simply by typing in the address.

MapInfo Pro is meant for power users, such as actuaries and risk analysts, who constantly need to generate and customize maps to answer unique questions.

Both products leverage Pitney Bowes' expertise in geocoding, mapping, and visualization as well as its large database of risks. Both products can consume imagery produced by a variety of sources, including satellites, airplanes, drones, and smartphones. Pitney Bowes prides itself on several fronts, starting with the high quality of its geocoding. Pitney Bowes believes it is the best in the world at geocoding, i.e., validating addresses at scale and globally. In the United States, it says that 24 of the top 25 P&C insurers use its geocoding capability, as do many insurance customers in other parts of the world. In one example, it says it has helped improve a U.S. P&C insurer's residential portfolio geocoding from an initial 85% accuracy to 95%.

Pitney Bowes also prides itself on its ability to bring context to a specific address (for example, if a business is not necessarily located at street level), append a range of risks to that specific location, locate points of interest, and identify administrative and community boundaries as well as its ability to do all the above globally. Pitney Bowes delivers its solutions by producing data, leveraging its deep expertise in mail delivery globally, and by aggregating data from a wide range of providers. Unlike some major tech players, Pitney Bowes is rarely seen as an existential threat by many data providers and therefore can nurture a vast network of data partners. The firm has been creating customized data sets and managing third-party relationships, including contractual and royalty agreements, for 30 years. It sees itself as both a software and a data company.

Pitney Bowes says its core geocoding capability has a solid penetration among property insurance actuaries and underwriters, but the firm is looking to help P&C insurers in other areas, such as claims. The firm feels the insurance industry has only scratched the surface of understanding the value of maintaining a single customer view and of being able to do it in an agile fashion.

In addition to property insurance, Pitney Bowes also serves the healthcare market, supporting population health management and quality initiatives. The firm points out that over 50% of healthcare costs are driven by social factors, many of which can be predicted by location. The firm views the shift to value-based payments as opening a greater need in healthcare for understanding risk. It sees new opportunities beyond its legacy business of helping U.S. payers manage mailing efficiency, by enabling payers to use Spectrum as a Master Data Management system to develop a single view of their members with a geospatial context, addressing such questions as: does the patient live alone and is therefore at higher risk of re-admission? Does the patient live in a high-risk neighborhood where certain conditions are prevalent? Does the patient share lifestyle characteristics with people who are known for skipping their medication? Does the patient live close to relevant health providers given their condition? Pitney Bowes' vision is to enable payers to leverage Spectrum to identify high-risk members upon enrollment, enable intervention, promote member engagement, and support care coordination.

In car insurance, Pitney Bowes is exploring use cases for its technology as well. For instance, Pitney Bowes believes it has the capability to ingest massive amounts of telematics sensor data to enable an insurer to monitor in real time or in batches the status of its insured vehicles. Pitney Bowes can build data lakes for insurers, generating insights on issues such as where cars are headed, whether they are crossing the street center line, and more. In property insurance, Pitney Bowes says it can ingest drone imagery to enable use cases such as claims adjustment.

Among recent acquisitions, Piney Bowes acquired Maponics in 2016, which includes numerous geographic boundary data products, for example, neighborhoods, school campuses, and retail centers. The firm continues to be on the lookout for new acquisitions.

In location intelligence, Pitney Bowes views itself as competing primarily with GIS vendor Esri. In geocoding specifically, Pitney Bowes sees itself competing against Google because it is one of the rare vendors that can provide a global geocoding solution.

The firm believes it is differentiated not just in location technology but also in data management, including address verification. The firm views geospatial technology as becoming a critical part of what IT must deliver to the enterprise and no longer a separate function. Thus, Pitney Bowes is positioning itself to compete more as an enterprise master data management vendor helping IT grapple with a massive flow of geographic data. Pitney Bowes believes that the pressure on IT to run a range of analytics on such data is going to grow exponentially. The vendor seeks to help IT consolidate its disparate data sets and geocode them, attribute the entire data set (e.g., number of rooms in a building, square footage, distance to fire hydrant or fire house, proximity to forested area), and make it easy to manipulate the data.

Pitney Bowes has been selling directly to insurers thus far and is now looking to grow further by leveraging a wider network of resell partners, such as system integrators.

OUR TAKE

Pitney Bowes is a great fit for property or health insurers looking to anchor, manipulate, and analyze their massive data sets in a geographic context. From geocoding to a wealth of data attributes to master data management, Pitney Bowes has a very rich offering for P&C and health insurers, backed by a financially stable firm deeply committed to delivering actuarial-grade precision.

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