EXECUTIVE SUMMARY

IDC research shows that those organizations that are leading in digital transformation (DX) put a focus on using information to establish better customer experiences, improve knowledge worker productivity, and create operational adaptability. This focus manifests itself in the investment in a digital platform that provides the requisite capabilities to organize and process their data. In fact, investment in a digital platform strongly correlates to achieving digital maturity.

A key element of the digital platform is the ability to organize data in what IDC calls the “intelligent core.” This capability goes beyond traditional data management considerations like syntax (the rules) to include a semantic understanding that captures the knowledge graph of the organization. When the various knowledge graphs of key foundational areas like people, place, entity, and thing are connected, a knowledge fabric is created; this fabric opens a wide range of options for the implementation of digital use cases. For specific industries, this might include:

- **Government and Smart Cities** — In government, better delivery of services and furthering digital transformation are critical to success. Only by adopting a data-first approach using tools and techniques like the knowledge fabric can we advance considerably our aims of better engagement and constituent satisfaction.

- **Retail** — Place awareness correlated to customer, product availability, and vendor/supply options improves the likelihood that the retailer can achieve the expected revenue and profit growth targets. By aligning customer and employee dialogs with the roles, behaviors, and location of the person who needs, buys, and uses the retailer’s products in the context of the person’s current world, retailers create better experiences, thus driving sustainable growth. Contextualization is informed by data about the person and the dynamic state of his/her world based on what is happening, said, needed, and expected “now” in the context of achieving the retailer’s goals for the relationship, campaign, and message.
Financial Services — Improving customer experience and reducing onboarding and transactional friction, while elevating know-your-customer (KYC) compliance, third-party risk, and financial crime risk management requires abundant and rich data to better connect people, places, things, and entities. Location-based intelligence through a knowledge fabric can provide financial institutions (FIs) with a more holistic view of the physical and digital attributes of the locations surrounding their entity relationships.

Insurance — In insurance, the knowledge fabric can offer high-precision data about people, places, and things and their interrelationships to effectively augment the underwriting and catastrophic modeling processes. This in turn can help transform the decision making in insurance departments. The knowledge fabric can also provide contextual data about people and their unique preferences to transform customer engagement. It thus helps carriers meet customer expectations in the digital era for best-in-class experiences without compromising a healthy risk portfolio.

This white paper explores these concepts in depth and concludes with specific recommendations by industry. For all industries, the general guidance is clear — digital maturity depends on the investment in a cross-functional platform and that platform is greatly enhanced by the referential integrity delivered by the knowledge fabric.

DIGITAL TRANSFORMATION IS AT THE CENTER OF ENTERPRISE STRATEGIES

IDC has been conducting research on digital transformation for over three years. One of the most frequent questions we field is around whether the term digital transformation is real or just another technology vendor concept to drive marketing efforts. It is certainly a legitimate question, but we are always drawn back to our original epiphany in late 2015 when we heard the CEO of a major financial institution declare that his company was no longer a bank, it was a technology company in the financial services industry.

We have heard this technology company theme from numerous executives across a wide range of industries. This gives credence to the argument that digital transformation is a reality, not hype. Of course, the reality of digital transformation raises another important question as to why these CEOs are pivoting their strategies in this direction. IDC’s ongoing analysis suggests that the economic impact of the digital component of the global economy will be $18.5 trillion by 2020, roughly 25% of the whole.

We have explored the digital journey through various research vehicles, including maturity benchmarking and sentiment surveys. What rises to the top in these surveys is the importance
of data in creating new customer experiences, improving the productivity of knowledge workers, and creating operational resiliency. When we analyze the differences between organizations that have achieved digital maturity and those that struggle to achieve digital maturity, three characteristics emerge as key factors:

- **Long-term investment.** Leaders fund their digital transformation efforts largely through capital appropriations rather than trying to take a self-funding approach that reinvests savings from initial projects. The capital pathway allows an organization to execute with long-term goals in mind and to look across traditional functional silos.

- **A comprehensive road map.** Leaders align the appropriations with a specific set of use cases that are implemented in a coordinated way over time.

- **A digital platform.** Digitally determined organizations tend to gravitate toward a single digital transformation platform that organizes information and facilitates the creation of new capabilities for decision making and customer engagement.

For the purposes of this white paper, we will focus most of our discussion on the digital platform. Specifically, this white paper explores how the digital platform is constituted and how to implement it with the best possible information foundation.

### The Digital Platform and the Intelligent Core

The most important decision a company with digital aspirations will make in the next two to three years will be the selection of a digital transformation platform. This platform will deliver the requisite scale, cross-domain scope, and resiliency needed for insights and automation models. IDC has produced a series of studies that provide an abstracted view of the architecture of the platform that we have slightly recast for the purposes of this document (see Figure 1). The critical element in building insights and automation models is the intelligent core that is surrounded by four key supporting services:

- **Engagement services.** These services allow the company to connect and deliver digital experiences to customers, suppliers, partners, and employees.

- **Integration services.** This set of services supports a wide range of modern and legacy technologies from EDI to microservices that can easily connect to the firm’s ecosystem.

- **Developer services.** The platform will serve a wide range of internal and external constituents. Success will be based on how rapidly value-added capabilities are added. A robust set of developer services is also required.
- **Management services.** These services include two important overlay services. One is security that must be woven into the digital platform. The other is management services that distribute workloads across available infrastructure capacity when in operation.

**FIGURE 1  The Intelligent Core**

Organizations want to build insights and automation models on the premise that the decision process is driven by the corpus of information available. IDC has identified several key categories of information within the organization:

- **Transactional data.** This data comes from the applications purchased and built to support common business processes. The data is usually highly structured and in fully normalized databases. This data provides an important context for how the company is performing.

- **Creative content.** This information is usually unstructured or semistructured and includes everything from 3D CAD models and marketing content to audio and video. The goal is to provide the ability to easily reference the information for search and understanding. This information provides a design context.

- **Instrumentation.** This category is a newer concept to most organizations, but this is the information that creates awareness or a situational context. It can include customer survey input to improve experiences as well as things like IoT data that can provide the operating condition or location of an asset.
These three categories of information depend on a key foundational category that relates to master data and creates the requisite referential integrity across places, people, entities, and things (PPET). IDC research shows that more than 70% of data scientists’ time is spent in getting data organization right rather than on building the insights and automation models needed. A corollary to this finding is that most of the time involved in organizing data relates to reconciling to these PPET data sources.

Organizations that undertake the creation of a usable ontological reference — a knowledge graph or a knowledge fabric — can free up precious time for the data scientist. This time can then be spent to build and adapt the insights and automation models needed for digital success.

MOVING FROM A KNOWLEDGE GRAPH TO A KNOWLEDGE FABRIC

The insights and automation models that will fuel digital transformation should be built on a digital transformation platform, which needs a strong referential foundation to optimize development. A key benefit of organizing data in a graph is that there can be multiple links (or relationships) between two sets of data. Consider John Smith and Mary Smith. In a relational database, the join may be made between the contacts and the marital relationship identifying each as “spouse of." However, in a knowledge graph, many relationships can be created with data including that of “home address, holidays in Italy, likes cats, drives an Audi,” and so forth. This referential integrity is also critical to doing inference. Consider the following example: John Smith lives in New York (data point 1); New York is in the United States (data point 2); therefore, John Smith lives in the United States (the inference). Unless there is a good semantic (not syntactical) understanding of person (John Smith) and place (New York, United States), this simple inference is impossible for a machine to make. And inference is what separates an analytic model from a learning model.

One can group master or reference data into four categories: people, places, entities, and things. People relates to information about individuals. There are points of reference like government-issued identification numbers (e.g., Social Security number), but regulations limit the extent that those numbers can be used.

Place is a location, and there is a clear reference in that a location carries a set of coordinates, but those coordinates aren’t always precise enough. There is an established standard reference called the pbKey from Pitney Bowes that leverages the company’s vast repository of addresses. The pbKey is a unique identifier for every addressable location; it could include business information, property information, socioeconomic information, and so forth.
Entities are companies or government agencies — organizations in the simplest form. There are several choices for a reference identification, the most commonly used is the DUNS number from Dun & Bradstreet. However, there is a complex construct, given the nested parent/child relationships involved such as a subsidiary and a parent company, which can make referential reconciliation difficult.

The things category is mostly everything physical that doesn’t fit into the other three (people, places, and entities) categories and can include everything from products to large assets to tiny sensors. There isn’t a single reference, but there are some well-developed ontology structures (United Nations Standard Products and Services Code [UNSPSC]) and industry resources such as the Universal Product Code (UPC) for consumer products.

The first step in creating referential integrity is to build a knowledge graph for each of the categories (see Figure 2). The reference identification should be tied to all sources of external and internal information that might be used in the insights and automation models. This knowledge graph provides the ability to view all the information available on the category and ensures that individual pieces of information can be associated with the right person, place, entity, or thing.

**FIGURE 2** Building a Knowledge Graph

![Referential Integrity](source: IDC, 2019)
Weaving the Knowledge Fabric with a Place Orientation

Creating the knowledge graphs of the four categories of reference data is an important first step to creating a semantic foundation for utilizing an organization’s corpus of information. However, most insights and automation models will use more than one category of reference data, so data management personnel should look at how to connect the individual graphs into a knowledge fabric (see Figure 3).

FIGURE 3 The Knowledge Fabric

Begin by choosing an anchor category to serve as the primary reference identifier. IDC recommends using the place category for this purpose for several reasons:

- **Less variability.** Geocodes and addresses don’t change nearly as much as the other categories, so maintenance is easier.

- **An accepted reference key.** In addition to coordinates, the pbKey can be used to normalize all information. Entities have an accepted reference key as well, but it is subject to more change.

- **Connection to the other categories.** People and entities are generally associated with an address. Things are located somewhere. Given the ubiquity of places, it is a natural connector to the other referential types.
• **Creates a geospatial reference.** This might initially be overlooked, but many insights and automation models need to reference things relative to space. Understanding how a delivery truck might move from one place to the next place is one example.

The knowledge fabric is created by linking the categories of reference data together using place as the common denominator. This fabric will allow analytic and inference models to traverse the corpus of data available at the organization and, if done right, significantly alter the amount of time needed for manual organization.

**INDUSTRY EXAMPLES**

**The Knowledge Fabric for Governments and Smart Cities**

In government, two of the most critical pieces of information are location and constituent identity data. Almost every type of analysis that a government will want to undertake is going to depend on these being accurate and timely. Combining even these two vectors alone is not always easy as data can be messy, unstandardized, or not consistently available to key stakeholders. Using the approach of a knowledge fabric changes this limitation and unlocks new possibilities for governments to take a deeper look at their data and bring new insights to the forefront.

Government also has a unique use of location and identity data, as it is often the authority and entity of record responsible for regulating these pieces of information. GIS departments often will be the keepers of master address registers needed across permitting, assessing, deeds, and physical asset inventories. Agencies such as Social Security, healthcare, licensing, and tax will usually own the highest quality identity data. With these systems of record brought into the knowledge fabric, other departments can link their own data to it, creating a gold standard of person and place consumable across many formerly distinct agencies and domains. As with anything, the details are where the knowledge fabric counts, and it is the deep and meaningful connections with good data that add true value to otherwise siloed information. Without this ability to weave together all the components, service delivery will be hampered, costs will go up, and citizen satisfaction will plummet. Figure 4 highlights the drivers and challenges faced by government.
Use Cases in Government and Smart Cities Enabled by the Knowledge Fabric

Modern governments are all about service delivery. Whether this is through entitlement programs, public safety, transportation, education, urban planning, zoning and economic development, or public health, citizens now have much higher expectations. At the center of better service delivery is the constituent as customer, and having a clearer picture of needs, usage, and availability can be a vital component in making sure the right people get the right services at the right moment.

Smart Cities are becoming the norm around the globe as technology and data become more ubiquitous in the urban experience. Subsequently, urban planning and strategic zoning regulations to increase economic development and opportunity are becoming more complex. This is where a knowledge fabric that brings together current and historical data can provide a better way to look across the urban landscape in a systemic way in order to identify areas of both need and untapped potential for investment. Data such as location, permits, zoning, business use and occupancy rates, demographics along with infrastructure, and traffic patterns all coming together into a single tool can change the entire nature of the analysis, making difficult to identify opportunities suddenly obvious.

For public safety and public health agencies, the 360-degree view of a citizen and geography makes all the difference in their effectiveness. With current issues facing governments such as the ongoing opioid crisis, the ability to pinpoint hot spots of crime and overdoses can provide...
both caregivers and public safety officers ways to better understand where the issues are and design the appropriate interventions. Data including 911 call history, ambulance and medical personnel locations, Narcan training availability, socioeconomic indicators, and details on incidence response times can all be brought together in an analysis to identify larger trends and then predict where future problems might occur. The precise targeting made possible by bringing together formerly disparate sets of data can reduce crime as well as save lives.

Customers expect that real-time information is available to them on their devices on demand. Using this technology to be able to connect assets will allow for better decision making using up-to-the-minute data on critical services and outages. Everything from transit, elevators, traffic, weather, and other dangerous conditions to resource availability can be brought together to truly power mobility as a service. This will become increasingly critical in cities with aging populations.

With government budgets facing pressures, keeping up with evolving transportation and infrastructure maintenance and needs is a particularly expensive and critical piece of good governance. Bridges, railways, flood control measures, roadways, facilities, and vehicle fleets need maintenance and repair, but timely and historical logs are often scattered across different agencies and systems. Adding this data to a larger knowledge fabric enables stakeholders to unlock the ability to see across time and make sure that scarce resources are applied in a strategic way where they are needed most urgently. This will help reduce greater costs for repair later as well as ensure that infrastructure is safe and highly available, leading to better service and less disruptions to the daily life of customers. Figure 5 lists government use cases impacted by place.

**FIGURE 5** Government Use Cases (Impacted by Place)

<table>
<thead>
<tr>
<th>Transactional</th>
<th>Creative</th>
<th>Instrumented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data-driven policy development</td>
<td>Service and benefit recommendation engines</td>
<td>Fleet management and deployment</td>
</tr>
<tr>
<td>Master address management</td>
<td>Outreach campaign design</td>
<td>Environmental monitoring</td>
</tr>
<tr>
<td>Outstanding fine/fee collection</td>
<td>Digital Twin development</td>
<td>Workforce / task management</td>
</tr>
<tr>
<td>Maintenance logging</td>
<td></td>
<td>Crowd control and safety</td>
</tr>
<tr>
<td>360-degree citizen view</td>
<td></td>
<td>Resource allocation and distribution</td>
</tr>
<tr>
<td>Permitting/licensing approval and planning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: IDC, 2019
The Knowledge Fabric for Retail

For retailers, customer, place, product/merchandise, and vendor knowledge graphs are weaved together in the knowledge fabric, forming the contextual platform for seamless and frictionless engagement. The knowledge fabric weaves together an understanding of the relationships between master data elements over time. Knowing place enriches the understanding of everything, adding spatial awareness to data and making everything addressable. Relationships that were not obvious before can be exposed with analytics, and interactions may become intelligent.

Knowing the contextual relationship between where a customer is physically located and how place relates to product availability and omnichannel shopper behaviors enable retailers to execute contextualized customer engagement, deliver personalized offers, and create a seamless frictionless experience across all touch points of the customer journey. A 360-degree view (aka a single view) of the omnichannel consumer anchors relationship development, and place provides unprecedented clarity about purchase patterns, triggers, and opportunities. The knowledge fabric takes advantage of this data clarity, underpinning capabilities that optimize the identification of physical store locations and drive the orchestration and movement of goods, automated processes, directed work, and timely messaging to both consumers and employees that will grow revenue and profit while minimizing risk. Figure 6 highlights the drivers and challenges in retail.

FIGURE 6 Drivers and Challenges in Retail

Market Trends
- Shifts in omnichannel consumer shopping patterns
- Hyper-competitive marketplace
- Mandate for digital transformation - business strategy, priorities and processes
- Need to differentiate and improve efficiencies

Challenges
- Rearchitecting data flows and data management for hyper-personalized consumer centric buying and selling
- Understanding consumer context in near real time – who, where, why, what – and activating intelligent processes and interactions
- Organizational ability to change

Source: IDC, 2019
Use Cases in Retail Enabled by the Knowledge Fabric

Experiential retail requires IT modernization just to stay in business. To thrive, retailers must undertake the creation of a knowledge fabric to free up precious time for the data scientist to build and adapt the insights and automation models needed for digital success. Retailers that seek to create exceptional experiences for customers invest in technologies that improve convenience, connection, and context in all interactions. The goal is to create what feels like a bespoke experience to each customer and address consumer needs at any moment or through every moment within the customer journey, deepening and building on convenience, connection, and context from one to the next. Place awareness correlated to customer, product availability, and vendor/supply options improves the likelihood that the retailer can achieve the expected outcomes of key use case implementation.

Most retail processes benefit from location awareness, so consumer interactions, operational processes, transactions, and product movements should be tagged and associated with place. Impacted use cases include real-time inventory management, curated merchandising (assortments), omnichannel order orchestration and fulfillment, fraud management, advanced security, reverse logistics, loss prevention, price and offer optimization, workforce management, contextualized content delivery, contextualized marketing, and 360-degree customer data management and engagement. Retailers will need to align customer and employee dialogs with the roles, behaviors, and location of the person who needs, buys, and uses the retailer's products in the context of the person's current world. Contextualization is informed by data about the person and the dynamic state of his/her world based on what is happening, said, needed, and expected “now” in the context of achieving the retailer’s goals for the relationship, campaign, and message.

As retail business leaders set out to drive growth, they aim to maximize the value of data by creating insights and driving automation. Retail leaders do this on the premise that the decision process is driven by the corpus of information available to the organization. The use cases described in Figure 7 are a partial list sourced from IDC’s Worldwide Digital Transformation Use Case Taxonomy, 2019: Experiential Retail (IDC #US44627719, June 2019) for the retail industry. These use cases were selected because place is an important element. In Figure 7, the use cases are aligned with the previously described data categories: transactional (pure data — produced with analytics), creative (data produced to drive engagement), and instrumented (processes that leverage data to drive an improved outcome directly).
The Knowledge Fabric for Financial Services

A financial institution can derive insights from a knowledge fabric to enhance business outcomes in numerous ways, from marketing to risk and compliance. For purposes of this white paper, we will focus on risk and compliance concerns related to know-your-customer compliance, which includes customer identification programs (CIPs), customer due diligence (CDD) and enhanced due diligence (EDD), and financial crime risk management.

Effective KYC and financial crime risk management within FIs is largely predicated on understanding as much about your customer as you can. A customer, in this sense, is one of many entities with which a bank interacts. These entities may include employees, counterparties, and vendors. A knowledge fabric will enhance the risk management processes that govern an FI’s relationship with them. This includes a risk-based assessment of the entity at onboarding and over time, evaluating transactional activity against the entity’s risk profile. For years, financial institutions have endeavored to create a holistic view of their customers and entity relationships and understand how those relationships may link to other customers and entities within the FI’s environments. Holistically understanding an entity relationship enables better risk assessment of that entity. As an industry, substantial gains have been made in understanding the interrelation of entity relationships, thanks to entity resolution tools.
The concept of the knowledge fabric enhances the performance of entity resolution tools by infusing the data with location-based intelligence (place) in the digital and physical sense.

Fs must focus on people and entities for compliance with regulations that necessitate focus. Regulations related to anti-money laundering (AML) and KYC force Fs to create risk-based analyses of customers and their transactions to identify suspicious activity. Further, recent beneficial owner regulations added to Fs’ CDD requirements place additional strain on bank resources. Fs must document who the people are behind legal entity customers. In addition, understanding relationships of the owners to other people, places, and entities is important for effectively assessing the risk of legal entity customers and the aggregated risk of the entire relationship, including beneficial owners.

The knowledge fabric enables Fs to understand more about their customers through the enriched data that place provides. In addition, place provides abundant reference data, enabling risk management functions to identify hidden relationships and derive insights that can drive better compliance and risk management. Location intelligence from place data can aid understanding of attributes surrounding an address. For example, location intelligence can enable understanding of crime levels within the area or if the area is under a FinCEN geographic targeting order, if it is a virtual address, or if there are multiple PO boxes operating from a single dwelling. A knowledge fabric can drive deeper-level insights. Imagine an Fi small business customer that owns a strip mall in the center of town. Would it be important to a bank to know if one of its small business customer’s tenants was a marijuana-related business? Would the bank have a compliance issue related to that customer by accepting and depositing rent from that business? In this example, gaining insight as to the types of businesses located within the strip mall would provide intelligence to develop a more accurate risk assessment of the customer. The knowledge fabric, with enriched place data, provides Fs an ability to proactively surface risk and compliance issues. Place data enables connections between people, places, entities, and things that could not previously be connected, improving detection of suspicious activity. Figure 8 highlights the drivers and challenges for the financial services industry.
Use Cases in Financial Services Enabled by the Knowledge Fabric

Financial institutions have an imperative to digitally transform their operations and offerings to maintain pace with their digitally determined peers, and not be surpassed by digitally native challenger banks. Leveraging the use of a knowledge fabric will enable FIs to derive valuable insights that will propel back-office compliance and risk functions while improving the customer experience by reducing friction that the compliance process sometimes causes.

The knowledge fabric, leveraging the power of place intelligence, is the cornerstone for effective financial crime risk management. The rich data that is produced from the knowledge fabric is vital to the effectiveness of entity risk rating, AML, and fraud detection models. Enhancing these models with additional data can help drive down false positives, particularly in the onboarding and screening processes. This may reduce operating expense by as much as 39%, identify and clear suspicious transactions up to 49% faster, and help improve customer experience at onboarding.

IDC’s digital mission of connected banking is driven by the need to improve customer engagement in selling, delivering, and servicing financial products. The ability to know information about, and related to, the customer is a key element in delivering positive
customer experiences and making risk management decisions at the customer level. The use cases described in Figure 9 are a partial list sourced from IDC’s Worldwide Digital Transformation Use Case Taxonomy, 2019: Banking (IDC #US44300119, July 2019) for the financial services industry. These use cases were selected because place is an important element. In Figure 9, use cases are aligned with the previously described data categories: transactional (pure data — produced with analytics), creative (data produced to drive engagement), and instrumented (processes that leverage data to drive an improved outcome directly).

FIGURE 9  Financial Services Use Cases (Impacted by Place)

The Knowledge Fabric for Insurance

Insurance organizations face a difficult balancing task in the digital era; they must accept the right risks to maintain a healthy portfolio while delivering best-in-class customer experiences. This is more challenging in an age where customer expectations on how insurance sales and service are conducted are greatly influenced by experiences with digitally advanced industries. Despite the traditional nature of the business and the inflexible legacy landscape, incumbent insurers should operate with speed and efficiency to get the balancing act right. Figure 10 highlights drivers and challenges for the insurance industry.
FIGURE 10  Drivers and Challenges for Insurance

Source: IDC, 2019

According to IDC’s Worldwide Digital Transformation Use Case Taxonomy, 2019: Insurance (IDC #US44600319, June 2019), insurance organizations need to deliver “contextual and value-centric insurance” to address customer and market expectations. This is about creating simple, transparent, and unique experiences that are rooted on the principles of proactive risk management and secure, seamless, and contextual engagements across the customer journey. A knowledge fabric that brings together contextual, standard, and high-precision information about people, places, and things can help realize this objective.

A knowledge fabric powered by data and analytics can support property and casualty (P&C) insurance companies in their efforts to effectively handle their portfolio and also succeed in their mission to deliver “contextual and value-centric insurance.” Such a knowledge fabric provides business insights drawn from the deep relationships between people, places, and things. Key use cases include data-powered decision making, smart catastrophic modeling, and interactive personalized videos.
Use Cases in Insurance Enabled by the Knowledge Fabric

Data-Powered Decision Making
Implementing a simple, technology-driven onboarding process powered by structured and unstructured data from multiple sources is an important consideration to meet the customer experience expectations in the digital era. The idea is to reduce the number of data points to be collected from the customer for verification, risk assessment, and pricing. For this, insurers should transform their underwriting process with accurate location information so as to help expedite the risk analysis.

Hyper-accurate geocoding can provide a comprehensive depiction of any addressable property. In both commercial and personal P&C insurance, making all relevant information available in one place can help build a holistic picture of the risks associated with the property to be insured. This information includes, but is not limited to, a building’s condition and structure, impact due to fire/flood/earthquake, and the residents and their past activities and their socioeconomic status. A knowledge fabric that offers this holistic picture can immensely help the decision making as the data sets containing physical location and the data on people and things are combined to offer a single comprehensive view from which to draw insights. The solution can enable the underwriting function to make faster, more informed, and precise decisions by integrating the underwriting processes with real-time intelligent decision support systems. In addition to driving customer centricity, a data- and analytics-driven decision-making process can also help enhance staff experience.

Smart Catastrophic Modeling
With the insights derived from advanced analytics, predictive modeling tools, and cognitive capabilities, an insurer’s catastrophic modeling can also be enhanced. Precise estimations for potential risks make this possible. The knowledge fabric can aid insurers to come up with plans for customers across geographies with robust analysis of exposures based on the location and concentration of natural or man-made risks. The users of the knowledge fabric can have greater control over the models because of greater understanding of an insured property’s risk exposure.

Meaningful Customer Engagement Using Interactive Personalized Videos
One common goal across insurers in different parts of the world is to make insurance simple for their customers. Globally, carriers acknowledge that disclosures and communications should be made simple as complexity can make customers feel vulnerable. Communication should also cater to specific audiences (i.e., different customer segments). Another common goal is more relevant products and services. Based on the responses from 57 U.S. carriers,
IDC research observed that P&C insurers are now prioritizing IT initiatives to create highly personalized, contextual, and value-centric products and services as well as attracting and retaining customers (see State of Digital Transformation in the U.S. P&C Insurance Market — 2019 Update, IDC #EMEA44820519, February 2019). Today, these initiatives are more important for insurers than traditional objectives such as cost reduction, organization growth, and performance.

One way to make customer engagement simple and highly personalized is by establishing a single view of a customer across the organization. A knowledge fabric can provide consistent, complete, secure, integrated, aligned, and easily available customer intelligence from combined external and enterprise sources. This can enable customer outreach and meaningful interactions through new channels such as simple interactive personalized videos. Insurance carriers can thus avoid overwhelming the customers with massive amounts of cumbersome paper-based information on coverage, deductibles, and claims.

The use cases described in Figure 11 are a partial list sourced from IDC’s Worldwide Digital Transformation Use Case Taxonomy, 2019: Insurance (IDC #US44600319, June 2019) for the insurance industry, with place as an important element.

**FIGURE 11 Insurance Use Cases (Impacted by Place)**

**Transactional**
- Smart policy admin
- Smart claims
- Intelligent customer onboarding
- Intelligent underwriting
- 360-degree customer intelligence

**Creative**
- Contextual customer engagement across policy life cycle
- Usage-based insurance - vehicles/homes/businesses
- Evidence-based loss prevention - vehicles/homes/businesses/individuals
- Customer reward, recognition and value adds

**Instrumented**
- Concierge digital claims – vehicles/homes
- Connected insurance ecosystem
- Telematics-enabled fraud management
- Parametric insurance
- Virtual and augmented connect

Source: IDC, 2019
ESSENTIAL GUIDANCE

As companies digitally transform to enable doing more at scale and faster, decision-making platforms play a key role in enabling insight enabled processes and automation. Platforms that support insights and automation models require referential integrity through the application of a knowledge fabric.

The knowledge fabric is created by linking the categories of reference data together using place as the common denominator. This knowledge fabric will allow analytic and inference models to traverse the corpus of data available at the organization and, if done right, significantly alter the amount of time needed for manual organization. Industries are using a knowledge fabric to produce the insights and automation models that fuel digital transformation.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world’s leading technology media, research, and events company.