Informatica | **Deloitte.**

DATA, AI AND ANALYTICS STRATEGIES TO IMPROVE RETAIL CUSTOMER EXPERIENCES, SUPPLY CHAIN RESILIENCY AND REGULATORY COMPLIANCE

5 Ways to Enhance the Customer Experience with Cloud Data Management

How to Deliver Seamless Retail Experiences with Customer and Supply Chain Insights

Looking ahead to a radically altered retail landscape

What does the next decade hold for retailers? Change. Lots of it.

How to describe what lies ahead? Experiences.

If you want to retain customers, they'll need unique and memorable experiences that keep them highly engaged with your brand and your products. And in this era of extreme supply-chain disruption, suppliers require a closer watch so that businesses can adapt quickly to any issues that may arise and keep inventory at optimal levels. Indeed, the experiences you deliver to customers and how tightly integrated you are with suppliers will be your greatest brand differentiators in the coming months and years.

The only way to deliver this? Through a total mastery of your data.

With the right data strategy and cloud data management capabilities—and the AI and analytics practices to make the most of your data—you can improve retail customer experiences, drive omnichannel commerce, build resilient supply chains, optimize inventory and fulfillment, and reduce risk while increasing compliance.

But significant challenges stand in the way. To name a few:

- **Increasing data fragmentation and complexity** that make it difficult to track the customer contacts, interactions and personal preferences that enable personalized customer experiences across multiple touchpoints and platforms (e.g., app, store, website, etc.)

- **A lack of visibility into supplier networks and supplier coverage of product categories across domains**, which limits a deeper understanding of tier-1 suppliers; and a lack of support for complex product content with much-needed cross-function, workflow-based automation

- **Legacy technologies** that fail to prevent exposure and reduce risk by not providing visibility into data usage or access for compliance with regulations such as GDPR and CCPA

In this paper, we share how connecting your data efficiently and effectively with cloud data management can help you address your top business priorities and keep pace with the rapidly evolving retail landscape. We also provide five proven strategies to help you forge a successful data strategy and support your AI and analytics initiatives.
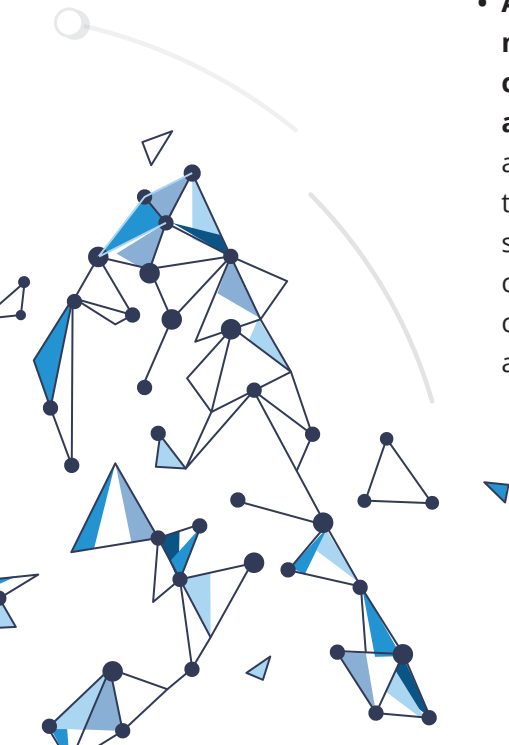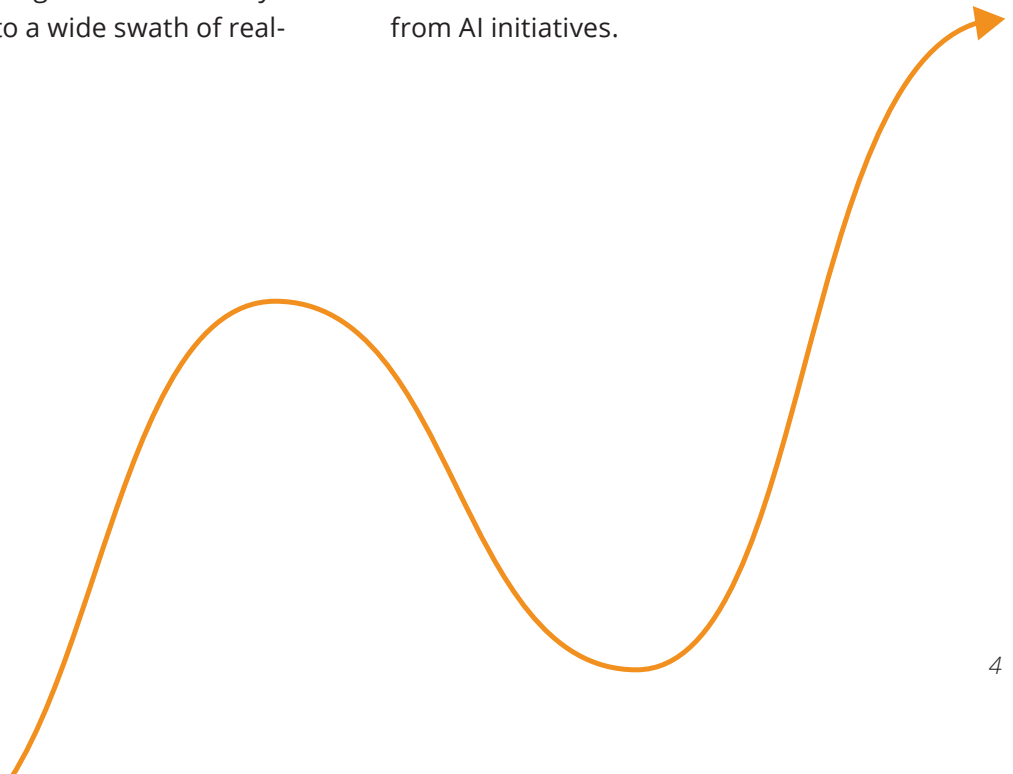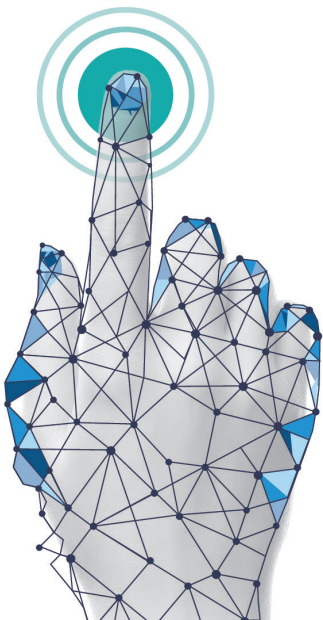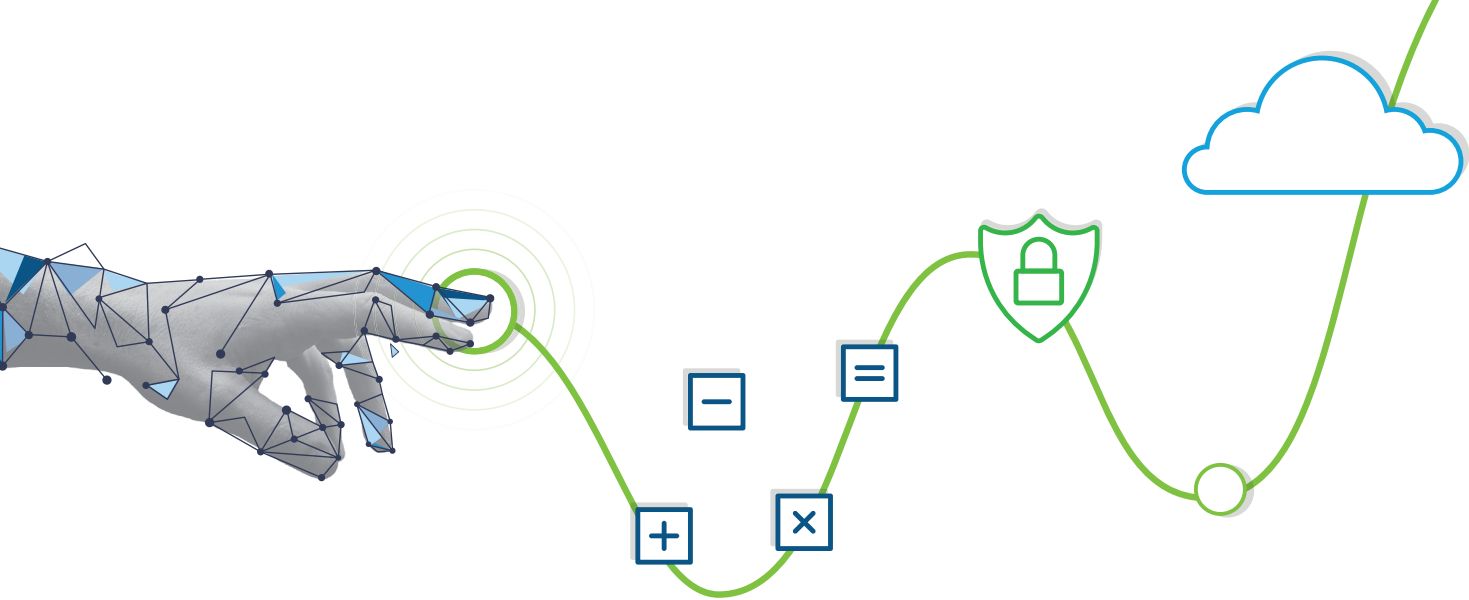
Attitudes toward AI and analytics are changing

Today's retail industry is embracing advanced analytics engines that drive innovation and value. The attitude that AI and analytics are bleeding-edge technologies not to be considered until sometime in the future is vanishing—as are the beliefs that security and privacy concerns are roadblocks to the successful deployment of AI.

Although still in early days, AI proof of concepts (POCs) and pilots are now commonplace in retail, with a fair number of these initiatives making it to production. As a result, we're seeing AI and data analytics applied to a wide swath of real-world retail initiatives, with encouraging results.

Still, we're also seeing many organizations stumble along the way. Specifically, businesses are making some common errors when starting on their AI and analytics journeys. Happily, these can be corrected with an advanced data and analytics management platform. The help of a partner can provide both the technical expertise to manage enterprise data as an asset along with the deep business transformation acumen needed to achieve value from AI initiatives.

Breakthroughs in customer experience powered by cloud data management:
5 use cases

Cloud data management capabilities support the top priorities of retail organizations today, to help:

Create personalized customer experiences

Deliver omnichannel buying experiences

Optimize supply chains

Strengthen data privacy and compliance

Streamline inventory management

Let's now examine some use cases which are top of mind for leaders in the retail marketplace to remind ourselves of what we can achieve by harnessing data effectively.
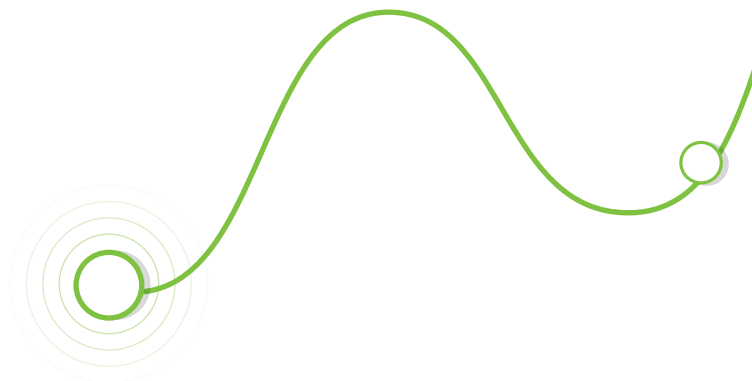
Transform the customer experience

Customers continue to evolve their shopping habits, but one trend is clear: they are increasingly multi-channel. They're leveraging online shopping and social media for inspiration and to perform research in addition to purchasing goods.

Perceiving that companies are profiting off inflation, they're becoming more sensitive to price and item availability, prioritizing both over preference for a particular brand. And their expectations are on the rise for retailers to deliver the goods.

CHANGES TO SHOPPING HABITS:
Securing the best price

61% say companies are profiting off inflation

60% will trade brands if their preferred brand is not in stock and will check stock availability before making a shopping trip

**65%** will trade brands if prices are too high

75% of shoppers expect delivery within 2 days, with **27%** expecting free delivery

Source: Deloitte Insights, "Dbriefs, Holiday shopping and travel seasons 2022: Trends to watch"

What *is* customer experience?

Customer experience is simply what the customer perceives of a business or brand based upon the cumulation of all the interactions they have with it. Customer experience includes how the customer interacts with online stores—ideally via a drag-and-drop graphical user interface—as well as how they perceive the friendliness and knowledgeability of the staff and other aspects of shopping in a physical store. Customer service plays a huge role, as does the experience of using the product itself. Indeed, every touchpoint makes a difference to your customers' experience, and whether they decide to keep coming back or not.
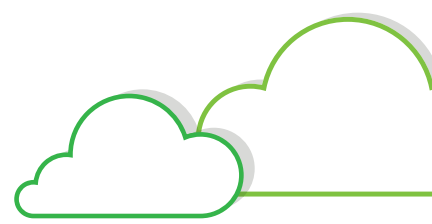
> " Today's customers perceive a company or a brand based on experiences, rather than products or services only. They demand more self-service capabilities and define their customer journey in a dynamic way every time they interact with the company. "
> — DR. AHMED HEZZAH, DIRECTOR, DIGITAL CUSTOMER, DELOITTE MIDDLE EAST

All these things add up to customers wanting certain things from their experiences, including better customer onboarding and building a "shared heritage" from moments of customer delight.

Your data and analytics strategies will determine whether you can deliver on a better customer experience. Do you have a trusted view of customer data, contact info and personal preferences? Do you have the insight to improve your customer experience, understand how to reduce churn and drive brand loyalty?

Cloud-based data management and AI and analytics can help improve the customer experience by:

- Providing a unified view of data and insight across critical retail business domains, such as customer, product, supplier, and location

- Integrating application silos such as point-of-sale, payment processing and inventory to automate retail business processes

- Facilitating data sharing with retail ecosystems and partners with a self-service data marketplace

- Delivering a consistent view of trusted data across channels and customer interactions through a data quality and governance tool

- Reducing time to value with out-of-the-box accelerators specifically designed for retail, such as connectors, data models and more
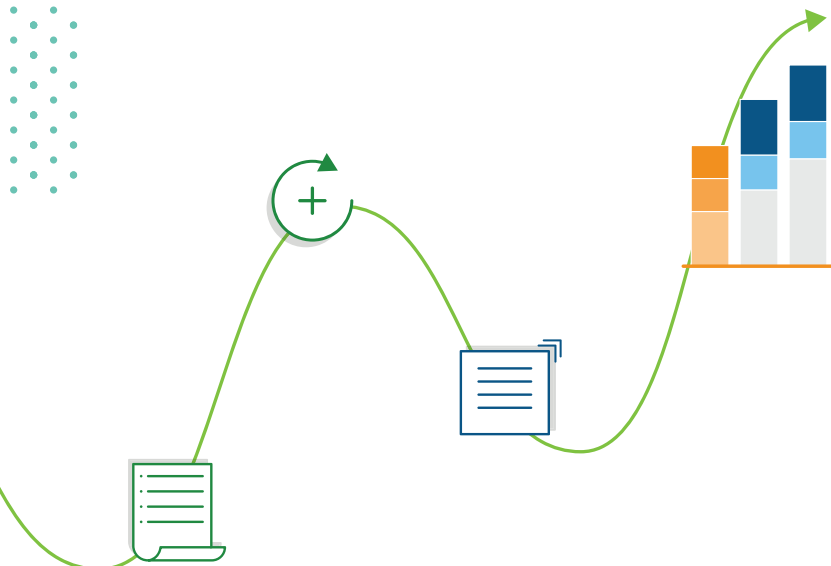
Make all your commerce consistent and seamless with omnichannel

As customers increase their engagement across multiple channels, creating memorable shopping experiences—and stickiness—becomes slightly difficult to manage. Retailers should consider looking to a more consistent omnichannel customer experience where every interaction with a brand is seamless throughout, whether the customer window shops or views products in the store and then buys them online. Or they perform their product research via their mobile phone on social media, then go to the store to try on or otherwise experience the real product.

53% of consumers say they're likely to look at a product in-store and buy it online.[1]

**53%** of brands are investing in tools that allow them to sell anywhere.[1]

47% of consumers want the option to check out online and return in-store.[1]

41% of consumers surveyed prefer shopping at retailers that adopt sustainable practices.[2]

1 Source: "The Future of Retail Report: Trends for 2022." [1]

2 Source: Deloitte Insights, "Dbriefs, Holiday shopping and travel seasons 2022: Trends to watch"
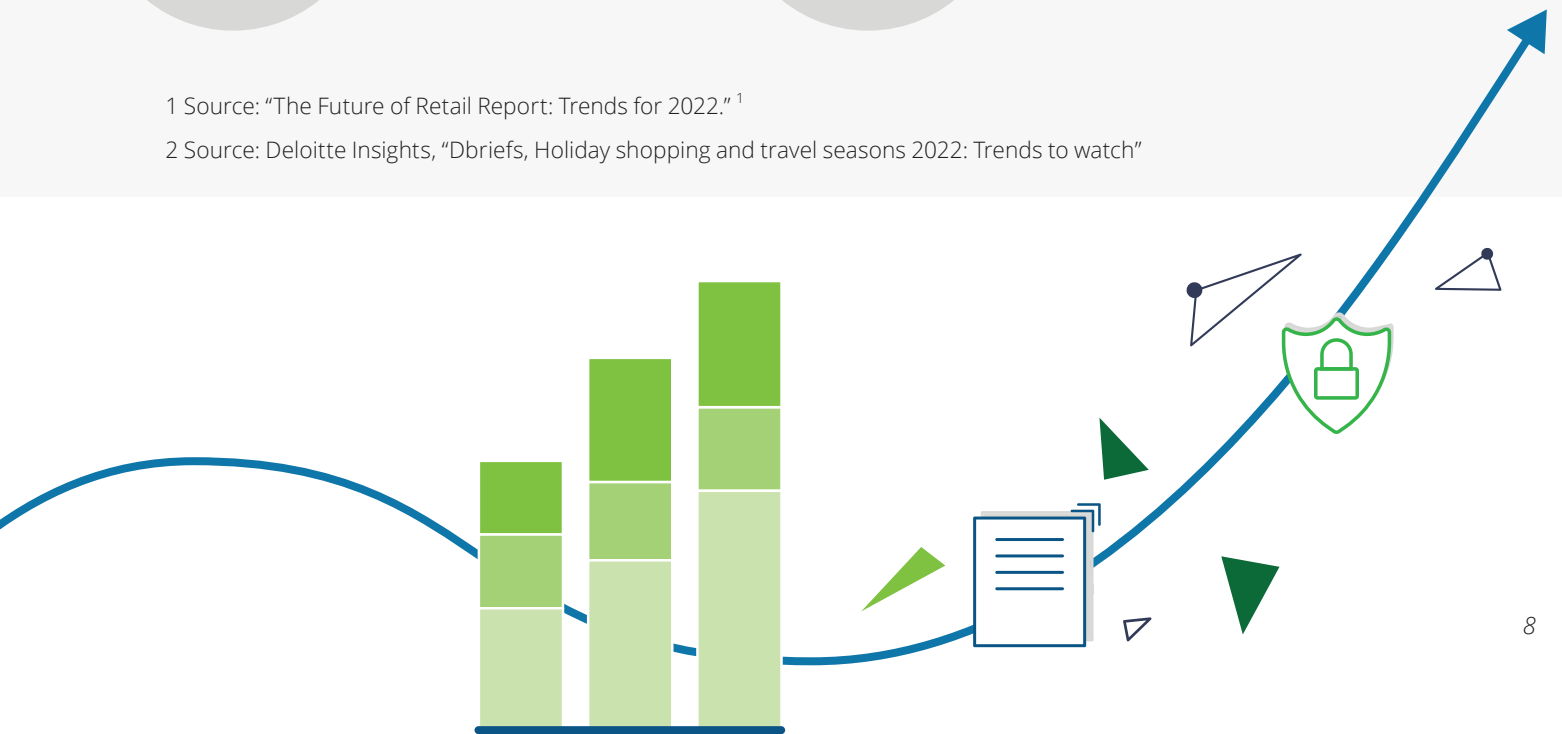
What's the difference between multichannel and omnichannel?[2] After all, multichannel still allows your customers to engage with your brand in multiple ways. The difference is that with multichannel, no attempt is made to ensure that the customer experience is the same across all channels. It also doesn't focus on making it possible for customers to shift from one channel to another in mid-research or purchase and not lose their place.

At its most basic, an omnichannel strategy requires a retailer to uplevel a multichannel approach for giving customers the best possible experience, whether using a desktop computer or a mobile device or visiting a physical store. The total experience must be both seamless and consistent.

According to Deloitte's 2022 retail industry outlook,[3] 96% of consumers expect this "seamless and consistent" experience across all retail channels. This means graduating to omnichannel. Not only can you seamlessly create many opportunities for cross- and upselling, but you're also building customer delight by providing the same personalized experience wherever and however they decide to interact with you.

Mobile shopping, in particular, is growing in popularity.

According to Insider Intelligence by eMarketer,[4] retail mobile sales exceeded $359 billion in 2021, an increase of 15.2% over 2020. By 2025, mobile sales should more than double to reach $728.28 billion and will account for 44.2% of retail ecommerce sales in the United States.
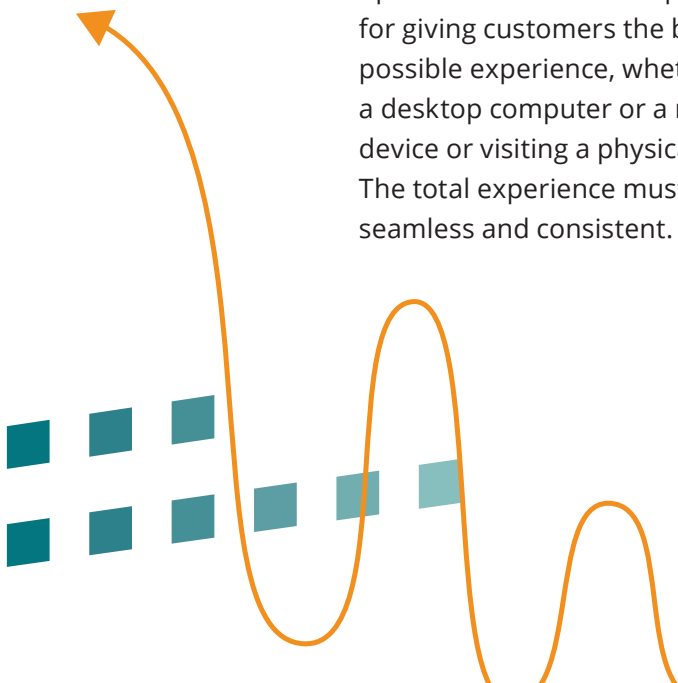
Additionally, social media platforms today have clickable "buy" buttons that allow consumers to make purchases without leaving their sites. Mobile users prefer this rather than navigating to retailers' websites. Likewise, many retailers today offer one-click checkout. Shoppers enter their payment information just once, and then make additional purchases. This is especially useful to mobile shoppers, who prefer to point and click rather than type data using small keyboards.

And according to the Harvard Business Review,[5] within six months of an omnichannel shopping experience with a brand, shoppers made 23% more repeat shopping visits and were more likely to recommend the brand than those who used a single channel.

But here, too, challenges lurk that require a powerhouse data strategy and expert use of AI and analytics. Your product data must be relevant, consistent and high-quality. But this data can be complex and difficult to manage. Plus, many retailers today don't have an automated way to create, manage and syndicate product content to get a 360-degree view of the many possible channels that exist: physical brick-and-mortar store, online store, social media and mobile apps.
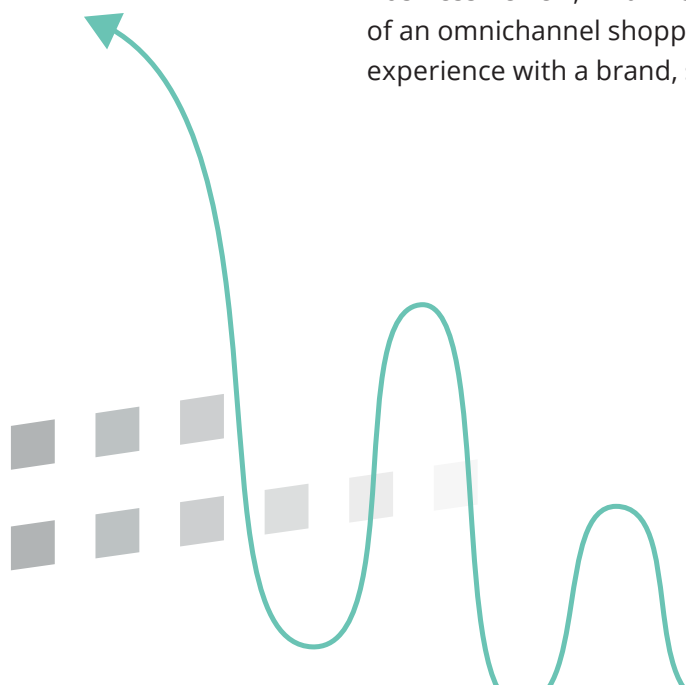
DRIVE INTEGRATED OMNICHANNEL EXPERIENCES:
Based on relevant, consistent and high quality product data.

Online shop, different assortments depending on purchase option

Compliant product details and nutrition facts

Mobile apps and social media

Shop ingredients, recipes

Online cross—and upsell opportunities

Store experience

Printed ads

Cloud data management can help remedy this situation by:

- Bringing together views of data and related insight across critical retail business domains (for example, customer, product, supplier, and location)

- Integrating application silos (point-of-sale, payment processing and inventory) to automate retail business processes

- Protecting customer data and facilitating compliance with regulations such as GDPR and CCPA

- Delivering a consistent view of trusted data across channels and customer interactions with data quality and governance

- Establishing a single, central platform to collect, manage, govern and enrich product information and content and distribute it to marketing, sales, online store, mobile and social media channels
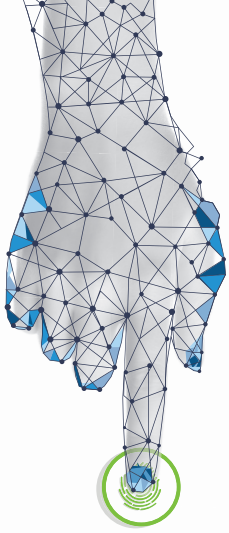
Optimize inventory management

You don't want the excess costs that come with lost sales, lower revenues and the loss of loyal customers due to sold-out stock. But neither do you want to carry more inventory than you absolutely need. Inventory optimization is the practice of possessing the right amount of inventory—exactly enough to meet demand without selling out or overstocking.

In last year's holiday season inventory was tight,[6] leading to out of stocks, back orders—and unhappy customers. Not so this year. FTI Consulting found[7] a decided build-up in inventory in retail across the sector in mid-to-late 2022. Retail inventory levels at the end of the second quarter of 2022 were 31% higher year-over-year than the same period in 2Q21. Some retailers say that the increases are deliberate to avoid last year's empty shelves during the holiday season. But there's no doubt that this padding comes with added costs and risks.

Last year, product shortages drove consumers even faster to "hybrid" shopping—mixing physical and online channels in search of inventory.

To optimize inventory in retail, you need clean, trustworthy data and the appropriate technology. Cloud data management and advanced data analytics and AI can enable you to:

- Seamlessly integrate ERP and advanced planning and scheduling (APS) systems to handle any number of SKUs and locations

- Streamline management of large, dynamic product portfolios

- Get real-time visibility of your inventory, from production to shipping

- Ensure the right amount of inventory is available to meet demand, both in the present and for the future

Build a resilient supply chain

Despite your best efforts, though, optimizing your inventory can be an impossible task if you don't have a resilient supply chain.

In a recent survey [8] of global retail executives who oversee supply chain, logistics and warehousing, 47% said that supply chain disruption was their most urgent challenge. This shouldn't be surprising. If its supply chain doesn't work, the threat is truly an existential one for a retailer, as it would simply stop functioning. It's fair to say that resiliency is an absolute necessity in today's fast-moving retail markets.

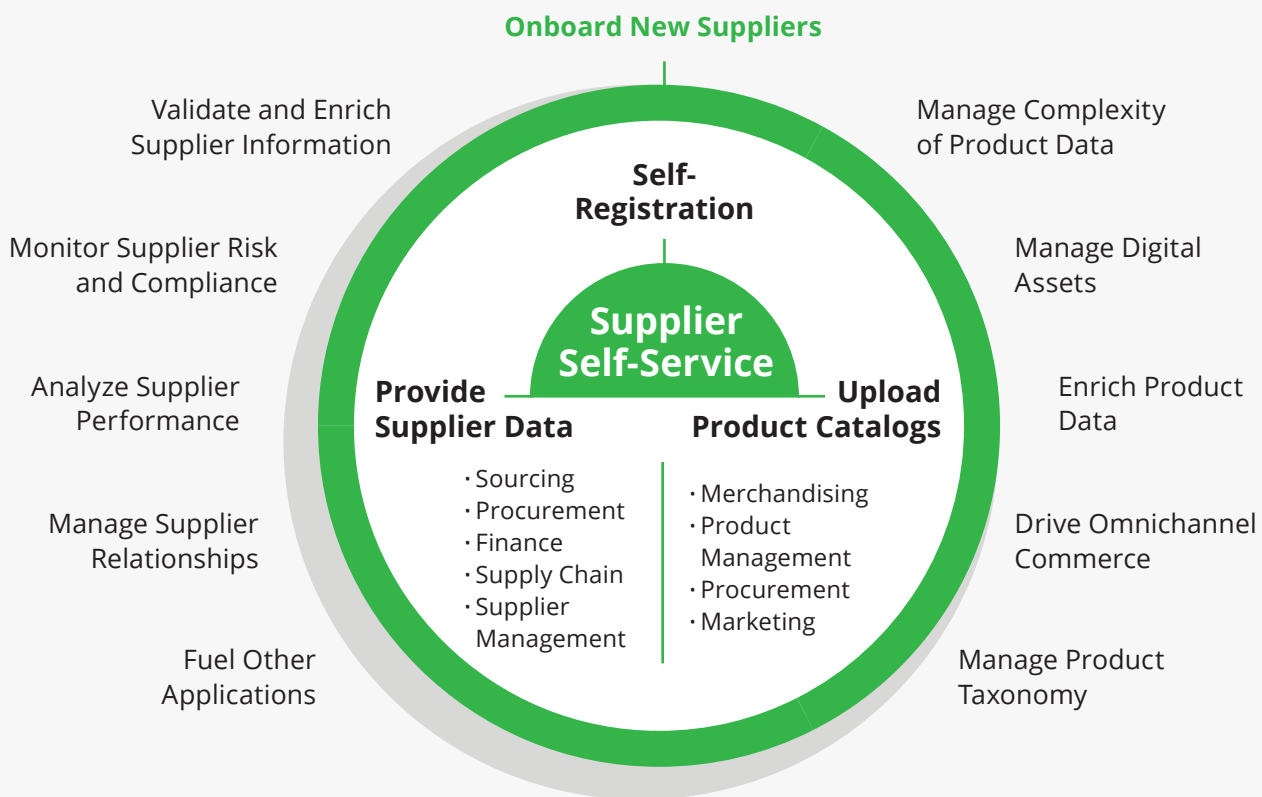But a resilient supply chain is something very specific: It refers to a supply chain's ability to both resist disruptions and recover operational capability ASAP after the inevitable disruptions occur. One of the biggest challenges is that many retailers have limited visibility into supplier networks, supplier spend, their individual performance records and the risk of depending upon them. More than six in 10 retailers (64%) report that they expect supply chain disruptions will impact their ability to grow, according to Deloitte.[9] And most have no visibility into sustainability scores to ensure they are complying with the growing list of environmental, social and governance (ESG) regulations.

What's more, many retailers have limited or no visibility into their supply chains beyond their tier-1 suppliers. Cloud data management coupled with AI and analytics can help remedy this by giving you the insight you need to identify and remediate supply chain bottlenecks as well as gaps.

And there are other things you can do to make your supply chain more resilient. One of them is to streamline supplier and product onboarding with self-registration. With the right data and technology tools, you can automate everything from validating and enriching supplier information, to analyzing supplier performance, to managing the complexity of product data. The ability to automate all of your business processes and integrate application silos—across point-of-sale, payment processing and inventory—are also critical to ensuring supply chain resiliency.

STREAMLINE SUPPLIER AND PRODUCT ONBOARDING:

Onboard New Suppliers

Validate and Enrich Supplier Information

Monitor Supplier Risk and Compliance

Analyze Supplier Performance

Manage Supplier Relationships

Fuel Other Applications

Self-Registration

Supplier Self-Service

Provide Supplier Data
· Sourcing
· Procurement
· Finance
· Supply Chain
· Supplier Management

Upload Product Catalogs
· Merchandising
· Product Management
· Procurement
· Marketing

Manage Complexity of Product Data

Manage Digital Assets

Enrich Product Data

Drive Omnichannel Commerce

Manage Product Taxonomy

Unilever reduces supplier onboarding time by 80%

Every day, more than two million people around the world use a Unilever product. With Informatica solutions, Unilever was able to reduce supplier onboarding time by as much as 80%—going from five weeks to five-to-seven days. It did this by eliminating the multiple manual engagements with suppliers that were formerly necessary to complete the supplier onboarding process.

Informatica MDM Product 360 enables Unilever to automatically retrieve master data and R&D data from source systems and combine data sets in one place for easy access and consistency. Unilever and retailers now have a single version of truth for product data that is helping to enhance consumers' shopping experiences.
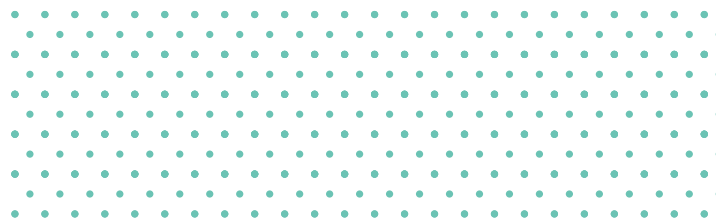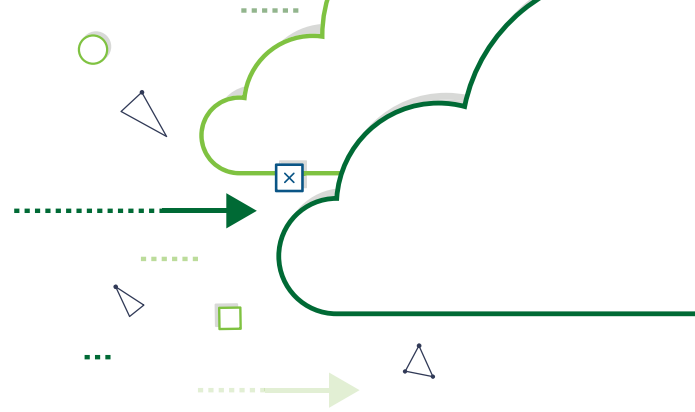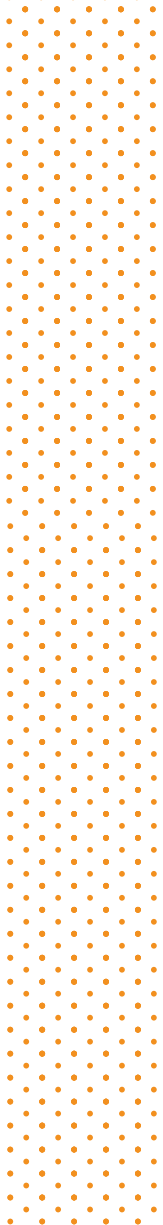
Ensure compliance and reduce risk

As customers continue to seek out the best deals and highest availability for desired items, they provide retailers with an abundance of information on their needs and habits. But with this information comes great responsibility. You should ensure your retail organization is able to comply with data privacy laws and protect customer information from unauthorized access.

According to the Economic Times,[10] risk management refers to "identifying potential risks in advance, analyzing them and taking precautionary steps to reduce/curb the risk." Compliance risk management, it therefore follows, is managing the risk of being out of compliance—in this case, with data privacy laws such as GDPR and CCPA—through loss, theft, exposure due to a data breach or not complying with consumer rights regarding their personal information.
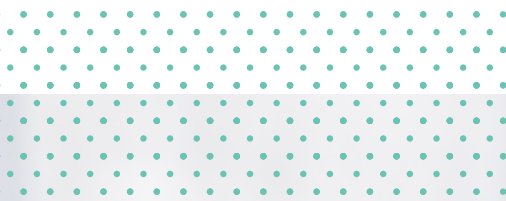
If you don't know what information you have or where it resides, this can create a manual nightmare—or worse yet, an impossible task. In addition to the potential harm done to a company's reputation, the financial penalties of being out of compliance can be severe.

The fact that loyalty programs are becoming so popular today means that companies now have more information on consumers than ever, increasing the compliance burden and the risk of running afoul of consumer privacy laws. And personalization is so attractive that 71% of consumers feel frustrated when a shopping experience is not tailored to their tastes and 83% are willing to share personal data for a more personalized experience.[11] That's both good news and bad news—good that retailers have more data to analyze and bad in that it increases the risk of a compliance failure.
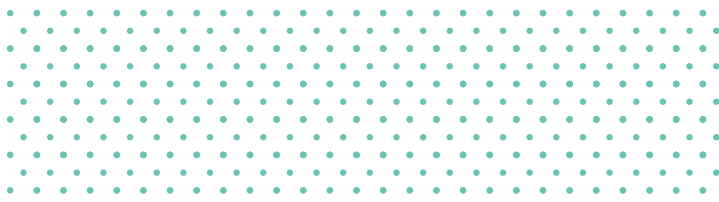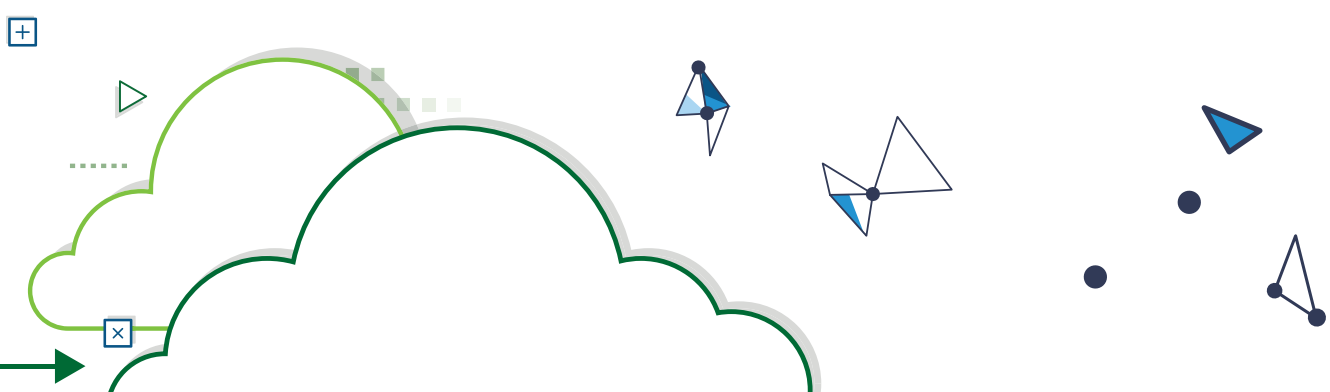
eBay improves finance efficiencies

The online auction and retail giant kicked off a data and governance program to improve the quality of information, drive operational efficiencies and make key business decisions faster. By using Informatica® Intelligent Data Management Cloud™ (IDMC) for Retail, eBay reduced unused or misused data, improving finance efficiencies. It simultaneously saw a material reduction in offline and manual activities and improvement in the quality of data being used throughout the organization.

Cloud data management helps enable you to reduce risk by:

Protecting customer data and facilitating compliance with regulations such as GDPR and CCPA

Delivering a consistent view of trusted data across channels and customer interactions with data quality and governance

What's stopping so many retailers from realizing value from data, AI and analytics?

All organizations recognize data as one of their most valuable assets to leverage in meeting their strategic objectives. Retailers especially know the key role data plays in giving both customers and suppliers the best possible experiences.

This recognition has led to decades-long investments in traditional on-premises data warehousing solutions and appliance-based solutions such as Netezza or Terradata. Due to the gradual evolution of these solutions and technical debt accrued over time, they now hamper an organization's ability to scale and respond to the rapidly evolving business needs.

This complex and delicate web of data flows— which are so essential to the current day-to-day operations—sometimes prevent organizations from wholeheartedly committing to a transformation that modernizes their data platform using the power of the cloud. Instead, they are just dipping their toes, working on edge use cases, with partial adoption that leaves them in no man's land.

Myths about the risks of storing personally identifiable information (PII) or payment card industry (PCI) data on the cloud do not do retailers any favors, either. The necessity for governed, protected and trusted data is universally accepted.

Yet, we've seen many organizations struggle to successfully adopt these capabilities. Too often data is siloed, with little or no integration between departments, preventing teams from realizing new insights and valuable efficiencies, resulting in duplication of effort and increased costs.

Data silos also inhibit progress on research that can generate valuable insights. When researchers feed low-quality data into AI models, or data that isn't complete, outcomes can be unreliable. Perhaps more troubling is the presence of unknown bias in the data sets used to train AI algorithms, which can have broad adverse consequences.

What's more, ineffective data integration and data management prevents many organizations from taking full advantage of AI and analytics. On the other hand, you have IT organizations who go full throttle on the latest and most innovative technologies, building what they believe is the best-in-class data platform which will undoubtedly serve as a foundation for solving the organization's biggest and most complex problems.

This well-intentioned and often complex effort fails to gain traction due to a lack of business sponsors or a robust business case or a failure to account for key enabling factors such as talent.

So where to start? How to address these challenges? Let's delve into five actions you can take today to stay clear of these muddy waters and guide your AI and analytics journey toward unlocking its full potential for your retail organization.
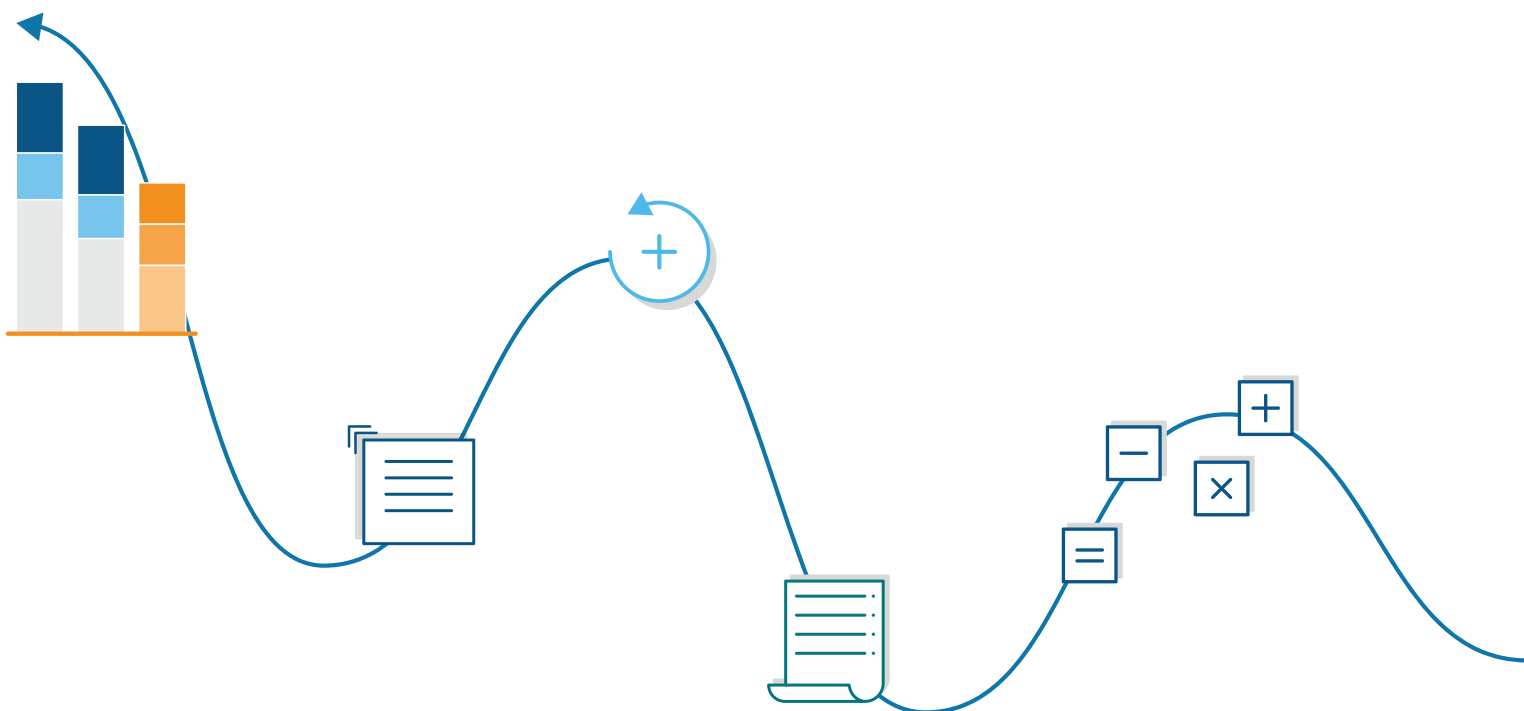
Five actions to accelerate your AI and analytics journey
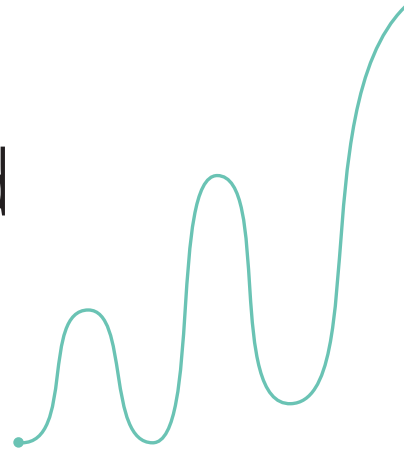
Embrace the cloud

Most retailers today are embracing the cloud. By 2026, the global cloud retail market[12] is expected to reach $39.63 billion, a 16.3% compound annual growth rate (CAGR) from $11.89 billion in 2018. And retailers are not just considering a single public cloud provider to meet all their needs when hosting their data and applications. They are looking at two to three.

It's much less of a technology challenge today to move to the cloud. It can be done, and it has been done. We strongly believe that it's time for all retail industry participants to jump in with both feet.

We'd particularly like to stress that there's more trust in the cloud— including much less apprehension about cloud security. It's well-earned. Microsoft, Amazon and Google have all spent billions on securing their cloud platforms.

Microsoft,[13] for example, has more than 3,500 security engineers on staff who are constantly fine-tuning based on what they learn from the more than 1.5 million attempted cyberattacks on its infrastructure every day. It invests more than $1 billion annually in security.

Google, in 2021, said it would invest more than $10 billion over five years to strengthen cybersecurity.[14]

However, we want to caution that although the security offered by the hyperscalers is impressive and necessary, no amount of investment from these cloud firms can make up for lack of proper security controls implemented by your company.

You should take advantage of the security features of the cloud but institute your own layers of security to ensure your organization's data remains safe.

Don't shy away from multi-cloud

Every organization is multi-cloud, whether they know it or not. At this point, 92% of all enterprises are multi-cloud.[15] So, plan for it.

This is also, incidentally, why enterprises often prefer the flexibility provided by an agnostic data management platform that isn't tied to the infrastructure of any particular cloud. But to effectively use multi-cloud, we note that it's critical to balance ingress and egress costs.

For example, it's best not to separate AI workloads from where the data is. No one wants to be constantly shipping data across the wire.

Although it can make sense to have some apps run on specific clouds to take advantage of certain algorithms, retailers don't want to be pumping data continuously from one hyperscaler like AWS, Azure or Google Cloud to another.

Because when you try to scale, the costs add up, as any of these hyperscalers are going to charge— a lot—every time you take data out.

And then there are latency issues. So, we advise you to be prepared for the challenges as well as the benefits of multi-cloud.

Focus on scaling AI for production

AI proof of concepts (POCs) are frequently accomplished by a lone data scientist pulling data from multiple disparate sources, building rules using their choice of tooling and programming languages, and successfully running the models that result. But although that might work, incorporating a model into business workflows or into a daily report sent to senior executives often turns out to be untenable. ETL or ELT jobs would have to be scheduled, data would have to be pulled on a repeatable basis, and data quality rules and governance would have to be enforced. That "productionizing" of the AI model is where things can often fail.

If you try to get to value fast without taking a unified, platform approach, you end up with a single data scientist slinging custom code in their own way in a backroom. They might be working on something cool, but it won't scale.

You need to select your technology platform, your processes and your people so when your data scientist completes his or her initial pilot, they're using the approach, the processes and the tools that can easily move the science project to production. Then you do the same thing, not once but 25 times, and you're on your way.
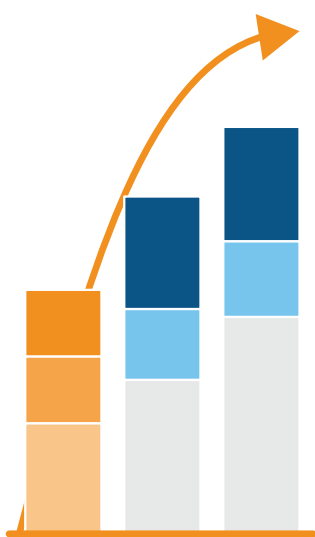
## Manage data as an asset by investing in a data management platform

AI deployed and driving value at enterprise scale must be built on a comprehensive data and analytics platform. As the diagram below shows, there are eight core capabilities this platform must possess, with tight integration and interoperability required across these eight capabilities. Such an approach is needed to prepare your data and make it fit to drive high-quality AI at scale. Rather than buying numerous separate so-called "best-of-breed tools," you need a fully integrated data management solution. Companies should not have to endure the pain of stitching together point solutions, or suffer the inefficiencies of coding by hand, to manage their AI initiatives. Those approaches tend to result in increased cost and complexity, and much, much longer time to market.

And, as we frequently ask our clients: do you, as a retailer, want to compete on how fast or how well you integrate your disparate data management tools?

Wouldn't you rather put your time, money and scarce people resources into high-value activities that drive innovation and competitive advantage delivering the best possible retail experiences to your customers?

4

Note that the use of "data as an asset" is more than simply a buzz phrase. Just as you have a chief financial officer (CFO) who oversees disciplined processes to ensure proper financial controls of assets—along with enterprise financial applications for managing these assets—you need a chief data officer (CDO) who owns the processes and controls to ensure enterprise data is inventoried, cataloged and managed. And this CDO needs an enterprise data management platform to deliver on this responsibility.

5
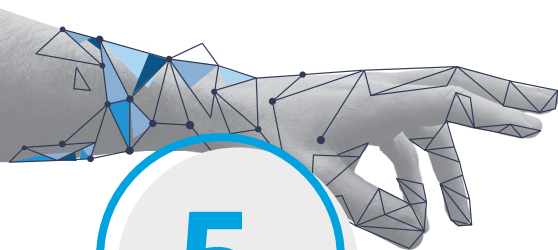
Surround AI technology investments with a holistic data modernization framework

Now, as great as it is to deploy an integrated data and analytics technology platform, by itself it isn't enough. But we've seen in the market that most businesses focus almost entirely on that. What you need to do is surround that data and analytics framework with a strategy and, with required enablers, to achieve a holistic data modernization framework.
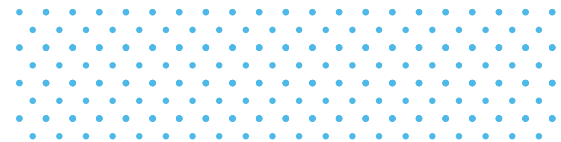
We put strategy in the center on purpose: because business strategy needs to inform everything else. It must drive the order in which you build everything, the capabilities you need and the data you load into the platform.

In Deloitte's "Becoming an AI-fueled organization: Deloitte's State of AI in the Enterprise, 4th Edition,"[16] getting leaders on board with AI and analytics is a core best practice.
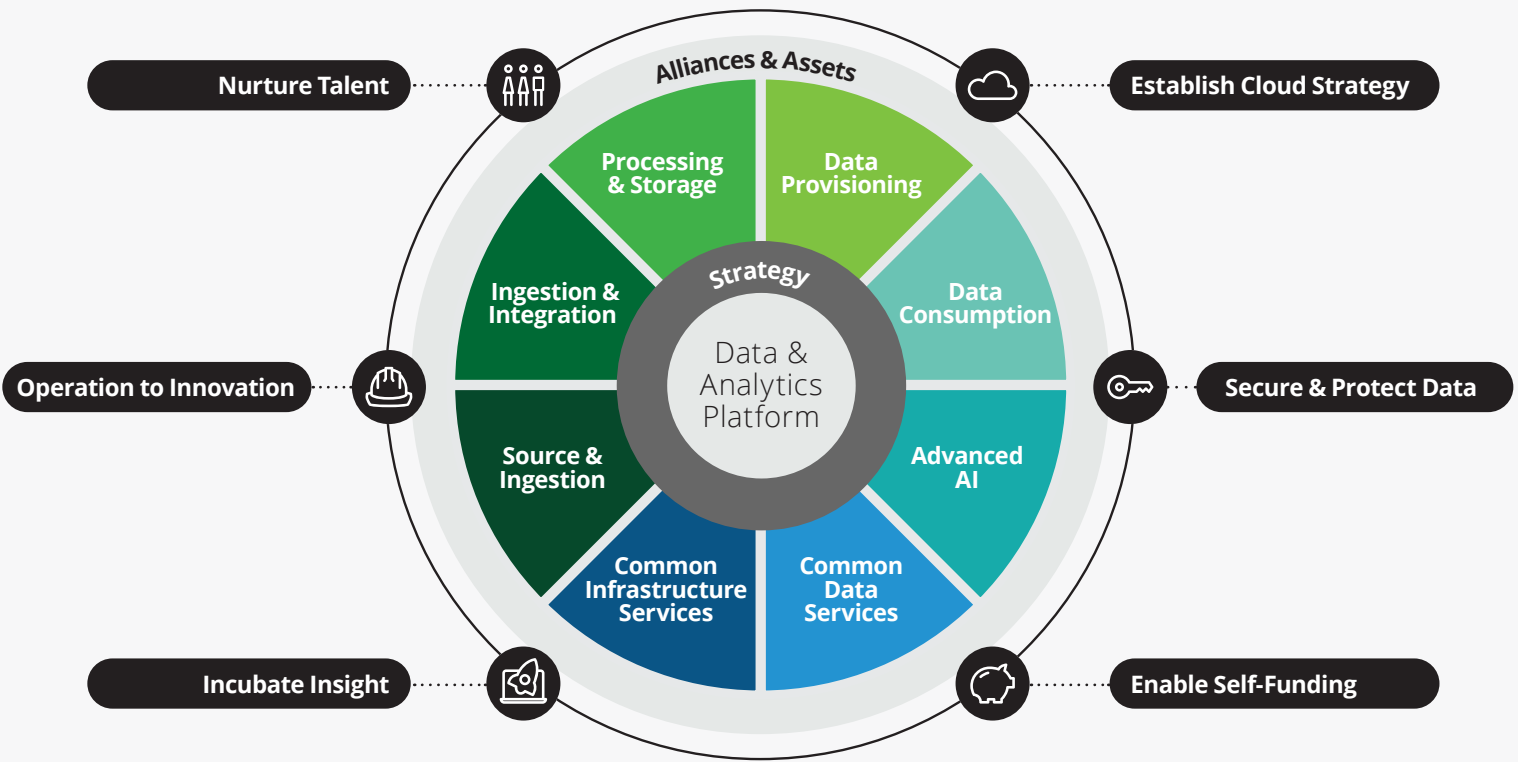
Source: Deloitte Wholistic Data Modernization Framework

Informatica has long been recognized by customers and global analyst firms as a leader in cloud data management. Informatica® Intelligent Data Management Cloud™ (IDMC) for Retail delivers experiences for a broad set of enterprise roles, including technical and business.

Although it is certainly possible for retailers to find strong vendors in each of the categories that fall under the data and analytics umbrella—ingestion, source, processing, storage, provisioning and more—and try to stitch them together, they'd likely spend 90% of their effort integrating tools rather than getting value out of the data. A holistic data and analytics platform can give you all those capabilities, truly best in class, and already integrated. So, you have a Ferrari rather than a Frankenstein.
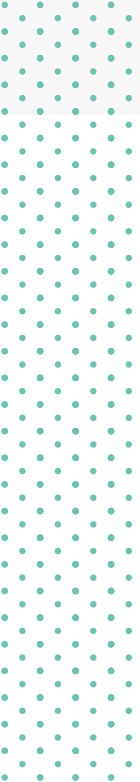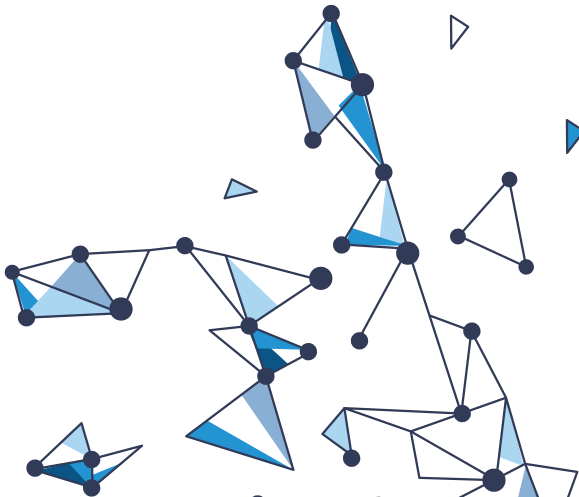
Potential benefits of the Informatica approach

AI-powered and microservices-based, the Intelligent Data Management Cloud™ (IDMC) for Retail helps you become more data-driven, develop more innovative products and services and deliver high quality consumer experiences through the following capabilities:

Cloud-native at scale
Scale as you need for all enterprise workloads with elastic and serverless processing.

AI-native at scale
Automate thousands of manual tasks and accelerate data-led transformations by applying AI and ML to data and metadata.

Multi-cloud, hybrid cloud
Run, interoperate and support all combinations of multi-cloud and on-premises hybrid infrastructures.

Low-code/no-code experience
Maximize agility by empowering the largest possible community of data practitioners within your organization.

Security and trust as design principles
Ensure the highest level of security, consistent data quality, end-to-end data governance and data privacy across the enterprise.

Here's how

The good news is that IDMC for Retail takes retailers into the future—giving them a finely tuned machine with parts that are designed to work seamlessly together.

Which is why retail firms that are looking to reimagine commerce through AI should not be trying to compete on their ability to select and integrate data-management tools. They should be looking to compete and deliver value on AI—and just leverage the data management technology that works.
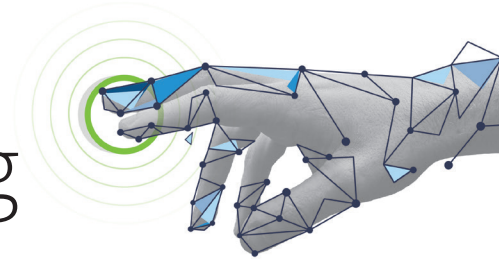
Conclusion: Everything happens for a reason

Today, nearly three quarters (73%)[17] of shoppers opt for multiple channels during their shopping journey. Retailers must evolve…or else. But 65% of retailers cite data management as the biggest problem they face in trying to leverage their data, according to the fourth annual benchmarking report, *The Ascension to Digital Maturity*.[18] So, as retailers go through the digital maturing process, they're asking a critical question: What will it take to get the most out of my data?

The answer: to deploy AI and analytics within a cloud-based data management solution that enables them to:

- Embrace the cloud wholeheartedly

- Accept the reality of multi-cloud

- Focus on scaling AI for production

- Manage data as an asset by investing in a data and analytics management platform

- Surround AI technology investments with a holistic data modernization framework through a partner like Deloitte

FOOTNOTES

1. https://www.shopify.com/retail/retail-statistics

2. https://www.bloomreach.com/en/blog/2019/omnichannel-commerce-for-business

3. https://www2.deloitte.com/content/dam/Deloitte/pt/Documents/consumer-business/2022-Retail-Outlook.pdf

4. https://www.insiderintelligence.com/insights/mobile-commerce-shopping-trends-stats/

5. https://hbr.org/2017/01/a-study-of-46000-shoppers-shows-that-omnichannel-retailing-works

6. https://blog.adobe.com/en/publish/2021/11/30/adobe-consumers-spent-10-8-billion-on-cyber-monday-109-8-billion-so-far-this-holiday-season#gs.i4sepp

7. https://www.fticonsulting.com/insights/articles/retail-rebound-run-aground

8. https://www.fourkites.com/combating-retail-challenges-with-data/

9. https://www2.deloitte.com/content/dam/Deloitte/pt/Documents/consumer-business/2022-Retail-Outlook.pdf

10. https://economictimes.indiatimes.com/definition/risk-management

11. https://www.accenture.com/_acnmedia/PDF-77/Accenture-Pulse-Survey.pdf

12. https://www.fortunebusinessinsights.com/industry-reports/retail-cloud-market-101599

13. https://learn.microsoft.com/en-us/security/msrc/fy18-strategy-brief

14. https://www.cnbc.com/2021/08/25/%20%20google-microsoft-plan-to-spend-billions-oncybersecurity-%20%20after-meeting-with-biden.html

15. https://www.itp.net/infrastructure/cloud/96541-92-of-enterprises-now-have-a-multi-cloud-strategy

16. https://www2.deloitte.com/content/dam/%20insights/articles/US144384_CIR-State-of-AI-%204th-edition/DI_CIR-State-of-AI-4th-edition.%20pdf

17. https://www.fortunebusinessinsights.com/industry-reports/retail-cloud-market-101599

18. https://commercenext.com/the-ascension-to-digital-maturity-a-benchmark-report/

About the Deloitte and Informatica alliance

Data is more than just the numbers and files you move around. When you manage your data the right way, you can unlock insights that help you better understand and run your business. Together, Deloitte and Informatica can help you take control of your biggest data needs, from integration, quality, and management, to data governance and security. We'll deliver smart data that gleans powerful insights and unlocks potential you never knew existed. Let us know where you want to go, and we'll help you transform and modernize your enterprise with the right technology and without any downtime. We'll disrupt the way you manage your data—without disrupting your day-to-day—so you can see the bigger picture.

For more information about how Deloitte and Informatica work together, visit us at
www.deloitte.com/us/informatica

Learn more about Informatica's solutions for retail at:
www.informatica.com/retail

Deloitte.