

Cloud-Powered Retail

Serving Future Needs Today

Rustam Orudzhev, March 6 2025

Cloud-Powered Retail: Serving Future Needs Today

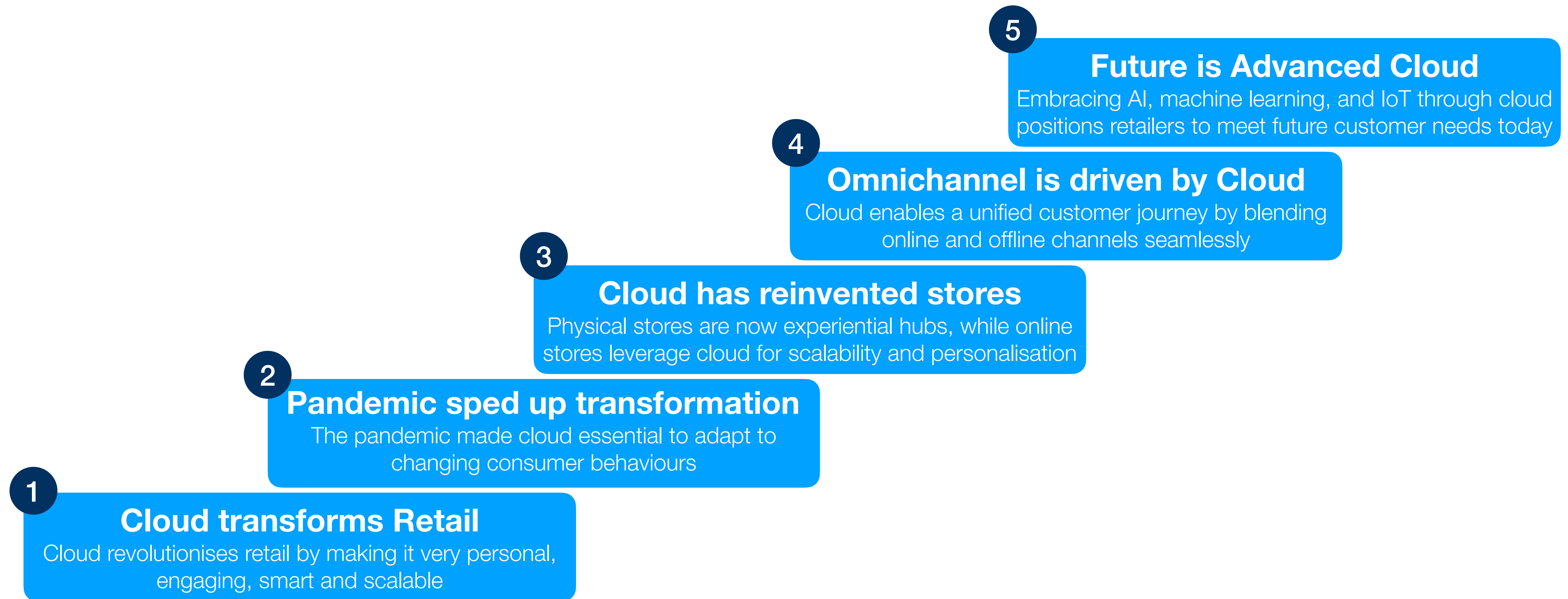
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Storyline on a page

Cloud-Powered Retail: Serving Future Needs Today

Storyline on a page

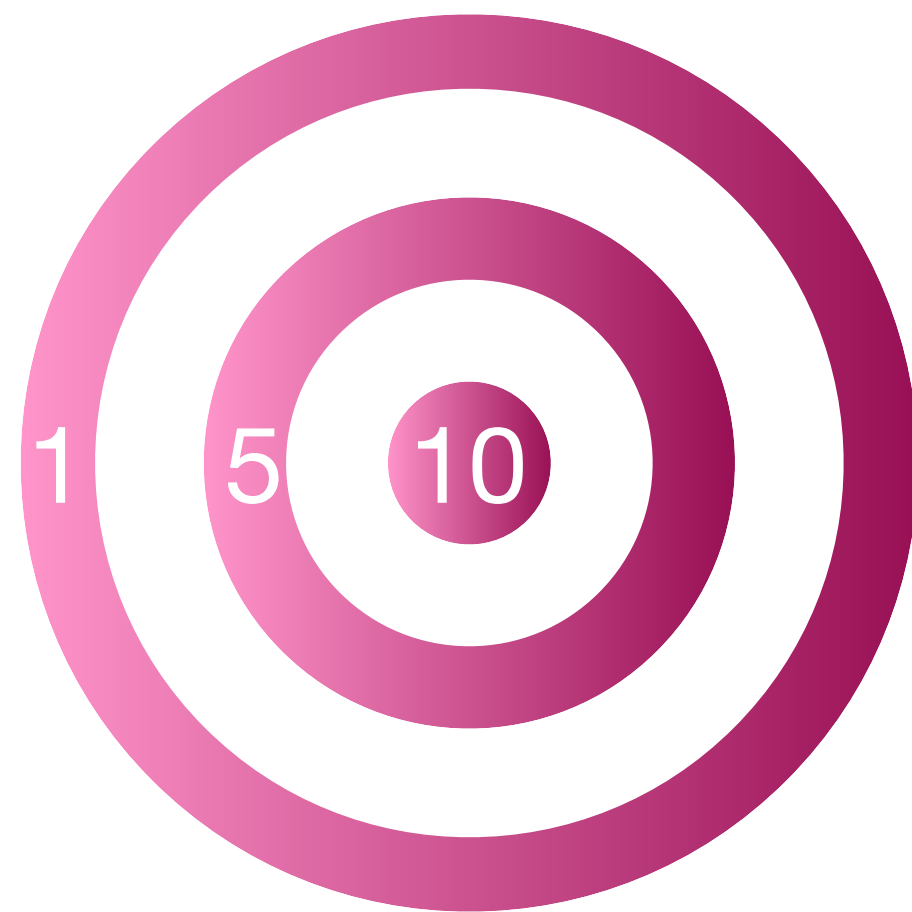


The transformative role of Cloud



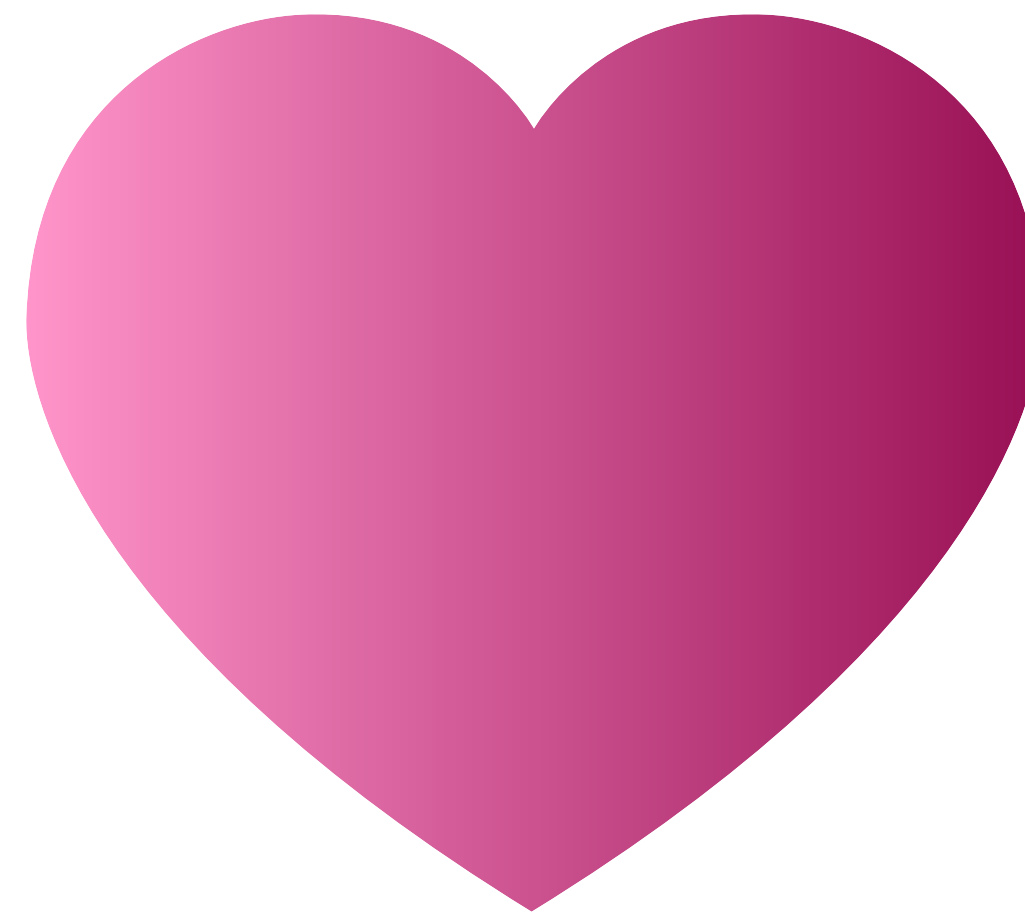
How to be relevant, personal and delightful?

Fundamental Retail challenges



Relevant

Meet customer needs with precision



Personal

Serve customer in a unique way

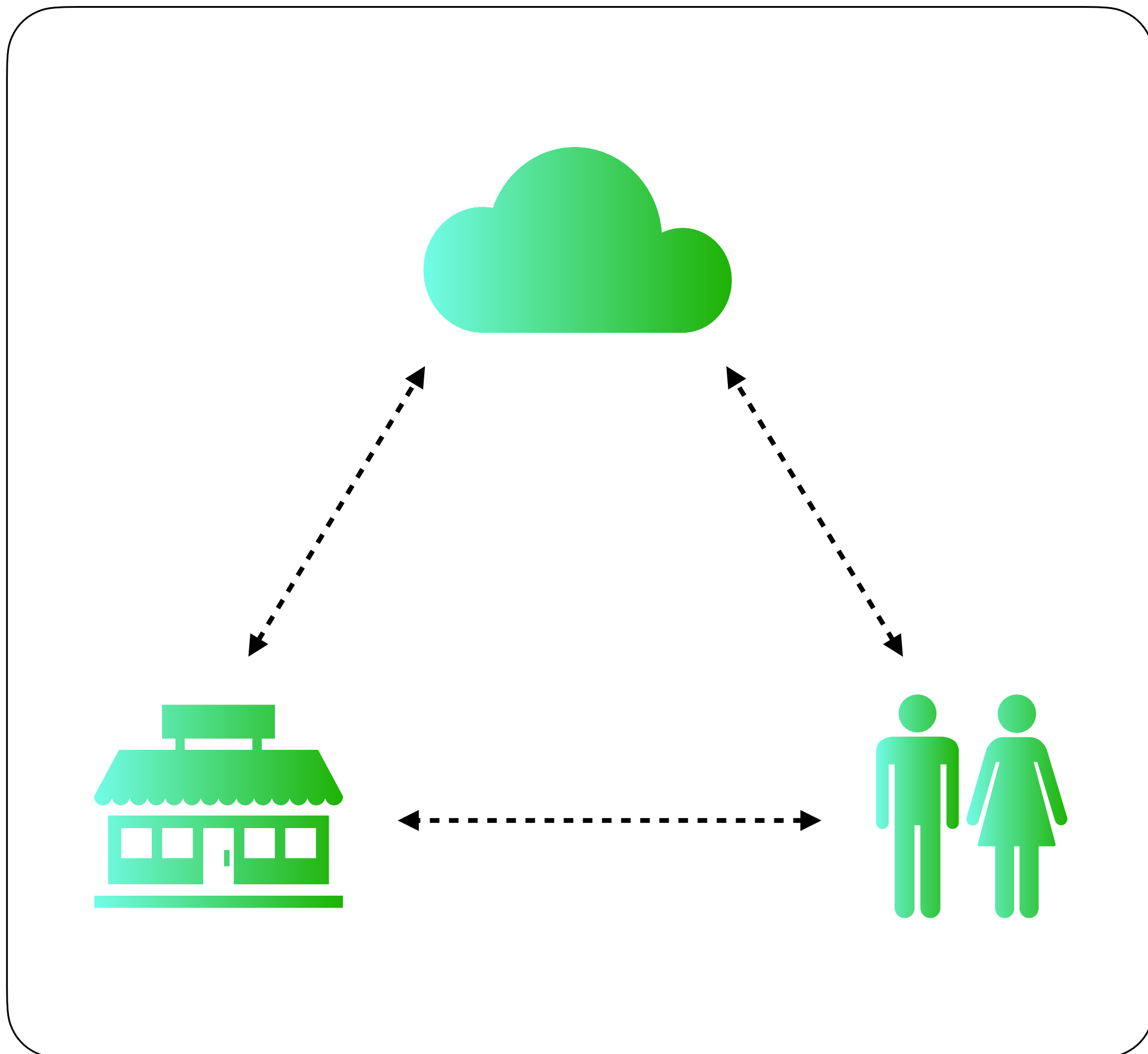


Delightful

Bring customer joy

Cloud is the Catalyst for Change

The Pivotal Role of Cloud in Retail Transformation

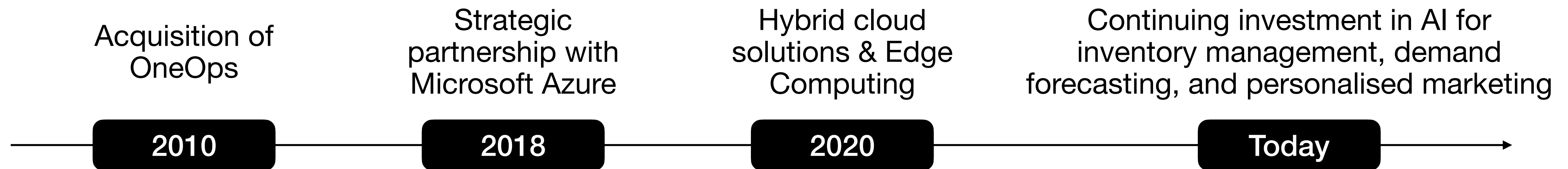


- **Innovation with Advanced Technologies:** Cloud enables AI, machine learning, and IoT, powering innovations like chatbots and smart store operations that boost efficiency and customer experience.
- **Real-Time Analytics and Personalisation:** Cloud enables immediate data analysis, offering deep customer insights for personalised marketing and enhanced customer engagement.
- **Omnichannel Integration:** Unifying online and offline channels through the cloud creates a seamless customer journey and real-time inventory synchronisation.
- **Scalability and Flexibility:** Retailers can swiftly adjust IT resources to match demand without heavy infrastructure investments, scaling up during peak times like holidays.
- **Cost Efficiency and Agility:** Utilising pay-as-you-go cloud services reduces IT costs, eliminates the need for physical infrastructure, and accelerates the deployment of new services.

**World's BEST companies:
what are they doing?**


Walmart Goal: stay competitive, stay ahead

Walmart Cloud Migration example



Pandemic changed Retail for good

Division Line: Retail Pre- vs. Post-COVID

- 
- **Physical Retail Dominated:** Brick-and-mortar stores were the main shopping venues, offering tangible experiences. E-commerce was secondary, seen as a convenience rather than essential.
 - **Online as a Support Channel:** Websites primarily showcased products to drive in-store visits. Online and offline channels were siloed, leading to inconsistent customer experiences.
 - **Fragmented Omnichannel Efforts:** Early attempts to integrate online and offline channels were hindered by legacy systems, making seamless experiences rare and challenging.
 - **Cloud Used for Backend Efficiency:** Retailers adopted cloud technologies mainly to reduce operational costs (e.g., data storage, inventory management) with minimal focus on enhancing customer-facing services.
 - **Generic Marketing Practices:** Retailers collected customer data but lacked advanced analytics, resulting in broad, one-size-fits-all marketing that missed opportunities for personalisation and loyalty building.
- **Innovation Dominated:** Adoption of AI, IoT, AR, and VR sped up. Cloud computing made deploying these advanced technologies feasible, enhancing customer experiences and operational efficiency.
 - **Online Became Essential:** The pandemic pushed shopping online, making e-commerce the primary channel. Cloud technology was crucial for handling the surge in online traffic and transactions.
 - **Omnichannel Experiences Became Crucial:** Customers expect seamless integration between online and offline shopping. Cloud enables real-time data sync, facilitating services like BOPIS (Buy Online, Pick Up In-Store).
 - **Cloud-Enabled Agility and Resilience:** Retailers needed to adapt quickly to changing markets. Cloud infrastructure offered scalability and flexibility, allowing deployment of new services and support for remote workforces.
 - **Advanced Personalisation with Data Analytics:** Increased online shopping produced vast data. Retailers used cloud-based AI and machine learning to analyse this data and delivering personalised recommendations.

Role of Physical & Online Stores

We go to physical store only if we want to

Evolution of Physical Stores



Personalised In-Store Experiences: Stores use real-time customer data from the cloud to offer personalised shopping. Interactive kiosks and smart mirrors provide tailored product suggestions, enhancing engagement.

Empowered Sales Associates: Staff use cloud-connected devices to access product info and customer data on the spot. This allows personalised recommendations and mobile checkout, enhancing service.

Seamless Omnichannel Integration: Physical and online stores are connected through the cloud. Customers can sync carts and wish lists between devices and in-store, making shopping more flexible.

Data-Driven Store Optimisation: Cloud analytics provide insights into shopping patterns. Retailers optimise layouts, staffing, and promotions based on this data, improving the shopping experience.

Real-Time Inventory Management: Cloud integration updates inventory instantly across locations. This enables services like BOPIS (Buy Online, Pick Up In-Store) and reduces stockouts, improving satisfaction.

Shops beyond shopping: a community place

Nike Live Stores example



Real-Time Community Engagement: Cloud platforms enable Nike Live Stores to engage with the local community by hosting events and gathering feedback, which is then used to refine offerings and services.

Data-Driven Personalisation: Nike Live Stores utilise cloud-based analytics to tailor their inventory based on local customer preferences and purchasing behaviours. This ensures that products offered are relevant to the community.

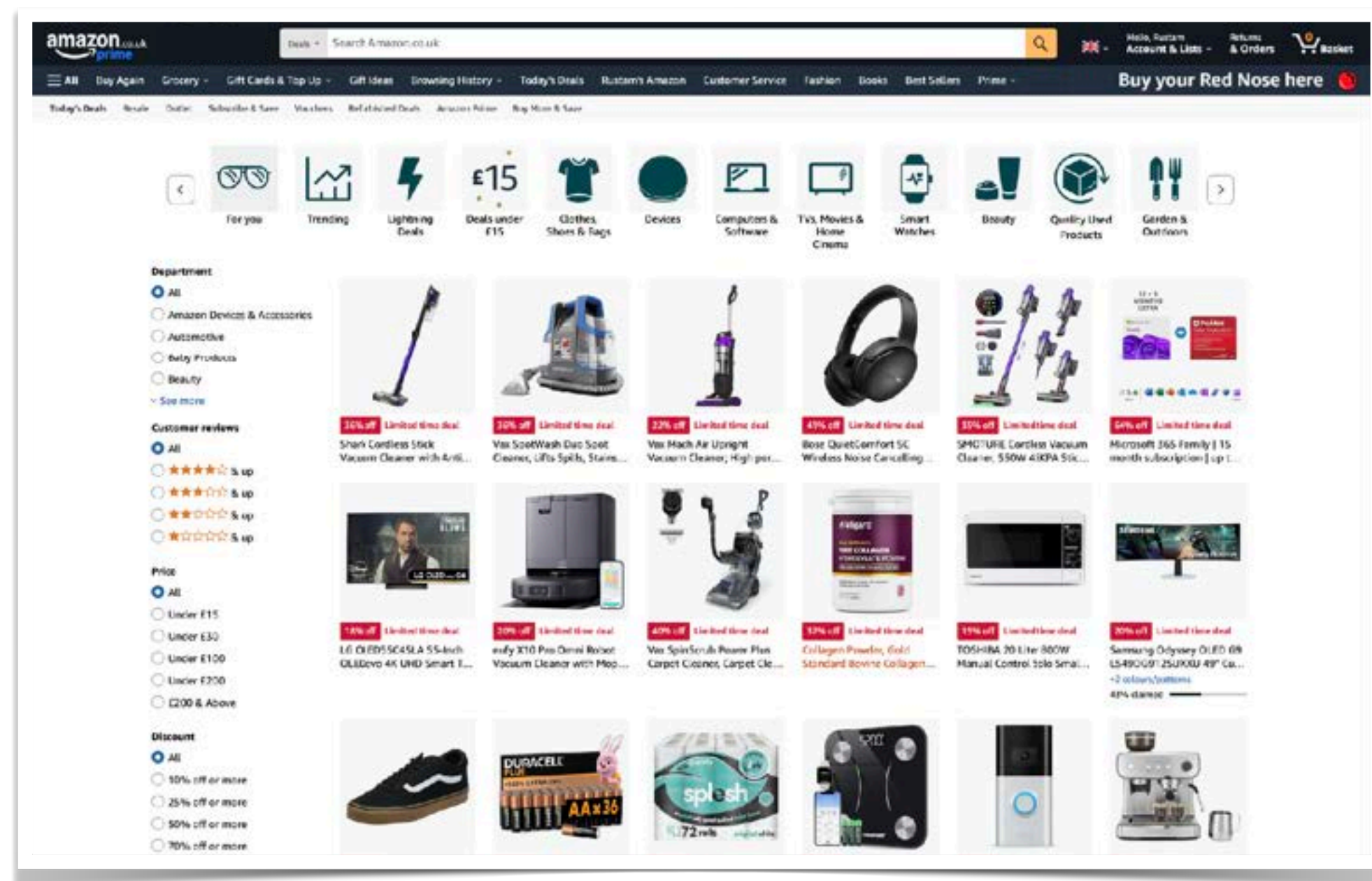
Integration with the Nike App: The Nike App is deeply integrated with Nike Live Stores, using cloud sync. Customers can reserve products, access exclusive offers and receive personalised experiences (NikePlus members).

Cloud-Powered In-Store Technology: Store associates are equipped with cloud-connected devices that allow them to assist customers and process transactions anywhere in the store, as well as access to customer profiles.

Omnichannel Integration: Cloud services integrate data from online shopping, the Nike App, and in-store interactions to provide seamless customer experience across all touch-points.

Online shopping takes over offline stores

Evolution of Online Stores



Scalability and Flexibility: Online stores can effortlessly scale operations up or down based on demand without investing in physical infrastructure, ensuring smooth performance during traffic spikes.

Advanced Personalisation: Real-time data analytics in the cloud enable personalised product recommendations and tailored shopping experiences, boosting customer engagement and sales.

Seamless Integration: Easy integration with third-party services like payment gateways, inventory systems, and marketing tools enhances functionality and streamlines operations without building from scratch.

Improved Security and Compliance: Cloud providers offer robust security measures and compliance with regulations like GDPR and PCI DSS, safeguarding customer data and building customer trust.

Enhanced Omnichannel Experience: Cloud technology delivers a consistent shopping experience across websites, apps, and physical stores, syncing customer data and preferences for seamless shopping flexibility.

Empowering businesses of all sizes to scale globally

Shopify Cloud Platform example



Effortless Global Scaling: Shopify's cloud platform lets businesses easily scale operations worldwide, smoothly handling growth and traffic spikes.

Simplified International Expansion: Provides tools for multi-currency support, language localisation, and global payments, making it easy to sell internationally.

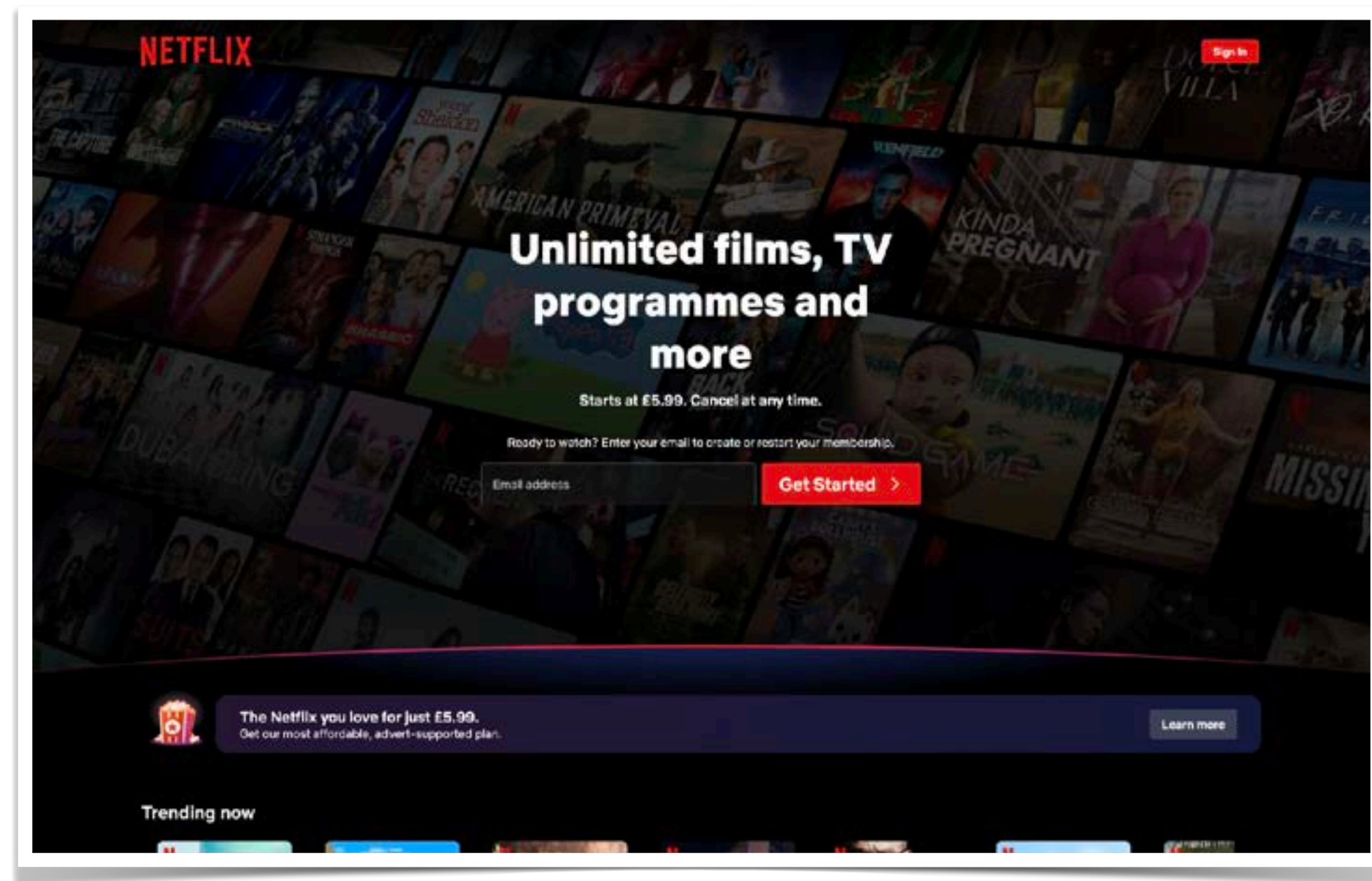
Integrated Commerce Solutions: Offers all-in-one cloud-based tools for inventory, payments, shipping, and omnichannel sales across online and physical stores.

Customisation and Innovation: Enables businesses to customize stores with apps and APIs, fostering innovation and unique customer experiences.

Empowering All Businesses: Supports businesses of all sizes with resources and 24/7 support, lowering entry barriers and enabling global success through cloud-based e-commerce.

Advanced real-time personalisation = ❤️

Netflix example



- **Advanced Recommendations:** Netflix uses machine learning algorithms on cloud infrastructure to analyse viewing habits. Delivers personalised content suggestions and dynamically ranks titles based on individual interests.
- **Scalable Cloud Infrastructure:** Processes vast amounts of global user data in real time. Ensures fast, reliable streaming worldwide, effortlessly handling traffic surges.
- **Customised User Interfaces:** Personalises artwork, previews, and UI layouts for each user. Enhances content discovery and boosts user engagement.
- **Continuous Improvement:** Uses cloud-based A/B testing to optimise recommendations and features. Real-time analytics enable swift enhancements to personalisation strategies.
- **Leveraging AI and Machine Learning:** Predicts viewing preferences to suggest new, relevant content. Informs original content creation aligned with audience interests.

Omnichannel Enabled by Cloud

Sync inventory and customer data in online and offline

Nordstrom's Unified Commerce example



Consistent Customer Engagement: Cloud platforms unify marketing and support across online, app, and in-store channels, ensuring consistent messaging and assistance wherever customers interact with Nordstrom.

Seamless Omnichannel Shopping: Customers can access their carts and preferences on any device, thanks to cloud sync, and even reserve items online to try in-store, blending digital convenience with physical experience.

Unified Customer Profiles: Associates have access to comprehensive customer data via the cloud, enabling personalised service and tailored loyalty rewards that boost engagement and loyalty.

Real-Time Inventory Updates: Nordstrom's cloud system instantly synchronises stock levels across all channels, enabling accurate availability and services like Buy Online, Pick Up In-Store (BOPIS).

Optimised Order Fulfilment: Cloud technology turns stores into fulfilment centres, determining the best location to ship online orders, speeding delivery and balancing inventory efficiently.

Evolution of Retail with Cloud

Utilising Cloud to anticipate customer needs

Target's Predictive Analytics example



Personalised Marketing: Target leverages cloud-based analytics to process customer data and create tailored promotions, increasing engagement and loyalty.

Product Recommendations: Uses cloud algorithms to provide personalised product suggestions based on purchase history, enhancing satisfaction and boosting sales.

Inventory Optimisation: Analyses real-time sales data in the cloud for accurate demand forecasting, optimising inventory levels, and improving supply chain efficiency.

Customer Behaviour Analysis: Identifies shopping patterns and trends through cloud analytics, enabling proactive adjustments to product offerings and merchandising strategies.

Dynamic Pricing: Adjusts prices in real-time using cloud-based analytics, based on demand and competition, to remain competitive and maximise profitability.

Mobile-centric, instant and very personal

Starbucks Rewards example



Real-Time Updates: Rewards and offers are instantly synchronised across all platforms. Customers enjoy consistent, accurate rewards information whether they're in-store, on the app, or online.

Personalisation: Cloud analytics deliver tailored promotions based on customer preferences. Personalised recommendations boost customer satisfaction and loyalty.

Scalability: Handles millions of transactions smoothly, adjusting to demand without slowdowns. Resources scale automatically during peak times to maintain smooth operations.

Omnichannel Integration: Rewards seamlessly integrate across the app, website, and stores for flexible earning and redemption. Customers redeem rewards seamlessly across all channels.

Innovation: Enables rapid rollout of new features and updates while ensuring security. Automatic updates keep the system secure, protecting customer data.

Cloud Integration Today

Scalable infra and advanced analytics tools

Microsoft Azure's Retail Solutions example



Scalable Cloud Infrastructure: Azure automatically scales computing resources based on demand, ensuring optimal performance during peak times without excess hardware investment.

Advanced Analytics and Insights: Azure's tools like Synapse Analytics enable real-time analysis of large data volumes, offering swift insights into customer behaviour, sales trends, forecasts, pricing etc.

Personalised Customer Experiences: Azure's AI services deliver personalised recommendations, tailored promotions, and enhanced customer service through chatbots and virtual assistants.

Enhanced Security and Compliance: Azure provides advanced features like threat detection and encryption to protect sensitive customer data. Meets international standards like GDPR and PCI DSS to meet the regulations.

Operational Efficiency and Cost Savings: Infrastructure as a Service (IaaS): Migrating to Azure reduces capital expenditure on hardware and maintenance. It offers a unified platform to manage all services.

AI and Cloud powered customer assistance

H&M's Virtual Assistant example



Interactive AI-Powered Customer Support: H&M's virtual assistant provides real-time customer support 24/7. The AI responds to customer inquiries in natural language (Natural Language Processing or NLP).

Personalised Product Recommendations: By analysing customer behaviour and preferences stored in the cloud, the virtual assistant offers personalised product recommendations aligned with individual styles.

Efficient Product Search: Customers can find products quickly using voice or text queries, with the AI interpreting intent to deliver accurate results. The AI assistant allows users to upload images to find similar items.

Scalable and Reliable Cloud Infrastructure: Leveraging cloud, the virtual assistant scales seamlessly to accommodate numerous simultaneous users without performance issues. Cloud-based AI models learn from interactions.

Seamless Omnichannel Integration: The virtual assistant is accessible across web, mobile app, and social media, providing a unified customer experience. Cloud ensures interactions are synced across all channels.

The Future of Cloud Integration

Personalised fashion suggestions from AI

Stitch Fix's AI Recommendations example



Data-Driven Personalisation: Stitch Fix gathers data from clients through style quizzes, feedback, preferences, all processed in the cloud. Machine learning understands each client's unique style, size, and fit preferences.

Machine Learning Algorithms: Utilising cloud algorithms, Stitch Fix predicts fashion items that clients are likely to love. The AI models improve over time by learning from client feedback, refining future recommendations.

Hybrid Human-AI Styling: Human stylists receive AI-generated suggestions, and then add insights and human judgment, ensuring a tailored experience that considers nuances algorithms might miss.

Scalable Cloud Infrastructure: The cloud infrastructure handles vast amounts of data, allowing real-time analysis and quick updates to client profiles. Scalable cloud resources support a growing client base.

Optimised Inventory Management: AI analyses trends and preferences to predict which items will be in demand, aiding in inventory planning. Cloud-based analytics help align inventory with actual customer needs.

IoT inventory tracking and targeted advertising

Macy's example



Real-Time Inventory Tracking: Macy's uses shelves equipped with RFID technology to monitor merchandise in real time, ensuring accurate stock levels and reducing out-of-stock situations.

Automated Replenishment: Smart Shelves detect low inventory levels and instantly notify store associates for prompt restocking, efficiently meeting customer demand.

Personalised In-Store Marketing: Macy's installs Bluetooth beacons that interact with shoppers' smartphones via the Macy's app (with consent), delivering personalised offers and recommendations based on location.

Enhanced Customer Engagement: Beacons provide real-time information and promotions as customers navigate the store, creating a more engaging and personalised journey while encouraging loyalty program participation.

Data-Driven Store Optimisation: Data collected from Smart Shelves and beacons allow Macy's to analyse shopping patterns and product interactions, helping optimise store layouts and product placements to boost sales.

Blend online and offline commerce using Cloud

Alibaba's 'New Retail' Initiative example



Unified Commerce Ecosystem: Alibaba uses cloud to integrate its e-commerce platforms with physical stores, creating a seamless retail environment where online and offline channels complement each other.

Data-Driven Personalisation: Cloud analytics process massive amounts of consumer data to understand shopping behaviours and preferences. Customers get personalised offers, enhancing engagement and driving sales.

Smart Stores and IoT Integration: Alibaba's Hema Fresh stores utilise IoT for real-time inventory management and interactive shopping. Customers use the Hema app to order and pay, bridging digital and physical shopping.

Optimised Supply Chain and Logistics: Cloud-based systems enable real-time inventory tracking and efficient fulfilment, reducing overstock and stockouts. Physical stores act as distribution hubs, facilitating rapid delivery.

Enhanced Mobile Integration: Mobile apps like Taobao and Alipay are integrated with physical retail, offering features like augmented reality (AR) virtual try-ons, digital coupons, and loyalty rewards.

Key Takeaways and Conclusion

Retail is either in the Cloud or out of business

Key Takeaways

1. We go to physical store only if we want to
2. Retailer only as good as it's Online & Mobile
3. Omnichannel defines customer experience
4. Predictive personalisation is imperative
5. AI is part of sales from recommendations to support



Thank you!