

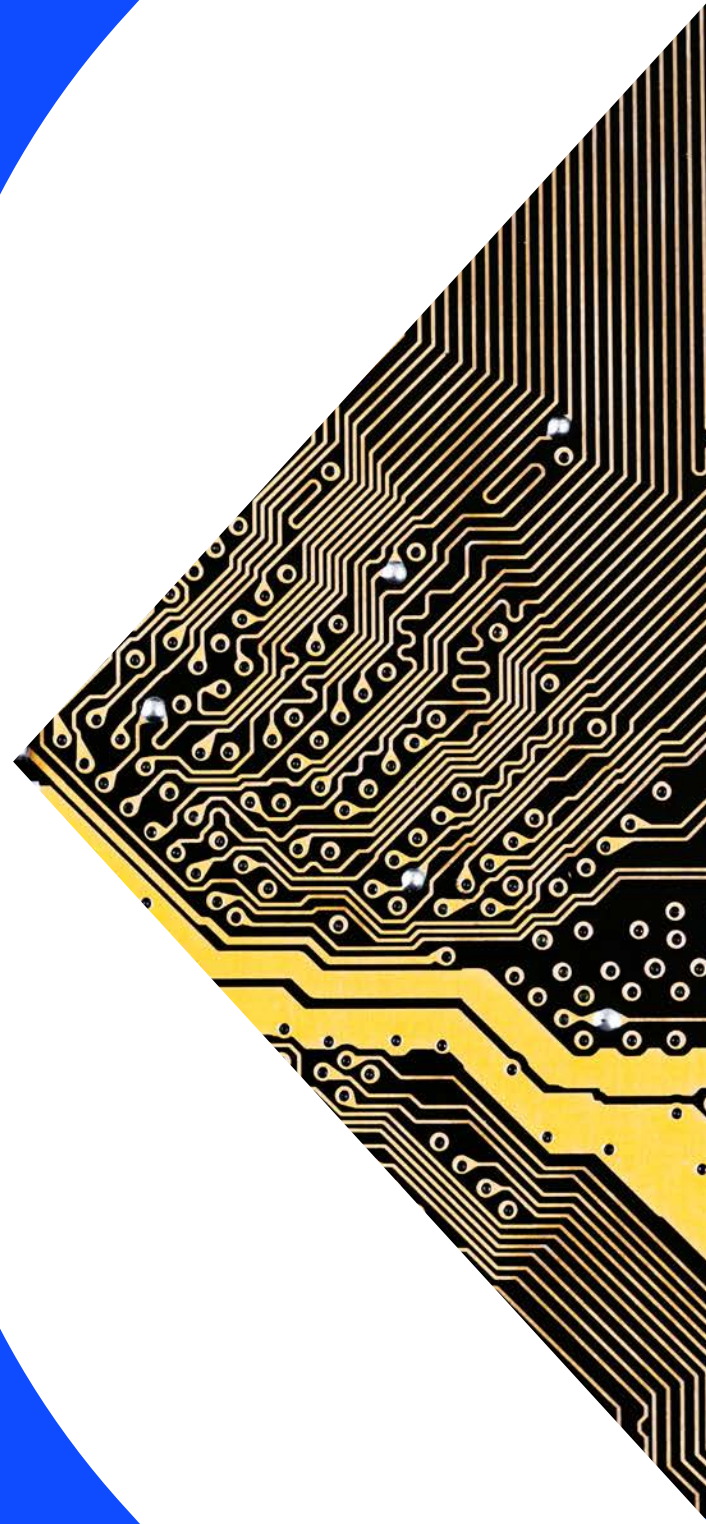
NewtonX

Innovation Report: How UX Research Leaders can delight customers and beat competitors

NewtonX matches the world's toughest questions with the only minds who know the answers. We find the right subject matter expertise from an open network of 1.1 billion professionals across 140 industries.

To do this, we use the most sophisticated search engine in the research industry – the NewtonX Graph. It identifies the exact audience for our clients' business questions. We ensure every professional is 100% verified, so you can ground your work in true expertise and make strides with confidence.

As the world's leading B2B research company, we field large-scale quantitative surveys, facilitate qualitative interviews, engage in long-term consultations, and create customized research plans.



NewtonX surveyed 300 leaders at companies that are using, developing, or considering developing visual search.

Retailers are banking on visual search for the future — but are consumers on board?



In 2021, visual search is no longer a novelty. Google's image search launched in the early 2000s, but in the past five years Google has enabled a surge of brands to hop on board with AI-powered visual discovery tools.

NewtonX investigated why tech and retail giants are looking to visual as the future of search — and whether consumer preferences are actually in line with this shift. In order to investigate the topic, NewtonX surveyed 300 leaders at companies that are using, developing, or considering developing visual search. The data and insights in this article are informed by this survey.

WHY TECH GIANTS THINK VISUAL SEARCH IS THE FUTURE

There are two primary types of visual search: reverse search, wherein a user submits a photo of something and the search engine matches the photo to products or names, and straightforward visual search, wherein users scroll through photo-based platforms like Instagram and then click on photos for product purchasing.

Both types of visual search shorten the discovery-to-purchase cycle and also enable customers to find matches for their product intent much faster than with keyword search, which helps brands turn intent into actual sales.

Additionally, 34% of survey respondents cited competing with Amazon as a primary incentive for entering the visual search game. Amazon's rekognition software API is already used by Snapchat, which links directly to Amazon product pages when users press and hold the camera screen while it's pointed at an object. However, other retailers believe that Amazon's surplus of similar product references make it difficult for users to discover new items, which leaves space for competition from smaller e-commerce platforms. For instance, Farfetch, a retail platform for boutiques, allows users to search using photos they find on Instagram or Pinterest — platforms where products are more likely to be one of a kind or boutique.

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Google's moves into the space have also motivated other sectors to invest in visual search. Salesforce launched its own visual search tool for retailers, and Walmart is built its own visual search technology in-house.

TECH GIANTS MAY LOVE VISUAL SEARCH — BUT DO CONSUMERS?

Consumers are fully accustomed to searching with keywords — after all, they've been doing it for the entire lifespan of the Internet. However, the proliferation of social media has contributed to more photo and video-heavy Internet content. Gen Z's preference for visual content has driven news organizations, shopping platforms, and even dining companies to invest more and more in non-written forms of communication. Social media platforms like Instagram and Tiktok only reinforce the search-by-image trend.

While respondents to the NewtonX survey who have rolled out visual search functions still say that the majority of users opt for keyword search, multiple platforms report strong growth in the area.

Additionally, the proliferation of retail platforms, influencer culture, and retail presence on visual social platforms (e.g. Instagram) will make visual search more and more appealing to consumers. NewtonX experts believe that over the decade visual search will approach keyword search, and potentially even surpass it.

A new reality: three disruptive enterprise applications for mixed reality



Mixed Reality (MR) has been the holy grail of virtual experiences for years, but only recently emerged as a fully functional and applicable technology.

Two months ago, NewtonX assembled a panel of 15 senior Mixed Reality experts, including a member of the Magic Leap founding team, the inventor of one of the first Virtual Reality pieces of equipment, and 10 business executives already integrating MR in their business processes and workflows. The tech experts from our panel pointed to two concurring technological advances for why MR is at a turning point: advanced image recognition and Simultaneous Location and Mapping (technology that can locate and situate a person while simultaneously mapping

the environment in new and changing environments). Having established that MR can now contribute to high-performance businesses from a technological standpoint, NewtonX turned to the business executives using MR in their internal business functions in order to identify the technology's enterprise applications.

THE DIFFERENCE BETWEEN AUGMENTED REALITY AND MIXED REALITY

Augmented reality (AR), which has existed for almost a decade, provides information about a task overlaid on the real world. For instance, Google Glass uses AR to overlay text on reality based on alerts and location-specific data. Mixed Reality takes AR one step further, allowing users to see the real world, while also seeing and interacting with virtual objects. These virtual objects can be anchored to places in real space, allowing the MR user to test visual configurations as they would actually appear in real life.

Mixed reality uses image recognition and sensor data to calculate the user's place in the physical world, as well as virtual objects' place in the real world. For instance, if an architect or contractor were considering placing a water heater in a certain spot, they could place a virtual water heater (with the exact shape and dimensions as the real water heater) and see how the configuration would work, without the strenuous and time-consuming activity of actually testing it in different locations.

This is just one of many applications of MR. There are numerous tangible use cases for the technology that enterprises could benefit from.

THE TOP THREE ENTERPRISE APPLICATIONS OF MIXED REALITY

Using the quantitative and qualitative insights gained through the panel of 15 MR experts, NewtonX identified three key areas in which mixed reality can provide tangible business benefits to enterprises.

1 Remote collaboration in real-time

MR has far-reaching applications for team collaboration. Thus far, this has mostly been applied to the construction industry (through integrations with BIM technology), but it could also be beneficial to warehousing design, real estate ventures (or questions such as, “Can a team of 24 really fit this space?”), and product design. Most collaboration is currently done through cloud-based software, but MR opens up the possibility of combining the various collaboration tools we currently have, allowing, for instance, remote teams to brainstorm on the same virtual whiteboard.

Because changes in the virtual environment happen in real-time, all stakeholders can see the most up-to-date versions of the environment at all times. This level of visibility keeps everyone on the same page and minimizes time spent bringing new members up to date.

2 Sales demos

Sales representatives will likely adopt MR rapidly. The technology enables the customer to visualize the reps’ product — not just through a demo, but by seeing it fully integrated into their lives. As early as 2014, Fiat began experimenting with VR for marketing material, and in 2016 released an AR showroom in conjunction with Google, allowing customers to virtually explore the inside and outside of the car superimposed on their surroundings.

The virtual showroom idea is particularly appealing for big purchases that are difficult to return or view in person. Museum curators and interior decorators could similarly benefit from the demo nature of MR.

3 Remote training and instruction

This will likely be one of the most lucrative and widely used application of MR. The technology offers a quick and inexpensive avenue to accessing trainers, experts, managers, or coaches for hands-on training. For instance, a technician installing an offshore wind farm (a series of wind turbines located in a body of water), could have an expert quickly and seamlessly annotate and point to the areas that the technician needs to work on. Similarly, some healthcare providers are experimenting with MR to connect specialized doctors with ER doctors and nurses to give hands-on guidance during difficult or unfamiliar procedures.

In fields where hands-on training is necessary, MR could decrease the need for on-site trainers, and instead centralize training to a few people in the flagship office using MR to work with other teams. In complex manufacturing, enough resources are focused on training new workers that this could provide significant cost savings. A comprehensive study on using MR for implementing a manufacturing procedure of an aircraft maintenance door, allowing for real-time collaborative interactions, found that there was no statistically significant difference in performance between on-site live training and MR live training.



Cashierless checkout and in-store sensors are just the beginning of the brick and mortar tech revolution.

WHY IT WILL PAY TO ADOPT MR EARLY

While MR is still in its nascent stages, it will offer cost-savings to enterprises through increased collaboration, more effective sales, and decreased cost for training and expertise. Importantly, it helps stakeholders make fewer mistakes through miscommunication or miscalculation. It's no wonder that the construction industry (which has a rich history of miscommunication and mistakes) has adopted MR readily. The next few years will bring more enterprise-focused MR tools, and those companies that adopt early will reap the benefits fastest.

Smart shelves and dynamic labels — the future of brick and mortar retail



Cashierless checkout and in-store sensors are just the beginning of the brick and mortar tech revolution. In the wake of Amazon Go's launch, other legacy retailers have begun piloting programs for smart displays that can show targeted ads and promotions to shoppers, cooler doors with digital depictions of the merchandise inside, and smart product suggestions based on customer purchase history. According to a recent NewtonX retail survey with executives and senior managers at large retailers one of the top three strategic initiatives is digitizing

in-store experiences. In this article, we look at what digital experiences the largest retailers are piloting, and how this will affect consumer shopping experiences.

SMART SHOPPING DOESN'T JUST MEAN BARGAIN HUNTING

Cooler Screens Inc., a Chicago-based company that has raised \$10M in VC funding (last round led by Microsoft), creates smart cooler doors equipped with cameras and sensors. The cooler doors serve two purposes: they can show the items inside in their best light (think: a McDonald's hamburger on a billboard vs. in real life), and they can also serve as digital advertising platforms. The Cooler Screens technology uses facial recognition to enable targeted advertising based on demographic data, as well as advertising based on external factors, such as the weather. For instance, a cooler door would be prime real estate for ice cream brands during a heat wave, while a hot chocolate brand would want to claim the advertising space during a snowstorm.

This isn't just speculation: Cooler Screens customers include Walgreens, Nestle, and MillerCoors. Other companies are taking different tactics for in-store targeted advertising. Focal Systems, for instance, has raised \$2.8M to equip shopping carts with tablets that can display ads to shoppers based on demographic data as well as their proximity within the store to other products.



These products are largely still in pilot stage. However, they raise interesting possibilities for the future of pricing and distributor/brand partnerships. For instance, if a distributor generates an extra 10% in revenue from in-store targeted advertising, they can also offer competitive prices and deals for customers, which in turn increases traffic and revenue. Additionally, distributors can partner with brands to offer advertising space in exchange for lower wholesale prices.

The success of these products will rely on how willing customers are to be served targeted ads in-store. Brands will need to offer experiences that are improved enough from a customer standpoint (discounts they truly want, subtle enough targeting that they don't feel spied upon but do feel tempted to buy, etc.) that they are willing to overlook privacy concerns.

HYBRID BRICK AND MORTAR AND ECOMMERCE: THE FUTURE OF RETAIL TECH

The NewtonX survey found that hybrid e-commerce and brick and mortar approaches are the gold standard for 82% of survey respondents. While most brick and mortar stores have made the transition into ecommerce, recent moves from ecommerce giants including Amazon, Warby Parker, Google, and Alibaba into brick and mortar have forced legacy brick and mortar retailers such as Walgreens to digitize the in-store experience.

Ecommerce brands have the advantages of a wealth of consumer data and mobile apps used by a large percentage of their customer base. This allows them to integrate mobile experiences into brick and mortar experiences. For instance, Alibaba's Hema grocery stores, which launched in 2016 and are now open in hundreds of locations, have customers scan items on their app to get product information, pricing, recipes, etc. To purchase items, customers can use Alipay, where they'll also find customized offers and discounts. The store offers guaranteed 30 minute delivery within a 3km radius of any Hema location (Alibaba says housing prices around the stores have soared). Meanwhile, if a customer wants to eat dinner in the store while they wait for groceries to be delivered they can go to the company's robotic dining room, where robots heat up the grocery store food that the customer has requested and then serve it.

Experiences like this that combine the personalization and ease of ecommerce with the immediacy and tactile benefits of brick and mortar will soon become the gold standard for everything, from point of sale, to advertising.

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The data and insights in this article are sourced from the NewtonX professionals community. Professionals are anonymous and are previous employees of the company(s) referenced. No proprietary confidential data or information has been disclosed in this article.

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