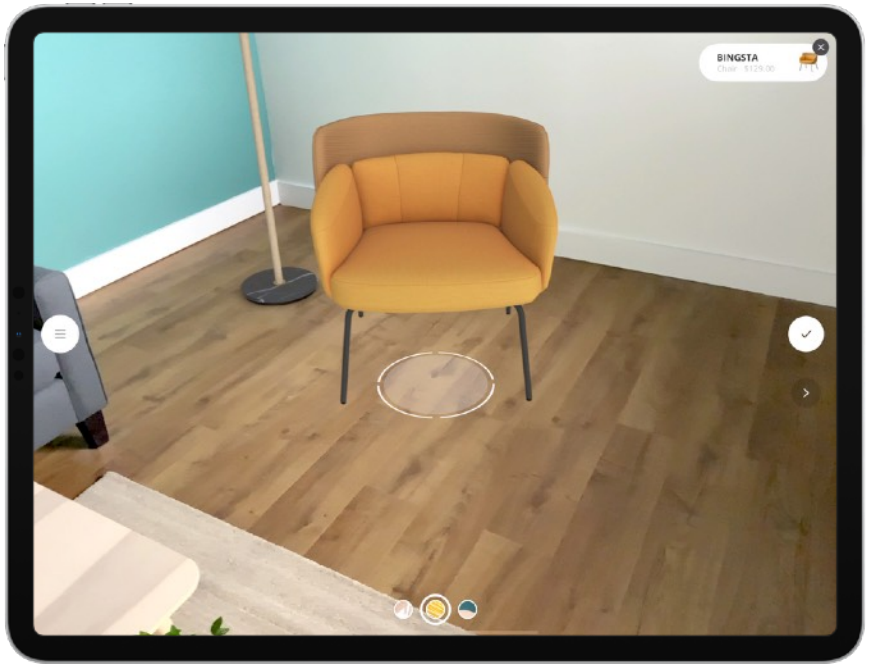
Augmented Reality in Business

Empower employees and customers with the world's largest platform for augmented reality (AR). Apple hardware and software are designed from the ground up for the best possible AR experience. AR on iPhone and iPad powers workflows that were never before possible.

What is augmented reality?

AR places information in the world in a highly visual and contextual way, enabling more connected and productive work. Because AR maintains a real-world view on the device, it takes experiences beyond the screen and provides entirely new opportunities for employees to interact, communicate and get work done.



Why augmented reality in business?

AR improves and even redefines how employees and customers complete tasks that are challenging or expensive — or even physically impossible — with greater efficiency and enhanced productivity.

Businesses are seeing incredible benefits from AR in a wide range of use cases:

Enhanced visualisation
Use visual overlays and lifelike content to increase productivity.

Better communication
Enable faster decision-making and improve service with shared AR content and experiences.

Remote expertise
Support work without being on-site. Reduce shipping and travel expenses.

Improved service
Replace old processes and bring life to new ones. Reduce service time and improve communication with customers.

Flexible training
Guide employees more efficiently on-site or enable employees to train from wherever they are.

Requirements for great AR

It takes a lot to create AR experiences — from powerful cameras and motion sensors to integrated software.

Advanced cameras enable users to see their environment.

Motion sensors detect movement and position with great accuracy and speed.

Powerful processors and machine learning create realistic and interactive scenes.

Immersive displays provide AR experiences in brilliant detail.

Apple's integrated software development kit supports AR and provides a powerful set of tools to develop the best AR experiences.

All of these components are seamlessly integrated for the best AR experiences on iPhone and iPad — straight out of the box.

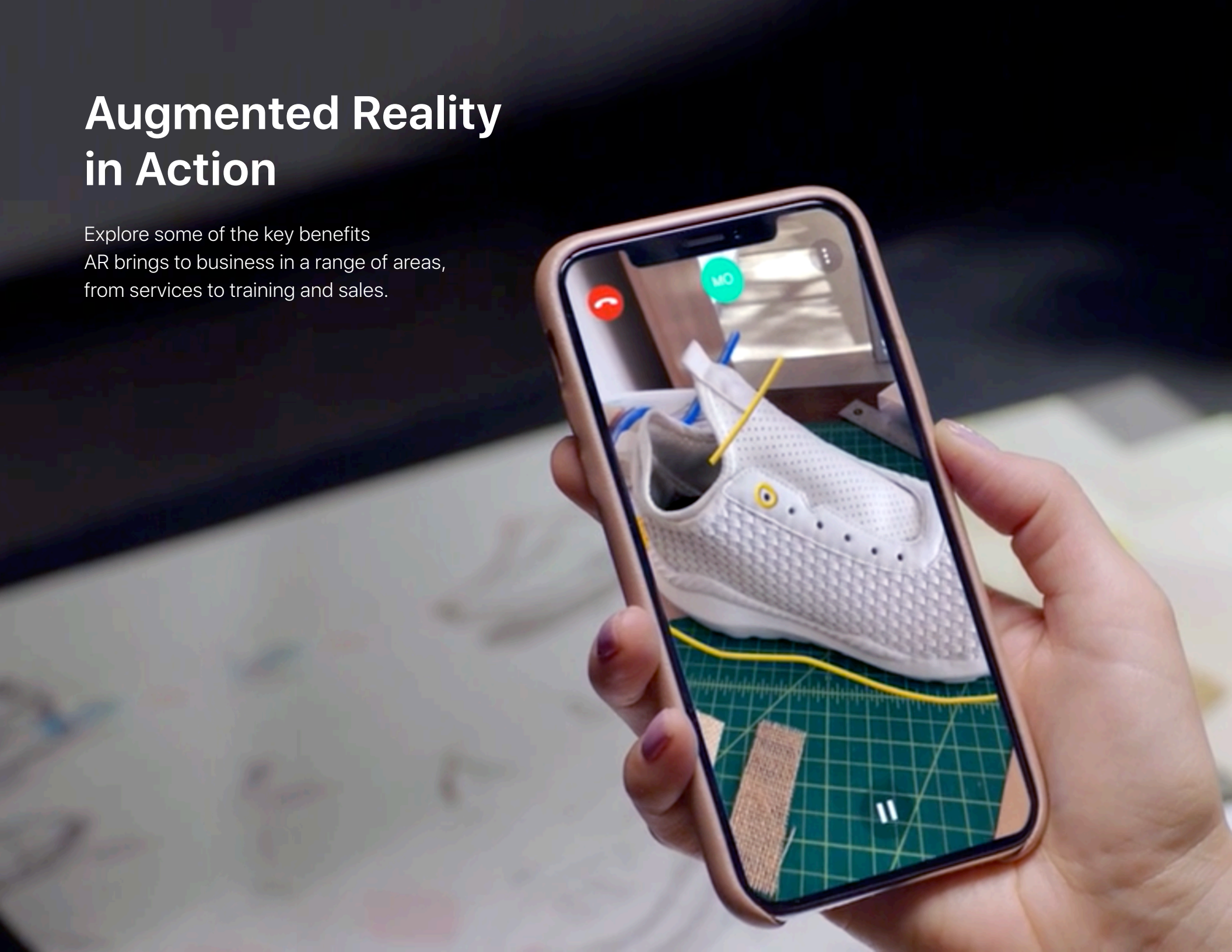
iPad Pro + LiDAR

The new iPad Pro is built for AR with advanced technologies:

- Wide and Ultra Wide rear cameras and the TrueDepth front-facing camera capture high-quality images and video from all angles.
- The new LiDAR Scanner increases spatial understanding with cutting-edge depth-sensing capabilities for AR.
- New depth frameworks in iPadOS combine data from cameras and motion sensors for a more detailed understanding of AR scenes.
- The A12Z Bionic chip with the Neural Engine handles trillions of operations per second to power seamless AR interactions.
- The Liquid Retina display brings AR experiences to lifelike levels of realism and interaction.
- Four-speaker audio and studio-quality mics are built in for using voice and accurate audio input in AR scenes.

Augmented Reality in Action

Explore some of the key benefits
AR brings to business in a range of areas,
from services to training and sales.

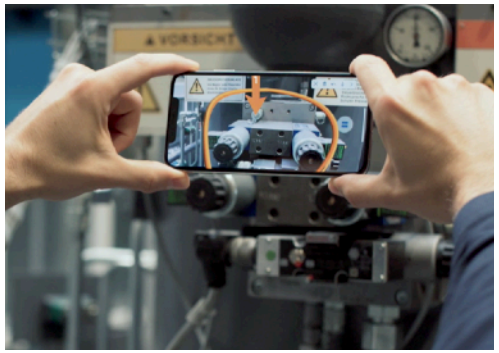


Service and maintenance

Enable employees to provide remote expertise and remote assistance with AR. Move projects forwards and provide services that would otherwise require multiple site visits and product shipments.

Remote technical expertise

- Improve service time
- Reduce site visits
- Communicate in real time
- Increase fix rates



TeamViewer Pilot

View on the App Store >

An on-site technician provides information to an expert in a remote location using TeamViewer Pilot. To guide the on-site technician, the remote expert places annotations on equipment in the real world. This kind of AR-powered workflow can reduce travel to sites and increase fix rates.

Real-time operations and maintenance

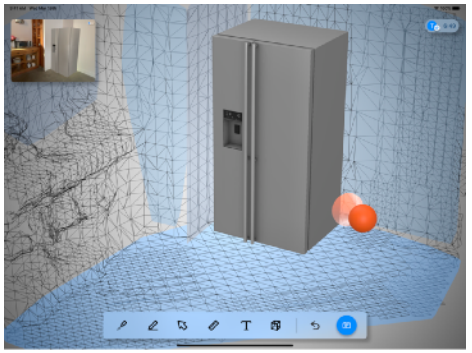
- Speed up inventory search
- Improve decision-making
- Reduce errors
- Accelerate turnaround time

KLM Digital Studio and Regional Jet Center

This proof-of-concept app collaboration between KLM Digital Studio and Regional Jet Center aims to improve operational efficiencies by speeding up part search in the moment and creating maintenance workflows in a more visual way. AR helps technicians by making relevant information instantly available and allowing them to see parts at lifelike scale.

Remote consulting

- Accurately understand project need and space
- Improve communications
- Create fluid workflows
- Reduce travel and site visits
- Improve service



Streem Interactive Video Calls

View on the App Store >

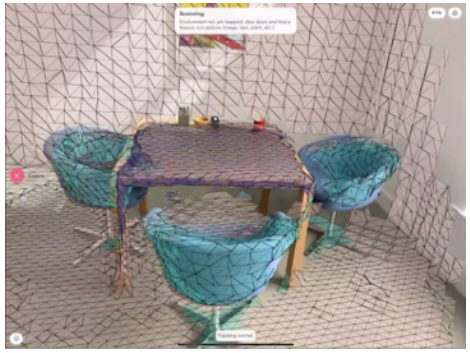
The Streem app facilitates remote consulting and service with spacial understanding provided by LiDAR. Customers create a detailed 3D map of their space using the LiDAR Scanner on iPad Pro. This 3D map allows a remote consultant to take detailed measurements of the space and snap appliances into place, reducing site visits. Customers see the models in their own space so they know exactly what their choice will look like in their home.

Design and consulting

Whether your business designs buildings, products, or provides consulting services, AR can be a powerful tool for enabling faster decision-making, reducing costs and increasing customer engagement.

Architecture and design services

- Eliminate site surveys
- Quickly share accurate models
- Improve decision-making
- Keep projects moving forwards off-site



Shapr3D CAD modelling

View on the App Store >

Architects and designers can use Shapr3D on iPad Pro with LiDAR to create a depth map of a room, then export a dimensionally accurate floor plan and 3D model in CAD.* This reduces time-consuming surveys and additional on-site visits.

*Available this autumn.

Product design and production services

- Create more efficient workflows
- Make decisions quickly
- Reduce travel and shipping
- Improve communications

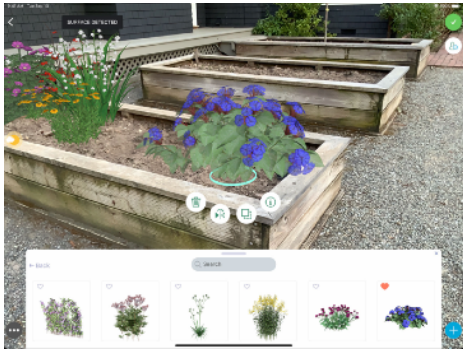
Vuforia Chalk

View on the App Store >

The remote guidance experience in Vuforia Chalk combines live video, audio and the ability for both the remote and local participant to annotate their live shared view. On-screen annotations in Vuforia Chalk accurately stick to real-world objects, even as participants move.

Landscape design

- Improve client workflow
- Increase motivation to purchase with realistic designs
- Enable better decision-making with content placed in the real world



iScape

View on the App Store >

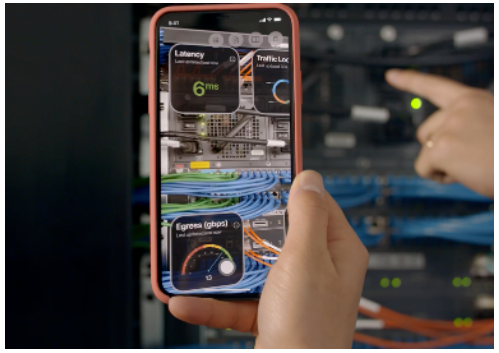
With iScape, consultants choose landscaping options for clients, use AR to place designs in an environment — like the above flower bed — then share them remotely. Seeing content in the real world provides context available only in AR.

Training and collaboration

Provide more flexible training and collaboration tools to improve technical instruction, employee collaboration, real-time guidance and employee onboarding.

Real-time training

- Make training engaging and interactive
- See issues in the moment
- Reduce time searching for information in manuals
- Free instructor and student to focus on what's important



Splunk AR

View on the App Store >

The Splunk AR app provides AR overlays of back-end data in real time, enabling more flexible, productive services and training, and reducing time-consuming paperwork. Customers use Splunk AR to monitor and service a range of Splunk appliances and dashboards, and instructors can access what's most important in a training scenario — there and then.

Technical training, multi-user

- Improve communication via shared AR
- Easily provide real-time feedback
- Interact with hard-to-reach equipment
- Visualise complex topics in action

Tech Trainer

In this SAP demo app, AR enhances training through shared experiences, where multiple users interact within the same AR scene for asset maintenance. Actions on the instructor's iPad are mirrored on the employee's iPad, which is helpful for walking through complex topics and providing the employee with a realistic visual of the actual equipment.

Medical training

- Interpret actions in the real world with motion tracking and overlays
- See progress in the moment
- Understand progress over time
- Easily train colleagues

Complete Anatomy

View on the App Store >

Complete Anatomy uses motion tracking and AR overlays to interpret a patient's movements, and makes the invisible visible by showing the viewer which muscles are being engaged. A practitioner or user can track recovery progress, and the app can interpret the movements — helpful to both a patient and doctor, both in the moment and over time.

Merchandising and inventory

Quickly see inventory and sales data in the moment to reduce back-of-house trips and increase time with customers. Use photorealistic AR content to enable new customer and employee experiences.

Interactive planogram

- Set up displays more accurately
- Easily see stock availability and trends while working with customers
- Spend more time with customers by reducing back-of-house trips

Shoe Planogram

This proof-of-concept app is an interactive planogram that uses AR to show stock levels in the moment. It also reduces employee trips to the back of house, creating a better customer experience and ultimately better service. AR can also enhance operational efficiency for guiding and checking floor setups like this shoe wall.

Retail sales

- Place and compare products in highly realistic ways
- Improve decision-making
- Increase customer engagement wherever they are

Endless Aisle

Another powerful component of AR is photo-realistic objects. This retail demo allows an employee or customer to place and compare products in a highly realistic way. Because objects are so lifelike, users can reach a decision that previously could be done only in person. Photo-realistic 3D content is also a powerful tool for product designers.

Inventory management

- Quickly see items received using AR overlays
- Complete back-of-house tasks more efficiently
- Speed up inventory processes so employees can spend more time with customers

Scandit Barcode Scanner

View on the App Store >

Scandit uses AR for enhanced visualisation of back-end data to improve inventory management, logistics, sales use cases and ticketing, and can inspire new workflows as well. In this example, a quick scan of items with the camera reveals items the employee is looking for, greatly speeding up back-of-house tasks.

Bringing augmented reality to your organisation

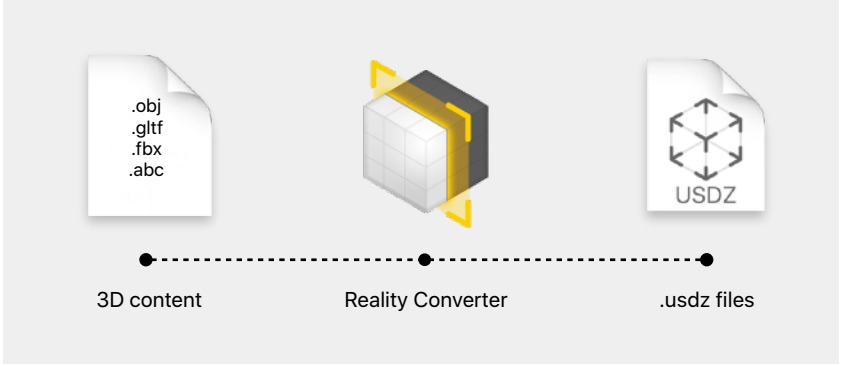
To discover which business lines and workflows can benefit most, start high-level conversations with your teams and stakeholders. Consider the entire value chain, it's possible to bring AR to any part of it, and you can start from anywhere — support, training, sales or design. Once key workflows are identified, determine the top use cases.

Get started creating AR experiences

It's easy to get your teams started creating AR experiences. You can make use of the 3D content your organisation already has or build a custom AR app.

Using 3D content

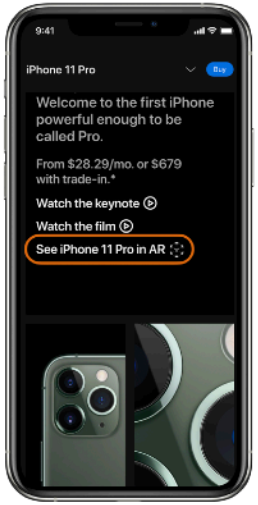
Your design and marketing teams may already have 3D content in common file formats. These files can be converted using Reality Converter — a simple conversion tool on Mac that converts common 3D file formats into a preferred format called USDZ.



Once converted, it's simple to bring 3D content into AR experiences on the web, in messages and in email with Quick Look — no app required.

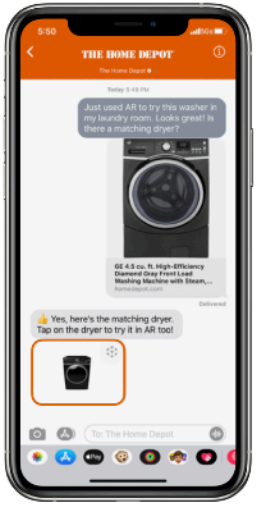
AR Quick Look

Built-in apps on iPhone and iPad — such as Safari, Messages, Mail, News and Notes — use Quick Look to display USDZ files of virtual objects in 3D or AR. You can embed Quick Look views in apps and websites to let users see AR objects in real-world surroundings.



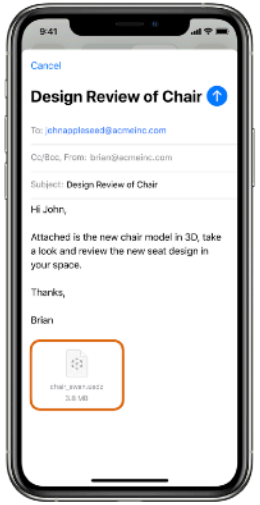
Safari

Tap an AR object right from Safari.



Messages

See AR objects in Business Chat or Messages.



Mail

See attached USDZ files straight from email.

Building apps

Use powerful developer tools to create the best AR experiences. Developers can get started building AR apps with three basic tools—Xcode, ARKit and RealityKit.

Xcode is the integrated development environment for building apps across Apple platforms. With Xcode, you can manage the entire development workflow — from creating an app to testing and publishing it.

ARKit is a framework that combines visual information from cameras with motion features to support advanced capabilities like collaboration, multiple face tracking and simultaneous use of front and back cameras.

RealityKit leverages information from ARKit to integrate virtual objects into the real world seamlessly. It's the AR engine that makes AR development faster and easier by providing photo-realistic rendering, camera effects, animations, physics and more.

Moving forward with AR

AR on iPad and iPhone provides an incredible new set of tools and opportunities for businesses of all sizes. Connect with your teams to spark interest and provide a sense of what's possible in your organisation. Now's the time to think big and ask how AR can redefine your business. Apple products can help bring your ideas to life.

Resources

- apple.com/uk/augmented-reality
- developer.apple.com/augmented-reality
- developer.apple.com/augmented-reality/quick-look
- apple.com/uk/ipad-pro

AR on iPad requires iOS 11 or later and iPad (5th generation or later) or iPad Pro (any model).