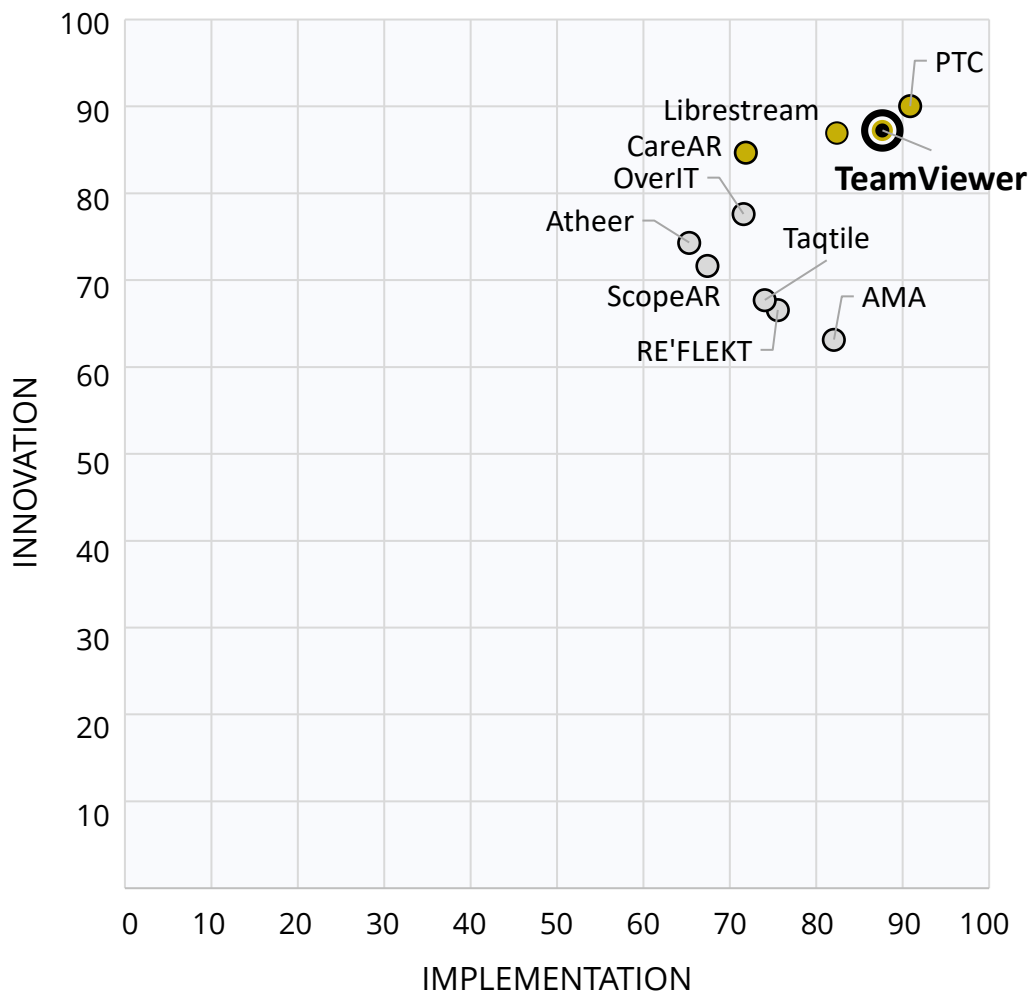


ABI RESEARCH COMPETITIVE RANKING  
ENTERPRISE AUGMENTED REALITY PLATFORMS



OVERALL: 87.4 | INNOVATION: 87.2 | IMPLEMENTATION: 87.7 | RANK: 2



# ABI RESEARCH COMPETITIVE RANKING

## ENTERPRISE AUGMENTED REALITY PLATFORMS



### Innovation:

TeamViewer rocketed into the AR scene with a rate of AR product movement and acquisition not seen before. Since the last ABI Research AR platform competitive assessment at the end of 2019, TeamViewer launched AR product in Pilot, acquired past ABI assessment leader Ubimax, acquired notable US AR platform Upskill, acquired Viscopic as a mixed reality and workflow enabler, and started to scale up AR operations across the two main AR products, Frontline and Assist AR.

Remote support has been TeamViewer's primary strength for years, and some persistent AR integration leveraging that strength shows up today. Without Ubimax, the company would have scored below average in training and guided workflow support—however, xInspect and xMake have significant training applicability, while guided workflow is covered by dedicated product catered to similar use cases across verticals (xPick in Logistics, xMake in Manufacturing, xInspect in Field Service). Viscopic also strengthens these three, training especially, with 3D visualization and mixed reality workflows.

TeamViewer loses some momentum in the AI/ML and machine vision categories in comparison to some competition. Machine vision is not a core product like it is with PTC, but with Viscopic onboard the company has a technology foundation to grow SLAM and recognition capabilities. For AI, the company enables dashboards and analytics for customers just as most competitors in the assessment do—some automatic reporting capabilities are already available, although deeper automation and prediction is not a focus though more is to come in 2022. In-house Natural Language Processing (NLP) is a differentiator, although it shows more in input option strength rather than the more forward-looking innovation focus for AI/ML that comes with automation/prediction.

Cloud is strong across the criteria. As service elements are increasing, however, there has not been as much focus paid there when compared to PTC. Frontline can be full web-based depending on primary device usage. Single Sign-On (SSO) is supported, and the company has invested 30 million euros over the past five years on security efforts. Full cloud, hybrid, and on-premises are all supported, with the majority of customers today hybrid.

The company has some significant robotics overlap and 5G activity, as well as some early edge compute activity. For robotics, TeamViewer IoT and remote control combined with newer AR capability is a sweet spot when considering total TeamViewer portfolio. The company's remote support roots show strongly with telecom partnerships, as well as Ericsson.

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### Implementation:

While TeamViewer's acquisitions and product expansion show up across the criteria, it's perhaps more notable in Implementation thanks to significant capability growth in order to scale AR capability quickly. TeamViewer total customers and footprint is gigantic, but specific AR footprint through Frontline and Assist AR is smaller. Some high-profile customer names are present, including Coca Cola, DHL, BMW, Ford, Toyota, Airbus, and Agco Fendt, among others. If TeamViewer is able to increase attach rate of AR customers paired to their broader customer base, AR footprint can expand dramatically. Partnerships are a similar story, strong but room to grow specific to the AR side of operations. The company recently joined SAP's partner program including a technical integration of Frontline into SAP's asset and service management solutions, and is partnered with Google Cloud to deliver order picking solutions

Device support is best in class. iOS and Android support, along with desktop support, is there. For smart glasses, Ubimax brought with it one of the most complete device support lists out there, and that's where it remains. Magic Leap is the only big name missing—all big name assisted reality devices are supported, and onboarding for new devices is ongoing. Other device support options differentiate here as well, such as wearable scanners and enterprise smartwatches.

Pricing is average for a large-scale end to end platform player. Pricing is partially public for Assist AR remote assistance product (the Lite tier costing around US\$40 per month, but undisclosed for the Professional tier), and no pricing is public for Frontline. The professional tier of Assist AR adds features like SSO, a web Application Programming Interface (API), third party software integration (Salesforce, Teams, etc.), and a mobile SDK. Sales channels are both direct and indirect depending on the customer, but most customers are served through the channel and partner ecosystem. Scaling options are strong thanks to a few product tiers and trial opportunities.

Integration and time to value go hand in hand, and TeamViewer scores well, if not perfectly, here. Content capture potential and integration support is strong, as is offline capability. New content creation is not a focus, but possible for some niche situations. Professional services include dedicated consulting, solution configuration and deployment, and ongoing solution support.

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### Concluding Remarks:

**TeamViewer's pace and focus of acquisition positioned the company very favorably in this assessment, and can be seen as the leader in Europe.**

TeamViewer's existing strengths in remote support and enterprise enablement mesh well with the AR-specific strengths gained through Ubimax, Upskill, and Viscopic. Ubimax was a leader in prior ABI assessments, and the Frontline platform today is expanding and combining those existing strengths into a cohesive platform paired with greater resources and footprint through TeamViewer. Some uncertainty remains around how well TeamViewer will scale customers coming onboard thanks to the acquisitions, but shown progress is promising.

"TeamViewer's recent AR product movement and acquisition has led to a comprehensive enterprise AR platform with best-in-class device support, notable strategic partnerships in place and a large customer base to sell to. TeamViewer's implementation capabilities are highly scalable and time-to-value from a customer perspective is short. All this gives TeamViewer a market leading position amongst all enterprise AR players, especially in Europe," says Eric Abbruzzese, Research Director at ABI Research.

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## ENTERPRISE AUGMENTED REALITY PLATFORMS

### Scoring Criteria

After individual scores are established for innovation and implementation, an overall company score is established using the Root Mean Square (RMS) method:

$$\text{Score} = \sqrt{\frac{\text{innovation}^2 + \text{implementation}^2}{2}}$$

The resulting overall scores are then ranked and used for percentile comparisons.

The RMS method, in comparison with a straight summation or average of individual innovation and implementation values, rewards companies for standout performance. For example, using this method, a company with an innovation score of 9 and an implementation score of 1 would score considerably higher than a company with a score of 5 in both areas, despite the mean score being the same. ABI Research believes this is appropriate as the goal of these matrices is to highlight those companies that stand out from the others.

The following criteria were used to rank the vendors:

### Innovation Criteria

**Use Case Applicability:** Where and how the platform can be used when considering inherent strengths and weaknesses. Specific portfolio product to enable use cases where applicable. This includes use case opportunities in current and future markets, as well as vertical applicability across enterprise and consumer markets. Scores in these use cases are not binary, meaning partial points are given based on assessed capability of product.

- Remote Assistance
- Training
- Guided Workflow and verification

**AI/ML:** Integration and usage of artificial intelligence and machine learning tools in the platform, whether 1st party or through partners. Analytics and dashboard support is very common today, however automation and prediction varies in maturity. Full points in automation and prediction includes complete automation of use cases where possible—e.g. removing the need for a remote expert, complete hands off data capture/metadata tagging/content delivery—and full preemptive prediction of AR content and data delivery from connected systems.

- Analytics and Dashboards: what types of data, dashboards, integration with data capture and automation capabilities.
- Automation and Prediction: just in time content delivery, location based content, chatbots, non-AR prediction (e.g. machine maintenance)

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**Machine Vision:** Enabling mixed reality, but can also be leverage for assisted reality, with semantic labeling, object tracking, etc. For these elements, some points are given through support of a mixed reality smart glasses product, such as HoloLens—which natively supports gesture control and SLAM. Additional points are given for dedicated product on top of hardware-level support, such as a licensable SLAM SDK or additional gesture control capabilities.

- SLAM (Simultaneous Localization And Mapping) and spatial tracking
- Semantic labeling
- gesture control
- optical character recognition
- pattern/object recognition

**Cloud:** Connectivity both within the platform itself and without.

- Cloud and local storage and processing
- Cloud sync between devices and platform
- XaaS (Anything/Everything as a Service) portfolio elements (specifically web-based)
- SSO (Single Sign-On)
- Security
- Cloud platform support

**Enabling Technologies Support:** support for forward looking enabling technologies that integrate with the AR platform. While support for these technologies is not a requirement today, some customers will demand them while others will hope to scale into them in the future. Partial points are given for partnerships and conversations occurring in these areas, while greater points are awarded for active product and portfolio support.

- Robot management/programming/control
- Edge compute
- Blockchain
- 5G

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### Implementation Criteria

**Customers and Footprint:** Measure of traction through verticals, scale of current distribution, notable customers, and capabilities for expansion. Strong footprint and proof of capability customers help demonstrate maturity in what can be an uncertain market.

- Number of active users/devices
- Sales channels
- Proof of capability customers

**Partnership Ecosystem:** value of the partnership ecosystem to a potential customer and/or partner. Often, a partnership ecosystem can be the primary differentiator between similar platforms. Greater exposure and cooperation with impactful companies can ensure cooperability and capability. Note that partnerships are different than simply support of a platform (e.g. using AWS is different than being an Amazon partner).

- Overall scale (number of partners)
- Notable names
  - Hardware: Microsoft, Realwear, Vuzix, Google (mobile and glasses), Apple (mobile)
  - Cloud: Amazon AWS, Microsoft Azure, Google;
  - Services: SAP, Salesforce, ServiceNow, Dynamics

**Device Support:** Breadth and depth of support for multiple form factors (monocular smart glasses, binocular smart glasses, mobile, etc.) Operating Systems (OSs) (e.g., Android, iOS, Windows, etc.), and input/interaction options. Support for both mobile devices and smart glasses is a boon as the market expands both segments.

- Smart glasses types: assisted reality vs mixed reality
- Mobile device requirements
- Input options (hands free and handheld): voice, gesture, gaze, trackpad, controller)

**Pricing and Business Models:** outright cost of usage, along with flexibility of business model and actual portfolio. A clear portfolio layout and associated pricing helps attract initial customers, while scaling capability helps retain customers. Increasing interest in cloud, especially cloud native and cloud first, portfolio offerings factors into business models and structure of portfolio, with greater cloud and as a Service exposure a positive.

- Overall cost
- Transparency of portfolio and pricing
- Scaling options (how well these business models scale with customers, from pilot phase to large scale.)
- SaaS, subscription *versus* non-subscription offerings. Pervasiveness of SaaS throughout portfolio.
- Options for free trial/free tier



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**Integration Potential:** Capability and flexibility to integrate into existing systems for customers across different needs. This lessens barriers both to entry and to scale.

- Content capture. audio/images/video, synergy between use cases (e.g. captured content feeding training, remote assist, etc.)
- Content development team (if applicable)
- Offline usage capability
- Non AR platform support (examples):
  - IoT
  - PLM
  - PDM
  - ERP
  - CRM

**Time to Value:** How long it takes to get up and running and start seeing value. High CapEx and OpEx often associated with augmented reality can inhibit investment and growth, but quick time to value can encourage investment. All of the criteria in this assessment could be seen as contributing to time to value, but elements specifically included in this criteria examine initialization time primarily.

- Content creation and optimization tools
- Low code/no code options
- Professional services availability



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