

Virtual Reality and Augmented Reality in Europe

The global Virtual and Augmented Reality (VR and AR) market is growing exponentially, shifting its focus from VR to AR. Europe accounts for about a fifth of the market. This makes it an interesting market for your VR and AR services. Both the consumer and the business market offer you good opportunities, but specialisation may give you a competitive advantage. Gaming and healthcare are the most promising industries for VR and AR.

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1. Product description

What is Virtual Reality and Augmented Reality?

Virtual Reality (VR) and Augmented Reality (AR) serve to provide users with an enhanced or enriched experience. Generally by using a display, like:

- mobile devices - smartphones, tablets
- Head Mounted Displays (HMDs) - such as gaming consoles
- Spatial Augmented Reality (SAR) systems - digital projectors

They use similar technologies, but are clearly different concepts.

Virtual Reality

VR technology uses software to replicate a real or imaginary environment. The user is fully immersed in this closed, virtual 3D environment. VR allows them to interact with it by simulating their physical presence. This technology is especially popular in the gaming industry and for training and practice sessions.

Augmented Reality

AR technology overlays computer-generated information onto a live view of a real environment. It enhances the view and allows the user to manipulate the information. This makes AR only partially immersive, augmenting the user's real world with virtual content.

The key difference between AR and VR is that the AR user interacts with the real world, instead of a simulation.

VR and AR technologies are popular among both consumers and businesses. They are used in, for example:

- gaming and entertainment
- healthcare simulations
- tourism destination marketing and virtual tours
- educational tools in various market segments
- architectural design
- engineering support functions

However, within these fields the purpose of VR and AR technologies differs. For example:

Tourism

- VR - tourism organisations can use a virtual representation of their destination in their marketing to attract tourists
- AR - by adding virtual content to tourists' real environments, AR can serve as a tour guide on location

Healthcare

- VR - medical professionals can use virtual simulations to train and practice medical procedures
- AR - by adding virtual content during a live medical procedure, AR can assist medical professionals and improve accuracy

Industry experts agree that VR and AR are set to thrive. Leading IT experts Gartner expect [VR and AR technologies to reach maturity within the next 5–10 years](#), despite a slow start. This presents you with an interesting opportunity to provide your VR and AR software development services to European companies.

Why do European companies outsource Virtual and Augmented Reality services?

Lack of in-house expertise and specialisation

A key advantage of outsourcing VR and AR services is that European companies don't need to hire in-house expertise. These services require specific knowledge, technical skills and tools, which most European companies don't have in-house. Specialised expertise is especially valuable. Specialisation in a specific vertical sector, or even a specific context within a sector, gives you a competitive advantage.

To make sure a VR or AR business solution meets their operational needs, European companies may require a try-before-you-buy experience. For example, a pilot project or demo.

Tips:

Emphasise your expertise in your marketing activities.

Clearly communicate your specialisation in a vertical sector or specific context.

Follow the latest technological developments to keep your knowledge and skills up-to-date.

European companies often require proof of your technical skills. Provide references, testimonials and examples of recent work, preferably on your website.

Offer potential buyers a pilot project or a demo to demonstrate transparency and capability. This also establishes trust.

Be realistic in what you can achieve and try to deliver added value. In other words: "under-promise and over-deliver".

Familiarise yourself with your clients' business characteristics to show you understand their business needs.

Cost reduction

[For 60% of executives, cost reduction is their main reason for outsourcing IT.](#) This confirms that cost reduction continues to be a key driver for European companies to outsource IT, like VR and AR services.

This can give you a clear advantage, as labour is relatively cheap in developing countries. To attract European

buyers, your pricing should be competitive, clear and transparent.

Tips:

Offer competitive pricing, but don't compromise on the quality of your services.

Be transparent in your pricing: avoid hidden costs.

What are the challenges when it comes to outsourcing Virtual and Augmented Reality services?

Data security and intellectual property protection

Data security and intellectual property protection are of the utmost importance to European companies. This is especially relevant to outsourcing VR and AR services, because software developers may have access to sensitive project and company information.

European companies generally perceive offshore data security to be of inferior quality. [The European Union currently considers data to be appropriately protected in a select number of countries:](#)

- the 28 countries of the European Union
- the three countries inside the European Economic Area - Iceland, Liechtenstein and Norway
- countries with "adequate" data protection laws - Andorra, Argentina, the British Islands, Canada, Faroe Islands, Israel, New Zealand, Switzerland and Uruguay, as well as the United States of America (limited to the [Privacy Shield framework](#))

This makes it even more important for you to show potential European buyers that your VR and AR services are secure.

Tips:

Provide clear information about your company's data security and privacy measures.

Apply for standards like the [ISO 27000-series on information security](#) to support your commitment to data security.

Offer a Non-Disclosure Agreement.

Make sure you comply with [European data protection rules](#). Look at the requirements section for more information.

Also pay attention to data security within the software you develop. All software has bugs, which you need to handle appropriately.

Clear communication

Good communication between customer and service provider is essential to VR and AR services. Unclear communication may cause misunderstandings and disagreements, which can lead to disputes with your buyer.

Developing good VR and AR software starts with defining what the device should do. Ask your buyer key questions like:

- What features should the software include?
- What is the target group (users) for the device?

And of course:

- What is your budget?
- What are the deadlines of the project?

The extent of communication with your buyer a project requires depends on the type of contract:

Fixed

With a fixed price contract you agree on specifications, budget and deadlines in advance. During the software development you keep your buyer up-to-date, but you don't need to negotiate further. European buyers usually prefer a fixed price for IT outsourcing. This type of contract is especially suitable for relatively simple and clearly defined projects.

However, fixed price contracts assume that the buyer can adequately specify the requirements for the solution. In new and emerging technologies like VR and AR, this is often not the case. Hence it may be more appropriate to divide the project in smaller parts or phases and contract on a phase-by-phase basis.

Flexible

More flexible models are Time & Material or Dedicated Team contracts. These are especially suitable for relatively complicated projects. You and your buyer discuss and agree on the specifications during the development process. This also means the budget and deadlines are not set in advance. These types of contracts require intense communication with your buyer.

More and more organisations are transitioning to an [Agile](#) working model. This means that the overall requirements are determined in less detail and the development takes place in sprints of usually 2-4 weeks. At the end of each sprint, a working product is delivered, then based on the progress and user feedback, the project planning can be adapted. Contracting is often comparable with Time & Material, but with guarantees for the development speed and quality of the products.

Tips:

Listen carefully to your buyer's ideas, problems and wishes and thoroughly document them. Ask questions to better understand what your buyer wants.

Regularly update your buyer on the progress you are making.

Be prepared to communicate with your buyer during their office hours, even if they are in a different time zone.

If you use a fixed price contract, make clear agreements with your buyer on a structured plan and the expected timeline of the project.

For more information on the different types of contracts, see Cleveroad's [Types of Contracts in Outsourcing: How to Make a Wise Decision](#).

2. Which European markets offer opportunities for Virtual Reality and Augmented Reality?

VR and AR market is growing rapidly

The global VR and AR market is set to grow exponentially. Spending on these products and services is expected to reach €23 billion in 2018, which is an impressive growth of 92% since 2017. Between 2017 and 2022, worldwide spending on VR and AR is forecasted to expand at an average annual growth rate of 72%.

Europe is responsible for a fifth of global VR and AR market

Europe is one of the major player on the VR and AR market, along with Asia and North America. Industry experts expect Europe to account for about a fifth of the global market. Especially Western Europe drives the revenue that makes up this share.

Tip:

Focus on Western European countries, where VR and AR revenues are expected to be highest.

AR is overtaking VR as the largest market

Currently, VR is the largest sector. The market is estimated to consist of about a quarter AR and three quarters VR revenue. In the coming years however, this is expected to reverse. Global AR revenues are catching up with VR. **By 2022, AR is projected to dominate the market.**

Tips:

Build expertise and skills in AR, to benefit from the rapidly expanding market.

Develop consulting skills to advise potential buyers on how they can benefit from AR (and VR) and how you can realise this for them. The earlier you are involved in the project, the better.

Enterprise market is on the rise

VR and AR started out as a mainly consumer-oriented market. In 2017, **the consumer market share accounted for 56% of spending in Western Europe.** However, **business use is on the rise.** In 2018, 26% of Head Mounted Displays are expected to be designed for enterprises. **By 2025, the business market is estimated to drive about 40% of revenues.** This makes both consumers and enterprises promising target markets for your VR and AR services.

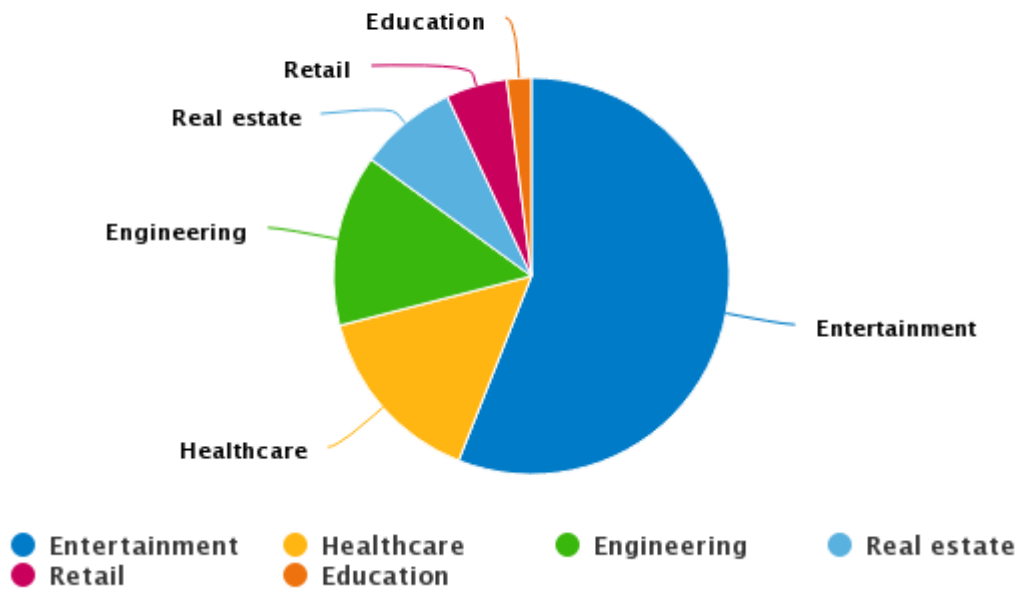
Tip:

Focus on either the consumer or the enterprise market, to maximise your expertise in your target market.

Entertainment and health care are main VR and AR markets

When the market has matured further, **the main industries to use VR and AR technology are expected to be entertainment and healthcare.**

Figure 1: VR and AR software spending



Source: Goldman Sachs

Within entertainment, the leading industries are:

1. gaming (34% of total spending)
2. live events (12%)
3. video entertainment (9.5%)

This illustrates that the gaming industry is an especially promising VR and AR market. The Europe State of the Industry report of the Game Developers Conference indicates that a [33% share of European gaming industry professionals are interested in developing VR games](#), while 23% show interest in developing AR games. Although the initial hype seems to have tempered by now, this makes VR the most popular platform among developers after the PC, PlayStation 4, PS4 Pro and Nintendo Switch.

Tips:

Focus on the most promising industries: gaming, live events and video entertainment, as well as healthcare and engineering.

Specialise in a specific industry, like gaming or healthcare.

European IT outsourcing market continues to grow

According to Whitelane Research, [44% of European companies plan to increase their IT outsourcing](#). Another 33% intends to continue outsourcing at their current rate, 12% hadn't decided and a mere 11% planned to decrease their IT outsourcing activities. This indicates that the European IT outsourcing market continues to be a promising target market.

3. What trends offer opportunities on the European market for

Virtual and Augmented Reality?

Technological developments

Because VR and AR are key emerging technologies, they are developing rapidly. These technological developments make VR and AR applications more accessible to both consumers and businesses. For example through less bulky and/or expensive hardware, highly developed graphics, VR sensors in mobile devices, new software platforms and tools for faster and easier VR and AR application development.

There are now standard AR features available in Android, iOS and Windows10, lowering the threshold even further for basic applications. These developments are expected to drive growth on the European VR and AR market in the coming years.

Tip:

Follow technological developments and innovations to keep your knowledge and skills up-to-date.

Mobile applications

Mobile VR and AR applications offer interesting possibilities. This is expected to be a consumer-first market, for example via mobile gaming applications.

You can develop mobile VR and AR software for:

- handheld mobile devices - especially suitable for AR experiences
- smartphone headsets - allow users to wear their smartphone like a Head Mounted Display, particularly suitable for immersive VR experiences

Tip:

Provide mobile VR and AR development services.

4G and 5G mobile internet

VR and AR applications require considerable bandwidth. When it comes to mobile internet in Europe, 4G-coverage has become relatively mainstream with low latency, high capacity and increased speed.

[4G-coverage varies among European countries](#), both in availability and speed. Countries with particularly good 4G-coverage include:

- Norway (92% availability, 41 Mbps)
- Netherlands (90% availability, 42 Mbps)
- Hungary (89% availability, 39 Mbps)
- Lithuania (88% availability, 33 Mbps)

However, countries with relatively limited 4G-coverage include:

- Ireland (57% availability, 23 Mbps)
- Germany (66% availability, 24 Mbps)

- France (68% availability, 25 Mbps)
- Italy (70% availability, 25 Mbps)

In the meantime, 5G mobile internet is on its way. [5G promises to be considerably faster than 4G](#). This allows for a greatly improved mobile VR and AR experience. [The European Union is stimulating the deployment of 5G with its 5G For Europe Action Plan](#). It intends to roll out fully commercial 5G services in Europe by 2020. All urban areas and major terrestrial transport paths should have uninterrupted 5G coverage by 2025.

Tips:

If you provide mobile VR and AR services, focus on countries with good 4G-coverage. For more information, see the [4G-availability and -speed per country](#).

Keep track of the [developments in European 5G-deployment](#).

Skills shortage

As the European market for VR and AR applications rapidly expands, there is an increasing need for specialised developers. However, there is a considerable lack of IT training, certification and experience in the European workforce. Due to the rapid technological innovations in IT, the skills of IT-graduates don't match the needs of the market. The European Commission expects [the shortage of IT-skilled staff to reach 756,000 unfilled jobs by 2020](#).

Because of this, European companies need to outsource their VR and AR development to providers with the required expertise. This offers you good opportunities.

Tips:

Promote your company's professional skills, expertise and experience in VR and AR development. Use references to support your message.

Ensure your access to skilled professionals. For example by working with universities, setting up training courses or centres, systematically collecting and analysing CVs and have a partner network of companies and individuals.

See our study about [trends on the European outsourcing market](#) for more information on general trends.

4. What requirements should Virtual and Augmented Reality services comply with to be allowed on the European market?

What legal and non-legal requirements must you comply with?

General Data Protection Regulation

Europe's new [General Data Protection Regulation](#) (GDPR) has come into effect on 25 May 2018. This regulation is designed to protect individuals in Europe from privacy and data breaches. Under the GDPR, any company or individual that processes data is also responsible for its protection. It applies to all companies processing the personal data of persons in Europe, regardless of the company's location. This means it also applies to you directly.

The personal data this regulation protects can range from a name or email address, to bank details, social media content, a photo or an IP address. Some key consumer rights you must comply with include consent, right to access, data portability and the right to be forgotten. You also need to practice privacy by design, meaning data protection should be included from the onset of designing systems.

Tips:

If you process data of people in the EU, regardless of where you are in the world, make sure you comply with the GDPR.

For more information on the GDPR (and other European legislation), see our study about [buyer requirements on the European outsourcing market](#).

Copyright - Legal protection of computer programs

The European Union has established specific rules to protect computer programs by means of copyright. The [Directive on the legal protection of computer programs](#) (2009/24/EC) establishes that you have to make sure not to breach any copyright when placing your computer programme on the market. However, it also protects your products against unauthorised reproduction.

Tip:

Read more on the [legal protection of computer programs](#) on the website of the European Commission.

What additional requirements do buyers often have?

Voluntary data security ISO standards

Data security is one of the main challenges for service providers. This includes both data protection and recovery systems. Many European buyers expect you to have information security and management systems in place. Especially in industries where security is essential, such as finance and banking or mobile applications. The [ISO 27000-series on information security](#) contains common standards for information security.

Tips:

Make sure you have effective security processes and systems in place. From business-continuity and disaster-recovery to virus protection.

Ask your buyer to what extent they require you to implement a security management system like the [ISO 27002 code of practice for information security](#).

See our study about [buyer requirements on the European outsourcing market](#) for more information.

5. What competition do you face on the European Virtual and Augmented Reality market?

Competition on the European VR and AR market does not differ significantly from the outsourcing market in general. Refer to our [top 10 tips for doing business with European buyers](#).

Nearshoring more popular than offshoring

European companies prefer to outsource services to providers within the same country (onshoring). When outsourcing abroad they prefer nearshore locations because of proximity, language, cultural similarities and the little or no time difference. These are usually Eastern European countries, due to their relatively low wages. For example Poland, Bulgaria and Romania.

However, prices in nearshore countries are rising. This development makes service providers in these countries less competitive for offshore service providers. It makes European companies more open towards outsourcing to destinations further away. You can choose to form subcontracting partnerships with these nearshoring providers, or compete with them.

[Offshoring destinations with the strongest potential](#) are:

- India
- China
- Malaysia
- Indonesia
- Brazil
- Vietnam

Tips:

Limit the possible disadvantages of being offshore. Provide excellent communication, availability in the required time zone and good security and privacy measures.

Differentiate yourself from onshore and nearshore providers to remain competitive. Emphasise how you are different in your marketing message. Do not only compete on price, but also analyse what other advantages you can offer. For example access to skills, specialised industry expertise or around-the-clock operations (24/7).

Research what your competitors are doing right and wrong. This can help you differentiate yourself from them.

Partner with nearshore service providers, as Eastern European companies are looking for cheaper destinations. Many service providers in developing countries have not yet recognised this opportunity.

6. Through what channels can you get your Virtual and Augmented Reality services on the European market?

Subcontracting by European service providers

Subcontracting by European service providers is your most realistic market entry channel. It means that European service providers subcontract VR and AR assignments to you, that end user companies have contracted to them.

Tips:

Decide on a business model. Either develop your own VR and AR services, or focus on providing services for a European partner.

Target service providers whose size is in line with your capacity.

Focus on companies that serve the same industries as your company.

Browse the [directory](#) of EuroVR, the European Association for VR and AR, for contact details of interesting companies. The association is also updating its map of the European VR and AR market landscape with an overview of the main players on the market.

Attend relevant industry events in your target country to meet potential partners. This also allows you to learn more about their business culture. For example [AR&VR Show](#), [AR & VR World](#) and [VR World](#) in the United Kingdom, [VR Days Europe](#) and [VRX Europe](#) in the Netherlands, [Laval Virtual](#) in France, [SALENTO AVR](#) in Italy and [EuroVR Conference](#) at different locations in Europe.

Use national industry associations to find potential customers in Europe. For example [Bitkom](#) in Germany, [Nederland ICT](#) in the Netherlands and [UKITA](#) in the United Kingdom.

National outsourcing associations can also be interesting sources to find potential customers. For example [Global Sourcing Association](#) in the United Kingdom, [Outsourcing Verband](#) in Germany and [Platform Outsourcing](#) in the Netherlands.

Develop good promotional tools, such as a professional company website and a company leaflet. Also invest in Search Engine Marketing, so potential customers can easily find your company online.

Direct sales to end users

You can also try to sell your VR and AR services directly to European end user companies. New electronic marketplaces may make this easier. These marketplaces are a cheap marketing tool. Although they mainly contain smaller projects for freelancers, they could lead to pilot projects for companies. However, you need excellent end market knowledge.

Tips:

Research the end market segment that you want to focus on. This allows you to effectively market your company.

Look for potential leads in the field of VR and AR on online outsourcing marketplaces. For example [UpWork](#) and [Freelancer](#) (freelancers), [Ariba](#) (corporate) and [LinkedIn](#).

Intermediary

You can approach European service providers and end users of VR and AR services directly, or through an intermediary. A local contact person is an advantage, especially if you are located in a lesser-known outsourcing destination. Intermediaries, such as a consultant/matchmaker or sales/marketing representative, can therefore be an important channel to establish contact with potential buyers.

Refer to our study on [finding buyers in the European market](#).

7. What are the end market prices for Virtual and Augmented Reality services?

Price is the main reason for European companies to outsource VR and AR services to developing countries. Staff salaries make up a large share of the costs of these services. This means outsourcing them to countries with lower wages can lead to considerable savings. For example, the average annual salary of a software developer in Western Europe is between €36,000 and €50,000. In offshore destinations, this is usually significantly lower.


Tips:

Research the average salaries in your European target country. For example via [Payscale](#), a global database for salary profiles.


Emphasise the potential salary savings in your marketing.

Please review our [market information disclaimer](#).

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