

Augmented Reality (AR): Markets Reach \$ 80.8 Billion by 2022

LEXINGTON, Massachusetts (September 13, 2016) – WinterGreen Research announces that it has published a new study Augmented Reality (AR): Market Shares, Strategy, and Forecasts, Worldwide, 2016 to 2022. The 2016 study has 516 pages, 183 tables and figures. Worldwide AR markets are poised to achieve significant growth with the use of smartphone apps and headsets or glasses that are platforms to project digital information as images onto a game image or a work situation.

AR is in the early stages of an explosive growth cycle. The Pokemon Go phenomenon raid adoption raised awareness and expectation for the vision of augmented reality AR and digital enhancement of the surroundings. Digital enhancement as AR is just human explanation of our existing surroundings. Digital enhancement provides human explanations of the innate natural world and of the machines we use to perform work.

AR digital enhancement provides explanations and process predictions. Google pointed the way, as it so often does, to the AR opportunity with Google glass which failed, but spawned a large number of projects that have succeeded. All the AR vendors will reap the benefits of the Google original Google Glass huge AR marketing investment.

Augmented reality AR is set to become an indispensable part of people's lives. AR is poised to take off as part of the much heralded Internet of things (IoT). Digital images become as much a part of the real world as the things we can touch and feel as they are integrated into everyday life. The reality is augmented by the digital images. Augmented reality is a misnomer to the extent that it implies that reality is somehow has something superimposed on it. Instead the reality exists, and the digital images blend in to enhance the experience of reality, make it more understandable or more interesting. The reality is not changed, it is not made better, it is understood better.

Use-cases for AR proliferate. Pokemon Go points the way to, illustrates, the huge game market opportunity looming on the ubiquitous smart phones.



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Adoption of AR technology in the enterprise is growing. AR headsets and glasses are used in manufacturing, logistics, remote service, retail, medical, and education. One popular AR application is providing ‘see-what-I-see’ functionality, enabling off-site specialists to provide real-time guidance and expertise to troubleshoot an issue. Others superimpose process steps by step information on dials and switches in workflow situations.

Epson offers smart glasses. Augmented reality displays are being used to train technicians in common routines. It is used to provide surgical guidelines to surgeons. It is used to provide information to doctors in the operating room.

AR glasses can give employees real-time data streams layered over the real world. Security clearances can be shown. Status of machinery in a factory can be shown. Internet of Things (IoT) needs AR to use data to turn information into a decision-making tool. This will work in the manner outlined by Daqri where step by step procedure manuals are created via video or some other manner.

Then the IoT uses the step by step procedure manual to address process, to address workflow via superimposing streams of data and analytics that generate alerts from that data to provide just in time information intuitively. Alerts are generated when change is noted. Streams of information from IoT sensors are basically boring unless there is a change, unless something needs attention, hence the value of alerts.

Just as the intensive care unit did not exist in hospitals until patient monitors were invented, so also AR will leverage change and detection of change to generate alerts. Based on IoT data, alerts will usually be few and far between, but then they come, they will need attention. In this manner the digital images provided by AR leverage what we have learned from monitoring in a few specific areas like the hospital ICU and will be carried forward to every task in every human endeavor.

As price points decline, AR becomes useful. Augmented reality AR is set to become an indispensable part of people’s lives. AR is poised to take off. Digital images become as much a part of the real world as the things we can touch and feel as they are integrated into everyday life. The reality is augmented by the digital images. Augmented reality is a misnomer to the extent that it implies that reality is somehow has something superimposed on it that changes the reality.



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Instead the reality exists intact, and the digital images blend in to enhance the experience of reality, make it more understandable or more interesting. The reality is not changed it is not made better, it is understood better, process and workflow can be implemented in a more efficient manner.

The reality does not change with AR as it does with VR. With VR, the user is immersed in an illusion. With AR reality becomes more fully experienced, is explained better. This is a significant difference, the difference between and illusion and reality

The experience of virtual reality that is really immersive and does change the experience of reality depends on people being stable and able to center themselves back to reality after the experience fo the illusion. Augmented reality is providing a way to make what the seven senses that include vision, hearing, touch, smell more effective. The sense of reality is enhanced instead of having an illusion take over.

According to Susan Eustis, lead author of the study, “These game based and industrial end-to-end process IoT augmented reality modular AR markets are anticipated to reach \$7 trillion by 2027, growing in some cases at the same pace we have seen from Pokemon Go augmented reality. Pokémon Go grew to a massive 45 million daily active users per day after two months in the market, with the market reaching \$250 million for the vendor Niantic by September 2016 after two months starting from zero.”

Phenomenal growth is anticipated to come from implementation of step-by-step procedure virtual reality modules that are used to manage systems. Every business executive in the world wants to have an IT structure agile enough to manage phenomenal growth, should that be necessary, the aim is to construct augmented reality modules that address the issues brought by the Internet of Things (IoT). IoT takes the data from sensors, superimposes analytics on collected data, turns the data into information, and streams alerts back to users that need to take action.

Augmented reality enhances our sense of reality, it further explains what is going on around us, it does not support illusion, it supports getting in touch with what is real, what is really out there. Pokemon Go is so much fun because it gives us little animals, little characters to play with in our exact location, it enhances the experience of our neighborhoods. It has large beautiful birds that flap their wings and look magnificent.



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The Pokemon GO characters are placed in our world, they are not crazy, they are not illusions that replace an unhappy experience of reality, or entertain with inappropriate violence, as you would find in a virtual reality game, they are friends that appear in our local life, show up in local locations where they can be caught and looked at. They become part of real life, a vital expression of reality.

Thus to say the implementations of digital imaging superimposed on reality is augmented reality misses the point, they are images that help us participate more fully in the reality around us. The augment the experience of reality, they do not change the reality itself as VR does.

The Augmented Reality (AR) market size at USD \$659.7 million in 2015 is anticipated to reach \$80.8 billion by 2022. The market goes from \$659.7 million in 2015 to \$2.6 billion in 2016, an astoundingly rapid growth for a market that really is not yet well defined. The increasing scope of applications across different industries, manufacturing, medical, retail, game, and automotive, all industries really, is expected to drive demand over the forecast period to these unprecedented levels, reaching into the trillion dollar market arenas soon. AR technology is in the nascent stage with a huge growth potential, and has attracted large investments contributing to the industry growth.

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