

3RD ANNUAL

AR & VR World

12-14 June 2018,
ExCeL, London

**HOW AR AND VR
TECHNOLOGIES BRING
WORKPLACE TRAINING
INTO THE MODERN AGE**

tmt.knect365.com/ar-vr-world

 @ARVRWorld #ARVRWorld  #ARVRWorld



CONTENTS



S.3 Introduction

S.4 Education and Training

S.8 Benefits for the enterprise

S.9 The future



INTRODUCTION

AUGMENTED REALITY (AR) AND VIRTUAL REALITY (VR) ARE POISED TO TRANSFORM THE ENTERPRISE BY REVOLUTIONIZING HOW EMPLOYEES ARE TRAINED.

Standard college courses, apprenticeships, work placements, and on-the-job training has evolved beyond traditional classroom setups to include online instruction, mobile apps, gamification, and other resources in recent years.

However, AR and VR have the potential to carve deep and permanent changes in the way we learn and are trained in our roles.

AR is the superimposition of images and virtual content on the environment around us, while VR is the full generation of a computerized, virtual environment and objects.

Either form can be created through PC software, mobile applications, and dedicated headsets. Together, they may come under the term "mixed reality."

While we are unlikely to see AR and VR in cash-strapped schools anytime soon, enterprise players have the resources to invest in these systems as long as there is a justifiable return on investment.

SOURCE: Goldman Sachs Equity Research, 13 January 2016, Profiles in Innovation: Virtual & Augmented Reality



GOLDMAN SACHS: **\$80
BILLION** MARKET VALUE
FOR BOTH VIRTUAL AND
AUGMENTED REALITY
BY 2025

HOW AR AND VR ARE BRINGING WORKPLACE TRAINING INTO THE MODERN AGE

EDUCATION AND TRAINING

IN EDUCATION AND TRAINING, VIRTUAL AND AUGMENTED REALITY APPLICATIONS ARE BEING DEVELOPED AND USED IN A NUMBER OF WAYS.

Unimersiv offers a platform for corporate clients to develop VR and AR applications to train employees through headsets, with a particular focus on hands-on equipment and the construction industry.

SOURCE:

<https://unimersiv.com>

<https://www.businesswire.com/news/home/20160627005621/en/Survey-Finds-Teachers-Virtual-Reality-Reality-Classroom>

SAMSUNG SURVEY: **86 PERCENT** OF TEACHERS FEEL IT IS A CHALLENGE TO KEEP STUDENTS ENGAGED IN CURRICULUM, EVEN WITH EXISTING CLASSROOM TECHNOLOGY. **93 PERCENT** OF TEACHERS SAY THEIR STUDENTS WOULD BE EXCITED TO USE VIRTUAL REALITY AND **83 PERCENT** SAY THAT VIRTUAL REALITY MIGHT HELP IMPROVE LEARNING OUTCOMES.

HOW AR AND VR ARE BRINGING WORKPLACE TRAINING INTO THE MODERN AGE

EDUCATION AND TRAINING

EON REALITY IS ANOTHER PLAYER IN THE VR AND AR SPACE WHICH FOCUSES ON MANUFACTURING AND THE INDUSTRIAL SECTOR, DEVELOPING APPLICATIONS FOR THE ENTERPRISE.

Virtual reality allows students to perform inspections and tamper with digital replicas of equipment, whereas augmented reality is layered upon objects such as engines to teach students about the intricacies of objects they will come into contact with daily in their roles.

Accenture is a company that uses these applications to provide information through AR headsets to staff and visitors in plants, providing crucial data on equipment and instructions on how to perform complex procedures.

Waste management firm Festo is using VR and AR to train water professionals in the sciences and engineering through simulators which demonstrate how to interact with a plant, operate machinery, and what to do in moments of crisis.

SOURCE:

<https://www.eonreality.com/applications/augmented-virtual-reality-manufacturing>

<https://www.eonreality.com/portfolio-items/virtual-reality-industrial-application/?portfolioCats=611>



EDUCATION AND TRAINING

THE COMPANY'S "AQUATRONICS" APPROACH COVERS THE MATERIAL REQUIRED TO DO THE JOB EFFECTIVELY AND WAS CREATED DUE TO THE NEED TO CONDENSE LEARNING WHILE KEEPING TRAINEES SAFE IN POTENTIALLY HAZARDOUS SITUATIONS.

Temasek Polytechnic, an institute for aerospace engineering, was also seeking ways to train students more effectively and achieve better academic results while also improving student concentration in the classroom.

The institution turned to VR and AR, creating a series of applications which allowed students to enter a virtual gas turbine engine and learn the fundamentals of operation and repair through interaction.

SOURCE:

<https://www.eonreality.com/portfolio-items/vr-simulator/?portfolioCats=611>

<https://www.eonreality.com/portfolio-items/eon-engine-explorer/?portfolioCats=611>

<https://www.idc.com/getdoc.jsp?containerId=prUS43248817>

VIRTUAL REALITY WILL CONTINUE TO DRIVE GREATER LEVELS OF SPENDING IN THE NEXT 12-18 MONTHS, AS BOTH CONSUMER AND COMMERCIAL USE CASES GAIN TRACTION. THERE IS CURRENTLY A HUGE APPETITE FROM COMPANIES THAT SEE TREMENDOUS POTENTIAL IN THE TECHNOLOGY, FROM PRODUCT DESIGN TO RETAIL SALES TO EMPLOYEE TRAINING. MEANWHILE, THE AUGMENTED REALITY MARKET WILL DELIVER MORE MODEST LEVELS OF SPENDING NEAR TERM WITH MOBILE AR ON SMARTPHONES AND TABLETS LIKELY TO GARNER THE MOST ATTENTION FROM CONSUMERS, WHILE HEAD-MOUNTED DISPLAYS WILL PRIMARILY SELL INTO COMMERCIAL USE CASES."

**TOM
MAINELLI,
PROGRAM VICE
PRESIDENT,
DEVICES AND
AR/VR AT IDC**

EDUCATION AND TRAINING

ATHEER HAS CREATED AR SOFTWARE, DOWNLOADABLE TO AN EMPLOYEE'S SMART GLASSES, WHICH PROVIDES STEP-BY-STEP INSTRUCTIONS IN INDUSTRIAL AND RETAIL ENVIRONMENTS. THE SOFTWARE HAS ALSO BEEN USED IN TRIALS WITH PORSCHE TO SPEED UP REPAIRS AND MAINTENANCE IN DEALERSHIPS AND GARAGES.

Walmart is another convert of VR and AR. The retail giant is planning to expand a pilot program to 200 US training centers which utilize VR to instruct employees in both management and service.

SOURCE:

<https://atheerair.com/2017/11/27/porsche-tech-live-look-makes-an-impact>

<https://www.gartner.com/smarterwithgartner/exploring-augmented-reality-for-business-and-consumers>

<http://www.businessinsider.com/walmart-using-virtual-reality-employee-training-2017-6>

<https://www.idc.com/getdoc.jsp?containerId=prUS43248817>



THE MARKET FOR AR IS MAINLY BUSINESS TODAY. WE ESTIMATE THE NUMBER OF AR HEAD-WORN DEVICES (HMDS) SOLD IN 2016 TO BE AROUND SEVERAL HUNDRED THOUSAND. WE FORECAST THAT IN 5 TO 10 YEARS HUNDREDS OF MILLIONS OF HMD DEVICES WILL BE IN THE HANDS OF USERS, SPLIT BETWEEN SEE-THROUGH TRANSPARENT DISPLAY DEVICES AND THOSE THAT PROVIDE FULL IMMERSION, SUCH AS VR."

**BRIAN BLAU,
GARTNER
ANALYST:**

WORLDWIDE SPENDING ON AUGMENTED REALITY AND VIRTUAL REALITY (AR/VR) IS FORECAST TO REACH **\$17.8 BILLION** IN 2018. THE LARGEST OF THE COMMERCIAL SECTORS IN 2018 WILL BE DISTRIBUTION AND SERVICES (**\$4.1 BILLION**), FOLLOWED BY MANUFACTURING AND RESOURCES (**\$3.2 BILLION**) WITH BALANCED SPENDING ACROSS THE PROCESS MANUFACTURING, CONSTRUCTION, AND DISCRETE MANUFACTURING INDUSTRIES.



BENEFITS FOR THE ENTERPRISE

THERE IS AN ALSO UNTAPPED POOL OF TALENT IN DEVELOPING COUNTRIES THAT THE ENTERPRISE CAN NOW CAPITALIZE ON THANKS TO THESE TECHNOLOGIES. VOLVO AND LKDF INTERACT USE VR AND AR APPS TO TRANSCEND LANGUAGE BARRIERS AND LIMITED LOCAL RESOURCES IN ORDER TO TRAIN ETHIOPIAN YOUTHS IN POOR, RURAL AREAS, WITH A FOCUS ON DIESEL ENGINE MAINTENANCE THROUGH VR GAMIFICATION.

These organizations have adopted technologies which have a number of benefits for the enterprise. VR and AR can provide an alternative way to train employees in what otherwise may be dangerous or risky environments -- not only to the students themselves but to physical machinery.

These technologies can also reduce the cost of providing equipment to practice on, as well as replace. Students can test their skills without the worry of causing damage to expensive and complex equipment, which makes VR and AR particularly valuable in industrial settings.

SOURCE:

<https://venturebeat.com/2017/11/09/3-ways-ar-will-revolutionize-manufacturing-and-logistics/>



AUGMENTED REALITY IS A NATURAL FIT FOR ON-THE-SPOT TRAINING AS IT TAKES THE EDUCATION OUT OF THE CLASSROOM AND INTO THE FIELD WHERE IT CAN BE APPLIED TO ACTUAL WORK SITUATIONS. WORKERS CAN SEE THE CORRECT METHODS TO PERFORM A TASK AS THEY DO IT THEMSELVES, AND THESE INSTRUCTIONS CAN BE RECALLED AS REQUIRED, ALL WITHOUT A HUMAN TRAINER IN THE LOOP."

**ROB CRASCO,
VIRTUAL AND
AUGMENTED
REALITY**

GARTNER: ESTIMATES IN THE NEXT 10 YEARS HEAD-WORN DEVICES (HMDS) - ACROSS ALL FORM FACTORS- WILL GENERATE **\$72 BILLION** IN DEVICE REVENUE ALONE.

HOW AR AND VR ARE BRINGING WORKPLACE TRAINING INTO THE MODERN AGE

THE FUTURE

REAL-LIFE SITUATIONS AND TRAINING SCENARIOS CAN BE CREATED NOT ONLY TO MAKE LEARNING MORE INTERACTIVE BUT ALSO TO BRING STUDENTS AND TRAINEES TOGETHER, NO MATTER WHERE THE LOCATION -- IMPROVING THE EFFICIENCY OF TRAINING AND POTENTIALLY REDUCING THE TIME REQUIRED TO TRAIN STAFF UP TO STANDARD.

Given “real world” experience, students may also retain information better as they are able to learn from their mistakes and understand how machinery works with an infinite amount of chances to learn, practice, and correct.

VR and AR are already proving value in training applications to the enterprise and in the future have the potential to drive innovation further.

These technologies can assist businesses in launching new training schemes and refining them without the need to invest in slower, more traditional classes, and may one day be used as a tool to select job candidates by placing them in real-world scenarios, as well as provide on-the-spot training to continually improve their skills.

Better staff, better training, and a more efficient use of training resources and time can only help the enterprise when it comes to the bottom line.



AR & VR World



PLAY YOUR PART IN MAKING AR & VR A REALITY

Develop an AR & VR blueprint in planning, design, implementation, scalability and sustainability

GET 20% OFF WITH DISCOUNT CODE TRAIN20

BOOK NOW

TechX365

**TECHX365 THE OFFICIAL
ARVR, TECHXLR8 AND
LONDON TECH WEEK
ONLINE COMMUNITY**



Keep up-to-date with all the breaking
technology news from London and abroad.

REGISTER

RECEIVE THE LATEST AND EXCLUSIVE:



in-depth
report



videos



webinars



podcasts



more

**AR & VR
World**

 **#ARVRWorld**

VISIT SITE

