SAMVAD

S.P MANDALI'S weschool Welingkar Education

VIRTUAL REALITY & AUGMENTED REALITY

Featured article:

EFFECT OF VR & AR ON PROFITS OF TECH COMPANIES

WeChat:

MR. KSHITIJ VEDAK
DIRECTOR, IMMERSITY INFOTECH PVT. LTD.

ABOUT US

OUR VISION

"To nurture thought leaders and practitioners through inventive education"

CORE VALUES

Breakthrough Thinking and Breakthrough Execution

Result Oriented, Process Driven Work Ethic

We Link and Care

Passion

"*The illiterate of this century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.*" - Alvin Toffler

At WeSchool, we are deeply inspired by these words of this great American writer and futurist. Undoubtedly, being convinced of the need for a radical change in management education, we decided to tread the path that leads to corporate revolution.

Emerging unarticulated needs and realities need a new approach both in terms of thought as well as action. Cross disciplinary learning, discovering, scrutinizing, prototyping, learning to create and destroy-the mind's eye needs to be nurtured and differently so.

We school has chosen the 'design thinking' approach towards management education. All our efforts and manifestations as a result stem from the integration of design thinking into management education. We dream to create an environment conducive to experiential learning.

MESSAGE FROM THE DIRECTOR

Prof. Dr. Uday Salunkhe
Group Director

Dear Readers,

It gives me great pride to introduce SAMVAD's edition every month. Our SAMVAD team's efforts seem to be paying off and our readers seem to be hooked onto our magazine. At WeSchool we try to acquire as much knowledge as we can and we try and share it with everyone.

As we begin a new journey with 2017, I sincerely hope that SAMVAD will reach new heights with the unmatched enthusiasm and talent of the entire team.

Here at WeSchool, we believe in the concept of AAA: Acquire Apply and Assimilate. The knowledge that you have acquired over the last couple of months will be applied somewhere down the line. When you carry out a process repeatedly it becomes ingrained in you and eventually tends to come out effortlessly. This is when you have really assimilated all the knowledge that you have gathered.

At WeSchool, we aspire to be the best and to be unique, and we expect nothing but the extraordinary from all those who join our college. From the point of view of our magazine, we look forward to having more readers and having more contributions from our new readers.

SAMVAD is a platform to share and acquire knowledge and develop ourselves into integrative managers. It is our earnest desire to disseminate our knowledge and experience with not only WeSchool students, but also the society at large.

Wishing everyone a very happy and prosperous new year.

Prof. Dr. Uday Salunkhe,
Group Director

FROM THE EDITOR'S DESK

Dear Readers,

Welcome to the August Issue of SAMVAD for the year 2017!

SAMVAD is a platform for "***Inspiring Futuristic Ideas***" and we constantly strive to provide articles that are thought provoking and that add value to your management education.

With courses pertaining to all spheres of management at WeSchool, we too aspire to represent every industry by bringing you different themes every month. We have an audacious goal of becoming the most coveted business magazine for B-school students across the country. To help this dream become a reality we invite articles from all spheres of management giving a holistic view and bridge the gap between industry veterans and students through our WeChat section.

The response to SAMVAD has been overwhelming and the support and appreciation that we have received has truly encouraged and motivated us to work towards bringing out a better magazine every month. We bring to you the August Issue of SAMVAD which revolves around the theme of "**Virtual Reality and Augmented Reality**".

We hope you read, share and grow with us!

Hope you have a great time reading SAMVAD!

Best Wishes,

Team SAMVAD.

"The difficulty lies not so much in developing new ideas as in escaping old ones."

John Maynard Keynes.

ACKNOWLEDGEMENT

Team SAMVAD would like to extend their heartfelt thanks to certain key members of the WeSchool family for their special efforts towards the making of this magazine.

We deeply appreciate the constant motivation & encouragement that our beloved **Group Director Prof. Dr. Uday Salunkhe** has always extended. His focus on the core values of Passion, We Link & Care, Result Oriented Process Driven Work Ethic and Breakthrough Thinking has formed the foundation of all the activities that we undertake as students of this esteemed institute.

We deeply appreciate the help and support given to us by;

Prof. Deepa Dixit
Associate Dean-Global Alliance Assistant
Head - Marketing Communication

Prof. Jalpa Thakker
Professor

Prof. Rutu Gujarathi
Senior Manager- Alumni Relations

Prof. Priya Godbole
Manager- Organisation Interface
Multi-Stakeholder Engagement

Ms. Yashodhara Katkar
General Manager – Liaison

Ms. Shilpa Kadam
Assistant Manager
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Thank You

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WECHAT

Mr Kshitij Vedak

Director- Immersity Infotech Pvt Ltd

Team Samvad

Could you please share your journey?

I am second generation entrepreneur coming from a family of real estate developers. About a year and a half back, I teamed up with my co-founders, Nitin Kulkarni, an Art Director and Preshit Joshi, a Video Editor, who have been in their respective industry for over a decade. When we realised that there is a big revolution happening in the new age technologies such as Virtual Reality, Augmented Reality, Mixed Reality and HOLO-graphic Technology, we teamed up to use our skillsets and know-how to provide enhanced experiences for the new generations to come, leading to the birth of Immersity Infotech Pvt Ltd. We got off to a flying start by creating a virtual reality roller coaster ride on an actual roller coaster by which you are introduced to a different world while sitting on an actual roller coaster. At the same time, we have also been creating experiences for skill development, entertainment, education, real estate and medical training.

How do VR/AR change customer experience in future?

VR/AR has a huge potential for creating brand awareness and focused customer engagement. Three major components drive the success of these technologies:

- Emotional Resonance
- Information Accessibility
- Hypothetical Experience

By virtue of emotional resonance, the user gets into a whole different feel of the

product which businesses showcase. It allows you to add up as much information as you may like while the customer may pick up information relevant to him, at his own discretion. Whereas, hypothetical experience is created when the customer starts thinking if I use this product in this fashion this is how I will benefit. At the end of the day, the customer makes informed decisions leading to decreased post-purchase dissonance. For example, the Marriott Hotels used VR in a great fashion. They allowed customers to experience their properties in Fiji or Bahamas, while they stayed in their other properties. Because it is an immersive experience, you can always come back and say, I was there, and then you start yearning to go there. This means a huge potential for businesses to create an interest and desire, leading to action.

How can VR help Healthcare and Education?

About 20 years back we started using overhead projectors due to the inception of the computer age wherein people started showcasing their ideas using PPTs and computer graphics. Prior to this we had transparent sheets. Similarly, technology has now upgraded to Virtual Reality, giving an even more immersive experience. A

teacher can today, explain a complex topic in the simplest form using VR. To give you an idea of this, "Can you remember the first lesson you took when you were in school?", 90% of the people don't. But if I were to ask," which was the first movie you watched?", the whole situation may present itself before you. It could have been a cartoon film, or a movie with one of your favourite film star. You would probably remember the popcorn and the seat you sat in. Visual impact makes the difference because visual memories are stronger. This can help you gauge how VR/AR in education will make an impact. As a company, we have already started marketing these placards which you can use to teach using a smartphone. In playschools the concepts of animal, their walking, habitat and sounds can be projected in a fun-loving way.

For VR in Healthcare, sky is the limit. Virtual Reality may be used wherever there is a requirement of high skillset or critical procedures, especially when you are dealing with human lives. When a young budding doctor has to be taught a surgery, a VR simulation can teach him the whole procedure or enhance the skills, mitigating the risk of losing a patient. We are developing a training product for Emergency medical services where we use different scenarios such as convulsions, choking etc. Half of the time, because people have not been used to ER situation, people panic. If you have already done this in VR then implementing it is much easier. Recruits can actually polish these skills before joining and implementing on actual patients.

How will AR affect the Retail and Real Estate sectors?

AR is already used in the real estate sector as people have started making brochures for clients, the animated walk-throughs have changed to virtual reality walk-throughs. If you are marketing a property which has got an awesome view from the 50th floor, overlooking the Worli sea-face. As a developer, you definitely want to sell that dream. Virtual Reality comes can generate that virtual scenario without actually having to build up to 50th floor.

Retail has a huge potential but it has a major problem in delivering to the customer in the face of current competition. Let's take an example of a particular product like a smartphone with almost 10-20 new features. Some of the biggest hindrances are attrition & untrained retail staff who cannot explain these features and in turn close the sale. Despite being the best product, it doesn't get converted. Here, Augmented Reality can act as a salesperson where you can control the flow of information via AR. We have been canvassing a product that uses augmented reality in a fashion show. The designer's motive is to showcase the outfits, but the people end up looking at the models, because naturally they are beautiful: the Focus is Lost. The main idea should be engaging the audience to convert into Sales. We have pitched augmented reality fashion shows, where we have tabs in hand and the moment the model walks the ramp, you just point the device at the dress and you can get all the information, like the cloth used, sizes available, price and delivery period. It is an immersive Augmented Catalogue.

What advice you like to give to the students who aspire to pursue a career in this field?

VR, AR, mixed reality and Artificial intelligence, which is also catching up, can be blended well and is a sunrise industry. Be ready for a long ride in these fields. At the same time, I also believe that in the next five years, Digital India which is currently at a nascent stage will turn into a teenager. The moment it turns into a teenager, things will start running helter-skelter. That means you have immense opportunities to apply these concepts to sales, training and a plethora of other industries. I suggest to management students who want to get into VR/AR to get their foundation strong by doing a crash course and understanding what the technology can actually entail and deliver by breaking the limitations the industry faces.

Basically, Artificial Intelligence coupled with VR/AR is the future, so my advice to the management students is to understand the limitations in terms of hardware, software, human skills available in the industry and excel by solving these problems. You should be able to connect the dots between the customer's expectations and your ability to deliver. Be ready for the market to explode with opportunities but let me forewarn you it isn't as easy as it appears. IT WILL NOT REMAIN A VIRTUAL DREAM BUT IT WILL BE A SUCCESFUL REALITY

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OPERATIONS

IMPACT OF VIRTUAL REALITY AND AUGMENTED REALITY ON OPERATIONS

Nikhil Thakur & Ankur Subhade, PGDM 2017-19, Welingkar Institute of Management, Mumbai

We have been hearing almost every day these terms Virtual reality and Augmented reality but very few know the real meaning, so let us first try to understand the meaning of Virtual Reality(VR) and Augmented Reality(AR).

Virtual reality is creating a virtual 3D space in which a user is immersed in this environment and can interact with this environment. This immersion can be real life like experience and user is able to look around and interact with the environment. There are many virtual reality games and which only require VR headsets and your mobile phones.

Virtual Reality:

Image (1): VRScout – Google image

Augmented reality is sometimes confused with virtual reality. AR in simple terms can be stated as layering of virtual objects on real life environment. Google glass and the very famous Pokémon GO developed by Niantic are examples of Augmented Reality.

Augmented Reality:

Google glass -Google image

Disruption is the new normal is what we hear every day and disruption with VR and AR is going to be the future. As we have established our understanding of VR and AR let us drill deep to understand its impact on operations and how they are or will be used in industries.

Any production or service operations setup in an industry has three common phases namely:

Design Development:

VR and AR help to refine and optimize the design at an early stage. Concepts and options can be reviewed, adjusted and modified quickly. Digital models can also be virtually tested, analyzed and simulated with tools. This results in rapid iterative design cycles and ultimately greater products and services. VR and AR make animated simulations which will help us visualize how products will be used over time. It is an invaluable understanding to know how products will be

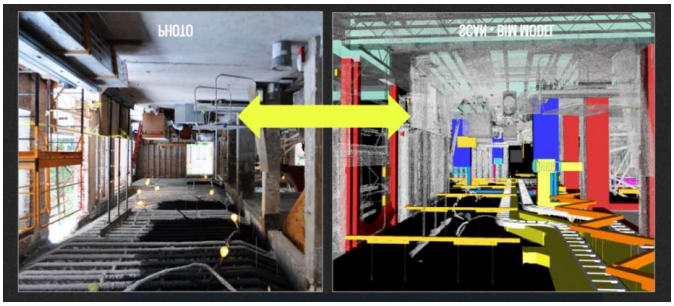
used when factors like ergonomics, access, look and feel come into play. It is easier to understand a life-like simulation, whereas 2D engineering drawings and more complex 3D models or blue print layouts can be difficult to interpret if you do not possess technical background.

Production Setup:

Industries can plan their production and assembly setup completely in a virtual world. This in turn will help speed up commissioning and operation of the setup. They can use VR and AR typically to:

- Setup and optimize the location and flow of production lines.
- Position automation lines, robots, production cells and importantly people so as to maximize productivity and efficiency and reduce inventory helping us achieve lean manufacturing goal.
- The staff can be trained to operate and handle virtual tools and later can work in live environment.
- For technicians and other operatives' ideal ergonomics factors in terms of reach, leaning, twisting and bending can be checked.
- Plan around support pillars, lighting, heating and air conditioning and factor in access for maintenance, cleaning and line-side delivery.
- When enhancing existing factory environment, it can be scanned and laid out with new virtual production lines and equipment.

Scanned actual environment over laid with new equipment:



https://blog.econocom.com/en/blog/supplychain-how-augmented-reality-can-boost-quality-controls/

Defect fix and enhancement:

No service or product can be fault proof always as there are many external factors which may be missed or newly created and we may get defect in live environment. This can be handled efficiently using VR and AR as we can simulate it virtually and have experts from any corner of the globe find solution. This will surely help us be agile in terms of our response time and ultimately achieve our SLA time frame.

Virtual and Augmented Reality in Industry: Some applications and advantages of VR and AR in different industries are explained below-

Healthcare and Medicine:

Pharma companies can provide more innovative drug information. With the help of VR and AR, patients can see how the drug works in 3D in front of their eyes instead of just reading long descriptions on the bottle. Lab workers could monitor their experiments with augmented reality equipment. In factories, workers could start working without hands on trainings as the device would tell them what to do, and how to do it.

Doctors and even patients are aware of the fact that when it comes to surgery, precision is of prime importance. Now, technology can help surgeons become more efficient at surgeries. Whether they are conducting a minimally invasive procedure or locating a tumor in liver, AR healthcare apps can help save lives and treat patients seamlessly.

Military Operations:

Military operations are one of the most crucial operation's where there is direct impact on many lives where VR and AR technologies can play a vital role. One of the technologies used is where a transparent display is positioned directly in the fighter pilot's view. Data typically displayed to the pilot includes altitude, airspeed and the horizon line in addition to other critical data. The Head-Mounted Display (HMD) is also used by ground troops. Critical data such as enemy location can be presented to the soldier within their line of

sight. This technology is also used for simulations for training purposes.

Security:

Organizations are increasingly grouping their skills and capabilities and investing into security operations centers (SOCs). Its need for a central geographic site presents a number of technical, logistical and operational challenges. Thus, using VR as a platform for security staff allows them to take their SOC anywhere, releasing them from the fixed physical infrastructure and geographic location of a traditional center. Taking action from the virtual world by sending server-side requests from the VR user interface to limit services, run scans and develop systemwide alerts creates an end-to-end story for users where monitoring and control exist in the same virtual space.

The applications of VR and AR in operations domain are not only limited to above mentioned examples. Manufacturing is an enormous industry and it does not shy away from using newer efficient technologies. It uses VR and AR in its operations to the fullest to reduce the "TIMWOOD" waste and achieve the final aim of "Lean" manufacturing.

Study shows that VR and AR are here to stay and will be a serious business in next 5 years and if one is not active in VR and AR already then, they should start right away. As in this tech driven VUCA world slow and steady will not win the race but being smart and ability to embrace change is the key to winning.

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FINANCE

EFFECT OF VR AND AR ON PROFITS OF TECH COMPANIES

Shivam Deshpande & Varenya Vikrant, PGDM Business Analytics 2017-19, Welingkar Institute of Management, Mumbai.

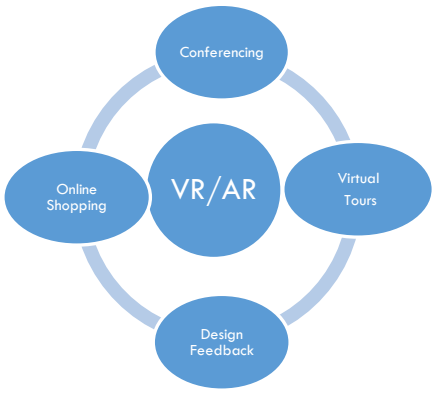
You want a glimpse of future and feel the power of VR and AR? $ 600 million in just 3 months earned by the most popular US mobile game ever- Pokémon go which still makes $2 million per day. It's the fastest game ever to reach the value of $ 600 million in such a short span. Apparently, it managed to engage people and give them just a trailer of what future has in box for all of us.

Of course, before Pokémon Go, Oculus rift and Google cardboard struggled to find a place in the market as it was early for them to be in the market where awareness about the potentiality of AR/VR was an issue. But the world is changing dynamically and the tech companies are realizing the potential of virtual and augmented reality in changing the perception towards our very own world.

Bishu Nayak from FixStream Inc. said that he sees AR and VR becoming tool for every aspect of the business including prototyping, developing new features, influencing sales, enhancing retail store experience, marketing and advertisement, etc. AR can also compliment artificial intelligence to mature predictive analysis models and drive more automation. Danny Boice from Trustify believes that VR will shake up the business world in a way greater than what internet did in the 90's.

2016 began with an estimation of $ 4.4 billion revenue from the AR/VR market, where $ 3.8 billion was expected from VR and $ 0.6 billion from AR. But VR disappointed with the total revenue of $ 2.7 billion which was thankfully balanced out by Pokémon Go helping AR with $ 3.9 billion. The results have definitely reshaped the way market would grow in the coming years. The Virtual and Augmented reality would be a market of staggering sum of $ 150 billion together by 2020. According to the data published by Manatt Digital Media and originally sourced from Digi-Capital, $120 billion is likely to come from sales of augmented reality and $30 billion from virtual reality. If the VR/AR sees rapid adoption, it may become a $ 182 billion market. The sectors that will generate revenue for VR and AR will be gaming, film and TV, health care, educational and social. The distribution of hardware needed will also contribute via headsets, graphics cards and video capture technologies. Quality is also crucial in both building and retaining a huge customer base. Also, the software platform will play an important role in revenue contribution.

Immersion is a key factor in deciding the future of AR/VR and studying the impact of it on the profits of tech companies. Oculus and others have realized this and are working on delivering mesmerising and magical immersive experiences. VR immersion will revolutionize the film industry in coming years. Some of the processes to be affected because of AR/VR are given in the figure.



Processes affected by AR/VR

Around 60 to 70 percent of those surveyed said that they see the benefits of using the technology in their daily lives. There are around 685 VR and 737 AR start-ups that realize the potential and are pushing up the products and technology forward. While people are realizing the potential, developers are busy developing technology. 200,000 developers have registered to build games for Oculus Rift which will reflect in the account books of the tech companies in the near future. The 685 VR start-ups are valued at $ 4.5 million whereas 737 AR start-ups are valued at $ 4.7 million. The number of VR users could reach 17 million worldwide which would boost the revenues of these tech start-ups.

The biggest impact will be on the online shopping industry especially where the items to be bought require a fit such as furniture, fashion, real estate, while booking hotel rooms, renting cars, travel and adventure, etc. where customers have a clear idea of what they are buying. 63% believe that such experience will benefit both customer and the companies.

AR and VR will revolutionize the world of product building where the designers will have a clear idea of how the product will look like and how will it function in the early stages of development. It will also help in receiving faster feedbacks and making the changes quicker. This technique will reduce the production costs to a large extent and will help in profits.

Several tech start-ups emerging around AR/VR are receiving investments worth more than $ 100 million. Magic Leap has received $ 592 million from investors like Google. Jaunt VR has also received a round of $ 65 million from investors like Disney as well as 20th Century Fox and venture capitalists like Andresen Horowitz, Greylock Partners and others. The money is flowing in irrespective of the conditions of current hardware platforms available in the market.

The future is definitely beautiful for all the tech companies betting on the Virtual and Augmented reality. Their hard work in providing an experience to the customers through AR/VR will pay off soon. All the money invested by the huge tech organizations and investors will serve the purpose and the world will be a better place than it was yesterday.

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MARKETING

CHALLENGES FACED BY AUGMENTED AND VIRTUAL REALITY

Rakeshgowda R & MD Shahrukh, ***PGDABM 2017-19, C.C.S National Institute of Agricultur Marketing, Jaipur***

Yes! technological advancement had landed us into augmented and virtual world. I believe that VR, AR, AI, self-driving cars are inevitable and eventually aid people in becoming smart and relevant. Though they are inevitable but face a greater challenge in the process of implementation. There are still several challenges that lie ahead for the mass adoption of AR and VR and some strategies that need to be overcome are discussed below.

VR Needs to Be Cheaper

VR right now comes at too high of a price point for many. A lot of big investors like Google and Facebook have pumped billions into the VR market, allowing for some very powerful hardware like the Oculus Rift to hit the market in the last year. The issue is that consumers weren't quite ready for it all. “Price and content are absolutely critical for understanding whether our industry is going to get to maturity,”

VR Needs Killer Content

But even if you can overcome the price factor, VR still faces a very big hurdle in the form of a lack of must-have content. "The number one challenge right now is that compelling content – content that's habit forming from a consumer perspective," Soqui said. While there are plenty of well-received games for VR as well as emerging use cases on the enterprise side, VR has still yet to find its killer app – that use case or program that will make VR essential for consumers and business.

VR Needs to be Mobile

If you've tried any VR experience you've probably noticed one very cumbersome aspect – there's a lot of cords. That's something that may be fine for more static experiences (i.e. a sporting event where you just sit and look around), but if you want users to move around, especially in an enterprise setting, where multiple users may be sharing a design space and walking around, having a bunch of cords streaming around a room becomes annoying at best and a safety hazard at worst.

“The problem with the cord is if a user is effectively locked into a box, restricted by the cord, it essentially defeats the purpose of having them immersed in a supposed 360-degree environment,” Unity's Riccitiello said, emphasizing that freedom of movement is key for VR moving forward. “This industry won't work if you're tethered to a PC. It won't work unless you can experience things the way you do in real life.”

VR Needs 5G Speed

VR and AR technologies, on all ends from collaborative enterprise to consumer entertainment, are already demanding more than ever from our computer hardware and soon they'll be doing it for our data communication speeds as well.

VR Needs Cybersecurity

As with any connected technology, it's only a matter of time before cyber security issues are

raised. While there has yet to be any sort of high-profile hack or cyber-attack conducted via VR, but anyone who follows cyber security should consider it only a matter of time given how little attention is being paid to the intersection of VR and cyber security right now.

Developing augmented reality (AR) applications has historically required a number of technical trade-offs related to tracking. One approach is to rely on computer vision which provides very accurate tracking, but can be brittle, and limits the generality of the application. Another is to rely on sensor-based tracking which enables widespread use, but at the cost of generally poor tracking performance.

A new approach, Indirect AR enables perfect alignment of virtual content in a much greater number of application scenarios. To achieve this improved performance, replace the live camera view through AR with a previously captured panoramic image. By doing this there is improve in the perceived quality of the tracking while still maintaining a similar overall experience but with some limitations related to the panorama. Evaluating these boundary conditions on both a performance and experiential basis through two user studies. The result of these studies indicates that users preferred Indirect AR over traditional AR in most conditions, and when conditions do degrade to the point the experience changes, Indirect AR can still be a very useful tool in many outdoor applications.

Worldwide revenues for virtual & augmented reality is predicted to approach up to 14$ billion in 2017 & it could explode up to 143 $ billion by 2020. Some of the companies invested in virtual and augmented reality are Rothenberg Ventures, Facebook, Intel, Y combinators, Tec stars.

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HUMAN RESOURCES

Augmented Reality on the Facet of HR

Darshika Desai, PGDM Retail 2016-18, Welingkar Institute of Management, Mumbai

"Augmented Reality", a new star in the world of technology is lionized today by every person, in every field. It is the art of seeing the world like never before, immersed from science of 0 and 1. World is becoming virtually connected through social media, online platforms and mobile applications. Constant changes happen in this world which turns luxury of yesterday into a routine of today. This has roped in availability of information and communication at your fingertips.

Technology never stops recreating itself. Virtual world is getting better day by day going beyond our expectations. That is where Augmented Reality (AR) has taken birth. AR can be defined as a system where elements of the virtual world (pictures, sound, video, GPS data, etc) are augmented (or supplemented) in the real physical world by using the medium of AR devices or apps.

Multiple facets of AR:

Place your device wherever desired, and there you have all its information, whether graphically or contextually. This is like a sophisticated version of QR codes. You have all the required data by just directing your AR device wherever you want to.

The beauty of AR and its extremely intelligent interface has attracted the millennials and its adoption is growing in every field. Entertainment, gaming and retailing businesses are at the forefront in adopting this technology to give a never-like-before experience to its customers. However other sectors like manufacturing and IT are also having their pie of the AR cake. Not only customer experience, but back-end workforce can also be improved by the use of this technology. It helps the employees to work more effectively with its interactive and time saving attributes. Therefore, it has caught the eyes of HR in the organizations. Human Resource executives are always interested in building effective systems to acquire, retain and engage the employees of their organization. Today, they see immense opportunity in bringing their organization closer and improve workforce management through VR and AR technologies. Although AR is a new baby in India, the global AR market is poised to grow at a CAGR of 96.5% by the year 2019 and according to the analyst house Gartner, it will become an important workplace tool. Thus, there is an abundant opportunity for Augmented Reality in the HR filed.

AR Software designed for HR in India:

HCM Konnect (a mobile software solution) conceptualized and designed by Hexaware Technologies and powered by the Wikitude SDK, is the first augmented reality application in the HCM (Human Capital Management) world based on the realms of contextualization. It offers a comprehensive platform for engaging workforce by providing contextual insights. Through this software technology, the HR Mangers and the Business Heads can augment any HR point from their HCM system of record. Following are some ways that makes an HR Manager or a Leader's work easy by using this software:

- Searching for colleague's office or department where there is a large number of workforce.

- Connect with employees having specific skills just by a quick scan around your location.
- Real-time access to contextual information.

The following picture will give you an idea how multiple datum related to employees can be accessed just by a simple scan.

Point of interests that can be augmented in HR:
a) Employees – Augmenting Employee information including: Employee Availability, Photograph, Contact details, Job profile, where the employee is currently located within the premises and his Manager Details and contacts if the employee is not available.

b) Designations / Positions – Augmenting Position information including: Position holder's Availability, Contact details, Job profile, where the Position holder is currently located within the premise and the Position Holder's Manager details and contacts if he is not available.

c) Departments – Department details, Department Head details, his availability, Department turn over details, Departments training calendar, overtime, leave of absence, etc.

d) Locations – Location details, Departments / Units in location, Head count, Location head details, his availability etc.

e) Onboarding / Hires – Augmenting Employees information including his availability, Job profile, manager details and where exactly he is located.

f) Separations / exits – Augments Employees information including his availability, Job profile, manager details and where exactly he is located.

g) Competency – Augments Employees competency and proficiency details which further helps to identify training need gaps.

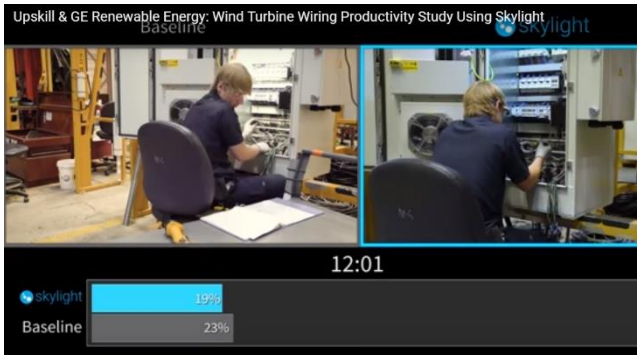
Some companies around the globe have started providing training to their workers through AR which gives them interactive and effective learning experience.

BMW developed AR training for their service engineers:

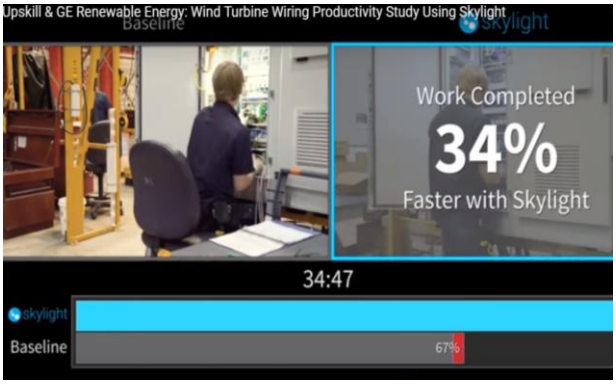
"Upskill", the leader in enterprise software for augmented reality (AR) devices, announced a successful pilot at GE Aviation using the company's "Skylight" platform on Glass Enterprise Edition. Its experiment is as follows:

Left: Employee referring a paper manual for the proceesing of work

Right: Employee using AR technology for the same work



Comparative Result: Work is completed faster with the use of AR



Future aspects of AR

Recruitment: Augmented and virtual reality can help potential candidates make more informed decisions prior to accepting a new role. In this context, virtual reality technology can be used for showing a day in the life of an employee at your organization and experiencing a tour of the company offices. Facilitating this can benefit the human resource department by increasing employee retention rates and decreasing employee turnover levels.

Health and Safety: In terms of health and safety, augmented reality means that employers can directly recreate the office environment, while also simulating the ways in which mischances, including fire, can occur. By providing direct training to employees through augmented. reality apps, businesses can provide training specifically tailored to their organization, equipping employees with the knowledge to deal with such situations should they occur.

In a nut shell, use of AR in HR is a boon to the organizations if adopted and practiced quickly, for we know that technological agility is the key nature of a “Learning Organization”. It is not much cost-intensive once implemented in the organization. Furthermore, the American Society for Training and Development has found that investment in employee training enhances a company’s financial performance, and undoubtedly, AR strives to improve the training experience at an altogether different level.

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GENERAL MANAGEMENT

Virtual Reality and Augmented Reality

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What is Augmented reality? What is Virtual reality? Are they possible to achieve? Some of the questions which were raised in the late 60s when the first AR device was born called the Sword of Damocles, created by Ivan Sutherland at Harvard University. The contraption basically superimposed a geometric grid over the user's view of a room. It was huge, unwieldy and impractical beyond the experiment but showed that despite being the early days of computer sciences, AR could be done. This led to an extensive research in the 90s but particularly focusing in the field of military and space programs.

It wasn't until the release of an iPhone which had a great set of combinations of hardware and software to be called as a true smartphone marked a great step in mobile industries, also paved the path to making AR and VR practically possible for consumers. Ralph Osterhout, CEO, and founder of the Osterhout Design Group (ODG) has been in the business of AR since the early days and has seen it all in flux. He notes that Apple's iPhones really put AR on the map - mostly because the components were finally of the right quality.

VR is a computer-generated simulation or recreation of a real-life scenario or environment. It creates a separate world for a person to interact. AR blends digital components into the real world, where users can interact the real world simultaneously with the virtual world.

In 2014 when Google Glass was released, it revived the idea of AR and VR. Later Microsoft's HoloLens was released with further advancements which were a success. Although Google Glass could not gain much attention, yet it had opened the way to a new market scope. Other companies such as Meta, ODG, and Epson are refining their technologies. According to an article from the TechNode States,'Total VR investment in 2015 and 2016 reached $593 million USD.

Impact of AR & VR on Business

ENTERTAINMENT: AR & VR will greatly impact the businesses. The major sector that will be affected is the entertainment sector. Just imagine Ironman without J.A.R.V.I.S., the coolest partner any superhero can have. Movies like Minority reports, Guardians of the Galaxy, Avengers etc. all used AR features. They could create an unimaginable effect using this technology. VR can provide an awestruck experience to the people by making them experience the effects virtually making them completely involved in the movies.

EDUCATION: AR/VR can revolutionize the way education has been imparted. Use of AR/VR can help the student better understand the concepts in details. It can provide a live case scenario to expand student's knowledge. Google has announced the release of a virtual reality platform for classroom called Expeditions. This technology can take the students to the exact situation to make them understand practically. In

depth learning can be provided. And as the study suggests learning is faster and more efficient by experiencing and getting practically involved. Which is what it aims at.

RETAIL: e-commerce is one of the biggest market likely to be affected. AR/VR can provide virtual testing of the products eg. Testing of furniture, testing of clothes etc. Home Improvement Store LOWE'S has holo rooms in 6 stores that help customers to view their designs through Oculus device.

LIVE EVENTS: Watching live events from home through VR will make the user feel like he is physically present in it. It not only includes sporting events but live news coverage etc.

HEALTH: It can be used as a tool by doctors in medical procedure and day to day tasks. It can a; so help to treat phobias and in physical therapy and conduct virtual visits.

AUTOMOTIVE: Several Car companies have already started using VR to design cars eg. Ford Motors Co. Using VR, a prototype can be made and analyzed physically by sitting in the car, walking, even driving thus giving an overall idea about the car and customer satisfaction.

MILITARY DEFENCE: It could create a real war like scenario, helping armies to prepare for war, train in a particular scenario and even analyse the location of enemies.

SPACE PROGRAMMES: It could create the same scenario of any celestial body thus helping to understand that body in a better way. It will help astronauts to acquaint themselves to the conditions of the space which will to the success of the mission.

It will also impact other business such as Real estates, military, and engineering by providing a virtual tour of the buildings and providing virtual accessibility.

Importance of AR/VR in business growth

Better Training Techniques: AR/VR can provide better training techniques by providing real world experience while sitting in a room. It can also expand the reach to new areas and explore new possibilities thus increasing the efficiency. It is generally less expensive than providing training to individuals.

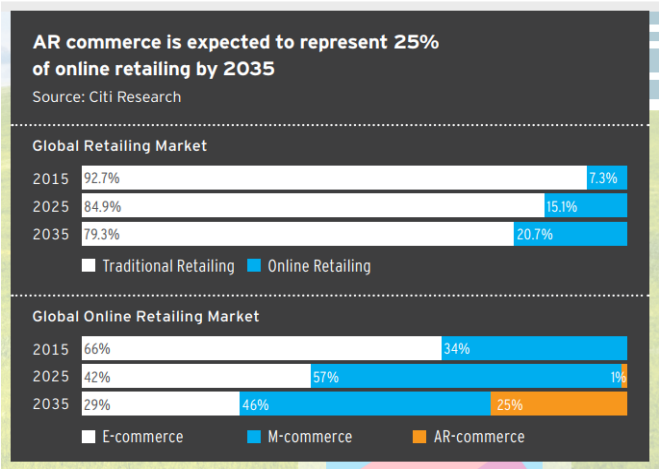
Improve the quality of meeting, conference or presentation: AR/VR can leave a great impact on the meeting. It can make the concept clearer and visually more accurate leaving an awestruck impact on the client.

Location Independent: Imagine you're on a vacation and your boss suddenly calls you to give a presentation. VR/AR can be a saviour. Just sit in a room, wear your glasses (as for today), open your laptop and go ahead with your presentation. It can make your presentation independent of location. You can give your presentation from anywhere around the world.

Revolutionary Ideas: It can help built new ideas by getting an in-depth review of any idea, product for example virtual testing of products can be a new platform that could revolutionize the e-commerce market.

Finance:

The market is expected to grow at a great pace.



Analysis:

It has been estimated that AR headsets sales are likely to reach $ 1.2 Billion worldwide in 2017.

In 2018 number of active VR users could reach 17 million worldwide.

By 2020 it has been estimated that AR market will reach approximately $ 120 billion annually, while VR may reach $30 Billion worldwide.

It has been estimated that by 2025 about 500 million VR headsets will be sold.

By 2025 mobile AR could become a primary market of $ 108 Billion, with AR having a dominant share of $ 83 Billion and VR having a share of $25 Billion.

The biggest challenge to achieve AR and VR is the availability of strong hardware. A person cannot wear huge glasses for an entire day. Also interacting with a computer framed in the glass is awkward. Apart from this creation of a content is a real challenge. Imagine an iPhone without apps, which will be nothing but a dumb piece of tech. Although work in this sector is going on yet it will take time to achieve the desired niche of apps. Cost is a major concern, a VR/AR device can cost above $1000 which is a huge price to pay. Other simple yet major problems include requirement of all day battery, internet connectivity. VR/AR has limited functionality. AR can be expanded but VR is limited to gamers only. These technologies require high-end computer systems with fast processors and GPU causing a great back drop. These are not compatible with old hardware hence customers will be made to buy the entire assembly. Short term health effects like headache, queasiness, blurred vision is seen but it is yet to research about long term effects. It is necessary to solve the VR mobility complexities related to lot of cords. That's something that may be fine for more static experiences but in an enterprise setting, where multiple users may be sharing a design space and walking around, having a bunch of cords round a room becomes annoying. Manufacturing of high resolution screens for AR will be key challenge to preserve this reality techniques. Training as well as services should be provided so that it becomes user friendly.

Security issues: (Cyber Attacks)

- Unreliable content: Variety of cyber threats like spoofing, sniffing, data manipulation and man-in-middle attacks can make the content unreliable even if the source is authentic.
- AR lacks a uniform or standardized security standard. Augmented Reality Mark-up Language (ARML) does not have comprehensive security controls and neither are they followed universally.
- AR portals depend on web browsers, but these browsers do not support AR functionality. To make AR options available, developers make tools which disable Web browser security filters, thereby making such browsers susceptible to security threats.

Current Key Players:

The major players who are currently working on development and improvement of this technology are: Google Apple Inc. Meta ADG Epson Microsoft HTC Sony Facebook Snapchat Samsung

Future for AR & VR

The current scenario and hype for these products have opened the door for this technology. Nintendo's Pokémon Go success is the best example to acceptance of people to AR. Apple's Tim Cook said that Apple is, "high on AR in long run…continues to invest a lot in this…AR can be huge". Even Google's Sunder Pichai, Facebook's Mark Zukerberg and Microsoft's Satya Nadella have appreciated the success of Pokémon Go as a major initial victory for AR &VR in the long run. With the current rate, it is expected that AR/VR market will have a huge impact on the consumer. Keeping this in view Facebook has bought Oculus for $400 million in cash and $1.6 million even before Oculus has released its product. Around 2,00,000 developers have registered to build games for oculus rift. Big companies such as Apple Inc., Microsoft, Samsung etc. are investing heavily.

Conclusion

As the spotlight is on virtual reality and augmented reality, it will generate great employment opportunities in the near future. As of now, it is the only time that will tell the future of this technology and how will it impact the lives of the people. So, AR&VR will enrich and enhance our daily lives with full of new world possibilities.

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NEWS CORNER

Team SAMVAD

SENSICS LAUNCHES HIGH RESOLUTION, WASHABLE VR SETS FOR THEME PARKS & ARCADES

Razer's OSVR initiative which produced the HDK headset, Sensic launched a VR set for public venues such as theme parks and arcades.

The move is set to be a pathbreaking one as these commercial sets differ largely from their consumer counterparts such as Oculus Rift and HTC Vive. Major upgradations may be seen in two areas: Higher Resolution (70% increase)- dual 1440×1600@90 Hz LCD displays and Hygienic by introducing a machine-washable, hypoallergenic face mask that physically separates from the display. This inexpensive strap can be set aside after each guest is done and sanitized for later use. The public VR headset is also said to work with "hundreds of peripherals including wide-area tracking systems." *Image courtesy: Sensics*

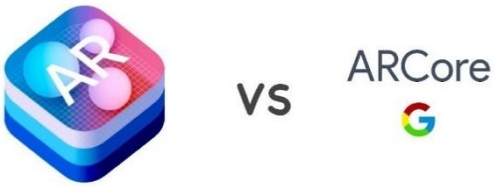
BIOFLIGHT VR- CHANGING MEDICAL DIAGNOSIS AND TRAINING

A Los Angeles based start-up, Bioflight VR has started creating educational VR experiences. Started with a view to help doctors utilize the volumetric information captured in MRIs, CAT scans, and ultrasounds to improve upon medical diagnosis from 2D slices of data, the start-up created time-lapse experiences showing the long-term impacts of sodium consumption and smoking in videos meant for doctors to show patients to inspire behaviour modification. However, soon they created interactive medical training for students to experience and learn intense emergency room scenarios. The

technology also allows assessment based on performance and competency. The co-founder Rik Shorten considers these technologies as stepping stones to adoption of more advanced and higher-end applications of medical diagnosis and distributed telemedicine. *Image courtesy: Bioflight VR*

APPLE'S ARKIT VS GOOGLE'S ARCORE

Google launched its ARCore as an answer to Apple's ARKit, which is available to all the IPhones from 6s onwards. Google on the other hand, has released for Android but available only on Pixel and Samsung S8. While Apple may lead the way due to its large user base, control over hardware and software and the much-anticipated launch of IPhone 8 and IOS 11 on its 10th anniversary that is set to increase IPhone users, Google with its estimated 100 million android devices will ramp up quickly. Developers have started creating apps on these platforms related to communication, collaboration, learning and search.



CALL FOR ARTICLES

We invite articles for the September 2017 Issue of SAMVAD.

The Theme for the next month: September 2017 - "**Grooming**"

The articles can be from Finance, Marketing, Human Resources, Operations or General Management domains.

You may also refer to sub-themes on Dare 2 Compete.

Submission Guidelines:

- Word limit: 1000 words or a maximum of 4 pages with relevant images.
- Cover page should include your name, institute name, course details & contact no.
- The references for the images used in the article should be mentioned clearly and explicitly below the images.
- Send in your article in .doc or .docx format, Font size: 12, Font: Constantia, Line spacing: 1.05' to **samvad.we@gmail.com. Deadline for submission of articles: 25th September, 2017**
- Please name your file as: <Your Name>_<title>_<section name e.g. Marketing/Finance>
- Subject line: <Your Name>_<Course>_<Year>_<Institute Name>
- Ensure that there is no plagiarism and all references are clearly mentioned.
- Clearly provide source credit for any images used in the article.
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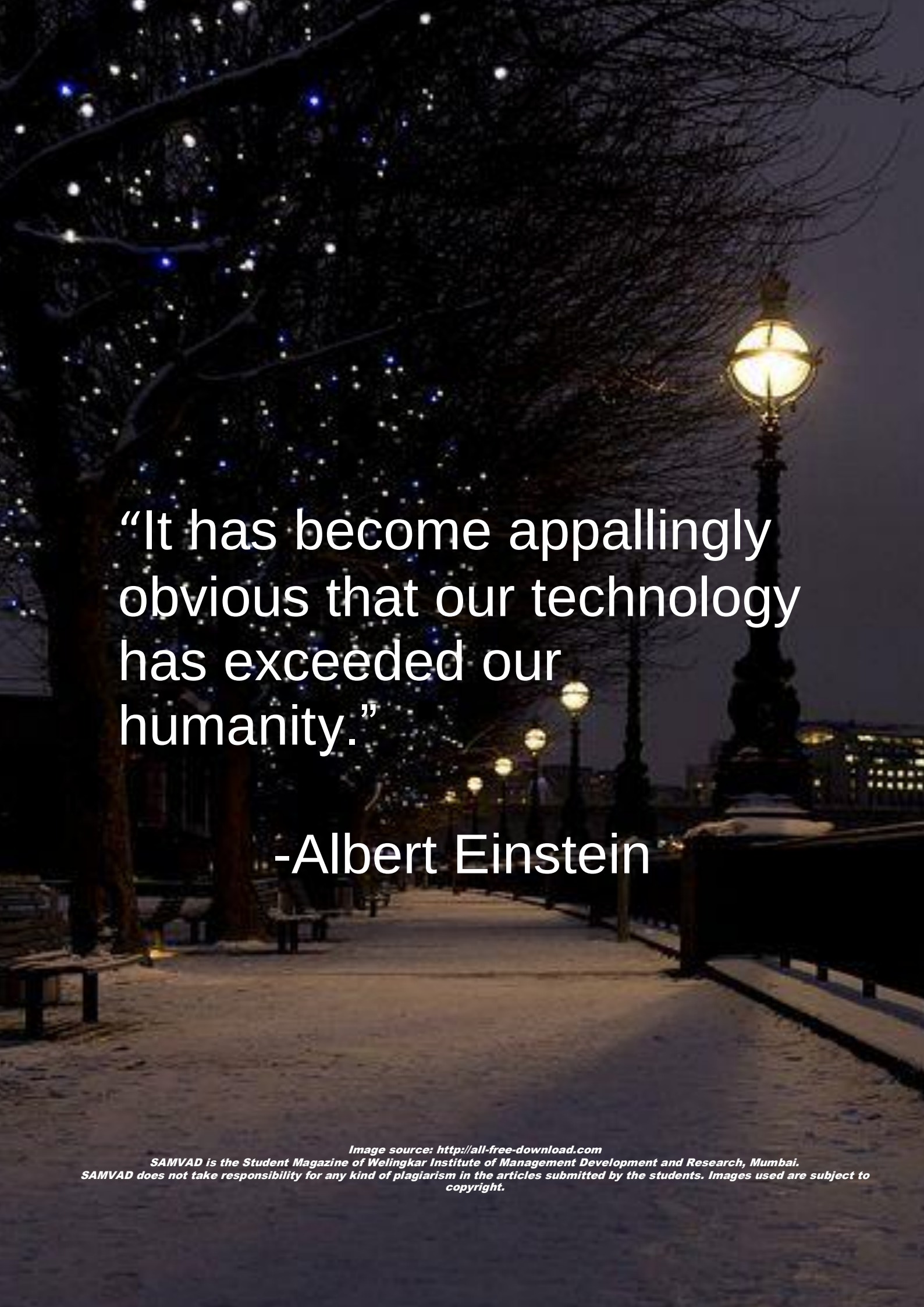

“It has become appallingly obvious that our technology has exceeded our humanity.”

-Albert Einstein

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