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College Engineering, Technology & Research, Bareilly

E-NEWS LETTER

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Latest Updates in World

Oculus Rift

Oculus Rift is a lineup of virtual reality headsets developed and manufactured by Oculus VR, a division of Facebook Inc., released on March 28, 2016

In 2012 Oculus initiated a Kickstarter campaign to fund the Rift's development, after being founded as an independent company two months prior. The project proved successful, raising almost US\$2.5 million from around 10,000 contributors. Then in March 2014, Oculus was purchased by Facebook for \$2 billion.

The Rift went through various pre-production models since the Kickstarter campaign, around five of which were demonstrated to the public before reaching its commercial release. Two of these models were shipped to backers, labelled as development kits; the DK1 in mid 2013 and DK2 in mid-2014, intended to provide developers with a platform to develop content in time for the Rift's release. However, both were also purchased by many enthusiasts who wished to get an early preview of the technology. The Rift saw its commercial release in March 2016 with the Rift CV1, which was discontinued in March 2019 with the release of its successor, the Oculus Rift S



Through Meant to be Seen (MTBS)'s virtual reality and 3D discussion forums, Palmer Luckey, the founder of Oculus and longtime MTBS discussion forum moderator, developed the idea of creating a new head-mounted display that was both more effective than what was then on the market, and inexpensive for gamers.

The first rough prototype was hacked together in 2011 by Palmer Luckey (then 18 years old) in his parents' garage in Long Beach, California. Coincidentally, John Carmack had been doing his own research and happened upon Luckey's developments as a fellow member of MTBS. After sampling an early prototype, Carmack favored Luckey's approach and just before the 2012 Electronic Entertainment Expo, Id Software announced that their future updated version of *Doom 3*, *BFG Edition*, would be compatible with headmounted display units.

In June 2012, during the E3 convention, Carmack introduced a duct taped head-mounted display based on Luckey's Oculus Rift prototype, which ran Carmack's own software. The unit featured a high speed IMU and a 5.6-inch (14 cm) LCD, visible via dual lenses, that were positioned over the eyes to provide a 90 degrees horizontal and 110 degrees vertical stereoscopic 3D perspective.

Development Kit 1



Rear view and control box

Two months after being formed as a company, Palmer's Oculus VR launched

a Kickstarter crowdfunding campaign on August 1 of 2012 for their virtual reality headset, named the Rift. The main purpose of the Kickstarter was to get an Oculus Rift prototype—now referred to as DK1 (Development Kit 1)—into the hands of developers to begin integration of the device into their games. The DK1 was given as a reward to backers who pledged \$300 or more on Kickstarter, and was later sold publicly for \$300 on their website. These kits sold at a rate of 4–5 per minute for the first day, before slowing down throughout the week

The Rift DK1 was released on March 29, 2013, and uses a 7-inch (18 cm) screen with a significantly lower pixel switching time than the original prototype, reducing latency and motion blur when turning one's head quickly. The pixel fill is also better, reducing the screen door effect and making individual pixels less noticeable. The LCD is brighter and the color depth is 24 bits per pixel.

The 7-inch screen also makes the stereoscopic 3D no longer 100% overlapping, the left eye seeing extra area to the left and the right eye seeing extra area to the right, in

Initial prototypes

The field of view (FOV) is more than 90 degrees horizontal (110 degrees diagonal), which is more than double the FOV of previous VR devices from other companies, and is the primary strength of the device. The resolution is 1280×800 (16:10 aspect ratio), which leads to an effective of 640×800 per eye (4:5 aspect ratio). However, since the device does not feature a 100% overlap between the eyes, the combined horizontal resolution is effectively greater than 640. The image for each eye is shown in the panel as a barrel distorted image that is then corrected by pincushion effect created by lenses in the headset, generating a spherical-mapped image for each eye.

HD and Crystal Cove prototypes

In June 2013, a prototype of the Rift that used a 1080p LCD panel was shown at Electronic Entertainment Expo. This step forwards to twice the number of pixels as DK1 significantly reduced the screen door effect and made objects in the virtual world more clear, especially at a distance. The poor resolution had been the main criticism of the DK1.

This HD prototype is the only prototype of the Rift shown to the public which did not turn into a publicly available developer kit.

In January 2014, an updated prototype codenamed "Crystal Cove" was unveiled at Consumer Electronics Show, which used a special low-persistence of vision OLED display as well as a new motion tracking system that utilized an external camera to track infrared dots located on the headset. The new motion tracking system would allow the system to detect actions such as leaning or crouching, which was claimed to help alleviate sickness experienced by users when the software did not respond to these actions.

Crescent Bay prototype

In September 2014, Oculus once again presented an updated version of the Rift, codenamed Crescent Bay. This version has a greater resolution than the DK2, a lower weight, built-in audio, and 360-degree tracking thanks to the presence of tracking LEDs in the back of the headset. Oculus has also licensed software library RealSpace3D.

Consumer version

Oculus VR announced on May 6, 2015, that the consumer version of the Rift would ship in the first quarter of 2016, and on March 25, 2016 the first batch of headsets began shipping to consumers.



Oculus Rift, sometimes referred to as "Consumer Version 1" or "CV1."

The consumer version is an improved version of the Crescent Bay Prototype, featuring per-eye displays with a 1080×1200 resolution, running at 90 Hz, 360-degree positional tracking, integrated audio, a vastly increased positional tracking volume, and a heavy focus on consumer ergonomics and aesthetics.

In March 2019, during the announcement of the Rift S, it was said that the Rift S would replace the original Rift. However, Oculus VR stated that they planned to support the CV1 with software updates for "the foreseeable future.

Software

Runtime

The Oculus Rift runtime officially supports Microsoft Windows, macOS, and GNU/Linux. The installation package includes components such as the headset driver (which includes Oculus Display driver and controller drivers), Positional Tracking Sensor driver, Oculus Service, and Oculus Home Application. The runtime service implements a number of processing techniques intended to minimize latency and in addition improve the smoothness of VR applications under weaker hardware. These include direct mode, asynchronous timewarp, and asynchronous spacewarp.

Oculus Home

When the user puts on the Rift and no other content is being outputted to the headset, they are presented with *Oculus Home*. This is the default environment of the Rift, which presents them with a loft environment and a floating menu, allowing the user to launch VR applications they own, see if their friends are using the Rift, and purchase virtual reality content on the *Oculus Home* store from the headset.

An update to the base software, called Core 2.0, introduced a more interactive default environment, allowing the user to navigate and customize it with imported 3D models.

Oculus Store

Oculus maintains a market place for applications for the headsets. The listings are curated to only allow applications that run smoothly on the recommended hardware. Most listings are also rated on their comfort level based on their likelihood of causing motion sickness or number of jump scares. However, developers do not have to use *Oculus Home* to distribute content for the Rift, this being entirely optional. The Store can be accessed from

the VR-based Oculus Home, from its desktop app, or on the Oculus web site under the section "Experiences."

Features

Listings on the registry include:

• Age and content ratingsComfort rating: "comfortable", "moderate", "intense" (assigned by Oculus)

• User ratings and reviews: user can give a rating on a 5-star scale and write a review

SDK

Content for the Rift is developed using the Oculus PC SDK, a free proprietary SDK available for Microsoft Windows (OSX and Linux support is planned for the future). This is a feature complete SDK which handles for the developer the various aspects of making virtual reality content, such as the optical distortion and advanced rendering techniques.

The Oculus SDK is directly integrated with the popular game engines Unity 5, Unreal Engine 4, and <u>Cryengine</u>. This allows for developers already familiar with these engines to create VR content with little to no VR-specific code.

The Rift is an open platform, and thus developers do not need any approval or verification to develop, distribute, or sell content for it, and do not have to pay any licensing fees. The SDK, however, cannot be modified or reused for other purposes or hardware without permission.

Content developed for the Development Kit 2 using SDK version 0.8 or above are compatible with the Rift; however, content developed for the Development Kit 1 or with older versions of the SDK will have to be recompiled using the latest SDK version to be compatible.

On 21 December 2015, Oculus announced the release of their finalized Rift 1.0 SDK, combined with the start of shipping their final version of the Oculus Rift VR headset to developers.

At Oculus's 3rd annual conference (Oculus Connect 3), it announced the new technology, called "Asynchronous Spacewarp (ASW)". This technology allows the Rift to compensate for the dropped frames. According to Oculus, ASW reduces the minimum specs of a PC to run the Rift without any judder.

System Requirments

In May 2015, Oculus VR announced "recommended" hardware specifications for computers utilizing Oculus Rift, specifying a CPU equivalent to an Intel Core i5-4590, at least 8GB of RAM, at least an AMD Radeon R9 290 or Nvidia GeForce GTX 970 graphics card. an HDMI 1.3 output, three USB 3.0 ports, and one USB 2.0 port. Oculus VR stated that these requirements would remain in force for the life of the first consumer model. The company also stated that while upcoming discrete GPUs for laptops may be able to reach the required performance for Oculus Rift, systems that switch between integrated and discrete graphics may not handle output in a manner that supports the device. Oculus Rift only supports 64-bit versions of Microsoft Windows 7 SP1 or

later; Oculus VR stated that the device would initially support Windows only in order to focus on "delivering a high[-]quality consumer-level VR experience"; support for Linux and macOS will be developed in the future.

A hardware testing application is available, and Oculus VR has also certified and promoted specific models of prebuiltcomputers that meet these recommendations, from vendors such as Asus, Alienware and Dell Inc., as being "Oculus Ready".

On October 6, 2016, Oculus VR announced lessened hardware recommendations, now suggesting an Intel Core i3-6100 or AMD FX 4350 CPU, at least a GeForce GTX 960 or equivalent graphics card, two USB 3.0 ports and one USB 2.0 port, and Windows 8 or newer. The company stated that these lower requirements were enabled by the adoption of motion interpolation; on systems that cannot handle full 90 frames per second rendering, the drivers will allow software to render at 45 FPS instead, and generate frames based on differences between them to send to the headset to maintain its frame rate. Oculus promoted that these changes lowered the average hardware cost of a PC meeting these specifications to US\$500 and would also enable certain laptops to run Oculus Rift.

In June 2018, Oculus VR updated its recommended OS spec to Windows 10. While Windows 7 and Windows 8.1 users would still be able to access the standard Rift experience, newer features and apps might require an upgrade to Windows 10

Applications

Gaming

Oculus has stated that the Rift is primarily a gaming device and that their main content focus is gaming.

Existing games with a first-person or fixed-camera perspective can be ported to VR with some development effort. However, Oculus has stated that the best virtual reality experiences are those that are designed, from the beginning, for the Rift.

A number of AAA games have added Rift support (and can be played with the Development Kit 2), including *Project CARS*, *Elite: Dangerous*, *Euro Truck Simulator 2*, and *Dirt Rally*, as well as a number of indie games such as *AaAaAA*??? – *A Reckless Disregard for Gravity* and *Ether One*. Fans and hobbyists have also modded support for the Rift into several popular titles which allow for extensive low-level modding, including *Minecraft* and *Flight Simulator X*.

At the release event for the Rift in June 2015, Oculus announced 9 launch titles for the Rift, including *EVE: Valkyrie* by CCP and *Edge of Nowhere* by Insomniac Games. It also announced that it was working with other developers including *Final Fantasy* developer Square Enix, *Rock Band* developer Harmonix, and *The Order: 1886* developer Ready at Dawn.

In July 2015, Oculus revealed that it was fully funding more than 20 second party high production value games

made exclusively for the Rift, one of these being Insomniac's *Edge of Nowhere*.

In July 2017, Marvel announced in the Disney's D23 event that it will be bringing 12 superheroes of theirs to VR with an Oculus exclusive game called Powers United VR.

Non-gaming

Oculus is including *Oculus Cinema* as a free application, which allows the Rift to be used to view conventional movies and videos from inside a virtual cinema environment, giving the user the perception of viewing the content on a cinema-sized screen. *Oculus Cinema* will also have a networked mode, in which multiple users can watch the same video in the same virtual space, seeing each other as avatars and being able to interact and talk to one another while watching the video.

The Rift also offers the opportunity to view new types of media that are impossible to view on regular monitors; 360° 3D videos and 'virtual reality movies' (an entirely new medium).

Spherical videos (commonly called 360° videos) can be viewed simply by the user moving their head around, and the Rift opens up the possibility for stereoscopic spherical videos (commonly called 360° 3D videos). In September 2014, NextVR announced that they would be using a \$200,000 camera rig to produce 360° 3D content for the Rift, including short films, as well as live streaming live events such as sports or concerts in 360° 3D. In July 2015, Oculus announced a deal with Canadian film company Felix & Paul Studios to produce 360° 3D videos for the Rift.

The Rift also supports a new medium of entertainment experiences, which Oculus calls "virtual reality movies". Oculus has established Oculus Story Studio to develop this type of content for the Rift, a team which has multiple former employees from major VFX companies such as PIXAR and ILM. Oculus Story Studio showed off its first VR movie, *Lost*, at the 2015 Sundance Film Festival, gaining positive reviews from attendees.

Social

Oculus believes that social applications will be the most popular virtual reality experiences in the long term. A number of social applications for the Rift are in development, and it is expected that there will be significant competition in the sector.

In May 2015, AltspaceVR launched a public beta for DK2 owners to try out their social VR platform. AltspaceVR allows people to inhabit a shared virtual space with spatial voice communications, cast content from the Internet on virtual screens, and interact with objects (allowing activities such as playing chess or other board games). It also supports extra hardware like eye tracking and body tracking

In 2013, Philip Rosedale, the founder of Second Life, left Linden Lab to work on a new virtual world designed for the Rift, called *High Fidelity*.

Industrial and professional

As well as the consumer uses, the Rift has attracted significant interest from industry and professional spheres for productivity enhancement, visualization, and advertising.

A number of architecture firms have been experimenting with using the Rift for visualization and design. With the right software, the Rift allows architects to see exactly what their building will look like and get an understanding of the scale that is impossible on a traditional monitor.^[77]

In early 2015, Audi started using Rift Developer Kit 2's at dealerships to help customers configure the car they are interested in, as well as to see what driving a race in the car would be like.^{[78][79]}

The Norwegian Army has been experimenting with the Rift Development Kit 2 to allow for a greater situational awareness of armoured vehicle drivers and commanders.^[80]

The use of Oculus Rift on an innovative virtual operator station assists the control of a teleoperated military mobile robot Tactical Robotic System (TAROS). Human operators can have intuitive control and mediate 3D view from stereovision cameras.^[81]

Oculus Medium is a Painting Experience for Oculus Rift.

Source: 1:<u>https://www.oculus.com/rift/#oui-csl-rift-games=robo-recall</u> 2: https://www.oculus.com/?locale=en_US

Latest Updates in SRMS CET&R

XIX Convocation 2k20

For fresh graduates of SRMS Engineering Institutions, 8 February will be a day to remember. SRMS CET, Bareilly, SRMS CETR, Bareilly, and SRMS CET, Unnao will host their XIX Convocation Day in a glittering ceremony on 8th February 2020 at Shri Ram Centennial Auditorium, SRMS CET Bareilly. Preparations for the event are in full swing as the organizers want to make the Convocation Day memorable for the young graduates. Leading dignitaries from industry and academia will be present on the day to inspire and encourage students taking early steps into the professional world. This year 2015 Batch students and scholars were awarded by their degree.

Best performer of 2015 batch

Achievments	Name of students	Branch
Gold Medal	Anchita Agrawal	CS
Sliver Medal	Kritika Rawat	CS
Bronze Medal	Prachi Singh	EE
Sports person of batch	Manisha Pandey	CS
All Rounder of batch	Leena Sondhi	EE

<u>Zonal</u>

<u>Art/Cultural Fest</u>

AKTU organized an arts and cultural fest 2020 which was held on 10 & 11 February 2020 at SRMSCET, Bareilly. Total 65 students from SRMSCET&R actively participated in the zonal fest in the various competitions namely poster presentation, t-shirt painting, rangoli, collage making, mehandi , face painting ,fashion choreography battle of bands ,group dance, light vocal solo, group song, mime, skit. There were a total 21 events in the zonals fest out of which the participants representing SRMSCET&R Bareilly participated and won total 12 positions successfully. As per the norms of AKTU, Lucknow the winner of every event at the zonal level qualifies for the state level which was held at IET, Lucknow 28 February and 29 February, following the same notion the winners of skit and mimicry will be representing SRMS CET&R at the state level.

The positions holders of the events in the zonals fest are listed as follows:-

S.No	Event Name	Position Secured
1	Skit	First Position
2	Mimicry	First Position
3	Group Dance	Second Position
4	T-Shirt Painting	Second Position
5	Poster Making	Second Position
6	Light Vocal Solo	Third Position
7	Indian Vocal Solo	Third Position
8	Face Painting	Third Position
9	Group Song	Third Position
10	Battle of Band	Third Position
11	Mime	Third Position

Annual Fest

ZEST - THE CULTURAL FEST

"Live the change, explore yourself & bring out the best in you"

Zest, the annual college cultural and arts fest 2020 held on 14 & 15 February 2020 at SRMSCET, Bareilly total 52 students actively participated in the fest in the various competitions. There were a total 26 events in the fest out of which the participants representing SRMSCET&R Bareilly participated and won total 13 positions successfully. This college fest was organized by the efforts of the tyro club student under the guidance of various department heads of the SRMS Trust. With the thoughts and notations that ignite the fire within ourselves students of the college participated, enjoyed, won certain positions in the various competitions and above all learned the team spirit.

The positions holders of the events in the fest are listed as follows:-

S.No	Event Name	Position Secured
1	Movie Spoof	First Position
2	Rangoli	First Position
3	Multi Scene	Second Position
4	Street Play	Third Position
5	Fashion Show	Second Position(Girls), First Consolation (Boys)
6	Whistling	First Position
7	Western Solo	Third Position
8	Mehendika Competition	First Position, Third position

9	Indian Solo	Third Position
10	Story Recitation	Third Position

AAMOD THE SPORTS FEST

"Champions are made from something they have deep inside them A Desire, A Dream & A Vision"

Aamod, the annual college sports fest 2020 held on 14 & 15 February 2020 at SRMSCET, Bareilly total 40 students from SRMSCET&R actively participated in the fest in the various competitions. There were a total 16 events in the fest out of which the participants representing SRMSCET&R Bareilly participated and won total 6 positions successfully. This college fest was organized by the efforts of the tyro club student under the guidance of various department heads of the SRMS Trust. With the thoughts and notations that ignite the fire within ourselves students of the college participated, enjoyed, won certain positions in the various competitions and above all learned the team spirit. Some Glimpse of zest and aamod are

The positions holders of the events in the zonals fest are listed as follows:-

S.No	Event Name	Position Secured
1	Discuss Throw	First
2	200 Mtr Race	First
3	Volleyball	Second
4	Cricket	Second
5	Javelin	Third
5	Shotput	Third









Student Arena

Artificial Neural Networks (ANN)

"Artificial Neural Networks or ANN is an information processing paradigm that is inspired by the way the biological nervous system such as brain process information. It is composed of large number of highly interconnected processing elements(neurons) working in unison to solve a specific problem."



An artificial neural network is an interconnected group of nodes, inspired by a simplification of neurons in a brain. Here, each circular node represents an artificial neuron and an arrow represents a connection from the output of one artificial neuron to the input of another.

Artificial neural networks Because of their ability to reproduce and model nonlinear processes, Artificial neural networks have found applications in many disciplines. Application areas include system identification and control (vehicle control, trajectory prediction, process control, natural resource management), quantum chemistry, general game playing,¹ pattern recognition (radar systems, face identification, signal classification, 3D reconstruction, object recognition and more), sequence recognition (gesture, speech, handwritten and printed text recognition), medical diagnosis, finance (e.g. automated trading systems), data mining, visualization, machine translation, social network filtering¹ and e-mail spam filtering. ANNs have been used to diagnose cancers, including lung cancer, prostate cancer, colorectal cancer , and to distinguish highly invasive cancer cell lines from less invasive lines using only cell shape information.

ANNs began as an attempt to exploit the architecture of the human brain to perform tasks that conventional algorithms had little success with. They soon reoriented towards improving empirical results, mostly abandoning attempts to remain

true to their biological precursors. Neurons are connected to each other in various patterns, to allow the output of some neurons to become the input of others. The network forms a directed, weighted graph.

An artificial neural network consists of a collection of simulated neurons. Each neuron is a node which is connected to other nodes via links that correspond to biological axon-synapse-dendrite connections. Each link has a weight, which determines the strength of one node's influence on another.

Source: https://towardsdatascience.com/applied-deep-learning-part-1-artificial-neural-networks-d7834f67a4f6

Mohd.Anas Cs-17

Quantum Computing



Quantum Computing, still an emerging technology, is one of the most fascinating things researchers, organizations, and governments have been working on in this century so far. The race toward building the first fully-functional, fully-working quantum computer (also called supercomputer) is on. With its impressive computational power quantum computers will most like be a cloud service in the near future rather than on-premise machines. IBM is already offering cloud-based quantum computing services.

Quantum computers promise to perform certain tasks much faster than ordinary (classical) computers. In essence, a quantum computer carefully orchestrates quantum effects (superposition, entanglement and interference) to explore a huge computational space and ultimately converge on a solution, or solutions, to a problem. If the numbers of quantum bits (qubits) and operations reach even modest levels, carrying out the same task on a state-of-the-art supercomputer becomes intractable on any reasonable timescale — a regime termed quantum computational supremacy1. However, reaching this

regime requires a robust quantum processor, because each additional imperfect operation incessantly chips away at overall performance. It has therefore been questioned whether a sufficiently large quantum computer could ever be controlled in practice. But now, in a paper in *Nature*, Arute *et al.*2 report quantum supremacy using a 53-qubit processor.

Arute and colleagues chose a task that is related to random-number generation: namely, sampling the output of a pseudorandom quantum circuit. This task is implemented by a sequence of operational cycles, each of which applies operations called gates to every qubit in an *n*-qubit processor. These operations include randomly selected single-qubit gates and prescribed two-qubit gates. The output is then determined by measuring each qubit.

The resulting strings of 0s and 1s are not uniformly distributed over all 2^n possibilities. Instead, they have a preferential, circuit-dependent structure — with certain strings being much more likely than others because of quantum entanglement and quantum interference. Repeating the experiment and sampling a sufficiently large number of these solutions results in a distribution of likely outcomes. Simulating this probability distribution on a classical computer using even today's leading algorithms becomes exponentially more challenging as the number of qubits and operational cycles is increased.

In their experiment, Arute *et al.* used a quantum processor dubbed Sycamore. This processor comprises 53 individually controllable qubits, 86 couplers (links between qubits) that are used to turn nearest-neighbour two-qubit interactions on or off, and a scheme to measure all of the qubits simultaneously. In addition, the authors used 277 digital-to-analog converter devices to control the processor.

Source: https://www.ibm.com/quantum-computing/learn/what-is-quantum-computing/

Vasudha Varshney

CS -17

Faculty Arena

Robotic process automation

Robotic process automation (or RPA) is a form of business process automation technology based on metaphorical software robots (bots) or artificial intelligence (AI) workers In traditional workflow automation tools, a software developer produces a list of actions to automate a task and interface to the back-end system using internal application programming interfaces (APIs) or dedicated scripting language. In contrast, RPA systems develop the action list by watching the user perform that task in the application's graphical user interface (GUI), and then perform the automation by repeating those tasks directly in the GUI. This can lower the barrier to use of automation in products that might not otherwise feature APIs for this purpose.

RPA tools have strong technical similarities to graphical user interface testing tools. These tools also automate interactions with the GUI, and often do so by repeating a set of demonstration actions performed by a user. RPA tools differ from such systems that allow data to be handled in and between multiple applications, for instance, receiving email containing an invoice, extracting the data, and then typing that into a bookkeeping system.

Deployment

The hosting of RPA services also aligns with the metaphor of a software robot, with each robotic instance having its own virtual workstation, much like a human worker. The robot uses keyboard and mouse controls to take actions and execute automations. Normally all of these actions take place in a virtual environment and not on screen; the robot does not need a physical screen to operate, rather it interprets the screen display electronically. The scalability of modern solutions based on architectures such as these owes much to the advent of virtualization technology, without which the scalability of large deployments would be limited by available capacity to manage physical hardware and by the associated costs. The implementation of RPA in business enterprises has shown dramatic cost savings when compared to traditional non-RPA solutions.

There are however several risks with RPA. Criticism include risks of stifling innovation and creating a more complex maintenance environment of existing software that now needs to consider the use of graphical user interfaces in a way they weren't intended to be used.

Impact and Employment

According to *Harvard Business Review*, most operations groups adopting RPA have promised their employees that automation would not result in layoffs.^[5] Instead, workers have been redeployed to do more interesting work. One academic study highlighted that knowledge workers did not feel threatened by automation: they embraced it and viewed the robots as team-mates.^[6] The same study highlighted that, rather than resulting in a lower "headcount", the technology was deployed in such a way as to achieve more work and greater productivity with the same number of people.

Conversely, however, some analysts proffer that RPA represents a threat to the business process outsourcing (BPO) industry.^[7] The thesis behind this notion is that RPA will enable enterprises to "repatriate" processes from offshore locations into local data centers, with the benefit of this new technology. The effect, if true, will be to create high-value jobs for skilled process designers in onshore locations (and within the associated supply chain of IT hardware, data center management, etc.) but to decrease the available opportunity to low skilled workers offshore. On the other hand, this discussion appears to be healthy ground for debate as another academic study was at pains to counter the so-called "myth" that RPA will bring back many jobs from offshore

Robotic process automation 2.0

Robotic process automation 2.0, often referred to as "unassisted RPA," is the next generation of RPA related technologies. Technological advancements and improvements around artificial intelligence technologies are making it easier for businesses to take advantage of the benefits of RPA without dedicating a large budget for development work

While unassisted RPA has a number of benefits, it is not without drawbacks. Utilizing unassisted RPA, a process can be run on a computer without needing input from a user, freeing up that user to do other work. However, in order to be effective, very clear rules need to be established in order for the processes to run smoothly.

Source:https://www.softomotive.com/processrobotdemo/?utm_source=google&utm_medium=cpc&utm_campaign=158581 1966&adgroupid=60572333715&utm_content=403869096715&utm_term=rpa&matchtype=p&gclid=EAIaIQobChMI_9Tt 4tWA6AIVhwsrCh1FsQ8jEAAYASAAEgKXGPD_BwE

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