

Significant Performance Enhancement by Disruptive Technology

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Abstract : *The time span of any new technology has become very short. With changes in the requirements of the customers using the technology the designers are left with limited choices and the time to market needs to be reduced significantly. Disruptive technology displaces the existing technology and shakes the market or a ground breaking point to create an entirely new industry. Disruptive innovation helps the industry to create a new market and eventually disrupts an existing market and value network. In this paper, we are going to discuss about the recent trends in disruptive technology and how these technologies helped the customers to be equipped with different type of applications. The trend has changed in 2019, now the new technologies are displacing the existing ones very fast.*

Index Terms - Disruptive Technology

I. INTRODUCTION

A disruptive technology is an innovation that uproots an established technology, or a revolutionary product or service that spawns a new industry. Disruptive technologies are sometimes described as being simultaneously destructive and creative because they make old products — and sometimes even entire industries — obsolete, creating new ones in their place [source: [Christensen](#), [Howard](#)]. Disruptive technologies have the power to change the way we work, live, think and behave. Throughout the centuries, humans have made tremendous leaps forward in the way we build, interact, and communicate with each other and the world. More recently, we've shifted self-execute industrialization to the age of information. We now have a seemingly unlimited amount of knowledge available at our fingertips. Technological advances are now accelerating faster than ever before. They're blurring the lines between the physical, digital, and biological domains.

Social Media, mobile, wearables, Internet of things, real time these are just some of the technologies that are disruptive markets. Change in how people communicate, connect and discover are carrying incredible implications for businesses and just about anything where people are involved. The real threat and opportunity in technology's disruption lies in the evolution of customer and employee behavior, values and expectations. This is a time of digital Darwinism- an era where technology and society are evolving faster than businesses can naturally adapt. This sets the stage for a new era of leadership, a new generation of business models, charging behind a mantra of "adapt or die". Rather than react to change and be disrupted by it, some forward looking companies are investing in digital transformation to adapt and outperform peers. Digital transformation the intentional efforts to adapt to this onslaught of disruptive technologies and how it is affecting customer and employee behavior. As technology becomes a permanent fixture in everyday life, organizations are forced to update legacy technology strategies and supporting methodologies to better reflect how the real world is evolving.

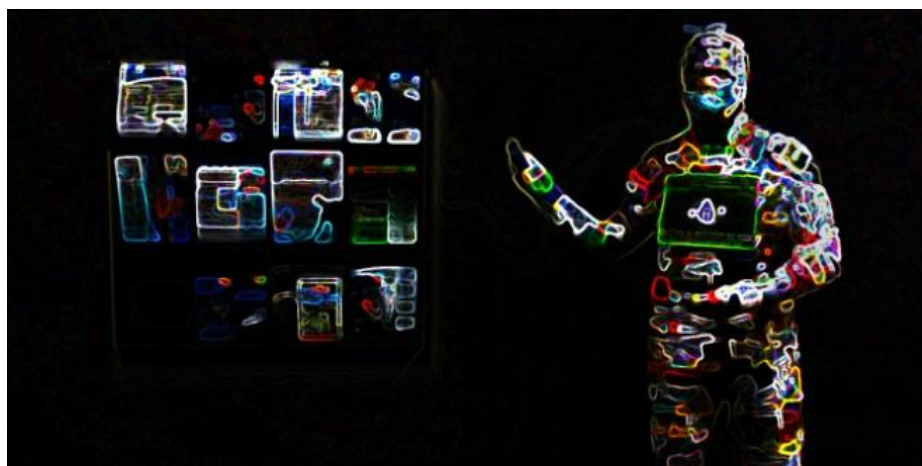


Fig 1 Disruptive technology changing business for good.

As technology continues to evolve, we can expect it to impact all aspects of our lives and society as a whole. It then begs us to ask the question "what does our future look like?" Below we take a look at the top five most disruptive technologies paving the way for the world of tomorrow.

II. TECHNOLOGY TRENDS OF FUTURE

2.1 VOICE

The future of technologies will remain incomplete without voice. The time when the relationship between the voice and the technology was only when we used to talk on the mobile phone, has gone long back. Even, the current trend of the users interaction with the devices and controlling electronic appliances with the help of voice and technology sitting at a far distance is also passing by. The existing technologies like Alexa and Siri have already acquainted us with the power of voice in controlling our everyday tasks ,but the applications are still limited. The future is all set for voiced based applications in the future trends of 2020.

With the help of Artificial intelligence and Machine Learning we will be able to control all the electronic devices that we have surrounded ourselves with in just a fraction of a second, this amazing combination of voice and technology will find a greater place in the users' day today activities.



Fig 2 Voice and technology

2.2 NLP

Natural Language processing is a sub field of Artificial intelligence that focuses on enabling computers to understand and process human languages, to make computers understand human language in a better way .Recent advances in Machine Learning have enabled computers to do quite a lot of useful things with natural language. Deep Learning has enabled us to write programs to perform things like language translation, semantic understanding, and text summarization. All of these add real -world value, making it easy for us to understand and perform computations on large blocks of text without the manual effort. There are few natural language processing problems which are addressed here text classification, language modeling, speech recognition, caption generation, machine translation, document summarization, question answering etc.

Text classification example is sentiment analysis where class labels represent the emotional tone of the source text such as "positive" or "negative". Language modeling is a key component of many deep learning natural language processing architectures. Alone, language models can be used for text or speech generation say for generating new articles. Speech recognition is the problem of understanding what was said say issuing commands to the radio while driving. Caption generation is the problem of generating contents of an image say describing a video. Machine translation is the problem of converting a source text from one language to another language say translating a text document from French to English. Document summarization is the task where a short description of a text document is created say creating an abstract for a document. Question answering is a problem where given a subject, such as a document of text, answer a specific question about the subject say answering questions about news articles.

2.3 Space Colonization

Presently, only a few highly trained and selected astronauts can go to space. Space colonization is where settlers could occupy gigantic aircrafts or other planets and moon. Space colonization is a good example of disruptive technology where lots of macro disruptive technologies will be invented as a result.

Space colonization also called space settlement or space habitation is the concept of permanent, autonomous self sufficient human habitation of locations outside earth. It is a major theme n science fiction, as well as a long term goal of various national space programs. Many people think of space colonies on the Moon and Mars, but others argue that the first colonies will be in orbit.

Several design groups at NASA and elsewhere have examined orbital colony feasibility. They have determined that there are ample quantities of the necessary materials on the Moon and near earth Asteroids, that solar energy is readily available in large quantities, and that no scientific breakthroughs are necessary. However, a great deal of engineering would be required.

To justify the colonization of space, supporters are given a variety of reasons, including survival of the human species., protection of earth's environment, access to additional natural resources and the spreading of life in the universe.



Fig 3 Space Colonization

2.4 Web 3.0

Web 3.0 refers to the next iteration of the internet. It will use technology to capitalise on interactivity, propelling the internet away from keywords and towards smarter search. Unlike current online experiences, Web 3.0 will use artificial intelligence to make search smarter. Currently, the results bought by search terms are most popular yet these result doesn't meet the needs of the user. Web 3.0 will be able to filter irrelevant information by applying filter to deliver a personal, specific set of rules. The internet of things also plays an important role in enabling Web 3.0 , the next generation of ubiquitous , always on search won't be possible without mass connectivity , this is what future is hoped to deliver using 5G and improved data storage solutions. Web 3.0 is also tied to spatial computing, omnipresent search will require different interfaces and methods of interaction such as voice and potentially even gestures. Web 3.0 has become all the more relevant in recent months due to the efforts of the block chain community.

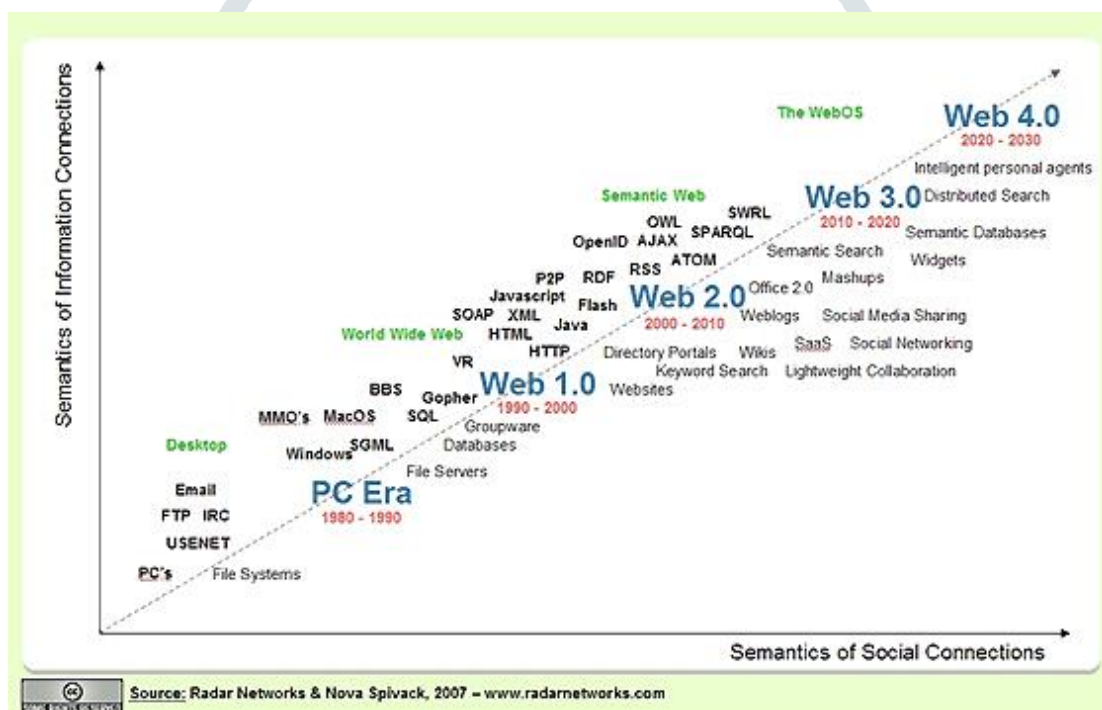


Fig 4 Statistics of Web 3.0

2.5 Spatial Computing

Spatial computing mixes technology into real world using augmented, mixed and virtual reality. AR adds a digital layer into real world, MR places interactive digital objects into real world, and VR puts the user in another world entirely. Gradually, alternate and mixed reality technology has moved away from gaming and into other industries providing training, data visualization and enabling collaborative work.

Spatial computing promises a purest form of "blending technology into the real world".

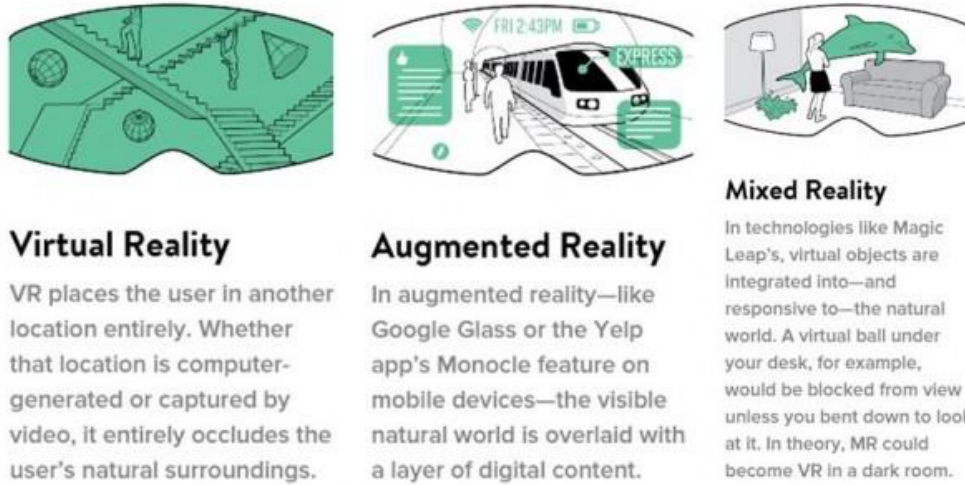


Fig 5 Distinction between VR, AR and MR

III. BENEFITS OF DISRUPTIVE TECHNOLOGY

In the coming decade, access to information will only increase, resulting in constant pressures to drive efficiencies, customize experiences, optimize decision making and built agile and resilient organizations capable of predicting and delivering value to myriad stakeholders.

The two major benefits of disruptive technology are leaders are challenged to create and adapt culture and people to take advantage of these benefits and organizations must create structures and processes which rapidly transfer these benefits to the market. Human machine integration, personalized technology, predictive logistics, connected infrastructure and autonomous decisions are few others to name the benefits of disruptive technology.

IV. CONCLUSION

As mentioned above successful organizations need to transform their approach to emerging technologies, recognizing that the integration of humans and machine requires investment in both.

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