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Digital Valley

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Editor's Point of View…

The world had undergone enormous changes over the past decade. We now live in a world where communication is paramount. It seems that everyone and everything is connected in some way.

For school students this has made things much more efficient. Research papers that used involve hours of laborious effort can now be researched and documented without over touching a card catalogue or a periodical index. Words of information are now available at the click of a mouse.

Questions that people pondered without any answer previously can now simply typed into any convenient search engine and answered almost immediately. There are countless sites filled with informative short articles all over the internet. Videos and music can now be seen on demand and news from across the world can be delivered in an instant.

There are some people who worry that the technological revolution and evolution we are experiencing today is moving fast. There seems be a loss of privacy in some respects and the specter of a Big Brother society looms larger that it has since 1984. Whether their fears are well founded or not will remain to be seen, but it is unlikely that people will ever willingly give up the almost instant connections to our wired world.

Flying in the face of these fears are individuals who share their worlds through their blogs. What used to be shared with only close friends is now put online for millions of people to see if they should happen upon the blogger's website. Individuals are learning to take advantage of this by using their well-placed blogs to sell products and services. The internet has allowed individuals an opportunity to step on to the same playing field as the big boys of business. With the right information and the ability to get it seen, anyone can now reach masses and share their thoughts, feelings and even sales pitches.

Business as well as individuals has come to rely on the internet as a source of advertising and actual sales. Entire business models have been constructed and thriving based solely on using Internet websites. It is rare today to find a traditional brick and mortar establishment that does not have some type of online presence. Any business that does not adapt and grow to keep up with the newest technology seriously risks being left behind in the wake of their competitors who choose to ride technology's leading edge.

Time will tell where this all will lead. We should make the most of the positive possibilities technology promises, but we should keep a careful watch on where we are going as human beings.

Regards,
Sohan Khemka

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COMPUTER SECURITY

Why Security?

Cyberspace (internet, work environment, intranet) is becoming a dangerous place for all organizations and individuals to protect their sensitive data or reputation. This is because of the numerous people and machines accessing it. It is important to mention that the recent studies have shown a big danger is coming from internal threats or from disappointed employees like the Edward Snowden case, another internal threat is that information material can be easy accessible over the intranet.

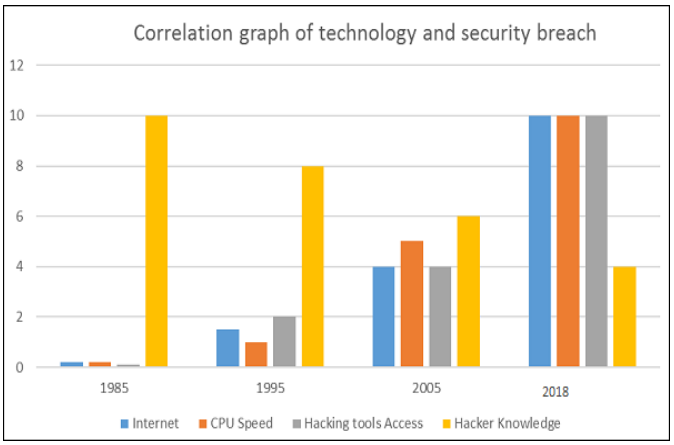
One important indicator is the IT skills of a person that wants to hack or to breach your security has decreased but the success rate of it has increased, this is because of three main factors –

- Hacking tools that can be found very easily by everyone just by googling and they are endless.
- Technology with the end-users has increased rapidly within these years, like internet bandwidth and computer processing speeds.
- Access to hacking information manuals.

All this can make even a school boy with the curiosity, a potential hacker for your organization.

Since locking down all networks is not an available option, the only response the security managers can give is to harden their networks, applications and operating systems to a reasonable level of safety, and conducting a business disaster recovery plan.

The following graph gives us a basic idea about how the fast the computer security trend is going, since 1985 to previous year 2018.



Potential Losses due to Security Attacks

The potential loses in this cyberspace are many even if you are using a single computer in your room. Here, I will be listing some examples that have a direct impact on you and on others –

- **Losing you data** – If your computer has been hacked or infected, there is a big chance that all your stored data might be taken by the attacker.

- **Bad usage of your computer resources** – this means that your network or computer can go in overload so you cannot access your genuine services or in a worst case scenario, it can be used by the hacker to attack another machine or network.

- **Reputation loss** – Just think if your Facebook account or business email has been owned by a social engineering attack and it sends fake information to your friends, business partners. You will need time to gain back your reputation.

- **Identity theft** – this is a case where your identity is stolen (photo, name surname, address, and credit card) and can be used for a crime like making false identity documents.

How Your Business Can Benefit From a Cyber Security Solution?

1. **It Can Protect Your Business** – The biggest advantage is that the best in IT security cyber security solutions can provide comprehensive digital protection to your business. This will allow your employees to surf the internet as and when they need, and ensure that they aren't at risk from potential threats.

2. **Protects Personal Info** – One of the most valuable commodities in the digital age is personal information. If a virus is able to obtain personal information regarding your employees or customers, they are quite capable of selling that information on, or even using it to steal their money.

3. **Allows Employees to Work Safely** – Without the best cyber security for your business, you and your employees are constantly at risk from a potential cyber-attack. If your system, or even individual computers, become infected than that can really hamper their productivity and even force you to replace computers.

4. **Protects Productivity** – Viruses can slow down personal computers to a crawl, and make working on them practically impossible. This can cause a lot of wasted time for your employees, and can often bring your entire business to a standstill.

5. **Stop Your Website from Going Down** – As a business, the chances are you're hosting your own website. If your system becomes infected, there is a very real chance that your website be forced to shut down. This means that not only will you be losing money from missed transactions, but you will also lose customer trust and certain viruses can often do lasting damage to a system.

6. **Denies Spyware** – Spyware is a form of cyber infection which is designed to spy on your computer actions, and relay that information back to the cyber-criminal. A great cyber security solution, such as firewall, can prevent this spyware from taking effect and ensure that your employees' actions remain private and confidential within your workplace.

7. **Prevents Adware** – Adware is a form of computer virus which fills your computer with advertisements and is fairly common. However, all these adverts can really have an impact on productivity and can often allow other viruses to enter your computer once you've accidentally clicked on them.

8. **Inspire Confidence in Your Customers! –** If you can prove that your business is effectively protected against all kinds of cyber threats, you can inspire trust in your customers and clients. They will then feel more confident when purchasing your products or using of your services.

So the benefits of computer security awareness are obvious as it directly minimizes the potential of you being hacked off your identity, your computer, your organization.

So if you are not taking the benefit of cyber security in your organization then you are at risk, do implement it now.

ROBOTICS

ROBOTICS

Robotics is a domain in artificial intelligence that deals with the study of creating intelligent and efficient robots.

What are Robots?

Robots are the artificial agents acting in real world environment.

Objective

Robots are aimed at manipulating the objects by perceiving, picking, moving, modifying the physical properties of object, destroying it, or to have an effect thereby freeing manpower from doing repetitive functions without getting bored, distracted, or exhausted.

What is Robotics?

Robotics is a branch of AI, which is composed of Electrical Engineering, Mechanical Engineering, and Computer Science for designing, construction, and application of robots.

Aspects of Robotics

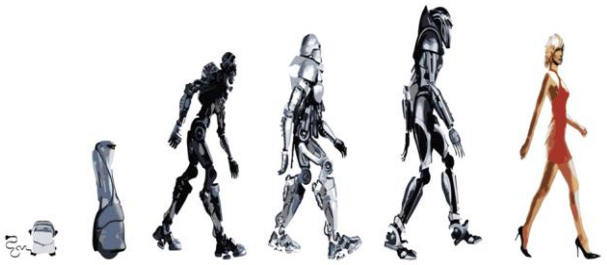
- The robots have mechanical construction, form, or shape designed to accomplish a particular task.
- They have electrical components which power and control the machinery.
- They contain some level of computer
- Program that determines what, when and how a robot does something.

Difference in Robot System and Other AI Program:

Here is the difference between the two –

AI Programs	Robots
They usually operate in computer-stimulated worlds.	They operate in real physical world
The input to an AI program is in symbols and rules.	Inputs to robots is analogue signal in the form of speech waveform or images
They need general purpose computers to operate on.	They need special hardware with sensors and effectors.

Applications of Robotics



The robotics has been instrumental in the various domains such as –

- **Industries** – Robots are used for handling material, cutting, welding, colour coating, drilling, polishing, etc.
- **Military** – Autonomous robots can reach inaccessible and hazardous zones during war. A robot named Daksh, developed by Defence Research and Development Organization (DRDO), is in function to destroy life-threatening objects safely.

- **Medicine** – the robots are capable of carrying out hundreds of clinical tests simultaneously, rehabilitating permanently disabled people, and performing complex surgeries such as brain tumours.
- **Exploration** – the robot rock climbers used for space exploration, underwater drones used for ocean exploration are to name a few.
- **Entertainment** – Disney's engineers have created hundreds of robots for movie making.

Advantages of Robots

- The people should know the importance of robots to help them to determine when to use and when to not use the robots, the robots can go to the planets, they can be used to explore the space, they can spy on the people in ways the people can't move and from views the humans can't reach.

- The robots can go far down into the unknown places where the humans would be crushed, they can give us the information that the humans can't get, they can work at places 24/7 without any salary and food, plus they don't get bored.

- The robots can perform the tasks faster than the humans and much more consistently and accurately, they become more common each and every day, the robotic pets can help the patients with depression and they keep them active.

- Most of robots are automatic so, they can move without any human interference, they can entertain us and they can help us in certain tasks, you can send them to dangerous environment such as the deep sea or the war-zones.

- You can use the robots to produce the products in the factories such as assembling the cars, they can also be used to build the parts for many products such as the plane parts, the car parts and the construction supplies.

- The robots do anything which we need to be precise & accurate, New jobs are created because the people have to fix and design the robots, The robots can work without sleep, So, they can work 24/7/365.

- The robots can endure the hostile environment of the interplanetary space, they are made that the planetary atmospheres do not affect their physical state and performance, they can replace the human beings in many areas of work, they can shoulder greater responsibilities and they can be programmed to manage themselves.

- The robots can be programmed to reach the Earth's nadir, they can be used to dig for the fuels, they can be used for mining purposes, they can be harnessed for exploring the depths of oceans, and they can be used to overcome the limitations that humans have.

- The robots can be used in carrying out the repetitive & time-consuming tasks efficiently, they are used to do dangerous tasks, they can adjust their parameters like their speed & time, and they can act quickly, unaffected by the factors that affect the humans.

- The robots do not require to sleep or take breaks, they are able to function without stopping, when employed to carry out dangerous tasks, the risk to the human health & safety is reduced, they can work long time without service or maintenance and they can be more productive than the people.

- The robots are designed to work in harsh environments like in space, without the air, underwater & in the fire, they can be used instead of the people when the human safety is a concern.

WEARABLE DEVICES

Wearable Devices

One of the most electrifying fields in consumer technology is 'wearable devices.' Indeed 2014 was dubbed as the 'Year of Wearable Technology;' and by 2019, the technology is expected to peg at $27 billion.

Their existence began way back in the 17th century with Abacus Ring, 1780 Pedometer to Exoskeleton in 1965, moving towards digital watch in 1972, Bluetooth headset in 2000, GoPro in 2004, Pebble in 2012, Google Glass and fitness bands in 2013, Google Cardboard in 2014, and Spectacles in 2016.

What is a wearable device?

A technology worn on the human body is known as a wearable device or wearable gadgets or just 'wearables.' These collect information about a person's health/fitness, sometime emotions too, and deliver this information to the individual. Some wearables include the Apple iWatch, Google Glass, Samsung Gear VR, fitness tracking devices like the pedometer and the fitbit (a watch that counts/captures the calories burnt, body temperature, heart rate) etc. Users can back up their data and track locations; make phone calls through their watches, make a calendar appointment, dim the lights etc. These devices push one towards adopting a healthy lifestyle

Wearables may just be more desirable and useful in the near future, chiefly in the fitness and healthcare sector.

Advantages of Wearable Technologies

- **Convenience & portability** – Wearables allow instant access to medical information and resources, as well as a selection of health apps. Medical students can receive, save, and carry with them all the information that they require on a simple small device.
- **Personalized information** – Several wearables provide the option of customization according to the user's personal health and fitness information. This, in turn, allows the user to be better aware of his or her health and maintain it to the best of their ability.
- **Improved clinical decision-making** – Wearables are the one of the most useful tools when it comes to supporting clinical decisions. Physicians can use these tools for looking up multiple medical sources and gaining access to drug reference databases for improved knowledge and understanding. Moreover, wearables can be used to improve disease diagnosis and to create and implement appropriate treatment plans.
- **Improved productivity** – Wearables help streamline workflow and increase productivity levels. In fact, physicians have reported that the use of mobile devices during patient rounds have helped them spend less time gaining access to data and recording it. This, in turn, has given them more time to spend with patients and improve quality care. Health-related apps have also increased the productivity of pharmacists by allowing them to access drug information quickly and record their findings, thereby resulting in more detailed documentation.

NEW TECHNOLOGIES THAT WILL CHANGE THE FUTURE

Technology doesn't exist in isolation anymore. It is today touching the broader sociological and cultural fabric of our society. It is enriching businesses and people alike, even those not involved directly to it. Here are the five main trends that would have a bigger impact in the years to come.

Women on Top

Women working in tech companies are thriving. 49 percent of such women believe their workplaces are doing enough to ensure gender equality, but only 16 percent feel their governments are doing enough. Despite, a profusion of leadership opportunities in the tech industry, 61 percent of women feel they have more pressure to prove their worth than their male counterparts. While, 37 percent of those questioned feel that women are only offered leadership roles to fill quotas.

Robots Go Social

The use of robots has become commonplace but social robots that have been created to help humans in a number of ways are just an edge away from big explosive growth. Industrial robots, however, are displacing many human jobs. All this has been made possible by advances in artificial intelligence (AI). There are suggestions that emotional intelligence Possessed by social robots in the future will enable them to make a huge difference in the society.

Robotics has already significantly contributed to sectors such as retail, healthcare, education, hospitality and others.

Auto beyond Tesla

Technologies like AI and connectivity are in process of making the cars smarter by transforming them. Big auto companies are expanding their processes over and above design and engineering to become technology companies. The cutting-edge cars of the future will give the power to its operators to add new features or purchase upgrades. On the whole, the consumer is likely to move away from car ownership to subscription. Within the next five years the safety designs and monitoring systems will also make the roads a safer place.

New Money

It is the funding that fuels innovations in the tech industry but the innovation is outpacing the institutional funding from the look of things. With Saudi and Qatar investments coming under the credibility radar, it seems likely that new money, particularly early stage funding, may come more from within the industry in the coming years.

Crypto Fights Back

The apparent 'Deal or no Deal' of Crypto currencies in Asia as an accepted unit of exchange has been dillydallying but the summit saw a positive environment for crypto players as the launch of eToroX wallet that will provide new functionalities such as support for new coins and fiat currencies. Luxembourg-based BitStamp is currently the 33rd largest crypto exchange according to its trading volume promoted virtual currencies.

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