

## **A Survey: Information Engineering and its Impacts**

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### **Abstract**

Advanced Information Technologies, Inc (AIT) focuses on managing, supporting, and protecting computer networks for multi-location companies, mid-size corporations, and government agencies. AIT provides a high level of technical support for existing companies to help control costs and maintain maximum efficiency and protection for business operations.

AIT provides technology services to businesses, commerce, and market structure and government agencies

**Keywords:** information technology interfaces.

### **1. Introduction**

Advancements in Information technology in today's push-button world, the facial expression the world is possessing small unremarkable could not be truer. Technology has shrunk distances and differences, and even brought voltaic lot many an ethnic barrier [1]. Lift your handset and dial, and you argon connected to the other perspective of the world. Change the channel on your TV, and alien nations and notions come to brio in your living room. Log on, and a whole reinvigorated world of weird and alarming communications is only a mouse up click away. It is not only our high-tech appliances that are becoming more productive and pocket-sized. It is the very planet on which we live. Information technology is not scarcely alluring, but all-essential in a world which expects you to be way of life able and well-informed to be credible. save amidst the dazzle of such entire accessible knowledge comes the straits of personal identity and culture, which are at serious danger of more preferably a little receive greater exposure to contrast values. Deuce sides of the kindred coin. So small-arm exposure to events and lifestyles of population in the western part of the cerebral

hemisphere could be edifying and intellectually stimulating, yet the gaps could be quite alarming to those in the slight developed countries.

How do cell phones change society? How do children use computers? How can we manage relationships via text messages? The internet, television, email and other new forms of information technology are changing at a rapid pace with potentially profound but also subtle influences on social life. This paper offers a succinct introduction to both the experience and implications of these information and communication technologies (ICTs) in everyday life. Considered the potential, or feared, social consequences of ICTs [2]. Throughout, i analyzed what factors are shaping the debates surrounding information and communication technologies. The outcome is a cutting-edge paper that offers a fresh survey to understanding AITs and everyday life. Throughout the latter half of the twentieth century, the introduction of information technology exerted a profound influence on the business landscape. Over the course of the last decade, the impact of information technology upon the market and the economy has become increasingly significant. Most notably, the technology boom that occurred during the late 1990s, spurred in large part by the rapid spread of Internet-based business models and initial public offerings, produced a period of prosperity and affluence that was virtually unprecedented in its intensity and magnitude.

## **2. Impacts**

Over the past 20 years, the world as we know has changed drastically. We have moved from a world that was bound by wires and copper cabling to a world that offers any bit of information you want with the touch of a glass screen from a device that fits in your pockets. In this same period of time, shopping used to involve planning a trip to a brick and motor store and hope they had the product you were looking for, and at the price you wanted to pay. If you lived in a small market, you didn't have the choices to comparison shop other stores. In today's age, a consumer can shop from the comfort of their home, and find exactly the right product at exactly the right price. With a click of a mouse and a charge of a credit card, the product will be rushed to the consumer's house with little to no effort.

- Impact on Business
- Impact on Education
- Impact on Banking
- Impact on Tourism
- Impact on Government
- Impact on World Peace and Security
- Medical Applications
- Judiciary Systems

Thus information technology is helping us in each and every domain, let's discuss each.

1. **Impact on Business:** First off, I.T. affects how businesses go about with their usual routine. For instance: the technology allows companies to go paperless, depending only on digital databases to store important data. Many pundits see this as a risk; isn't digital data flimsy and unreliable, they ask. But the shift offers several benefits as well—including reduction in operational cost, since the business no longer has to buy or rent space or equipment just to store data. [3]

Information Technology also affects the accuracy of business operations. When a company uses a computerized accounting system instead of relying on a real live accountant, they eliminate (or, at the very least, significantly reduce) human error. And because such systems allow for faster operations, the company's workers can concentrate on more pressing tasks. The most important impact of Information Technology on business lies on how it has changed the marketplace from geographically-based to global. I.T. permits businesses to take their operations into a worldwide scale thanks to applications that allows them to set up a store online. Simply put, Information Technology has changed the business landscape due to its wide and varied scope.

2. **Impact on Education:** The Role of Information Technology in Education is exploring the potential for technology to redefine the terms of teaching and learning. We concluded that making computers available in schools was not sufficient to realizing technology's potential. There are pockets of innovation. Individual teachers, students, and communities are delivering specific advances at every educational level. Advances can be grouped into 5 categories:

Pedagogy: enhanced capacity for tailoring instruction for individual students and monitoring student performance to assess instruction efficacy.

Constructing local content: through collaboration made possible by technology, students or professors in several locations, drawing on local content can transform classroom practices.

Professional development: information technology makes possible high-quality professional development at times convenient for the teacher. Technology can overcome school scheduling problems by delivering training during off-hours or as the teacher works with students and colleagues in the classroom.

Collaboration: teachers and students can collaborate outside the classroom in synchronous (real-time) and asynchronous (delayed response) fora, which brings far more resources, perspectives, and analysis to classroom assignments.

Economic efficiency: schools and universities are finding ways to use technology creatively to save money or expand productivity.

3. **Impact on tourism:** Information Technology is now focusing on the nature and role of information technology within the context of tourism, travel and hospitality. Information and communication systems embedded in a global net have had a profound influence on these industries, as also these industries with their presence in the electronic market show an impact on the developments of

IT. [6]Advances in the use and development of tools, technologies, and methodologies have facilitated the efficient netting of information and communication systems in tourism, travel and hospitality. Information technology provides various technologies to enhance the existing infrastructure. The technologies are mostly applicable in advertising and attractive sectors .using the modern technologies the present situation of tourism can be improved tremendously.

### **3. Impact on Banking**

Today's business environment is very dynamic and undergoes rapid changes as a result of technological innovation, increased awareness and demands from customers. Business organizations, especially the banking industry of the 21st century operates in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate. [5] Information and Communication Technology (ICT) is at the centre of this global change curve. Laudon and Laudon, (1991) contend that managers cannot ignore Information Systems because they play a critical role in contemporary organization. They point out that the entire cash flow of most fortune 500 companies is linked to Information System.

The application of information and communication technology concepts, techniques, policies and implementation strategies to banking services has become a subject of fundamental importance and concerns to all banks and indeed a prerequisite for local and global competitiveness. ICT directly affects how managers decide, how they plan and what products and services are offered in the banking industry. It has continued to change the way banks and their corporate relationships are organized worldwide and the variety of innovative devices available to enhance the speed and quality of service delivery.

Harold and Jeff (1995) contend that financial service providers should modify their traditional operating practices to remain viable in the 1990s and the decades that follow. They claim that the most significant shortcoming in the banking industry today is a wide spread failure on the part of senior management in banks to grasp the importance of technology and incorporate it into their strategic plans accordingly.

Woherem (2000) claimed that only banks that overhaul the whole of their payment and delivery systems and apply ICT to their operations are likely to survive and prosper in the new millennium.

#### **3.1 Medical applications: [7]**

##### **Electronic Health Records**

Information technology has transformed the way that patient information is stored and accessed, as well as revolutionized billing and insurance procedures. Electronic health records function as a database that store patients' health-related documents, such as their medical progress notes, immunization records, payment and account information and insurance data. They eliminate the need for doctors and hospitals to maintain hard

copies of medical records, and have provided medical staff with an easy and efficient way to access patient information. They have also created systems that make it easy to submit claims and be paid by insurance companies more efficiently.

### **Medical Equipment**

According to Carnegie Mellon, information technology is providing the medical field with improved capabilities to perform tests evaluate medical conditions and even perform surgeries with more accuracy. It is being integrated into machines and equipment, such as MRI's, to enhance a doctor's ability to see images more clearly. Information technology is also abetting the creation of medical robotics, which are computer-operated machines that perform surgeries through the use of information technology navigational systems. Disease Registries

The U.S. Department of Health and Human Services explains that information technology is used in the developments and advancement of disease registries. Disease registries are databases that track and monitor types of diseases that affect a group or large population of people. Information technology allows researchers to store this data electronically, and lets them perform automated updates, generate reports and perform analyses.

### **Quality Management**

Information technology allows health care organizations to have a better handle on their quality management efforts. Health care organizations can set up computer systems to perform automated quality assurance audits and generate reports on the findings. For instance, information technology systems can digitally pull information from electronic patient files and perform a quality audit on how many times in a month that patient received a particular treatment. Then, the system can generate a report of the findings. This information may be used for quality management purposes, and to determine if there are deficiencies that need to be addressed.

### **Health Insurance Exchanges**

According to a 2010 article on CivSource, information technology will play a big part in the health care reform that the United States undergoes. As the article explains, information technology will be used as a means to exchange medical information between health insurance companies. Patients will not have to be responsible for serving as middlemen between their providers and their insurance reps, as the information technology systems can take care of this for the patient. The information system that is set up on the doctor's side can communicate directly with the information system that is established on the insurance company's side.

### **3.2 Impact on Government**

As managers have turned to advanced technologies to promote service delivery, partnership arrangements have attracted great attention. Given the struggle between limited fiscal capacities and rising public expectations, the use of partnerships has

emerged as a strategy of government leaders who wish to benefit from advanced technologies. Despite the importance and use of these arrangements, little empirical research has appeared on the characteristics of partnerships that may alternatively promote or impede their success. [4] This research isolates several key characteristics from the implementation and inter organizational literatures and investigates empirically their impact on the cost and operational benefits of a geographical information system project. Our findings suggest that partnerships do provide a reasonable approach to service delivery; however, the effectiveness of these arrangements is tempered by the number of partners involved, the degree to which decision authority is shared among the partners, the amount of resources shared among the group, the formality of the arrangement, and the level of leadership commitment.

### 3.3 The World Peace and Security

Who else does not want to see peace and security permeate our society? If for some reasons, individuals or certain groups of people distance themselves from the peace and security then, probably, they do not belong to us. How can technology maintain international peace and security? Recently, the United States Ambassador to United Nations, Susan Rice, hosted a session of the United Nations Security Council titled, "voices of a New Generation," that sought to open new doors of opportunity to the world's youth (ages between 13 and 21 years old) on matters concerning international peace and security. I watched the video that genuinely touched my heart. Unfortunately, I'm yet to know if such a program is or can be extended to the older folks. The point is, we see how technology can help "fuel and energized" such excellent initiatives. As the speaker noted, "they poured in by e-mail, on YouTube, and through Facebook. And some were even written by hand" (para. 7). Again, as I illustrated earlier, this certainly demonstrates the power of social media. In the next year or so, I hope to embark on a behavioural science research studies that thoroughly investigate effects of human behaviour on advances in technology and society in general.

1. **Judiciary Systems:** There may be contentions between governments, citizens, and judicial systems but the contribution of science and technology to our legal systems cannot be overemphasized. For instance, DNA has served a good purpose in this direction: using DNA to solve crimes, to protect the innocent, and to identify missing persons. According to the Department of Justice "since the creation in 2000 of the Department of Justice's (DOJ's) Convicted Offender DNA Backlog Reduction Program, more than 493,600 offender samples from 24 states have been analyzed"(p. 4). This was an effort to solving criminal cases. So one can imagine what impact technology may have on the judicial systems in the coming decades. It's imperative to know how these advances influence the court's interaction with the public now and in the future. Consequently, future technology innovations in decision-making process in our legal systems are quite beyond imaginations.

2. **Current and Future Scenario:** Information technology with its latest inventions has become part and parcel of our day to day life, providing us with unpredictable facilities, making our day to day life easy. Information technology is helping business going global, helping managers be more effective, helps in marketing, business.

### **Future**

“Microsoft Thinks the Future of Information Technology Lies In Intelligent Technology”

The company said that its annual Tec Forum, which was hosted at Microsoft’s HQ this week, was focused on the move from information technology to intelligent technology. What this means is that computers will no longer play a passive role in our everyday lives as an input tool, but rather take part in our lives in a meaningful way. Machines, such as your Smartphone or tablet, will learn just as much from you as you learn from it.

The Tech Forum event was focused on the three ways that Microsoft is helping lead the charge into a future of intelligent technology:

- **The Arrival of Big Data:** The massive explosion of data from machines, sensors and people—along with the broad availability of affordable cloud services at scale—are bringing us powerful new tools that turn data into insight.
- **Systems That Learn:** 21st-century computers aren’t just told what to do—they learn. Dramatic improvements in machine learning are leading to systems that can absorb the vast amounts of data we are collecting, discern knowledge, and project futures.
- **More “Human” Natural User Interfaces (or NUI):** This is a topic we’ve covered a great deal here on NEXT—and a trend that includes speech, gesture, and touch to interact with computing systems. Yet NUI is much more than simply those input modalities. It enables a world where technology understands what we are doing and what we need or want. As a result, our interactions with computing systems will be more like working with an expert helper with human-like senses.

All three of these technologies will become more important over the years as our relationship with computers grows deeper. More technologies will also undoubtedly emerge over the next few years that will make us rethink our relationship with computers yet again. All of this leads us to the idea that technology is not merely something that humanity creates, but rather its a living, breathing creation that evolves alongside mankind. Moving to rename information technology to intelligent technology is the first step to realizing our intertwined future with machines.

After this we can easily predict the future of information technology and how it is going to impact us in future.

[8] However, futurologist Ian Pearson has a list of 10 hi-tech innovations that he claims will be in upcoming years.

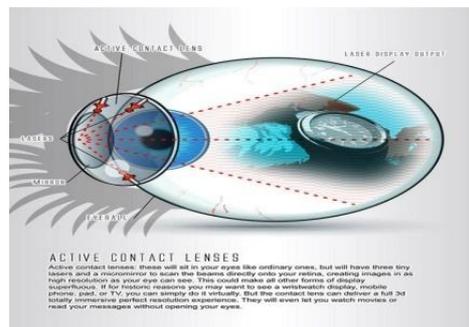
### 1. Dream linking

Using pillows with conducting fibres in the fabric, it will be possible to see monitor electrical activity from the brain. This will not only show when someone is dreaming, but recent developments indicate that we'll also be able to tell what they are dreaming about. It is also possible (with prior agreement presumably, and when both people are in a dream state at the same time) for two people to share dreams. One could try to steer a friend's dream in the same direction, so that they could effectively share a dream, and may even be able to interact in it.

### 2. Shared consciousness

Many people believe we will one day have full links between their brains and an external computer. We will be able to directly access more information outside the brain, making us much smarter, with thought access to most of human knowledge. The link will also allow us to share ideas directly with other people, effectively sharing their consciousness, memories, experiences. This will create a whole new level of intimacy, and let you explore other people's creativity directly. This could certainly be one of the most fun bits of the future as long as we take suitable precaution.

### 3. Active contact lenses



These nifty gadgets will sit in your eyes like normal contact lenses.

But they will have three tiny lasers and a micro mirror to beam pictures directly onto the retina, creating images in as high resolution as your eye can see. This could make all other forms of display superfluous. There is no need to wear a wristwatch, have a mobile phone, tablet or TV but you could still have them visually. The contact lens can deliver a full 3D, totally immersive perfect resolution experience. They will even let you watch movies or read your messages without opening your eyes.

### 4. Immortality and body sharing

While computers get smarter, the brain-IT link will also get better, so you'll use external IT more, until most of your mind is outside your brain.

When your body dies, you'll only lose the bits still based in the brain. Most of your mind will carry on.

You'll go to your funeral, buy an android body and carry on.  
Death won't be a career problem.

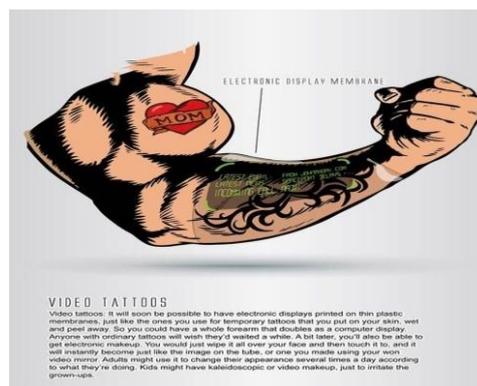
If you don't want to use an android, maybe you'll link into your friends' bodies and share them, just as students hang out on friends' sofas.

Life really begins after death.

### 3. Smart yoghurt

A 'quad core' PC has four processors all sharing the same chip, instead of the single one there used to be. This will increase until computers have millions of processors. These might be suspended in gel to keep them cool and allow them to be wired together via light beams. In separate developments, bacteria are being genetically modified to let them make electronic components. Putting this together, smart yoghurt could be the basis of future computing. With potentially vastly superhuman intelligence, one day your best friend could be a yogurt.

### 6. Video tattoos



It will soon be possible to have electronic displays printed on thin plastic membranes, just like the ones you use for temporary tattoos that you put on your skin.

With them you could turn your whole forearm into a computer display. Anyone with ordinary tattoos will wish they'd waited a while.

You will also be able to get electronic makeup.

You would just wipe it all over your face and then touch it to, and it will instantly become whatever you want. You will be able to change your appearance several times a day depending on your mood.

### Augmented reality

You've seen films where the hero sees the world with computer generated graphics or data superimposed on their field of view.

That technology area is developing very fast now and soon we will all be wearing a lightweight visor as we walk around.

As well as all the stuff your phone does, it will allow you to place anything you want straight right in front of you.

The streets can be full of cartoon characters, aliens or zombies.

You can change how people look too, replacing them with your favourite models if you wish.

### **8. Exoskeletons**

Polymer gel muscles will be five times stronger than natural ones, so you could buy clothing that gives you superhuman strength. They are too expensive to make today, but not in the future. Imagine free-running and leaping between buildings like a superhero, and having built-in reactive armour to make you bullet-proof too, with extra super-senses also built in. A lot of that stuff is feasible, so exoskeletons might become very popular leisure and sports wear, as well as the obvious military and emergency service uses.

### **9. Androids**

Artificial intelligence is likely to make computers that you can talk to just like humans in the near future.

These can easily link wirelessly to robots. Robotics technology will use polymer gel muscles too, and a nice silicone covering could make them very human-like, so they can mix easily with humans as servants, colleagues, guards or companions, pretty much what they do in the movie *I, Robot*, but with a much nicer appearance and probably much smarter.

## **4. Conclusion**

In this paper I have provided a brief overview of information technology and its impact on us. We have discussed the role of information technology in various domains. We also discussed the current and future scenario of information technology, how it is helping us in present and how it is going to help us in future. Upcoming technologies are going to change our lives completely.

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