

“RECENT TRENDS IN INFORMATION TECHNOLOGY AND ITS IMPACT ON BUSINESS”

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ABSTRACT

Information technology has become an integral part of our daily life. It has proven to be a game changer in solving economic and social issues. The paper focuses on the recent trends in information technology as cloud computing, internet of things, Mobile Applications, , Social platforms , User Interface and its impact on the business. Now a day's Business owners are beginning to realize that these technologies can revolutionize their company's productivity.

Keywords: *Cloud computing, Mobile Applications, , Productivity, User interface.*

I. INTRODUCTION

21st century has been defined by application and advancement in information technology. Information technology has become an integral part of our daily life. According to Information Technology Association of America, information technology is defined as “the study, design, development, application, implementation, support or management of computer-based information systems.” Advancement and application of information technology are ever changing. In this paper focus is on latest trends in information technology and its revolutionary impact on business. The paper provides the brief summary of main technological developments that have taken place in information technology and its influence on the business.

II. RECENT TRENDS IN INFORMATION TECHNOLOGY

1. Internet of things

Internet of things refers to internet enabled devices that are connected through a single remotely accessible network. In other words we can say that it is an ecosystem of discrete computing devices with sensors connected through the infrastructure of the internet. There has been a 20% increase in devices connected by IOT over the past years and experts also estimated that there will be over 50 billion devices connected by 2020. Internet of things has a wide applications in environmental monitoring, infrastructure management, Agriculture, energy management, building, home automation, medical and health care, transportation etc. The traction around smart home technology has been instrumental in cementing the IOT as a genuine consumer proposition due to an accessibility and advent of affordable IOT devices. Wearables is fast emerging category of IOT, encompassing any computer we wear on our body usually hooked up to peripheral sensors (heart rate, temperature, barometer) Now a days the biggest wearable computing sector is smart watches. Ms. Monika and Mr. Raj Kumar in his

research paper on 'Internet of things' analyzed Internet of things as self-configuring wireless network of objects/sensors whose purpose would be to interconnect all things. The IOT allows everyday objects embedded with electronic hardware and software to be controlled or sensed through a network remotely. They further analyzed that Self-configuring intelligence and autonomous control are not part of the original concept of the Internet of things. A hybrid Particle Swarm Optimization (PSO) and Gravitational Search Algorithm (GSA) is used to assign the optimal channel bandwidth to all paths out of total assigned bandwidth to minimize the total path loss so that all data can be transferred to destination.

2. Cloud Computing

Cloud computing is the utilization of computing services i.e. software as well as hardware as a service over a network. It reduces the IT infrastructure cost of company and promotes visualization. It reduces the investment for building, IT infrastructure and administrative cost for IT personnel. Small business cannot afford to buy latest versions of software and to pay for licenses but by cloud computing they have up-to-date technologies. Cloud technologies allow companies not only to increase or decrease computing capacity but also to expand business activities and processes through cloud computing, companies can adapt processes, products and services to the new market circumstances quickly and they are more competitive. Companies can quickly provide access to system or certain modules to its partners in order to work collaboratively that improves co-operation. C. Lakshmi Devasena in his research paper "Impact Study of Cloud computing on Business Development" focuses on the consumer marketing allegations of the hastily evolving convergence of dynamically scalable multi-client computational power, use of storage services and databases made obtainable through a network or the Internet. On the whole development is also known as "Cloud Computing". Public services linked with Cloud Computing grew from \$9 billion to \$40 billion over the last five years. This convergence is aggravated by the increased usage of e-Commerce, social media and smart phones and mobile commerce. This empirical impact study emphasizes the consequences of adopting Cloud Technology in business organizations (micro, Small Medium Businesses (SMBs) and Small Medium Enterprises (SMEs)) and how it affects business development, from various research literatures.

3. Mobile application

Mobile application is a software application developed specifically for use on small, wireless computing devices such as smart phones and tablets rather than desktop or laptop computers.. Mobile apps are designed with consideration for the demands and constraints of devices. Mobile user interface design is also essential and it also considers contexts, screen, input and mobility, security, authentication, authorization, working off line and service orchestration. Most of smart phones come loaded with basic messaging apps like Email, SMS, calendars and contact list but we can download thousands of other apps to customize our mobile business experience. IT dept can also customize smart phones to run line of business applications through the network like workflow management, logistics and shipping management, health records and other industry specific software. Online collaborations and video conferencing tools are boon to the companies with national or global presence. Mobile

apps bring lot of information about customers to the business. New business will build brand recognition through it. It increases the customer engagement and loyalty. Josh Dehlinger and Jeremy Dixon in his research paper "Mobile Application Software Engineering: Challenges and research direction" has analyzed that the rapid proliferation and ubiquity of mobile, smart devices in the consumer market has forced the software engineering community to quickly adapt development approaches conscious of the novel capabilities of mobile applications. The combination of computing power, access to novel onboard sensors and ease of application transfer to market has made mobile devices the new computing platform for businesses and independent developers. However, the growth of this new computing platform has outpaced the software engineering work tailored to mobile application development. Mr. Abhinav Kathuria and Ms. Anu Gupta in his research paper "Challenges in Android Application Development. A Case Study has elaborately explained that Smart phone is considered an important innovation that has changed the human life in several aspects. Android has emerged as the most widely used operating system in Smart Phones. Android operating system is open source and freely accessible to everyone. On Android operating system, many applications (apps) are available for fun and entertainment. With cut-throat competition for various examinations, students have moved from conventional way of learning to M-learning for preparation. They further discussed the design and development of an Android based app named as iquiz that can help students in preparation of competitive exams like UGC-NET, GATE etc.

4. Social Platforms

Social media are computer mediated technologies that facilitate creation and sharing of ideas, information, career interest and other forms of expression via virtual communities and networks. Social media includes all social networking sites as facebook, Twitter, LinkedIn, Pinterest, Snapchat, Mobile social media. Social media have strong influence on business activities and business performance. Social media generates huge amount of data about customers in real time. Business can increase customer retention and brand loyalty by connecting the customers with social media .It also increases sales through regular interaction and timely customer service. It also helps in monitoring and finding policies and strategies of customers. So business can be improved through product enhancement service and content. Mr. Sarah Cox in a case study on "Social Media Marketing in a small business" said that in today's social media driven environment, it is essential that small businesses understand Facebook, Twitter, and the strategies behind using social media for growing their business. Unfortunately, many small businesses do not have a strategy when they begin using social media. The purpose of his study is to understand how the owner of a small business, recognized for using social media to grow the business, uses social media to engage consumers. A case study is presented, followed by an in-depth interview with the small business owner, and accompanied by an analysis of the business's Facebook and Twitter posts. The results of the case study reveal the different strategies the owner uses to build and maintain relationships with consumers. The study concludes with a discussion of the lessons learned from the research: networking and creating relationships with other businesses, increases brand exposure; focusing more on relationships than sales, increases sales; interesting content promotes interaction and one main barrier to entry is a learning curve.

5. User-interface

User interface is that part of the machine that handle human machine interaction. Membrane switches, rubber keypads and touch screens are the examples of physical part of human machine interface which we can see and touch. Visual part of computer application or operating system through which a user interacts with a computer or software. It determines how commands are given to the computer or program and how information is displayed on the screen. Tools used for incorporating human factors in the interface design are developed based on the knowledge of computer science such as computer graphics, operating system, programming languages. The goal of user experience design in industry is to improve customer satisfaction and loyalty through the utility, ease of use and pleasure provided in the interaction with a product. Rich user interface design is used to encourage end users to engage with the application and maximize its useful potential. The more intuitive application also reduces the time to rely on training .According to Time news 55% of web users spend fewer than 15 seconds on a website so it is only the effective interface that can grab user attention and expands the business. Good interface design covers the behaviors, attitudes and emotions about using a particular product, system and services. It is a tool dedicated to the needs of users within that industry and optimizes the common specific task in their day to day operations.

II. IMPACT OF LATEST TRENDS OF IT ON BUSINESS

1. IT has proven to be a driving force of productivity. By combining the information technology with the business strategies organization can achieve increased productivity. Information technology make possible for the business leaders and decision makers to devise various strategies based on economic theories.
2. Through the smart grid coordination energy is going to be cheaper. Also machines find new and smoother ways to operate. The inventory cost will be less and due to this total cost will be less.
3. Remote work will become even more feasible. When IOT technology becomes commonplace and all devices are manageable on one network, it becomes easier to manage everything remotely. Businessman is able to manage an entire production line with even a single tablet and internet connection.
4. The rise of information technology has paved the way for various innovations.
5. The movement towards increased automation of business processes has increased efficiency and increases workflow considerably. It helps in developing automated processes for business. This saves time and cost.
6. Information technology provides best tool of communicating with customers and solving their problems in real time. It pays vital role in managing all resources of business viz financial, human by introducing wide range of feasible solutions.

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