

SMACS (Social, Mobile, Analytics, Cloud and Security) Technologies for Business

Block

1

INTRODUCTION TO DIGITIZATION

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Course Introduction

SMACS (Social, Mobile, Analytics, Cloud, and Security) Technologies for Entrepreneurship Development highlights how digital technologies are shaping and transforming business for increased market share and leadership. The self-learning material brings out the concepts in the technology areas: Social, Mobile, Analytics, Cloud and Security individually. It also explains the related business applications in detail. It discusses various inherent technology areas in each of the above with examples and illustrations. The course has social media as the backbone, mobile as the application platform, security provisions for maintaining the privacy and integrity of the data, business analytics integrating the data collected and finally the various applications of SMACS. The entire content is divided into six blocks.

Block 1 Introduction to Digitization helps in understanding how the digitized products and services offer an opportunity to maintain deep relationship with the customer. It introduces the reader to the five core subjects of the course, namely Social Technologies, Mobile platforms, Analytics, Cloud technology, and Security. The focus then moves on to social media discussing various customer relationships through the technology and product development using social media. It also details the various stakeholders and available social networking platforms.

Block 2 Mobile Technologies for Business helps in moving the data from one end to the other end. It focuses on the mobile environment discussing various devices and platforms, current operating systems, helping build solutions for access of the application through mobiles, all mobile applications for business organizations, and use of mobile in various task areas of business process management.

Block 3 Business Analytics discusses the use of available big data generated in various business transactions. There is a need to handle unstructured data as part of the business. Analyzing big data, known as data analytics, can help the top management in decision-making areas. The advantages of big data analysis helps in creating necessary market intelligence.

Block 4 Cloud for Business enables the flow of information across the globe. This gives exposure to the use of cloud technology for performing different business functions. It details the architecture and services, use of cloud for social marketing and then integrating various business applications as enterprise systems and deploying the cloud.

Block 5 Security Technologies for Business is an important aspect of providing security for moving data to satisfy the business needs. This block portrays how the major focus of research centers around this work area in the current digital world. The need and process of data security in business organizations, the required network security followed by information security in a cloud environment are discussed in this block.

Block 6 Applications of SMACS is a crucial block detailing some major application areas for the reader to perceive and propagate SMACS technologies in the work domain.

This block covers critical business function areas spanning applications for top management, marketing, operations followed by services department.

This edition has added a large number of contemporary examples and deleted old examples and exhibits.

BLOCK 1: INTRODUCTION TO DIGITIZATION

The fastest reach to the customer in supplying the product/service makes the organization nearer to the customer. It is likely to be retained as a favored supplier. This is possible through the utilization of digital technologies.

Block – 1 Introduction to Digitization introduces the reader to the five core subjects of this course known as Social, Mobile, Analytics, Cloud and Security. The focus then moves on to social media discussing various customer relationships through the technology and then to product development using social media. It talks in detail about various stakeholders and available social networking platforms. There are four units in this block.

Unit 1: Being aware of the digital technologies enables entrepreneurs to decide on the application of specific technologies for their business needs and to attain customer delight. *Introduction to SMACS (Social, Mobile, Analytics, Cloud, and Security) Technologies* briefly discusses the benefits, characteristics and challenges, and application areas of social technologies. It also dwells on different generations of mobile technologies, mobile operating systems, and advantages, and risks in upcoming mobile technologies. It also details on cloud computing and analytics for business intelligence. It talks about various aspects of information security in business organizations.

Unit 2: The business can penetrate fast by utilizing social networks as more and more consumers are connected through these networks. *Social Networking Platforms and Stakeholders* introduces the reader to various popular social networking platforms like Facebook, LinkedIn, Twitter, Google+, YouTube, etc. It describes the functionality of social networking platforms and discusses the privacy aspects. It briefs on open social platforms and other social networking platforms.

Unit 3: Improving the product and service delivery through innovation is critical to withstanding in the competitive world. *Product Development using Social Media* discusses the impact of social media on innovation, product/solution development. It details on new product development and crowdsourcing strategy. It highlights on social media, social product development and social media value chain. Finally, it talks about how social media drives business performance.

Unit 4: Retaining the present customers and meeting their increasing demands every day is possible through increased service levels and good relationship. *Customer Relationships through Social Media* stresses on opportunities and challenges in Customer Relationship Management (CRM) and discusses the social side of CRM. Ways of building long-term CRM through social media and connecting stores with social media using technology are discussed herein. Use of social media in brick and mortar sales and a social CRM solution are also presented in this unit.

Unit 1

Introduction to SMACS

(Social, Mobile, Analytics, Cloud and Security) Technologies

Structure

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Benefits and Components of Social Technologies
- 1.4 Characteristics and Challenges of Social Technologies
- 1.5 Application Areas of Social Technologies
- 1.6 Different Generations of Mobile Technologies
- 1.7 Mobile Operating Systems
- 1.8 Advantages, Risk Factors, and Future of Mobile Technologies
- 1.9 Cloud Computing
- 1.10 Analytics for Business Intelligence
- 1.11 Information Security in Business Organizations
- 1.12 Summary
- 1.13 Glossary
- 1.14 Self-Assessment Test
- 1.15 Suggested Readings/Reference Material
- 1.16 Answers to Check Your Progress Questions

“The journey of enterprise digital transformation never really ends, because we also must willingly and continuously disrupt ourselves by leveraging on the digital pillars that is SMACS.”

- Erco Alberto, ePLDT- President and CEO

1.1 Introduction

The adoption of multitude of technologies are proving exponentially beneficial to all business organizations and Social, Mobile, Analytics, Cloud and Security is one such set of technologies.

According to NASSCOM, the Indian IT-BPO industry market size in FY 2022 was around \$200 billion.¹ McKinsey projected that by 2025, Indian IT industry

¹ <https://swarajyamag.com/business/indian-it-industry-records-revenue-of-over-200-billion-in-fy22-nasscom-report>, February 22, 2022 (accessed on July 11, 2022)

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market would reach \$350 billion. The global IT and business services industry was worth \$9,325.69 billion in 2022. According to McKinsey research projections, the global IT industry is going to hit \$4 trillion by 2025. SMACS technologies (also known as digital technologies) spending globally was expected to increase to 60% by 2025.

SMACS is driving business innovation with the convergence of these five technologies (social media, mobile, analytics, cloud, and security). The reach of social media, the continued connectivity of mobile technology, the accuracy of business analytics, the continuously evolving security procedures and the network of commercial cloud computing are responsible for the successful B2B and B2C communications. SMACS helps in improving business operations so that they can maximize their reach to customers with minimized overhead. Huge customer generated data (both structured and unstructured) is leading the way to the creation of various business models as well as new business opportunities, thereby creating competitive advantage. Thus, brands which have been promoted using SMACS technology are getting a better response from their customers and prospects. Firms that are smart in strategizing SMACS-based marketing plans are able to do more targeted marketing, thus reducing their advertising cost and saving the organization's various resources. Another important benefit of SMACS is measuring returns from every campaign/activity due to the highly accurate analytical tools. SMACS has thus paved roads for the measurement of return on investments; a measure that immediately creates a best decision scenario and thus leads to greater entrepreneurial initiatives.

Social media is a community-based platform to interact, exchange and share informative content among registered users with the help of the Internet as a backbone. It involves group conversations and building relationships. This unit gives an overview of the latest technologies involved in mobile phones and cloud computing. It also gives an introduction to analytics, business intelligence, and information security issues which are an integral part of the present IT infrastructure used in effective communication.

1.2 Objectives

After going through this unit, you will be able to:

- Illustrate the different components that form part of Social Technology
- Explain the characteristics and applications of Social Technology
- Outline the generations and different operating systems that are used in Mobile Phones
- Relate to advantages, risk factors, and future of Mobile Technologies
- Summarize an overview of Cloud Computing
- Classify Business Intelligence and Information Security issues

1.3 Benefits and Components of Social Technologies

Social technology is defined as applying technology for defined social purposes: to ease social procedures via social software and social hardware, which might include the use of computers and information technology for governmental procedures, etc.

Social media is largely dependent on social technologies.

What is social media?

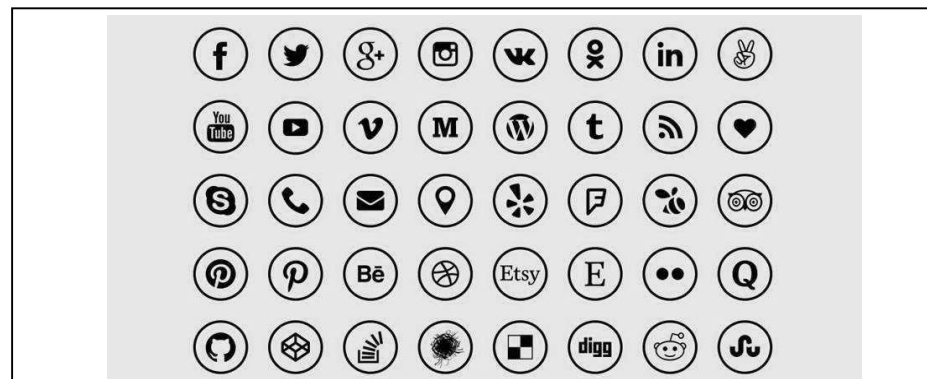
Social media is a set of online communication channels, helping the community-based input, interaction, content-sharing and collaboration at no cost.

There are varieties of social media in use. Websites and applications dedicated to forums, social networking, microblogging, social bookmarking, social curation, and wikis are various types of social media.

Some prominent examples:

Facebook, Twitter, Google+, Wikipedia, LinkedIn, Reddit, Pinterest. Social Media links people to their friends, work and each other in building better relations and in unexpected ways.

Figure 1.1: Commonly Used Social Media Icons



Source: <https://speckyboy.com/social-icon-sets/>, March 13th 2022, accessed on July 11th 2022

Components: Some of the components that are essential for the smooth and effective functioning of social media are:

- Internet Access / Wi-Fi Connectivity

The internet is a worldwide network connecting millions of people with the help of IT-based technology. Each computer is known as a host. There are millions of hosts who collectively constitute the internet. There are a number of ways to access the internet. The most popular mode is through an Internet Service Provider (ISP) who charges the users depending on the volume of data required/consumed or through a monthly subscription package, e.g., Airtel, BSNL and Beam cable, etc. There are over 190 countries involved sharing data, news and opinions via the internet. As of April 2022, internet

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users across the world were 5 billion which was approximately 63 percent of the total world population.² Wi-Fi, known as Wireless Fidelity, is a wireless facility used to connect computers, smartphones or other peripherals to the internet for communication within a particular geographical area. Generally, connections are established with the help of a Wi-Fi router which connects other devices on the network.

- Information Communication Technology

Information and Communications Technology, also known as ICT, is a collection of numerous technologies that cohesively work for the purpose of data processing and communication. It includes communication devices like mobile phones, computers and networking, hardware and software. For communication purposes, even satellite systems are also required for various specialized long distance services. Basically, it has users and software collectively called the Client and a Database to store data known as the Server which is connected over a network.

- Smartphone

Smartphone is needed as it is a wi-fi supported, pocket-sized gadget, running software components called “Apps”. Smartphones fulfill most people's needs for a telephone, digital, video camera, GPS navigation, clock, news, calculator, a media player, web browser, handheld video game player, flashlight, compass, an address book, note-taking, digital messaging, an event calendar, etc. Most smartphones produced from 2012 have high-speed mobile broadband 4G LTE capability. It is a mobile phone with the computation capability to a certain extent, having features such as a touchscreen interface, internet access and an operating system to support and Social Media apps like Facebook and YouTube. It supports an advanced mobile operating system having the capability to run a personal digital assistant, media player and GPS navigation utilities too. It can be used in the present day for: Web browsing, directions through GPS, taking selfies/pictures, keeping track of appointments and contacts, and puts many devices in one gadget- say E-book reader, MP3 player, camera, GPS receiver, Hi-Fi adapter, high definition touch-sensitive screen, cell phone, etc.

- Social Media Apps

Social media Apps are software applications which could be loaded on Mobile Operating systems and have specific application activity to be invoked by a click. For ex: Google trips (travel assistant), City mapper (routes within the city), Fabulous (personal fitness app), Memrise (conversational fluency in many languages), Whatsapp, Ola, Uber and many similar apps.

² <https://www.statista.com/statistics/617136/digital-population-worldwide/>, July 7th 2022 (accessed on July 11th 2022)

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(Social, Mobile, Analytics, Cloud and Security) Technologies**

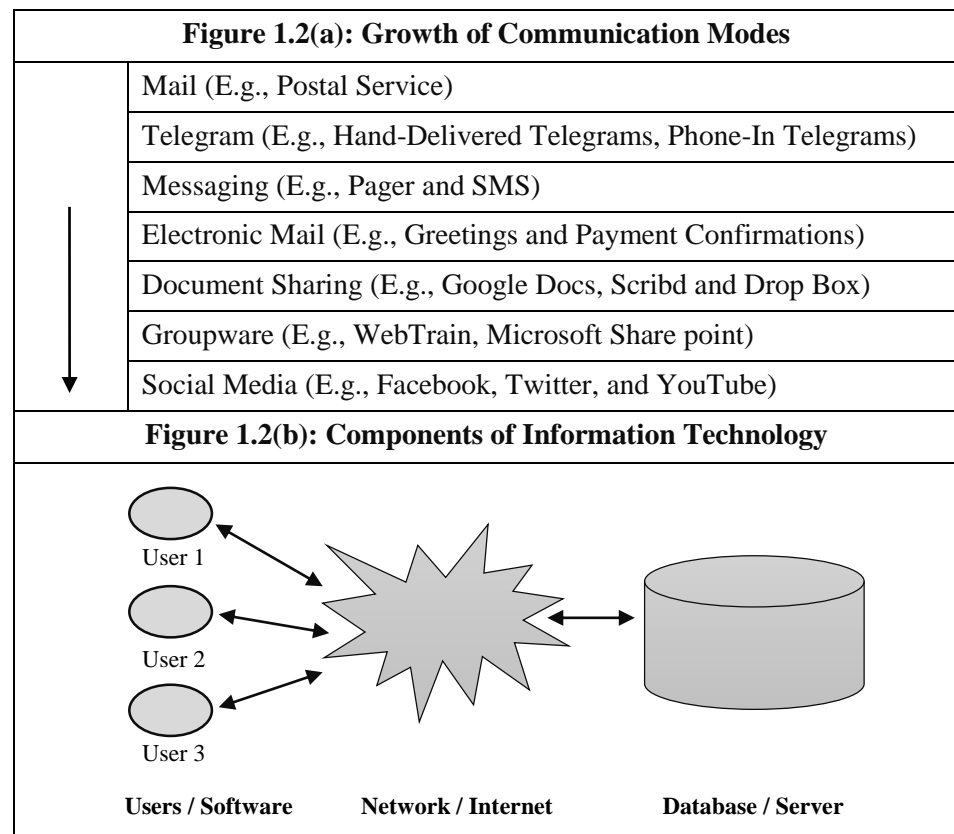
Social media includes computer-based communication tools which allow registered users or a group of users to create, share or exchange information, conduct discussions, and upload pictures/videos on the internet. These internet based applications or tools are built as per the specifications of Web 2.0; for example, Facebook and Twitter which are the most popular social media apps.

The evolution of social media includes the growth of communication, from the postal mail to begin with to the present day social technology like the Facebook as shown in Figure 1.2(a). The major difference is that earlier methods involved manual operations, but with the emergence of technology communication has become automated. Such is the impact of technology. Recently Indian government has abandoned the telegram service due to lack of customers.

It became redundant because of various better communication systems that came into existence. Social media is a subset of Information & Communication Technology (ICT) embedded with the latest technological developments such as smartphones, gadgets like iPad and mobile apps, etc.

The Figure 1.2(a) depicts the growth of communication modes over a period of time. Figure 1.2(b) shows the different components of information technology.

Figure 1.2



Source: ICFAI Research Center

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Benefits: Following are the key benefits of social media for business:

- **Enhancing the Exposure and Brand Awareness at Low Cost:** Social media will use various social networking opportunities to expose the company and its services to new customers. A multitude of computer-savvy users, with a single click, can see the message shown. Social media will help reach the prospective customers to talking/known about our business and this information can be leveraged to reach even more people through their own social media connectivity.
- **Learn about Customers and Target Consumers:** Social media gives deeper insights into the needs, habits, and characteristics of the customers leading to understanding the customer partially. Getting to know the customers can help discover more creative ways to reach them in their preferred ways via advertising or content sharing. Catering and targeting to these specifications is bound to lead to increased conversions. Sentiment analysis, referred to as opinion mining, is the analysis of the *feelings of the customers which helps as a tool to understand his/her behavior*. Another tool is Recommender systems. These are widely used in various domains for the suggestion of music, movies, articles, and even people. Amazon, Netflix and Best Buy use recommender systems to recommend products to the customers. While LinkedIn and Facebook use these to suggest new contacts.
- **Customer Service Scenarios:** All customers may not reach out to the company when they have a problem, but may feel comfortable to go ahead post a complaint online and await a response. It can be observed that many consumers are nowadays using social media as a point of contact with a brand.
- **Feedback Capture:** Social media is a platform which has the feasibility to be quick to collect instant feedback from consumers regarding services. Collecting of 'voice of the customer' during moments of truth is a vital marketing/business activity to ensure continued customer satisfaction and delight. Generally, the time between launching a product or a campaign and knowing its success or failure needs to be as short as possible to address the gaps. The quick access to feedback means one has the feasibility to respond and resolve mishaps in a faster manner.
- **New Opportunities:** Social media usage gives a greater confidence of having a social presence. Negative comments and experiences can be captured online, put in corrective action, and thus get addressed and adjusted. Thus, it keeps the customers happy showing potential customers the care you take.
- **Competitive Analysis:** Social media can help you keep an edge on the competition. One can use social media to also reach competition's fans, and understand their priorities and needs so that you can improve – or in a way benchmark with customer requirements within the industry.

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- **Sales:** Social media when used correctly could help increase sales. An audience that is truly interested in your brand or product will respond to sales messaging and convert. Having a social media presence also allows customers to “get to know” your brand, giving higher chances to gain the business.
- **Leads:** Social media is a great inbound marketing tool that helps collect leads and build an email list. Publishing and posting content that is relevant to both brand and audience is a way to attract customers who are truly interested in the brand.
- **Relevance:** Part of staying in business is to remain relevant to customers. The better way to remain relevant is by being in the thick of conversations customers are having about their needs and wants. Social media gives the company or brand insight into how it can continue to evolve and deliver results for the company's bottom line and consumers.

Social media can be time-consuming, and at times frustrating. But it is worth the time waiting.

Advantages: Some of the major advantages of using social media are given below.

- It distributes information and facilitates collaborative platform
It is a tool to distribute information, for example - on Medical and Health-related issues. It distributes information instantly to a wider audience. It is a cost-effective way to pass messages about blood donation camps, events and some urgent medical procedures, using the social media technology available in today's context. Social media can act as a collaborative platform involving medical experts who are located geographically apart to perform complex medical procedures in consultation with each other.
- Effective tool in Crisis Management
It is an effective tool to handle crisis management. Medical personnel can be trained to enhance their skills and improve exposure to serve better. It can be used to tweet live procedures among doctors, para-medical staff and different hospitals to keep them updated in real-time.
- Establish Relationships
Hospital and doctors can use social media to establish relationships with patients and can share ideas and health-related issues with individuals and groups.
- Helps in the promotion of activities and in education
The social media can be used to promote community activities and professional achievements of doctors and health care institutions. It can be utilized to provide awareness and education about specialty and experience. Social media can also be used effectively to attract, recruit and train professional colleagues.

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Example: Using Social Media for Sharing Knowledge, 2021

Kathy, an occupational therapist in NHS, had to constantly keep abreast with the changing legal requirements, applicable statutory policies in the health care environment. The best approach was to get trained on these changing, and state-of-the art knowledge to protect her position. She had the opportunity to meet many other similar professionals working in this area and within the country. Kathy built relationships with the other professionals introduced during those training events, using Facebook. Kathy also started generating a private Facebook interest group, which helped her to discuss the acquired skills and related knowledge on the activity she was currently associated with professionally. In the long run, this helped her to know about others practices, share about her approach towards similar needed areas, more so increase contacts with many other professionals in a networked way. Thus, social media definitely helped her, to enhance necessary skills and knowledge related to her current profession. She created a big platform through built network of professionals in similar work area, building contacts, which eventually helped her on a continuous basis in her profession.

Source: <https://www.hcpc-uk.org/standards/meeting-our-standards/communication-and-using-social-media/social-media-case-studies/developing-and-sharing-skills-and-knowledge-and-networking-with-other-professionals-using-social-media/> 24/03/2021, accessed on 14th July 2022

1.4 Characteristics and Challenges of Social Technologies

Characteristics: The following are a number of important characteristics which help social media to be very popular.

- **User-generated content:** Reading content written by others is a thing of the past. Of late, all participants in a social network are authors and content creators. Commenting on a blog or responding to other users publicly is construed as content as per specifications of Web 2.0. For example, a patient with a prolonged illness may share a blog with the hospital staff to keep himself updated regarding his health condition.
- **Conversation:** It is an interactive medium where anything posted by the users using social media may lead to the start of a conversation. With platforms such as Twitter, one can participate in a conversation round the clock. A user can be part of a conversation as per his wish.
- **Build and maintain relationships:** Social media helps the participants to keep in touch with the existing friends, well-wishers and find new friends with common interests. From a business perspective, all the stakeholders can seek advice or get connected using social media. One of the critical activities of any successful business is 'Customer Relations Management' with existing customers and opportunities to enhance customer base. Users can associate with old friends and maintain existing relationships on a regular basis.

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- **Communication:** For many of us, gone are the days of writing letters or picking up the landline. Users can communicate with their friends via email, text messaging or through their Facebook or Twitter accounts. They can even share information or make contact with multiple people at the same time. Mobile is another direct media for communication.
- **Information sharing:** One can share content found in the online newspaper with a group of people by just a click of a button. The same would have required photocopying and manual distribution in an old traditional mode of communication.
- **Community/Consumer-focused:** Social media allows building communities in which company/organization may participate in the community. It is the community that decides the type and scope of the content.
- **Webpace/Address:** The website should provide the users with free webspace to upload content. The users are given a unique web address that becomes their web identity. They can post and share all their content on this web address.
- **Build profiles:** Users are required to specify their personal details like name, address, date of birth, school/college education, professional details, etc. The site then mines the personal data of the user to connect to appropriate individuals based on the matching of their personal preferences and likes.

Challenges: In spite of social media's enormous growing popularity and numerous innovative services it provides to users, there are some gray areas which are risky if the communication based on social media is not well planned and correctly executed. Some of the scenarios which may involve potential risk are discussed below:

- **Personal and Professional posting:** Most of the social media apps like Facebook, Twitter and Skype are allowed at workplaces and help in information sharing and sales promotion. This may lead to the spread of misinformation if they are not controlled with proper security and privacy procedures while sharing information with individuals. For example, if the information is posted on someone's Facebook page and his privacy setting is 'public', then everybody can view the record. So care should be taken while sharing sensitive information on such public platforms. They are either difficult or not possible to do with traditional media.
- **Unencrypted Content:** Most of the contents generated on Social Media are not encrypted and when sensitive information is posted, it can be misused or breached by others, since it passes through the public domain, that is, the internet. Similar acts may be a violation of individuals' privacy laws and may lead to loss of reputation.

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- **Lack of workforce training:** Any organization using social media needs to evolve and enforce social media usage policy relating to what should be shared and what not. Organizations need to train their workforce on issues related to the legal and ethical use of social media. All such strategies by business service providers have to mitigate risk factors involved while using social media for professional distribution of business-related information.

Example: Amazon's Social Media Following

Amazon captured significant control on the usage of Digital Marketplace for business decisions and growth. In the process, they gained authority on the knowledge of using social media in their business endeavors for beneficial causes. They created centralized, branded and individually verified branded social media accounts for each of their Amazon business verticals like: 'Amazon Music, Amazon Prime Video and Amazon Web Services'. Each of these groups exploited the social media utilizing its potential to the full extent, towards both the business areas like marketing and customer services. Amazon used their primary Facebook connects regularly in marketing their products, show up the business deals made, organize competitions, share useful community specific content, and share any other useful significant posts. Amazon extensively used Twitter as a vital tool in service to customer and their e-business activities, in addition to conventional marketing activities. Amazon built Instagrams in promoting visual approach by building quality oriented images and content videos and tailored interesting content to different platforms for diverse approach.

Source: <https://www.giraffesocialmedia.co.uk/how-do-amazon-use-social-media/>, May 18, 2021, accessed on 14th July, 2022

1.5 Application Areas of Social Technologies

Social Media is making its presence felt in multiple domains like business, education and healthcare. Due to its power of being real-time and instant communication tool, it has changed the way of life of individuals and groups involved. Some of the application areas are shared below.

- Business

Social media has a major impact on companies and their customers as it is easy to use. It builds a relationship between team members, customers and prospective customers to promote brands and improve their service efficiency. For example, Coca-Cola and Red Bull had their own Facebook business fan pages which have numerous 'likes' by users. This kind of following can be used to connect and promote new products and feedback. It can be taken as a low-cost tool to use. It provides innovative working styles, interactive, ubiquitous ways to perform businesses via social platforms thus

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mitigating the line between physical and digital businesses. Digitization of processes in convergence with cloud services will support dynamic services and the way businesses can be done with ease and flexibility. SMACS also provide solution to information overload through various sources and by making proper use of it, organizations come up with informative and innovative decisions.

- **Education**

Social media is spreading its influence in the education sector as well, involving faculty and students to share content and ideas for better performance. Study groups can also be formed to share project worker source to collectively perform using tools like Google+ and YouTube.

- **Healthcare**

Social media is, of late, a widespread communication tool used in the healthcare sector connecting patients, hospitals, doctors and paramedical staff. Using this media and its different tools, medical camp campaigns, blood donation events, sharing of expertise among doctors for complex surgeries can be effectively communicated both among individuals and in groups.

Example: Social Media Use in Increasing Human Interaction

‘Nescafe France’ designed a campaign to accentuate the spirit of human connectivity and interactions focusing on the social media tool - Facebook. The campaign’s main focus was to create a user community on Facebook, aimed at connecting them in such a way to bring their old connections with whom they were not in contact in recent times. This campaign had tremendous success, as it helped to focus and understand Nescafe’s buyer persona. This was subsequently used to develop necessary drives focusing totally on human interaction.

Source: <https://www.connectmor.io/2022/01/25/social-media-marketing-strategies/> accessed on 14th July, 2022

Activity 1.1

Election Campaign - SMACS Usage

Dr. S. Krishna Murthy is an industrialist and a social worker providing his services to the public for over a decade. He is tech-savvy and interested in contesting for municipal elections. Most of the electorate in his locality is young IT professionals.

He wanted to make use of the social media tools to reach his electorate for his campaign to highlight his achievements and the community services rendered

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by him. Suggest a strategy to make the best use of social media to achieve maximum reach and publicity for his electoral campaign.

Answer:

Check Your Progress - 1

1. Name the social media used for creating user profiles and comments.
 - a. Facebook
 - b. Twitter
 - c. Blogging
 - d. Wikipedia
 - e. Google Docs
2. Which of the following is not a part of ICT?
 - a. Network
 - b. Software
 - c. Users
 - d. Microwave Communication
 - e. Hardware
3. Which of the following comes first in the order as communication media?
 - a. Postal Service
 - b. File sharing
 - c. Email
 - d. Social Media
 - e. Telephone
4. The Government of India stopped one of the following services in July 2013. Identify that service.
 - a. Postal Service
 - b. File sharing
 - c. Email
 - d. Social Media
 - e. Telegram

5. Pick the odd one out among the following.
- a. Conversation
 - b. Relationships
 - c. User profiles
 - d. Web Space
 - e. Google+
-

1.6 Different Generations of Mobile Technologies

Mobile communications play a vital role in supporting both voice and data-based communication. The evolution of mobile communications, from its first generation, 1G to the emergence of 4G technology is discussed in this section.

- **First Generation (1G):** This is also known as the first generation of wireless telephone technology or mobile telecommunications known as 1G introduced in 1980. The main difference between the existing models and 1G was the invention of cellular technology. Thus, it is also referred as 1G of the analog cellular telephone. Here the network contains many cells, each cell covered by a radio network with one transceiver. Thus, the same frequency could be reused many times. This increased system capacity resulting in great spectrum usage.
- **Second Generation (2G):** 2G refers to second-generation wireless telephone technology, which was based on digital communication. In this generation, 2G cellular GSM-based telecom networks were commercially launched in Finland in the year 1991. Compared to 1G technology phone conversations 2G was digitally encrypted, 2G systems supported a wider spectrum, allowing mobile phone penetration to greater levels. It included data-based value added services such as SMS text messages. An intermediate generation 2.5G was developed between 2G and 3G, implementing a packet switched communication apart from the circuit switched services.
- **Third Generation (3G):** Prior to 3G, General Packet Radio Service (GPRS), CDMA 2000 networks were introduced during 2.5 generation. Compared to earlier versions of 2G and 2.5G services, the 3G services allowed simultaneous use of speech and data services with higher data rates using broadband.
- **Fourth Generation (4G):** 4G refers to the fourth generation of cellular wireless standards. It is a successor to 3G and 2G families of standards. The 4G refers to all-IP based packet-switched network protocols which were introduced with mobile ultra-broadband (gigabit speed) using multi-carrier transmission.
- **Future trends:** Mobile Business Games, Mobile Artificial Intelligence, 5G.

Example: FIFTH GENERATION (5G) for IoT

‘China Mobile’ was a 4G global mobile communication and network operator spanning 73 countries. ‘China Mobile together with Baidu and Huawei’ used 5G technology, to demonstrate for the first time, the ‘8K HD video capture and live broadcast’ using 5G LAN technology under the ‘5G SA Option 2 architecture’ in 2019 at the ABC Summit. It also had customized ‘5G cloud dedicated line solution’, the allied platform for management, symbolizing the success of 5G LAN technology implementation. China Mobile’s proven approach had the effect to replace the Wi-Fi networks to build an enterprise wide cloud office networks for customers. Owing to this facility, enterprises were relieved from the need to build an independent and separate network, leading to reduction of network construction and allied costs of maintenance. 5G LAN technology enabled flexibility in group management providing direct access to the enterprise cloud.

Source: <https://www.gsma.com/futurenetworks/wiki/5g-lan-support-for-iot-in-cloud-office-2/> January 27, 2020, accessed on 14th July, 2022

1.7 Mobile Operating Systems

As a mobile phone user, we are aware of different mobile phones, the features they offer and their brands. However, users rarely do focus on the operating systems on which the mobile is run. Mobile operating systems give all operational features to the mobile and hence it is good to know of popular mobile operating systems. Some of the popular Mobile Operating Systems (OS) are:

- **Symbian:** Symbian is a user-friendly OS widely used in low-end phones and it is officially owned by Nokia. Currently, its demand has come down due to the popularity of Android and iOS. ANNA and BELLE are the two latest updated Symbian versions which are currently used in Nokia’s smartphones.
- **Android:** Google released the first Android OS in the year 2008 named ‘Astro’. Later upgraded versions ‘Bender’ and ‘Cupcake’ were released. Google names all of its Android versions in the name of sweet dishes in alphabetical order. Some of them, Donut, Éclair, Gingerbread, Honeycomb, Ice Cream, Sandwich and Jelly Bean, are the latest versions. Google Play is new and supports a huge collection of apps for Android devices. Samsung, HTC, and Motorola are the major brands using Android in their devices. Android is the serious competitor for iOS.
- **Apple iOS:** iOS was developed first by the Apple. It has many upgrades and the latest being the iOS 10. Apple has proffered the performance rather than appearance. This is the reason that the basic appearance of iOS is almost similar to that which was in 2007, the year when it was introduced. Overall, it is very user-friendly and is one of the best operating systems in the world. The following phones use iOS, namely, iPhone 5, 5S, 5C, along with iPad 3 and iPad.

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- **Blackberry OS:** Research In Motion (RIM) first released Blackberry OS in 1999 to support the Blackberry brand of smartphones. Blackberry is quite different from other operating systems with its interface having the trackball for operating the menu and a QWERTY keyboard. Its latest release being Blackberry OS 7.1 used in Blackberry Bold 9930 mobile sets. It is a very reliable OS and is immune to almost all the viruses. Some of the smartphones operating on Blackberry OS are Blackberry Bold, Blackberry Curve, Blackberry Torch and Blackberry 8520.
- **Windows OS:** Windows OS is a household name because of its use in desktops across the world. The latest Windows release by Microsoft is Windows 7 which is very popular due to its colorful and user-friendly interface. Nokia Lumia series is completely windows-based and some of the Phones using this OS are - Nokia Lumia 800, Nokia Lumia 900, etc.

1.8 Advantages, Risk Factors and Future of Mobile Technologies

The mobile phone is a part of everybody's life without which portable communication is next to impossible. Some of the mobile IT-enabled devices are the laptop, notebook computers and smartphones. Most of these devices support Global Positioning System (GPS), Wireless Fidelity (Wi-Fi) and Bluetooth technologies making them more convenient and accessible on the move.

Advantages of Mobile Technologies

By using mobile technologies one can:

- Open a new account on the bank's online portals
- Check stock market prices and do trading
- Place an order using online shopping
- Work from home and stay connected to the office online
- Check balances and transfer funds using NEFT (National Electronic Fund Transfer) and RTGS (Real Time Gross Settlement) modes. Both these allow individuals, companies and firms to transfer funds from one bank to another
- Pay utility bills and make travel bookings
- Communicate using the normal audio phone, WhatsApp and Facebook
- Get weather updates and traffic updates
- Get free information on entertainment and Online education
- Get help in emergencies/medical care as they are portable
- Can have fun and games

Risk Factors and Disadvantages

Lot of accidents occur because of using the mobile phone while driving due to lack of focus and diversion of concentration while driving.

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Mobile phones are used by criminals for communication, during terror attacks and other illegal activities while on the move.

The disadvantages and the security aspects of mobile phones include:

- Distortion - concentrating on the conversation takes away attention on the main subject
- Dependency – because of quick access to stored data, people depend heavily on these phones and even stopped memorizing critical things
- Isolation – focusing on conversation isolates them from the happenings around and the rest of the people around. This is a social issue
- Security issues – likelihood of storing confidential data with the hope of quick access, may cause privacy and security issues
- Repetitive use causes injury – of late, it is scientifically proven that continued use of smartphones causes health hazards
- High use – negative impacts- Health wise, loss of timewise, loss of focus wise, increased billing wise, etc.
- People stay addicted to their phones even when they are with a group of people, leading to social disconnection and dent in human relations.
- Use of mobile phones leads to the breach of moral values among the youth, for example, viewing objectionable adult content, prank calls, etc., which are the misuses of this technology.
- Health risks like brain diseases, tumors are caused due to radiation from phones due to excessive use which is a cause of concern.
- Eyesight and hearing problems occur due to continuous use of phones for viewing content and listening to music.
- Since it is wireless technology, and not completely secure, leads to loss of credit card/bank account passwords, impersonation and fraud of duplicate and illegal transactions.

Example: Mobiles in Shopping World

City Furniture built applications on mobile technology, which could give the same experience of shopping at their outlets for customers. Customers could feel the items by physically touching the items of their choice. In parallel, they could also dialogue with sales representatives. In this way, customers could integrate online research with necessary dialogue to arrive at decisions. The sales representatives also used mobile apps accessing real-time data of all their customers. They could also coordinate for processing of payments, organize for scheduled deliveries. They could do all these even on their tablets, without disconnecting the customer on the other side.

Source: <https://www.ibm.com/topics/mobile-technology>, 2022, accessed on 14th July, 2022

1.9 Cloud Computing

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics, three service models, and four deployment models.

Cloud computing means the ability to access the required computer hardware and software, out of a network of interconnected computers forming a complex system to perform data processing on the web. The service is provided by a third party service provider utilizing the internet. In this scenario, where the hardware and software are located is not the user's concern. They are safely and securely stored by the service provider and made available on a payment. Google Documents help in preparing documents over the net, is an example of cloud computing.

It is managed by a service provider and as a user one need not worry about the software required, the license of the application or regular updates of software versions. Cloud-based services are generally subscription-based, on-demand and one needs to pay according to its usage. There are both public and private clouds available, giving the user the level of control as per his requirements.

1.9.1 Cloud Computing Types

There are three different kinds of cloud computing with some services overlapping among them.

- **Infrastructure as a Service (IaaS):** It is hiring raw computing hardware over the net such as servers or storage. It is charged on the subscription mode based on the volume of space required, e.g. Web hosting (hosting one's own website).
- **Software as a Service (SaaS):** It is hiring software running on the cloud system. Web-based email and Google Documents are best-known examples. SaaS also provides periodic license or subscription based services, for softwares which are expensive to purchase.
- **Platform as a Service (PaaS):** It is using Web-based tools to develop applications wherein both Software and Hardware are provided by another company (known as the third party provider). Examples are - shopping cart checkout, and payment mechanism running on a merchant's server. In this case, the service facilities are provided by a third party known as the merchant banker.

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Cloud Computing Deployment Models

There are four deployment models in cloud computing. They are:

- **Public:** It is an open source cloud model that provides easy access to the systems and its services. It is best suited to manage load and is economical as it is an open to use. Examples of public cloud providers are Google, Microsoft, IBM, Amazon, etc.
- **Private:** Private deployment model or 'internal cloud' is managed by the organization based on subscription and are more secure than public model. It permits only authorized user and has greater control over data and its security. It is not as cost effective as public cloud.
- **Community:** This cloud model is shared among a community of people with similar computing requirements. It is secure and similar to private cloud except that it does not belong to one single organization but a group of organizations.
- **Hybrid:** Hybrid cloud is an integration of two or more cloud servers, viz. public, private, and community. Therefore, benefits also are many fold as it is a combination of cloud servers. It has some added advantage such as secure, cost effective, scalable, and flexible.

1.9.2 Advantages and Disadvantages of Cloud Computing

The advantages and disadvantages of cloud computing are given below.

Advantages

- Lower and reduced infrastructure costs. Using cloud it is easy to expand the uses of required applications.
- Only pay for what you use and everything is managed with a Service Level Agreement (SLA) between the user and the service provider.

Disadvantages

- Higher recurring operating overheads and costs.
- Major disadvantage is the total dependency on service providers relating to the terms and limitations of the services provided.
- The privacy and security risks of handling valuable data lie in the hands of the service provider located at an unknown location.
- The service is entirely dependent on the internet connection.
- Cloud computing is subject to outage and technical issues.

The virtual world of computers is called the Cloud which can be accessed online from anywhere round the clock.

Example: Cloud Computing Examples

The cloud SaaS company, Slack, was an enterprise communication and collaboration tool used by 'HelloFresh, NASA, Airbnb and Target'. Slack specialized on providing collaboration among enterprise teams and companies. Slack channels were aimed at transmitting essentially group messages. But they could be managed by 'individual, team, project, topic' specific approach. Thus, Slack could bring and ensure that, everyone is on the same page of communication. SaaS had other features like: video chatting, sharing of PDF files. It could also integrate with other existing cloud service groups like 'DropBox and Salesforce' in case of need for the customers.

Source: <https://builtin.com/cloud-computing/cloud-computing-examples>, March 14, 2022, accessed on 14th July, 2022

1.10 Analytics for Business Intelligence

Business Intelligence (BI) is a technology-based process to analyze data and extract required information to help decision-making activities by executives, managers and others in an organization. BI consists of a collection of tools and applications. It allows organizations to collect data from both the existing systems and old data from legacy systems and prepares it for analysis. Queries are executed on this data group for generating reports and data visualizations. Complex issues can be analyzed using BI, and proper decisions can be taken depending on the reports being generated.

For example, consider a sales forecast variance in an organization. Using BI we can arrive at answers to questions like:

- What happened to sales?
- Why did it happen?
- When did it happen?
- Will it happen again?

The BI system may use statistical/quantitative analysis, OLAP (Online Analytical Processing) using techniques like - cubes, slice & dice, drilling and data mining techniques. Analytics part of the business intelligence includes the statistical techniques such as correlation, regression, factor analysis and multivariate analysis, etc. They are used to analyze both structured and unstructured data.

Analytics is useful for data analysis, which in turn is used to derive business insights for organizational decision-making. Different analytic techniques are to be used based on the type of the data. Data scientist, the career of 21st century uses analytics, statistical techniques and mathematics for deriving insights from organizational data. Analytics can be a business function-specific such as HR analytics, Operations Analytics, Finance Analytics, Sales Analytics, Marketing

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Analytics, IT analytics, etc. Analytics can be applied to specific industries as well such as healthcare analytics, construction analytics, manufacturing analytics, utilities analytics, etc.

Analytics' main objective is to derive insights useful for organizational decision making related to operational efficiency, effectiveness and performance. Analytics usually works on current and historical data; however, analytic techniques can be used for future projections as well. Analytics provide us business intelligence, in turn providing competitive intelligence for business resulting in business sustainability and growth.

1.10.1 Different Types of Data Analytics

The goal of data analytics is to get actionable insights resulting in smarter decisions and better business outcomes. How one architects one's business technologies and designs data analytics processes to get valuable actionable insights, is a process function. It is critical to design and build a data warehouse/business intelligence (BI) architecture that provides a flexible, multi-faceted analytical ecosystem, optimized for efficient ingestion and analysis of large and diverse datasets. There are three types of data analytics:

- i) Predictive Analytics (forecasting)
- ii) Descriptive Analytics (business intelligence and data mining)
- iii) Prescriptive Analytics (optimization and simulation)

i) Predictive Analytics: Predictive analytics turns data into valuable, actionable information. Predictive analytics uses data to determine the probable future outcome of an event or a likelihood of a situation occurring.

Predictive analytics encompasses a variety of statistical techniques from modeling, machine learning, data mining and game theory, that analyze current and historical facts to make predictions about future events.

In business, predictive models exploit patterns found in historical and transactional data to identify risks and opportunities. Models capture relationships among many factors to allow assessment of risk or potential risk associated with a particular set of conditions, guiding decision-making for candidate transactions.

An example of using predictive analytics is optimizing customer relationship management systems. They can help enable an organization to analyze all customer data, therefore, exposing patterns that predict customer behavior.

Another example is for an organization that offers multiple products. Predictive analytics can help analyze customers' spending, usage and other behavior, leading to efficient cross sales, or selling additional products to current customers. This directly leads to higher profitability per customer and stronger customer relationships.

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An organization must invest in a team of experts (data scientists) and create statistical algorithms for finding and accessing relevant data. The data analytics team works with business leaders to design a strategy for using predictive information.

- ii) Descriptive Analytics:** Descriptive analytics looks at data and analyzes past events for insight as to how to approach the future. Descriptive analytics looks at past performance and understands that performance by mining historical data to look for the reasons behind the past success or failure. Almost all management reporting such as sales, marketing, operations, and finance uses this type of post-mortem analysis.

Descriptive models quantify relationships in data in a way that is often used to classify customers or prospects into groups. Unlike predictive models that focus on predicting a single customer behavior (such as credit risk), descriptive models identify many different relationships between customers or products. Descriptive models do not rank-order customers by their likelihood of taking a particular action the way predictive models do.

Descriptive models can be used, for example, to categorize customers by their product preferences and life stage. Descriptive modeling tools can be utilized to develop further models that can simulate a large number of individualized agents and make predictions. For example, descriptive analytics examines historical electricity usage data to help plan power needs and allow electric companies to set optimal prices.

- iii) Prescriptive Analytics:** Prescriptive analytics automatically synthesizes big data, mathematical sciences, business rules, and machine learning to make predictions and then suggests decision options to take advantage of the predictions.

Prescriptive analytics goes beyond predicting future outcomes by also suggesting actions to benefit from the predictions and showing the decision maker the implications of each decision option. Prescriptive analytics not only anticipates what will happen and when it will happen, but also why it will happen.

Further, prescriptive analytics can suggest decision options on how to take advantage of a future opportunity or mitigate a future risk and illustrate the implication of each decision option. In practice, prescriptive analytics can continually and automatically process new data to improve prediction accuracy and provide better decision options. Prescriptive analytics synergistically combines data, business rules, and mathematical models. The data inputs to prescriptive analytics may come from multiple sources, internal (inside the organization) and external (social media, et al.).

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The data may also be structured, which includes numerical and categorical data, as well as unstructured data, such as text, images, audio, and video data, including big data. Business rules define the business process and include constraints, preferences, policies, best practices, and boundaries. Mathematical models are techniques derived from mathematical sciences and related disciplines including applied statistics, machine learning, operations research, and natural language processing.

For example, prescriptive analytics can benefit healthcare strategic planning by using analytics to leverage operational and usage data combined with data of external factors such as economic data, population demographic trends and population health trends, to more accurately plan for future capital investments such as new facilities and equipment utilization as well as understand the trade-offs between adding additional beds and expanding an existing facility versus building a new one.

Another example is energy and utilities. Natural gas prices fluctuate dramatically depending upon supply, demand, econometrics, geopolitics, and weather conditions. Gas producers, transmission (pipeline) companies and utility firms have a keen interest in more accurately predicting gas prices so that they can lock in favorable terms while hedging downside risk. Prescriptive analytics can accurately predict prices by modeling internal and external variables simultaneously and also provide decision options and show the impact of each decision option.

Example: Prescriptive Analytics

An automotive company decided on launching a hybrid version of an existing flagship SUV model. Three years in advance of the launch, the company used a prescriptive analytics tool to analyze and optimize on design of the product, commitments to the marketing, probable pricing. An approach to targeting the introduction of the flagship SUV's hybrid version was also part of the study. One of the key decisions from the study made them to defer development money from four prominent features into other business areas, and also to the time of going to market by six months. It was very satisfying for the company as during the initial six months of launch, the company analysed that it could meet the forecast with an accuracy of 97.4%. This launch gave the highest return on investment in the company's history.

Source: <https://www.concentricmarket.com/blog/5-prescriptive-analytics-strategic-decision-making-program>, 01-March-2021, accessed on 14th July, 2022

1.11 Information Security in Business Organizations

Information security is a recognized activity which has become very important for the success of an organization. The information security involves defending information from unauthorized access, usage, disclosure, modification, recording

or destruction. It may be used in any of the forms which is either electronic or physical in nature.

Computer system threats may occur in different forms like software attacks, theft of intellectual property, identity theft and theft of equipment, etc. Viruses, worms, phishing attacks, and Trojan horses are the main reasons of software attacks. To overcome these problems the organizations adopt a number of techniques. Some of the techniques are discussed below:

- **Encryption / Decryption Techniques:** Encryption is the transformation of plain text into meaningless and random text (also known as ciphertext) and decryption is the translation of encrypted text to plain text. It can also be understood as jumbling data to avoid snooping by intruders (e.g., Substitution Codes that substitute letters of plain text by cipher text)
- **Authorization:** Giving rights of access to someone on our behalf (e.g., Permissions and rights). It is a security mechanism to define access and privilege given to personnel related to system resources.
- **Authentication:** Authentication is the previous step for authorization. It is usually used for the verification of identity. Password credentials (e.g., ATM Pin and Passwords)
- **Biometrics:** Use of biological and behavioral aspects of individuals for security (e.g., Finger Printing, IRIS and Signatures). Biometrics are used for identification of an individual through digital mode (finger print, Iris, facial image) so that they can be allowed access to the systems, devices, and data.

Please do an Activity on the appropriateness of cloud technologies while concentrating on security.

Example: Cyber Security in Financial Industry

A Financial Services Institution (FSI) had 216 in a central office, and another 1815 in satellite offices, a total of 2031 networked windows. They suspected threat actors on the network, and for building a proper cyber security, utilized the services of 'CyberSecOp' for delivery and managing security services, and critical infrastructure of the bank. 'CyberSecOp' designed their services to configure and make the necessary 'evidence collection system' in the case of any threat. They ensured services to scan the organization network, with high uptime to all the customer's servers and allied services. In case of identification of a breach, CyberSecOp, as part of containment phase, successfully isolated the 'malicious content'. Later, in coordination with the IT team of the FSI, investigated deeply to look at any other remedial actions that were required to be taken.

Source: <https://cybersecop.com/cyber-security-case-studies/2021/4/30/threat-hunting-case-study> accessed on 14th July, 2022

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Activity 1.2

Is Cloud Appropriate?

A multi-retail chain with 120 centers across India wants to have cloud-based IT Solution for managing its day to day operations. It would like to have a centralized information sharing mechanism regarding sales at various centers, sales by product, and online specialist's supervision of goods movements, if required. The CEO is very particular about the information flow and security of data in the organization. Is cloud computing the right solution? For the given scenario, list the number of activities and benefits for such an implantation.

Answer:

Check Your Progress - 2

6. Which mobile operating system is very popular?
 - a. Android
 - b. Symbian
 - c. Apple iOS
 - d. Windows
 - e. Blackberry
7. In which generation of mobile technology was the SMS introduced?
 - a. 4G
 - b. 3G
 - c. 1G
 - d. 2G
 - e. 0G
8. Which of the following is risky while using mobile phones?
 - a. Messaging
 - b. File sharing
 - c. Email
 - d. Driving
 - e. Sharing

9. Which of the following analytics looks at data and analyzes past events for insight as to how to approach the future?
 - a. Probabilistic
 - b. Prescriptive
 - c. Constructive
 - d. Descriptive
 - e. Business
 10. What does BI stand for?
 - a. Build Interface
 - b. Business Intelligence
 - c. Business Interference
 - d. Business Integration
 - e. Business Infrastructure
-

1.12 Summary

- Social media is a community-based communication platform involving group conversations to build relationships. Some of the important aspects to be taken care of while using social media include authenticity, honesty and transparency.
- Facebook and YouTube are the most popular social media platforms. Information and Communications Technology (ICT) is a collection of mobile phones, computer, networking, hardware and software used for the purpose of data processing and communication. It includes any communication devices like radio and television too.
- The evolution of mobile communications started with the first generation, 1G, followed by 2G and 3G to the emergence of present day 4G technologies. Over these generations, a number of new features were introduced such as SMS, GSM and Broadband to name a few.
- The mobile OS is a key to the success of a phone. It provides an interface, speed and other features. Some of the popular mobile Operating Systems are Windows OS, Blackberry OS, Android and Symbian.
- The cloud computing means the ability to access the required computer hardware and software services to perform data processing over the web anytime anywhere. There are three types of services possible, namely, Infrastructure as a Service (IaaS), Software as a Service (SaaS) and Platform as a Service (PaaS).
- Business intelligence (BI) is a set of procedures, methods, tools, and technology used to analyze data and generate information useful for organizational decision making. OLAP and data mining are major techniques

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used for analysis in an organization. Analytics include the statistical techniques used for data analysis.

- Information security involves protecting information from unauthorized access and destruction. Encryption/Decryption and biometrics are widely used techniques to have better security.

1.13 Glossary

BI: Business intelligence (BI) includes the applications, infrastructure and tools, and best practices that provide access to and facilitate analysis of information to enhance and optimize decisions and performance.

Cloud Computing: Cloud computing means the ability to access the required computer hardware and software services on the web. The service is provided by a third party service provider on the internet. Data is safely and securely stored by the service provider and the services are made accessible for a price. This virtual world is called the Cloud. Infrastructure as a Service (IaaS), Software as a Service (SaaS) and Platform as a Service (PaaS) are different types of Cloud Computing services.

ICT: Information and Communications Technology, also known as ICT, is a collection of numerous technologies that cohesively work for the purpose of data processing and communication. It includes communication devices like computers, networking, hardware and software.

Information Security: Information security is a recognized activity which provides the required protection to private data and information. Information security involves defending information from unauthorized access, use, disclosure, modification, recording or destruction. It may be used in any of the forms which is either electronic or physical in nature.

Mobile Operating Systems: Some of the popular mobile Operating Systems are Windows OS, Blackberry OS, Android and Symbian.

Mobile Technology: Plays a vital role in supporting both voice and data-based communication. Mobile communications evolved from first generation, 1G, to the 4G technology. There are four generations 1G, 2G, 3G and 4G.

Social Media: It is a community-based platform to interact, exchange and share informative contents among registered users with the internet as a backbone. It involves group conversations and building relationships.

1.14 Self-Assessment Test

1. Describe any three popular mobile operating systems.
2. What is Cloud Computing? Give examples of its different types of services available over cloud.
3. Highlight the key characteristics of social media and its use in the education sector.

4. Define terms ICT and BI. Explain how analytics are useful for the business intelligence of an organization.
5. Explain the methods used to address information security issues in a company.

1.15 Suggested Readings / Reference Material

1. Rodney Heisterberg and Alakh Verma (April 2022). “Creating Business Agility: How Convergence of Cloud, Social, Mobile, Video and Big Data Enables Competitive Advantage,” Narrated by Stephen Graybill.
2. Jonathan S Walker (2021). Social Media Marketing For Beginners - How To Make Money Online: Guaranteed Strategies To Monetizing, Mastering, & Dominating Any Platform For Your Brand, JW Choices.
3. Barry Connolly (2020). Digital Trust: Social Media Strategies to Increase Trust and Engage Customers, Bloomsbury Business.
4. Seema Gupta (6 August 2020). Digital Marketing McGraw Hill; Second edition.
5. Tracy L. Tuten, Michael R (15 June 2020). Solomon et al, Social Media Marketing, SAGE Publications Pvt. Ltd; Third edition.
6. Paul Martin Thomas Erickson (2019). Social Media: Usage and Impact, Global Vision Publishing House, 2 edition.
7. Steve Randazzo (2019). Brand Experiences: Building Connections in a Digitally Cluttered World, Paipen publishing.

1.16 Answers to Check Your Progress Questions

1. (a) Facebook

Facebook is used for creating user profiles, posting comments on updates and share information.

2. (d) Microwave Communication

Microwave Communication does not come under ICT. ICT is an integrated processing of data using hardware, software and network.

3. (a) Postal Service

Snail mail or Postal service is one of the oldest modes of communication handled manually.

4. (e) Telegram

Telegrams were abandoned by the Government on 14th July 2013 as they lost their popularity due to the invention of low-cost techniques like email and Facebook.

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5. (e) Google+

Google+ is the odd one because all other options are the characteristics of social media while Google+ is a communication tool.

6. (a) Android

Android because of its features and performance. On Android cross-platform app integration is very comfortable.

7. (d) 2G

2G of mobile technologies introduced SMS feature.

8. (d) Driving

Using mobile while driving leads to many road accidents due to lack of concentration.

9. (d) Descriptive

Descriptive analytics looks at data and analyzes past events for insight as to how to approach the future.

10. (b) Business Intelligence

Business Intelligence includes procedures, tools and technology to analyze data and present information to help decision-making in organizations.

Unit 2

Social Networking Platforms and Stakeholders

Structure

- 2.1 Introduction
- 2.2 Objectives
- 2.3 Social Media: Overview and Benefits
- 2.4 Blogs: WordPress, Tumblr, Blogger
- 2.5 Facebook Platform
- 2.6 Open Social Platform
- 2.7 Privacy and Security in Social Networking Platforms
- 2.8 Functionality of Social Networking Platforms
- 2.9 Other Social Networking Platforms
- 2.10 Choosing of appropriate Social Media Platform for better benefits
- 2.11 Summary
- 2.12 Glossary
- 2.13 Self-Assessment Test
- 2.14 Suggested Readings/Reference Material
- 2.15 Answers to Check Your Progress Questions

“Right now, with social networks and other tools on the Internet, all of these 500 million people have a way to say what they're thinking and have their voice be heard.”

- Mark Zuckerberg, Co-founder and CEO of Facebook

2.1 Introduction

While there are a number of popular social networking platforms, organizations need to be selective in choosing the right of them based on the goal and type of content being shared and expected engagement of the prospects and personas.

We have covered a few basics of social media, mobile technologies, and their operating systems in the earlier unit, along with an overview of emerging areas like the cloud. In this unit, we will study the role and functionality of social media in business in detail.

Social media has a wide reach and scope which includes interactive information sharing with enhanced capability to attach files, multimedia, conduct video conferences and many more utilities. Some of the popular platforms in the social media segment are Facebook, LinkedIn, Twitter, Google+ and YouTube.

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This unit also highlights the issues of the Facebook platform and other social networking platforms along with privacy and security related issues.

2.2 Objectives

After going through this unit, you should be able to:

- Describe different social media platforms like Facebook, LinkedIn, Twitter, Google+, YouTube
- List various blogs such as WordPress, Tumblr, Blogger
- Identify features supported by the Facebook platform
- Relate to Other Social Platforms
- Describe and relate to the functionality of Social Networking Platforms
- Outline privacy issues on Social Networking Platforms

2.3 Social Media: Overview and Benefits

Social media is defined as forms of electronic communication (such as websites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other content (such as videos) (Source: Merriam Webster dictionary). Social media is used to define social networking and the most popular sites are Facebook, Twitter, LinkedIn, Pinterest, Snapchat, Instagram, etc. It is statistically observed that 9 in every 10 internet users globally are visiting / using social networks every month. (Table 2.1)

Table 2.1: Social Media Usage

Details	Statistics
Number of Social Media users	4.62 billion
Quarter-on-Quarter Change in Social Media Users	+1.7% + 77 million
Year-on-Year Change in Social Media Users	+10.1% +424 million
Average Daily Time Spent Using Media	2h 27m +1.4% (+2m)
Average Number of Social Platforms Used Each Month	7.5
Social Media Users vs. Total Population	58.4%
Social Media Users vs. Population Age 13+	74.8%
Social Media Users vs. Total Internet Users	93.4%
Female Social Media Users vs. Total Social Media Users	46.1%
Male Social Media Users vs. Total Social Media Users	53.9%

Source: <https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/#:~:text=More%20than%20half%20of%20the,social%20media%20is%20h%2027m.,> June 2022, accessed on July 11, 2022

Uses of social media

In addition to building connections between people, social media has significant other roles too.

Crisis Preparedness

Social media has made real-time crisis readiness much easier. It is possible to know when a crisis is occurring, as it occurs. Social media was used extensively in Chennai during floods while the majority of telecommunication networks were down. Thus, the social media has become an easily accessible and faster media for crisis management.

Political Campaigns: Social media was extensively used in Indian parliamentary elections and in US presidential elections. Majority of the youth in both the countries has experienced and participated in these social media campaigns.

2.3.1 Twitter

Twitter is another popularly referred social media platform.

If current or potential customer base fits with the Twitter user profile, and the company can commit to regularly tweeting about information, their customers will find it interesting. Twitter has a range of uses and benefits for business, and can complement other communication channels.

- i. *Communicating:* Twitter is a way to keep followers up to date with current information about the business. Importantly, it lets followers communicate with the company too. For example, cinemas use Twitter to converse with patrons, recommend new release movies and retweet interesting tweets from movie buffs and experts. Retweet is a highly powerful tool.
- ii. *Generating leads:* Tweeting about special offers or new products can encourage followers to find out more, potentially leading to sales. For example, tour operators offer special promotions like 'buy one get one free' via Twitter.
- iii. *Showing brand's personality:* Twitter gives a chance to liven up a company's image. Tweeting about customers, people associated and brand's personality, gives followers a sense of business as more than just a supplier of goods or services. For example, bookshops can use quirky language and humor to share links to interesting articles, promote events, comment on literary awards and announce new products via Twitter. The Economic Times, Boston Consulting Group, etc., use twitter widely to promote and distribute insights to users.
- iv. *Researching trends:* One need not have to tweet to use Twitter. Searching or following tweets can give an idea of trends and topics that Twitter users are interested in. Twitter operates in real-time, so one can search for conversations that are happening right now. Twitter can point out the hot topics of the moment. It can show what Twitter users are saying about the brand, competitors and product category.

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- v. *Seeking feedback:* Many global businesses use social media, including Twitter, to invite online feedback, reviews or comments. This information is useful for businesses that want to improve, and also for potential customers doing research for their own purchases.
- vi. *Providing customer service:* For Twitter-savvy customers, receiving queries and doing services via Twitter is very convenient. A large telecommunications company has capitalized on this, providing a 24-hour response service for all sorts of customer queries, with staff using their names and answering in a chatty, personal tone.

2.3.2 Google +

Google+ has been gaining ground and popularity among business users primarily because it offers more significant benefits for a wide variety of businesses. Moreover, this social network enables to build new relations based on interests, passions, career, or profession. Therefore, users can find information that is relevant to them and share it with other users who share the same interests.

Google+ helps build and widen a network of contacts and also enables to bring business and brand closer to prospective customers and followers in a unique way. Moreover, Google+ enables to distribute media content effectively and efficiently in order to dominate social media. Here are the main benefits of using Google+ for business:

i) Take Advantage of YouTube Generation

Google+ allows you to take advantage of its integration with popular YouTube. Whether you have already established your brand on Google+ or YouTube, you will reach a wider audience by effectively using them in conjunction. For instance, Google+ users can view your YouTube video when you share them to Google+.

ii) Improved Presence and Reach

Google+ can help one's business build and maintain a strong presence. For instance, one can use features such as Google Maps and Local Business Pages to share with other Google+ users what the business entails and where it is located. Moreover, features such as Google+ Events create calendar reminders in order to ensure users are always up-to-date with promotional events and other important future plans. These features help businesses improve online presence.

iii) Your Conversations archived even after the events

Google Drive, being a cloud based file storage and management service, is capable of sharing huge amounts of information with your audience, including PDFs, presentation slide shows, and password-protected documents. Supplemental documents, such as worksheets, add great value to Hangouts on Air and keep conversations going even after your events.

iv) Use Embedded Posts to Extend the Life of Content

Embedded Posts is a great feature that enables users to share Google+ posts on blogs. You can extend the life of content by simply embedding content that was created within Google+ on your blog. Moreover, it is important to understand that the embedded content is directly linked to your Google+ profile. If web users log into their Google+ accounts and read or watch your content, their shares, +1s and comments will be displayed on both your Google+ content and blog.

v) Take Advantage of Images

Visual content is a very effective way of capturing the attention of your audience. Social networks such as Facebook, Twitter and Instagram require users to format (resize or crop) images to specific dimensions. Google+ does not adjust or crop pictures. This ensures that readers are intrigued by your photos and definitely are compelled to engage with them.

vi) Format Posts

Web users want to consume information in the least time possible. Therefore, if you want to use social media marketing and succeed in the approach, you must provide attractive, cohesive and useful content that readers can scan and find the required information they need easily. Social media platforms such as Twitter, LinkedIn and Facebook allow limited formatting of content. Therefore, you can't draw the reader's eye to the important parts in your post such as links or the media you are promoting. However, Google+ allows you to add variables such as italics and bold in order to capture the reader's attention.

vii) Segment your Audience using Google+ Circles

One can use Google+ Circles to segment contacts as you connect with other members. This important feature enables you to share content with specific connections, in particular groups or circles. On the other hand, when you get permission to contact your contacts, you can notify them directly via circles.

viii) Track Performance Using In-Depth Analytics

It is vital for marketers to track their social marketing efforts using the relevant performance indicators attached to them. There are many analytics tools which can be integrated with Google+. For ex: Circle Count and Sum All.

- a) *Sum All*: This tool provides a visual presentation of new Google+ followers, published posts and post engagement.
- b) *Circle Count*: This is a valuable tool that enables you to make key connections by providing you with a comprehensive database of influencers.

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Google+ enhances the media creation and how content is consumed. The segmentation, distribution, and analysis potential of Google+ provides marketers with limitless potential. However, it is vital to use Google+ with other social entities in order to maximize your benefits.

2.3.3 YouTube

YouTube is a very useful visual social media tool. Lot of social media users have high usage of YouTube videos. They also permit upload of self-videos onto social media. Lot of social learning and content delivery happens through YouTube.

YouTube is a video streaming and a social networking site. It's the second most popular search site on the Internet after Google. YouTube video watching is an identified significant activity on the Internet, with over 1 billion visits to YouTube daily and over 100 million videos watched daily. And it's easy for anyone who sees your video to rate it and share it with his social network.

The following practices can be applied while using YouTube:

i) Understanding YouTube's Traffic

Online videos are growing exponentially, with over 4 billion videos possibly viewed daily. If one can use YouTube for one's business, it can easily reach expected audience, both by creating videos and advertising on identified otherpeople's videos.

- ✓ YouTube as per statistics is the 2nd largest search engine behind Google.
- ✓ YouTube has 2.6 billion users worldwide.
- ✓ 62 percent of global consumers use YouTube.
- ✓ YouTube viewers watch over a billion hours of video on the platform every day and generate billions of views.
- ✓ YouTube is localized in more than 100 countries and is available in 80 languages.
- ✓ Every day, people watch one billion hours of video on YouTube.
- ✓ 62 percent of businesses use YouTube as a channel to post video content.
- ✓ 63 percent of YouTube watch time comes from mobile.
- ✓ 90 percent of people say they discover new brands or products on YouTube.
- ✓ 400 hours of video are uploaded to YouTube every minute worldwide.
- ✓ 90 percent of US digital video viewers use YouTube, the most popular channel for digital video consumption.³

³ <https://www.oberlo.com/blog/youtube-statistics>, May 17, 2022 (accessed on July 11, 2022)

Video-streaming platforms like YouTube have become so big that you are guaranteed to find a group of people who will become your raving fans and customers, as long as you educate, entertain and provide solutions to their problems.

ii) **Google Search Engines and Tracking Marketing Data on YouTube**

Due to Google Universal Search, videos, images, news, books and local searches are blended together in Google's search results, so as to provide the most useful information for people searching. One may notice videos are appearing more often in Google's search results. This shows that Google considers video to be as important as text-only pages. You can take immense advantage of this by writing high-quality articles on your site and in parallel creating complementary videos in YouTube. Doing this will build backlinks to your site, meaning you get found on Google more often by people searching.

By utilizing YouTube as a vehicle of your marketing strategy for the business, you're also increasing the authority of your website. The more authoritative your website is in Google's eyes, the higher all your pages will rank in the search results.

iii) **YouTube helps as Permanent Content Stories**

Using YouTube for business can help you to re-purpose content you've already created without the need to spend a lot of time or to invest in expensive equipment. Re-purposing content you have already created is an effective form of content marketing, as you can reach an audience that will love that particular type of content.

iv) **YouTubes helps Growing Audience Worldwide**

This is one of the biggest benefits of using YouTube for business. Continually creating video content creates opportunity to open the door to new visitors who would never come across your business any other way. Through YouTube, you can reach a worldwide audience even if you only speak one language. If you're a native English speaker, you are at an advantage, as it is difficult to capture the huge English-speaking markets (30% of all YouTube views) if you can't write or produce excellent content. In addition to this, if you include closed-captions (means the film is available with both captioning – spoken part of the text, for the use of deaf and hard of hearing. These can be set on-off in parallel to help the blind and visually impaired) on your videos, you can also reach new audiences as you are catering to people with different needs.

Research has established the fact that videos with closed-captions receive 4% more views and subscribers than those without. Fun Fact: 80% of people who prefer to watch video with closed-captions enabled don't have hearing impairments.

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It's also crucial to include several call-to-actions inside your videos, with annotations that link:

- Other videos
- Content on your website
- Email auto-responder series
- Products and services on offer

v) YouTube can be connected to E-mail also

Another benefit of using YouTube for business is the ability to build your email list as you continue to provide valuable, engaging content. Use software that allows you to embed your sign-up form directly into YouTube videos. A video can be stopped temporarily for a viewer to enter their email address and subscribe to your list, before they continue. This approach facilitates in building your customized email list, whilst providing engaging video content your audience will love.

vi) YouTubes helps Increase Promotion by Audience

Videos with a customized personal touch help to increase conversions. People buy from those they trust, and that trust is built by you relating to them on an emotional level. Research now shows that, for professional services and general companies, if you are driving traffic to a landing page with a video of a person in the company speaking about the product or service, it can dramatically increase your list of leads and sales.

vii) AdWords for Video helps Targeting the Audience

With Google AdWords used for Video, you can surely get laser-focused access to your audience by advertising on videos your audience are more likely to watch and search for. The biggest advantage of AdWords for Video is that you'll only pay for engaged views. A customer engaged view occurs, when any viewer watches the ad for at least 30 seconds. In other words, if your video ad is skipped, you won't pay anything.

The promising biggest benefit of AdWords for Video is the assured potential to grow your audience through 'earned views'. These views are free and are earned when someone who chooses to watch your video ad, goes on to watch one or more videos on your YouTube channel within a 7-day period. If anyone watches 2-4 videos on your YouTube channel, they are far definitely more likely to subscribe to your YouTube channel.

2.3.4 LinkedIn

It's a professional social media platform and is mainly used for professional networking, including employers posting jobs and job seekers posting their CVs.

Unit 2: Social Networking Platforms and Stakeholders

Following are the LinkedIn uses and benefits:

- i) Identifying the right people as a customer or prospect (finding their profile).
- ii) Receiving introductions or referrals to prospects (via the introductions tool or outside LinkedIn via a Magic Mail).
- iii) Receiving referrals to other departments from current customers (via the introductions tool or outside LinkedIn via a Magic Mail).
- iv) Researching out to the relationships between customers, prospects and other contacts (see the connections in their profiles).
- v) Discovering the relationships between your colleagues from the same and other departments and prospects (see the connections in their profiles). This might avoid painful situations when sales people from the same company call the same prospect or customer without knowing that their colleagues from the same or a different department are already in touch with them.
- vi) Eliciting information about customers and other prospects, which makes the conversations online and offline easier (reading their personal and company profile).
- vii) Maintaining relationships with current customers (Personal contacts, Discussions in Groups and answering questions in Answers).
- viii) Visibility for you as a sales person and your organization and personal branding (your profile not only on LinkedIn, but also in the Search Engines like Google, contributions in Answers and in Discussions).
- ix) Make yourself be perceived as an expert (contributions in Answers and in Discussions and Expert points).
- x) Well known Word of mouth publicity (getting recommendations and people talking about you. It can be in Discussions, mention you as the expert in Answers or talking about you outside of LinkedIn).
- xi) Getting recommendations which are visible to customers and prospects (recommendations written by other people, which can't be modified by you; which makes them stronger).
- xii) Finding the right groups and organizations to be a member of, both online and offline
- xiii) Picking up trends in the marketplace (Discussions in the groups of your customers and in the groups of your peers).
- xiv) Getting notifications when someone changes jobs. This is a trigger to contact them to see if you can be a supplier to the new organization and to get introduced to the one who will replace them at your current customer (network updates).
- xv) Getting notifications when your customers link with sales reps from a company that offers the same products or services like yours. This might be a trigger to contact your customers again (network updates).

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Example: How Amazon Used Social Media for Business Growth

Amazon, United States was the leader in the business areas: online bookstore, electronic commerce, technology, software, music, film, apparel, cloud technology and homeware. They fully understood the benefits of social media on their audience. Amazon used Facebook primarily to promote their products, emphasize their deals, conduct competitions, make community content available to all their audience. Amazon maintained customized Facebook accounts pertaining to Prime Video and Amazon Kindle. Amazon's Twitter activity covered not only marketing but also customer service and e-commerce. They had specially oriented approach to B2B. Amazon used Instagram, to present and endorse quality images and video material. Amazon ensured that it responded directly to customers about all their issues, complaints or questions on the social media itself.

Amazon.com - (Facebook 29M likes, Twitter 3.6M followers, Instagram 3.1M followers, LinkedIn 19.1 M followers, YouTube 477K subscribers, Pinterest 115.3K followers, Tiktok: 149.7K followers)

Prime Video - (Facebook 15M likes, Twitter 1.8M followers, Instagram 1.7M followers, YouTube 988K subscribers, Tiktok: 4.9M followers)

Amazon Kindle - (Facebook 3.9M likes)

Amazon Web Services - (Facebook 675K likes, Twitter 1.8M followers, LinkedIn 5.6M followers, YouTube 487K subscribers, Pinterest 115.3K followers, Tiktok: 149.7K followers)

Amazon Music - (Twitter 1.9M followers, Instagram 638K followers, YouTube 132K subscribers, Pinterest 115.3K followers, Tiktok: 149.7K followers)

Amazon Advertising - (LinkedIn 117K followers)

Pinterest – (Amazon Fashion 63.5K followers; Amazon Handmade - 4.2K followers; Amazon Home - 2.4K followers; Amazon Books - 785K followers).

Source: <https://www.giraffesocialmedia.co.uk/how-do-amazon-use-social-media/>, 18-May-2021, accessed on 22nd July, 2022

2.4 Blogs: WordPress, Tumblr, Blogger

Blog is a web based tool to post online personal messages. It is a place for the user to express, share his thoughts and passions. A blog is frequently updated, and its online personal journal or diary. It is a place to express opinions, share thought processes of self to the world. A place to share and sustain the passions. It can be drafted as anything you want it to be while inviting views and opinions from peers. A blog in a nutshell is one's own webpage, which is being updated on an ongoing basis. Blog is a short form for the word weblog and the two words are used interchangeably.

Some of the popular blogging sites are Tumblr, Blogger and WordPress.

Unit 2: Social Networking Platforms and Stakeholders

WordPress is highly-flexible for the user to write or to share a portfolio photo. User can have his own domain name. Similarly, Tumblr and WordPress users can upload their likes and reblog to user posts with the potential for more followers and readers. Tumblr is the best among all blogging platforms due to its capability to share and portray visuals, images, videos and music making; it is very popular and useful tool.

Blogger is another popular platform on social media backed by Google, due to which it is trustworthy and reliable. It is simple and easy to start using Blogger as the site gives the user a step-by-step process for creating a user's profile. There are a lot of customization options and one can even purchase templates from outside as well. Blogger is a blog-publishing service that allows multi-user blogs with time-stamped entries. Generally, the blogs are hosted by Google at a sub-domain of blogspot.com. A user can have up to 100 blogs per account.

Example: I Will Teach You To Be Rich (Personal Finance Blog Example)

Ramit Sethi of Stanford was very productive at writing blogs covering financial, and career-orientation recommending result-oriented systems. He launched his book "I Will Teach You To Be Rich" through a blog and it was New York Times' bestseller. The blog pulled largest number of traffic generating hot leads. Ramit created digital products for common financial and career-based pain points. He also used extensive email marketing to dramatically increase his blog readership.

Source: <https://www.ryrob.com/blog-examples/>, July 12, 2022, accessed on 25th August, 2022

Activity 2.1

Microsoft Blog

Microsoft Corporation, a software products and operating systems development company maintains an official blog page on their website. Usually developers from across the world interact, post queries and get responses. This is helping

Microsoft in evolving and maturing software products. They would like to use the same blogs feature to enhance customer experience, product marketability and to enter into new markets. As a social media expert, please advise Microsoft how they can go ahead with it using some innovative practices.

Answer:

Check Your Progress - 1

1. Which media is used for editing and publishing articles?
 - a. Facebook
 - b. Twitter
 - c. Blogging
 - d. Wikipedia
 - e. Google+
 2. Pick the odd one from among the following.
 - a. Facebook
 - b. Twitter
 - c. Blogging
 - d. FM Radio
 - e. Google+
 3. Which of the following is the use of YouTube?
 - a. Video sharing
 - b. File sharing
 - c. Hosting
 - d. Commenting
 - e. Blogging
 4. Which among the following is not a function of the blog?
 - a. Express opinions and thoughts
 - b. Share thoughts and passions
 - c. Share and sustain passions
 - d. Allow inviting views from peers
 - e. Helps employer's posting jobs
 5. What is a blog?
 - a. Web page
 - b. A type of email
 - c. Dashboard
 - d. Web based tool to post online personal messages
 - e. Log of web hits
-

2.5 Facebook Platform

Facebook is an online social networking service website. It was launched on February 4, 2004, by Mark Zuckerberg and his friends Eduardo Saverin, Andrew McCollum, Dustin Moskovitz and Chris Hughes. Initially the service was limited to Harvard students, which later spread to colleges in Boston, the Ivy League, and Stanford University. Later with the support from various other universities and highschool students it grew to a large network of participants. After registering, users can create a profile, add other users as "friends", share messages, post status updates and photos, share videos and also receive notifications when other users update their profiles. Additionally, users may join common-interest user groups organized by workplace, school or college.

Facebook for business - Some tips:

Facebook prohibits users from using personal profiles primarily for commercial gain. One can use Facebook profile to indirectly promote awareness of his/her business. With a Facebook business page, one can set up a presence that's all about brand, business, or cause. In addition, there is the freedom to advertise and promote products and services on a daily basis.

Some tips for building and maintaining Facebook content for the business:

- Adjust Personal Profile Settings suitable to the Professional Exposure
- Put a Professional Spin on the Profile Picture and Cover Image
- Update the Profile With Professional Details
- Preview the Public Version of Personal Profile, checking the suitability for business image
- Share Real-Life, Behind-the-Scenes Moments from self-business experience either from new products, existing products or services
- Highlight Customer Satisfaction from the business in operation
- Broadcast Facebook Live Video occasionally
- Link to Own Content Off Facebook
- Utilize Facebook Groups for value added content sharing

2.5.1 Some Features of Facebook

Features listed below are available as part of Facebook, to be integrated/used while working with Facebook for business activities.

Notes

It has a blogging feature which supports use of tags and images. It allows users to import blogs from other blogging service providers like Live Journal and Blogger.

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Chat

Chat is an instant messaging service which facilitates users to communicate with other registered users.

Gifts

Gifts is a utility for friends introduced in the year 2007 which allows friends to share virtual gifts which appear on the recipient's profile page. A personalized message can be given along with each gift if required.

Market Place

In the year 2007, Market Place service was launched to post free classified advertisements like the CNET's Craigslist service.

Messaging

A new messaging platform launched by Facebook allows users to directly communicate with each other via Facebook using several different methods like special email address, text messaging, or mobile app. Irrespective of the mode of delivery, a message will appear in a unified inbox.

Voice Calls

Facebook users are allowed to make live voice calls via Facebook Chat, allowing users to chat with others from all over the world.

Video Calling

In the year 2011, Facebook launched its video calling services using Skype as its technology partner. It allows one-to-one video calling using a Skype API (Application Program Interface).

Profile Creation

Users can create profiles and upload content consisting of photos, images, personal interests, contact information, family events and other details such as employment status, etc. Facebook has expanded options for user's gender setting, adding a custom input field that allows users to choose from a range of gender identities. Facebook introduced a feature to allow users to ask for information not disclosed by other users on their profiles. If a user does not provide key information, such as location, hometown, or relationship status, other users can request using 'ask' button feature to know about the users' information after approval.

News Feed

News feed is available on a user's homepage and highlights information including profile changes, upcoming events, and birthdays of the user's friends. This enabled spammers and other users to manipulate and create illegitimate events or post fake birthdays to increase the popularity of their own profile. In this regard

Facebook CEO, Zuckerberg issued an apology for the site's failure to include appropriate customizable privacy features. Later, changes were made accordingly; users are able to control the type of information to be shared automatically with friends. Users are able to prevent a select group of friends from seeing updates about certain types of activities, including profile changes, Wall posts, and newly added friends.

Like button

The like button is a social networking feature, allowing users to express their appreciation for other users' posts such as status updates, comments, photos, and advertisements.

2.5.2 Benefits of Facebook

Given below are some crucial benefits of Facebook when used for business.

- Increased exposure to likely global customers.
- Gather more leads from the network users.
- Reduced marketing expenses.
- Higher probability to reach a targeted audience.
- Use other face book insights....for specific tasks (built in analytics).
- Increased scope for building brand loyalty.
- Ensured and enhanced web traffic for self-business.
- Boost search engine operations.

Example: Use of Facebook

Shakey, a famous pizza group, modified their Facebook ad adding more creativity making it more interactive for their new pizza. This campaign included optimized photo ads in carousel format and video ads for message objective. The Messenger chat helped customers to answer queries and receive payments. This earned 5.8X more Messenger conversations than a business-as-usual creative.

Source: <https://en-gb.facebook.com/business/success/shakeys-pizza-asia-ventures>, August 12, 2021, accessed on 5th June, 2022

2.6 Open Social Platform

Open Social is commonly described as an open cross-platform alternative to the Facebook Platform. Open Social is a public specification released on November 1, 2007 that provides a component hosting environment along with a set of Application Programming Interfaces (APIs) for web-based applications. It was developed by Google and MySpace. Of late, it is considered as a runtime environment of general use for allowing integration of third party components to

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execute and run in an existing web application. The purpose of Open Social Foundation is to integrate and support numerous other open web technologies. This includes OAuth 2.0 which are regulations for open standard for authorization which provide client applications a 'secure delegated access' to server resources on behalf of a resource owner.

Similarly, Activity Streams and Portable Contacts API are also integrated using this platform. Activity Streams is an open format specification for stream based protocols used for performing syndicate activities like the Facebook's Newsfeed and Friend Feed utilities. Portable contacts is an open protocol for providing the users a secure way to access the address books and friends lists uploaded by the user on other applications over the web.

This platform is based on HTML and JavaScript and uses the Google Gadgets framework. It includes many APIs for social software applications to access data and core functions on participating social networks. Initially, Open Social support faced issues regarding security, with a self-described amateur developer demonstrating bugs and errors while using RockYou gadget on Plaxo, and iLikegadget of Ning social networks. In the initial days, Open Social did not perform as expected; it was compatible on Google based Orkut, while on other gadgets it had bugs and errors.

Example: SDG Philanthropy Open Social Platform

The SDG Philanthropy platform was a global community aimed at solving sustainable development goals (SDGs). Through Open Social, they built the bridge between the UN, governments and the private sector for promoting collaboration and knowledge-sharing. Open Social provided sources to SDG Philanthropy to create visually-appealing pages, informative images and intuitive graphical solutions to achieve the goal.

Source: <https://www.getopensocial.com/stories/sdg-philanthropy>, 2022, accessed on 6th June, 2022

2.7 Privacy and Security in Social Networking Platforms

Content sharing services have led to high popularity of social networking sites. On these sites registered users can view their profiles construed as a self-expression tool to overcome privacy related fears and violations, as most of the social networking sites provide users with access control features to impose restrictions on who should view their personal information.

2.7.1 Privacy

Security and privacy as a part of security requirement are the major areas of concern of any user on deciding the popularity of a social media service provider. Privacy expectations in social networks are based on relationships. Typical social networks support friends and networks with privileged access. Friendships are a defining characteristic of social networking sites, and friends receive access to

personal data. Friendships require acceptance by both parties. Some sites may extend privileges to the second or third degrees of connection. Social networks support networks, where members have some access to each other. Public visibility allows user to define which subset of a profile is to be made (such as the user's name and affiliation) visible to other users by default for search and identification. Many sites also allow users to customize their definition of public information.

On social networking sites sensitive personal information is vulnerable to be made public unintentionally. Therefore, it is important to understand how to protect our own privacy as well as others. Some of the major concerns of the users are:

- Who can access the information which is put online?
- Who controls and owns the information that was uploaded on social networking site?
- What personal information of the user is passing on to others?
- Will my contacts object if I share their information with others?
- How do I trust everyone with whom I connect?

2.7.2 Security

The user should make sure to use secure passwords to access social networks and email. If others can access your account, they are gaining access to a lot of your personal information and also about all the contacts connected through social network. It is, therefore, advisable to keep on changing your passwords regularly.

Here are some tips on how to create strong passwords:

- Think of a phrase rather than a single word.
- Use a combination of symbols, numbers, uppercase and lowercase letters. Include symbols and numbers for words and letters in a passphrase with a mix of alpha numeric combination with special symbols to make it highly secure.
- Do not use the same password for every account; Change your passwords every 3 months. Be sure your security questions and answers for your accounts are not simple and easy to guess.

Example: Phishing Attacks

Akamai organization: The attacker tried to use Google Translate, masking suspicious URLs, prefacing them with “www.translate.google.com” address, to dupe users into logging in. That was followed with phishing scams asking for Netflix payments, or embedded in promoted tweets, redirecting users to genuine-looking PayPal login pages.

Contd....

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The lack of a Hypertext Transfer Protocol Secure (HTTPS) lock and misspellings in the URL were the key red flags proving this as a phishing attempt.

Source: <https://www.frontiersin.org/articles/10.3389/fcomp.2021.563060/full>, 9th March, 2021, accessed on 5th June, 2022

2.8 Functionality of Social Networking Platforms

Ever since social media emerged in the year 2004, there have been rapid changes in technologies that are being used and various forms of social media have been developed. Some of the broad classifications of social media platforms based on their functionality and type of communication they support are:

- **Social Bookmarking:** Helps the user to tag different websites and one can search through websites bookmarked by users. (Example: Blinklist & Citeulike).
- **Social News:** Provides the latest news articles on a wide range of subjects such as social, political, economic and financial domains. Users can interact by giving their comments and vote for them (Example: Digg, Propeller Ads, Reddit).
- **Social Networking:** Interactive platforms which facilitate adding friends, commenting on profiles, joining groups and having discussions. (Wikipedia, Wikia)
- **Social Photo and Video Sharing:** Allows users to share photos or videos and commenting on user submissions. (Example: YouTube, Flickr)
- **Wikis:** Interact by adding articles and editing existing articles (Example: Wikipedia).
- **Instagram:** Instagram is a desktop, mobile, and internet-based photo-sharing application. This service is built for users to share pictures and videos either publicly or privately. Instagram allows users to upload photos or videos to the services. They can apply digital filters to the images, and also add locations through geotags. Users can add hashtags to the posts. Linking the photos to other content on Instagram is feasible. Users can connect the Instagram account to other social media profiles. This helps in sharing photos to those profiles as well.

Example: YouTube

YouTube is a search engine with social network functionality. KalariLab is a martial arts online school located in Thailand. Their YouTube algorithm analyzed different components of each video like title, description, tags, subtitles, etc., deciding on the interested users.

Contd....

It started with a small sample of audience and increased the audience automatically in stepwise way reaching wider groups. Thus, YouTube optimization strategy helped KalariLab to scale from 2,000 views per year to over 2,400 views per day without uploading any new videos.

Source: <https://chillital.com/youtube-case-study>, October 29, 2021, accessed on 4th June, 2022

Activity 2.2

Crowdfunding

In April 2020, fellow Indians were eagerly waiting to know why Kattappa killed Bahubali with the expected release of the movie titled “Bahubali – The Conclusion”. The makers of the movie tied up with NGOs known as Fuel A Dream and Make-A-Wish India to crowd fund their initiative of caring the needy children. In this regard, to promote the cause they are offering autographed T-shirts, first day movie tickets and comic books to people. As a social media expert, advise the makers of the movie how they can achieve crowdfunding using social media.

Answer:

2.9 Other Social Networking Platforms

A social networking service helps users in building social relations among people, e.g., allows sharing interests and/or activities. A social network service constitutes registered user's personal information, his/her social links, along with different additional services. Most of the social network services are interactive web based applications hosted on Internet. They are basically useful to share ideas, discuss shared concerns, etc. Value of such information and social networking services to the users is very high, thereby making it very popular and easily accessible to millions across the globe.

There are many wide range of social network services available on social media apart from popular ones like Facebook, LinkedIn, Twitter, Google+ and YouTube. Some of them are given below:

Rating/Review Service

Angie's List is a US-based, paid subscription website providing user reviews of local businesses. Angie's List grades companies on a scale ranging from A to F. Main parameters used for the rating are price, quality, responsiveness, punctuality and professionalism. Each company has its own page, which describes its business along with the customer reviews. The aggregate grade is drawn from the combined reviews and grades given to the businesses from the consumers.

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Photo Sharing Service

Flickr is an image hosting and video hosting website, and web services suite that was created in 2004 and acquired by Yahoo in 2005. It allows users to share and embed personal photographs, and effectively share with the online communities. The service is widely used by photo researchers and by bloggers to host images that they embed in blogs and social media.

2.9.1 Instagram

Instagram is a free, online photo-sharing application and social network platform that was acquired by Facebook in 2012. Instagram allows users to edit and upload photos and short videos through a mobile app. Users also have the option of making the profile private, to enhance security by allowing only their followers can view their posts.

Instagram is an online mobile photo-sharing, video-sharing and social networking service which enables its users to take pictures and videos, and share them on a variety of social networking platforms, such as the Facebook, Twitter, Tumblr and Flickr. Some of the features of this site are Explore Tab, which allows different types of Photo filters used for editing Photos. It is a software for photo effect and picture frames formation, available as Android Apps on Google Play.

Instagram Services are shared below:

- **Location Based Services**

Yelp is a multi-national corporation founded in 2004 by former PayPal employees to publish crowdsourced reviews about local businesses. It provides online reservation services through SeatMe. Similarly, it gives food delivery service using Eat24.

- **Virtual Gaming Service**

FarmVille is a farming simulation gaming site developed by Zynga in 2009. It has many gaming apps like Happy Farm, Town, etc. Most of the games developed involve various aspects of farm management such as plowing land, planting, growing, and harvesting crops, harvesting trees and raising livestock. Like most Zynga games, FarmVille games can be integrated with social networking aspect of Facebook for contacting other players, adding neighbors, distributing mystery gifts.

- **News Aggregator Service**

Digg is a news aggregator with an editorially driven front page, aiming to select stories, specifically for the internet audience, such as science, trending political issues and viral internet issues. It was launched in its current form on July 31, 2012, with support for sharing content to other social platforms such as Twitter and Facebook.

- Group Buying Service

Groupon is a deal-of-the-day website featuring discounted gift certificates usable at local business establishments. Groupon was launched in the year 2008, initially in Chicago, and later expanded to cities like Boston, New York City, and Toronto. By the year 2010, Groupon was spread over 150 markets in North America and 100 markets in Europe, Asia and South America, and had attracted over 35 million registered users.

- Chatting Services

WhatsApp is an instant messaging application compatible for usage on smart phones. This app uses the internet to send and receive text messages, images, video, user location and audio media messages. WhatsApp is the most popular messaging app with more than 700 million active users. It was developed by a group of ex-Yahoo employees later acquired by Facebook in the year 2014.

Hike Messenger is another multi-platform compatible instant messaging service for smart phones for internet based communication. Apart from text messaging, it supports non-textual content like graphical stickers, emoticons, images, videos, audios, files, voice messages, contacts and location details. It was a joint venture between Bharti Enterprises and Softbank, launched in 2012.

2.9.2 Pinterest

Pinterest is an online service that allows to share images through social networking. An example of Pinterest is the website where one has a “pinboard” that allows to post ideas to be remembered and then share them with friends through Facebook.

Example: Instagram

RESCUE (Bach flower remedies) promoted their range of natural remedies using Instagram to facilitate awareness about their products and driving product trials. They offered a “buy one, get one free” coupon using the CLEVER Influencer Marketing Agency. Popular blogs like ‘A Clothes Horse’ and ‘A Girl Named PJ’ created sponsored posts sharing honest experiences using the RESCUE natural stress relief products and promoted the “buy one, get one free” coupon. This influencer marketing effort yielded 133 million social media impressions, and more than 6,000 clicks to the coupon site and saw a 258% increase in their Instagram following.

Source: <https://shanebarker.com/blog/influencer-marketing-case-studies/>, February 28, 2022, accessed on 5th June, 2022

2.10 Choosing of Appropriate Social Media Platform for Better Benefits

Special features of various social media platforms are:

Facebook: Videos and curated content (videos have higher average engagement than images and links. Hence, videos are suggested on Facebook). Facebook also offers a platform for the promotional campaign for various business activities, in a customized and cost effective manner. It is the most popular way for establishing communication among friends and relatives. Facebook became the most preferred platform for digital marketing and thus helps reach maximum consumers.

Instagram: High-resolution photos, quotes, Stories (Instagrammers appreciate aesthetic quality in visual content and will often make the effort to transform the banal into a thing of beauty. Brands seeking to engage teens and young adults will want to offer an organic experience by aiming for quality, too. *Images and video will ideally be beautiful, thoughtfully composed and artfully presented. Organise for Product photos, behind-the-scenes, user generated content, stories, etc.*).

Twitter: News, blog posts, and GIFs (This makes it a great platform for sharing news relevant to your followers — industry news, company news, product news. Twitter is a great place to share your blog posts and curate high-quality, relevant content).

LinkedIn: Jobs, company news, and professional content (With LinkedIn being a professional networking platform, the most suitable content for LinkedIn is job listings and career information. You can also share company news and milestones on your LinkedIn company page. You can share on LinkedIn content that is relevant to the professionals in your target audience. This includes training webinars, whitepaper, and industry studies).

Pinterest: Infographics and step-by-step photo guides (unlike Instagram, images on Pinterest are mostly vertical. Images are displayed on the Pinterest feed at a width of 236 pixels and a maximum height of 800 pixels. Infograms are well suited).

Google+: Blog posts that you want to rank on Google (We learned that content posted onto Google+ gets indexed immediately and shows up in search results soon after).

Example: Amazon Approach

Amazon had specific Facebook accounts such as Prime Video and Amazon Kindle to market their products, highlight deals, run competitions, share community content, and share important posts.

Contd....

It used Twitter both as a marketing tool and an important step in customer service and e-commerce. Switching to “tweets + replies” on most Amazon Twitter accounts lead to abundant customers’ positive and negative experiences with the brand. Amazon used Instagram to promote high-quality images and video content.

Source: <https://www.giraffesocialmedia.co.uk/how-do-amazon-use-social-media/>, April 2021, accessed on 5th June, 2022

Check Your Progress - 2

6. Which of the following sites falls under the category of news aggregator?
 - a. Facebook
 - b. Twitter
 - c. Digg
 - d. Wikipedia
 - e. Flickr
7. What does API stand for?
 - a. Application Programming Interface
 - b. Application Portability Integrator
 - c. Application Programmers Integrator
 - d. Aggregate Performance Indicator
 - e. Application Provider Interfaces
8. Which of the following is the use of Skype?
 - a. Video calling
 - b. File sharing
 - b. Hosting
 - c. Commenting
 - d. Blogging
9. Which of the following features in the Craigslist?
 - a. Advertising
 - b. Marketplace
 - c. Video Sharing
 - d. File sharing
 - e. Blogging

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10. Which of the following is/are an open protocol for providing users a service to access the address books and friends lists from other applications over the web?
- a. Newsfeed
 - b. Blogging
 - c. Portable Contacts
 - d. Activity Streams
 - e. SyncIt
-

2.11 Summary

- Social media has a wider reach and scope to communicate, which includes interactive information sharing with enhanced capability to attach files and allows conducting a video conference and many more utilities.
- Some of the popular platforms like Facebook, LinkedIn, Twitter, and YouTube are very effective tools of communication in a larger social segment.
- We have seen in the current unit that the web based tool for online personal messaging, blogging services are very popular utilities. Some of them are WordPress, Tumblr and Blogger.
- Facebook is an online social networking service provider with many features available to its registered users like notes, chats, messaging, and voice/video calling along with profile creation and news feed capabilities.
- Privacy and security are the key factors affecting the popularity of any social media service provider. Some of the major issues include public visibility of personal and profile information, how to protect users' privacy as well as others'. Create strong passwords by including symbols and numbers for words and letters in a passphrase with a mix of alphanumeric and special symbols to make it highly secure.
- There are many more wide range of social networking services available on the social media like Rating/Review, Photo Sharing, Virtual Gaming, Group Buying and Chatting Services.

2.12 Glossary

FarmVille: FarmVille is a farming simulation gaming site developed by Zynga in 2009. It has many gaming apps like Happy Farm, Town, etc. Most of the games developed involve various aspects of farm management such as ploughing land, planting, growing, and harvesting crops, harvesting trees and raising livestock.

Flickr: A photo sharing community that allows both amateurs and professionals to post images they have taken and receive comments and even negotiate purchases with those who are interested in the photos.

Google+: It is a social network created by Google where users can share content and connect with other members. Businesses can add photos, contact information and more that will appear in Google's search engine result pages.

Hike Messenger: Hike Messenger is a multi-platform compatible instant messaging service for smart phones for internet based communication. Apart from text messaging, it supports non-textual content like graphical stickers, emoticons, images, videos, audios, files, voice messages, contacts and location details.

Messenger: It is an app to which Facebook transferred all of its messaging power. Users are able to chat with their friends in a similar manner to text messaging.

Open Social: Open Social is a public specification released on November 1, 2007 that provides a component hosting environment along with a set of Application Programming Interfaces (APIs) for web-based applications. It was developed by Google and MySpace.

WhatsApp: WhatsApp is an instant messaging application compatible for usage on smart phones. This platform app uses the internet to send and receive text messages, images, video, user location and audio media messages.

2.13 Self-Assessment Test

1. Briefly discuss the functions of social media with a suitable example.
2. Discuss the need for an Open Social platform.
3. Explain any two categories of social media services known to you.
4. Discuss five points about the impact of social media on employees of a software firm.
5. State in what areas a user of social media needs privacy for his personal information. Explain how you can strengthen a good password.

2.14 Suggested Readings / Reference Material

1. Rodney Heisterberg and Alakh Verma (April 2022). "Creating Business Agility: How Convergence of Cloud, Social, Mobile, Video and Big Data Enables Competitive Advantage," Narrated by Stephen Graybill.
2. Jonathan S Walker (2021). Social Media Marketing For Beginners - How To Make Money Online: Guaranteed Strategies To Monetizing, Mastering, & Dominating Any Platform For Your Brand, JW Choices.
3. Barry Connolly (2020). Digital Trust: Social Media Strategies to Increase Trust and Engage Customers, Bloomsbury Business.
4. Seema Gupta (6 August 2020). Digital Marketing McGraw Hill; Second edition.
5. Tracy L. Tuten, Michael R (15 June 2020). Solomon et al, Social Media Marketing, SAGE Publications Pvt. Ltd; Third edition.

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6. Paul Martin Thomas Erickson (2019). Social Media: Usage and Impact, Global Vision Publishing House, 2 edition.
7. Steve Randazzo (2019). Brand Experiences: Building Connections in a Digitally Cluttered World, Paipen publishing.

2.15 Answers to Check Your Progress Questions

1. (d) Wikipedia

Wikipedia is a free online encyclopedia created through the collaborative effort of a community of users. Any registered user can create an article for publication.

2. (d) FM Radio

FM Radio is the odd option as all other options are some form of social media services available online.

3. (a) Video Sharing

YouTube is used mainly for video sharing and uploading.

4. (e) Helps employer's posting jobs

Blog helps in all other functions as stated in a, b, c, d. LinkedIn helps in employer's posting jobs.

5. (a) Blog is a web based tool to post online personal messages

Blog is a web based tool to post online personal messages. Currently, individuals and organizations have and maintain blogs over the Internet.

6. (c) Digg

News aggregator - Selects stories specifically for personalized internet audience with interests in science and trending political issues.

7. (a) Application Programming Interface

Application Programming Interface (API)-a collection of pre-written applications which can be integrated and reused as and when required.

8. (a) Video Calling

Skype is a video calling app which supports cross-platform portability and allows video conferencing among a small group of registered users.

9. (a) Advertising

Craigslist is a website for classified advertisements in the area of jobs, housing, personnel, sale, items wanted and discussion forums.

10. (c) Portable Contacts

Portable contacts is an open protocol for providing the users a service to access the address books and friends lists from the other applications over the web.

Unit 3

Product Development Using Social Media

Structure

- 3.1 Introduction
- 3.2 Objectives
- 3.3 New Product Development and Crowdsourcing
- 3.4 Impact of Social Media on Innovation
- 3.5 Impact of Social Media on Product/Solution Development
- 3.6 Social Media Value Chain
- 3.7 Social Media Driving Business Performance
- 3.8 Summary
- 3.9 Glossary
- 3.10 Self-Assessment Test
- 3.11 Suggested Readings/Reference Material
- 3.12 Answers to Check Your Progress Questions

“The goal of social media is to turn customers into your personal evangelist.”

- Shane Barker, ShaneBarker.com

3.1 Introduction

Social media has gained the reputation to influence and effectively turn prospects and customers into loyalists through “Attract, Engage and Delight” cycle.

We have already gone through the basics of social media and IT-enabled technologies like mobile phones, along with issues relating to the impact of different social media tools on society in the earlier units. We have also seen the functions of social networking and its pros and cons in the previous unit. Now we will focus on product development using social media in the current unit. Therefore, this unit will be concentrating on the utilization of social media.

This unit basically addresses two areas regarding product development with the help of social media, firstly, how best a company or an organization can make use of social media to develop an innovative service or a product. Secondly, it dwells on social media’s role in enhancing community-based social products like development, value chain and performance.

Using social media, a focused campaign by companies on select group’s parameters such as their income level, hobbies, location and profiles can be

Block 1: Introduction to Digitization

analyzed based on the type of the product being developed. This, in turn, will help clustering of customers and better market segmentation. This leads to better results and solutions. It also helps in conducting analysis on responses and make changes in product development as per the needs of the prospective customers.

3.2 Objectives

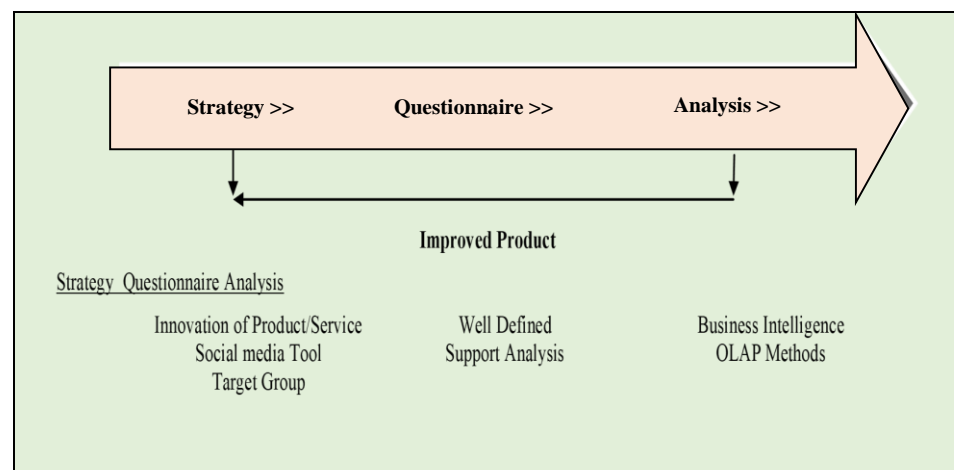
After going through this unit, you will be able to:

- Explain how organizations can make use of social media to engage users and procure feedback regarding new products that are being introduced.
- Summarize the impact of introducing innovative products through social media.
- Illustrate the effect of social media on community-based product development.
- Explain the importance of social media value chain.
- Show how social media can influence and drive business performance.

3.3 New Product Development and Crowdsourcing

For a new product to be launched, the company requires to do a lot of market study and research to analyze its feasibility and acceptability. Prior to social media's emergence, email was the low-cost alternative to get feedback and comments on a new product. Social media made bulk communication easy. Using this technology, companies can maintain fan pages to engage users and collect feedback. This method is known as 'Crowdsourcing', that is, taking the help of large online social media communities to seek their ideas, suggestions and feedback. (See Figure 3.1) The data collected is analyzed to arrive at a better acceptable product/service.

Figure 3.1: Crowdsourcing Based Product Development Lifecycle



Source: ICFAI Research Center

3.3.1 Aspects of Crowdsourcing in Product Development

The essence of crowdsourcing is brainstorming with online community generally at the conceptual stage of evolving a product yet to be developed in order to make it better. To make use of crowdsourcing the company needs proper planning and strategy, and this involves establishing goals for the proposed activities. Some of the aspects to be explored are given below:

- Is the product/service totally new or evolved from a previously existing version or innovative?
- Which social media tools (Facebook/Twitter) are being used for research?
- Which segment of users is being targeted? For example, which age group, which income level and which location? And even which combination of such attributes?
- Care should be taken as there are many communities with different backgrounds online.
- Apart from this, it is also important to design a format for the information being sought for the purpose of product development. Some of the key aspects are:
 - The number of questions and their nature are important.
 - The questions should be clearly defined with no ambiguity.
 - Do these questions support the required research and are they suitable for analysis?
 - Every answer should have a clear-cut objective for analysis.

Finally, the information so collected is analyzed to arrive at a product which is more suitable as per the requirements of the market, resulting in its success.

Example: Major Brands Using Crowdsourcing for Product Design Ideas

German car manufacturer, Porsche, touched five million fans on Facebook. They included these fans during customization of their new car design as part of crowd sourcing. Around half a lakh people shared their designs and preferences. The selected designs from these fans were integrated as part of the new vehicle. Porsche added a stripe on the car saying “5M Porsche Fans” and presented the same on the Facebook.

Source: <https://www.cadcrowd.com/blog/12-brands-using-crowdsourcing-for-product-design-ideas/>, January 27, 2022, accessed on 6th June, 2022

3.4 Impact of Social Media on Innovation

The general perception among the public regarding social media is that it is used only for group communication. But over time, usage of social media has matured to such an extent that it became a community platform for generating collective ideas, thus leading to the user-driven open innovation. Companies have made use

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of this opportunity effectively to collect feedback and comments on new innovative products as part of the product development process.

Social media can help such innovations in the following areas:

- Engage and interact with communities, old consumers and partners
- Generate new ideas and feedback, a continuous process for the betterment of the proposed product
- Provide better collective effort for innovation with the participation of new people
- Make use of business intelligence methods and procedures for getting the correct analysis
- Improving market share by promoting the outcomes of products/innovations achieved

Innovation through crowdsourcing to some extent is used in companies which are involved in marketing and in the sales domain in the business. But in the case of some sectors, it is only at infancy level, the reasons being no proper integration of digital platforms, lack of infrastructure to share information and employee adaptability. More recently, new models are being evolved using social media tools like Facebook on different websites.

Example: Innovation @ Netflix

Netflix carefully analyzed various social media conversations and assessed that viewers were having an issue of dozing off during shows. It brought the necessary innovative idea in the media usage, by introducing a concept called smart socks. This will automatically put a pause to the ongoing streaming services, when it identifies that users have fallen asleep.

Source: https://www.researchgate.net/publication/328315317_The_value_of_social_media_for_innovation_A_capability_perspective, 05-July-2022, accessed on 25th August, 2022

3.5 Impact of Social Media on Product / Solution Development

Social media is getting used in product and solution development in many organizations across the world. For example, the Linux operating system is a crowdsourced product development. They used different collaborative tools including social media. Organizations are using social media sites to get feedback from customers and they are using the feedback not only in product development but also in many business functions of the organization. For example, GE, Microsoft, Oracle, Johnson & Johnson use social media to interact with customers and use the inputs in product development.

It is useful for feature additions, bug fixing, and performance improvements and in achieving operational efficiencies for the product. Organizations also can use the inputs for their business intelligence, new product development, prototype development, take decisions whether to go ahead for product development or not, take, buy or make decisions for the product, marketing, and sales intelligence.

Activity 3.1

Social Media for Social Cause

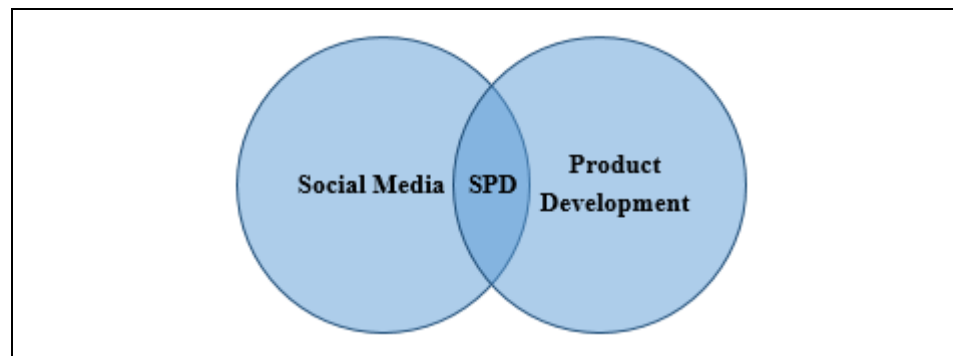
An NGO, which works for promoting awareness campaigns among online communities to support and educate street children, wants to seek new ideas. This data is used to develop strategies to make its campaign more effective and also to get information about children who need education in their locality. Suggest a template of the questionnaire of ten questions to be answered by the social media users for the required purpose.

Answer:

Effect of Social Media on Social Product Development

Social Product Development (SPD) is a product development framework for developing an innovative product/service which is conceptualized by an organization and improved by involving crowdsourcing technique and social media tools (See Figure 3.2). It involves open innovation of brainstorming of social media users for improvement of products or services during different stages of development life cycle.

Figure 3.2: Social Product Development



Source: ICFAI Research Center

Using social media for the purpose of communication and marketing is quite a common practice by companies. But in recent times usage of social media as a platform for social product development is gaining a foothold. Over 60 percent of organizations which are actively using social media for engaging users are planning to make use of their ideas and feedback on new products during the early stages of development. This trend is picking up and has great potential to make significant contribution to open innovation if companies pursue it seriously.

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For example, a US-based, non-profit company, Hope Lab had an innovative idea to campaign for new ideas on how to minimize obesity in children. The response was good. 400 participants took part and finally, six ideas were finalized by the company to address the issue.

Why social media for feedback?: A traditional research method needs a lot of planning and strategy to be successful. It involves spending a lot of money, coordination and time. As an alternative, the social media is a low-cost online platform for synergizing product development lifecycle, especially with regard to post-launch research and study. This kind of input collected for the product will help in improving its quality, and customization may be achieved leading to more innovation.

Benefits: Social media adds value during different stages of the product lifecycle. A mix of both traditional and social media based methods of research is found better for innovation. For example, a company using social technologies likes Twitter, LinkedIn and Facebook make use of focus groups to collect inputs to develop and test a new concept. The benefits achieved are the following: more ideas or requirements about the new product were generated, with fast response and lower product development cost. As a result, the higher product margins were achieved by companies due to the use of social media.

Risk: The biggest challenge involved in using social media as a tool for product development is its lack of proper strategy. There is a risk of not getting the correct outcome because of large number of participants. The challenge could not only be in terms of volume of fan/community base but also in the quality and credibility of the inputs from crowdsourcing.

Process: One of the primary requirements of such an innovation is that the companies should have an established fan base to engage the users. Some companies planning to take advantage of crowdsourcing-based product development are concentrating on developing strategies to engage and interact with the users as a prerequisite.

Example: Social Media and Product Development: IKEA

IKEA used digital platforms to gather ideas from all their purchasers and students from Universities for their product designs. Participants were also financially rewarded, if IKEA selected their idea for future development or enhancement. This Co-Create concept, an implemented idea by IKEA, was a popular social media approach and was a seed for countless inputs from the public, for the design of new products or upgradation/modification to existing ones. IKEA Hackers was their platform encouraging crowd sourcing and was well known to furniture lovers globally.

Source: <https://www.cadcrowd.com/blog/18-companies-that-use-crowdsourcing-for-new-product-design-prototype-innovation/>, 27th January, 2022, accessed on 6th June, 2022

Check Your Progress - 1

1. Which of the following is the process of people using social media to give inputs for product development?
 - a. Open forum
 - b. Crowdsourcing
 - c. Analysis
 - d. Advertising
 - e. Messaging
 2. Which of the following options does not help in open innovation?
 - a. Interaction
 - b. New Idea
 - c. Internal Content
 - d. Advertising
 - e. Business Intelligence
 3. Which of the following is required to boost social media usage in the healthcare sector?
 - a. Training
 - b. Social Media Policy
 - c. Hosting
 - d. Advertising
 - e. Training & Social Media Policy
 4. Which of the following is not included in Social Product Development?
 - a. Strategy and Focused Research
 - b. Internal Content
 - c. Social Media and Product Development
 - d. Promotion and Marketing
 - e. Examination of Data
 5. Which of the following is not a part of product development lifecycle?
 - a. New Idea
 - b. Analysis
 - c. Paid Content
 - d. Questionnaire
 - e. Feedback
-

3.6 Social Media Value Chain

A value chain needs to be understood in any product lifecycle to ultimately assess the overall business performance with reference to the product. It is the full range of business activities that includes design, production, marketing and distribution to businesses conduct, a cycle to bring a product or service from conception to delivery. This value chain determines many times the customer satisfaction, and in turn sales and revenues also. The concept of value chain is applied from the business management to the new social media environment. This is referred to as ‘Social Media Value Chain’.

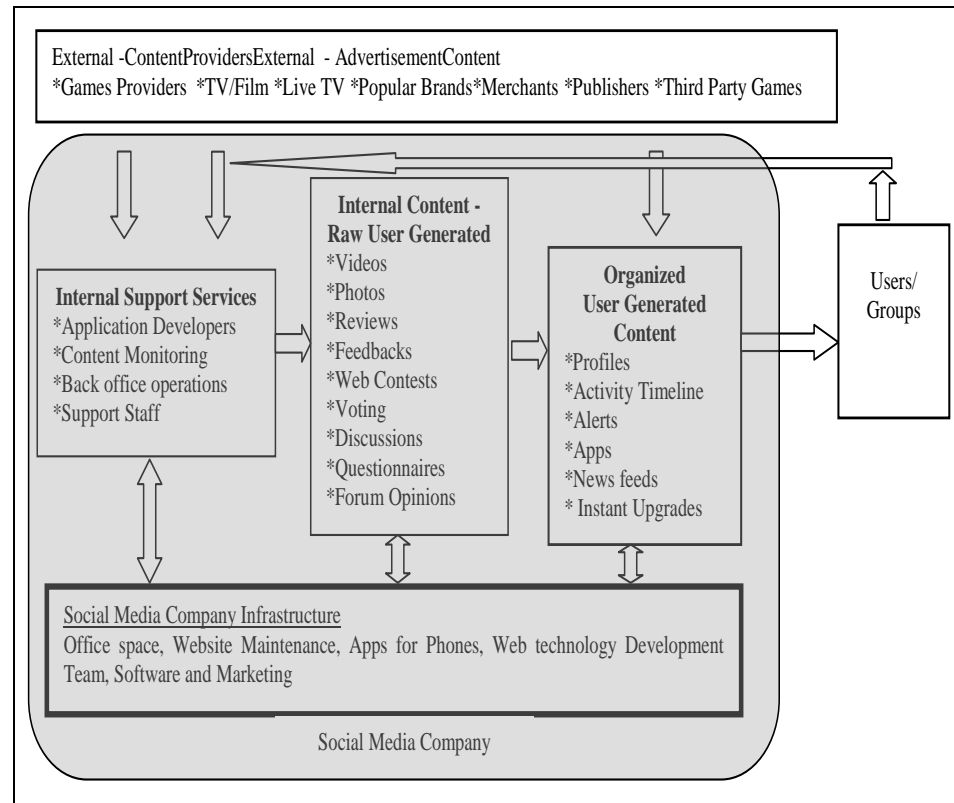
Social Media Value Chain - Overview

The social media value chain is an interdisciplinary, integrated activity to streamline and organize the delivery of the product or service to the public (See Figure 3.3). The concept of value chains is applied from the business management to the new media environment focusing on how the development of the new media and social media has deeply changed the value chains within this environment. Analysing the value chains means looking at how users consume different forms of media and how their consumption has an effect on stream revenues. How the new forms of media such as social media and interactive media have changed the habits of users and how the values have transformed themselves according to these new ways of creating, diffusing and accessing media content. With the changes that occurred with the rise of new media, yesterday’s value chain is becoming more and more irrelevant. The rules of the game have changed to Value chain in new media – social media.

In the traditional value chain, a successful end to end delivery of services/products would be handled by a select group of individuals and it would involve a lot of time and coordination effort to deliver goods in time. There may be manual services involved, which may cause unexpected delivery delays which are difficult to track and monitor.

Facebook value chain analysis shown in Figure 3.3 discusses sources of competitive advantage of the social media company by referring to its primary and support business activities.

To understand the value chain in its true sense, let us study the comparison of the traditional value chain and social media value chain. Both methods have major differences in terms of payment issues regarding the creator of content and service. The table below compares the differences in aspects namely - content creator, creator’s payment, service and internal contents. Figure 3.3 details the social media value chain.

Figure 3.3: Social Media Value Chain

Source: ICFAI Research Center

Example: What is an Example of a Successful Value Chain?

Starbucks' value chain strength was reflected in constant interaction with their customers and assuring provision of excellent service. Its social media accounts were the crucial source for interaction. It used these media platforms for reinforcement, marketing, sales and customer service. Starbucks presented its coffee as a big value chain - long journey starting from the land, into the hands of the farmer, moving to the roaster, and then to the eagerly waiting customer hands. This analysis of value chain traces all the stages to prepare various ways for refining the process, which constantly helped them to be on top.

Source: <https://www.businessnewsdaily.com/5678-value-chain-analysis.html>, 25th April, 2022, accessed on 6th June, 2022

3.7 Social Media Driving Business Performance

Social media tools are state of the art technologies, used in managing the day to day operations of many companies. A new business model is evolving by integrating social media with business operations to have better benefits (See Exhibit 3.1).

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Exhibit 3.1: Invest in Social Media Advertising

LoveBook, a gift book publisher, used the social media advertising platform, Facebook, to increase brand awareness, and enhance conversions. The video adverts created by them resulted in three times increased purchase rates. They measured a 57% increase in return on investment on advertising costs on social media. On the other side, they observed reduction of 53% expenditure on other platforms.

Source: <https://mention.com/en/blog/sales-on-social-media/>, 30th September, 2021, accessed on 6th June, 2022

Web 2.0 standards are proposed to transform the mode of content generation from the company-based to the user-generated one. Web 2.0 refers to World Wide Web websites that support user-generated content, usability (ease of use, even by not so familiar users), and interoperability (a website which can work well with other products, systems, and devices) for end users. A Web 2.0 website allows users to interact and collaborate with each other in a social media dialogue as creators of user-generated content in a virtual community.

Following are the points taken into consideration while designing as per Web 2.0 standards:

1. Simplicity
2. Centrally Positioned
3. Fewer Columns
4. Distinct sections (header, footer, content section)
5. Simple navigation
6. Bold logos
7. Big text
8. Color selection
9. Quality design (visual effects, icons etc.)

This leads to more tool development incorporating new features and applications to support interaction and sharing of content among social media users.

Similarly, Enterprise 2.0 specifications made companies to integrate with social media technologies to derive maximum benefit for the organization. These two standards basically changed the paradigm of business operation compared to the traditional model.

Major social media business capabilities for improving the performance of the business are:

- Collective effort and information sharing – Videos, comments, surveys and profiles
- Faster Development - Better versions of products, features and applications

Unit 3: Product Development Using Social Media

- Innovation - Crowdsourcing and open innovation
- Awareness – Training staff, promote innovation and advertising new developments
- Knowledge - Research on content, Decision-making, Business integration and analysis
- And SLATES (Acronym from first letters)
- Search
- Link to other websites
- Authoring
- Tags
- Extensions
- Signals

Activity 3.2

Social Media for Startup Research

A small team of young management graduates is venturing into entrepreneurship. They want to start an online fashion retail store. In that direction, they were very actively using Facebook and wanted to promote sharing of certain fashion designs, ready-made stitched garments and other allied fashion-related content using social media. Plan a list of activities to be done to improve their reach among friends and social media with the objective of having a startup.

Answer:

Check Your Progress - 2

6. Which of the following is not included in social media value chain ?
- a. Content generators
 - b. Advertising agencies
 - c. Social media providers
 - d. Internal content
 - e. Users

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7. Which of the following is a standard proposed content transformation from company-based to user-generation-based?
 - a. Social media guidelines
 - b. Web 2.0
 - c. Enterprise 2.0
 - d. HTML 5.0 Standards
 - e. Crowdsourcing 2.0
 8. Which of the following is not included in major social media business capabilities for improving the performance of business?
 - a. Innovation
 - b. Knowledge and Awareness
 - c. Faster development
 - d. Information sharing
 - e. Incentive payment
 9. Which of the following is the biggest challenge involved in using social media as a tool for product development?
 - a. Lack of proper strategy
 - b. Insufficiency of campaign
 - c. Fan base
 - d. Funds problem
 - e. Infrastructure issues
 10. Which of the following specifications specify the integration of companies and social media technologies?
 - a. Social media guidelines
 - b. Web 2.0
 - c. Enterprise 2.0
 - d. HTML 5.0 Standards
 - e. Crowd Sourcing 2.0
-

3.8 Summary

- Social media's emergence has enriched communication through other means and made email a secondary option, which was low-cost alternative to get feedback and comments on a new product. Social media made bulk communication easy. Using this technology, companies can maintain fan pages to engage users and collect feedback. This method is known as

‘Crowdsourcing’. That is, taking the help of large online social media communities to collect their ideas, suggestions and feedbacks. The data collected is analyzed to arrive at a better acceptable product/service.

- In the current days, instead of patient approaching hospitals and doctors, doctors and hospitals are openly lending their support to the needy by being part of the forums. This helps healthcare service providers to promote and market their products and services. Social media gives the best opportunity to exchange, update and be more informed regarding different medical conditions/procedures. Some healthcare service providers are interacting with patients on a daily basis as online patients expect a response from their doctor, through social media request, within a few hours.
- Social Product Development (SPD) is a product development framework for developing new innovative products/services, which is conceptualized by an organization (crowdsourcing can be used even here) and improved by involving crowdsourcing technique and social media tools.
- Social media value chain is a complex activity involving a number of players like content generators, advertising agencies, social media service providers and users. In this process of the value chain, integration of social media technologies can play an important role in improving the quality of service.

3.9 Glossary

Crowdsourcing: It is taking the help of large online social media communities to give their ideas, suggestions and feedback regarding new products and innovations.

Enterprise 2.0: Its specifications made companies to integrate with social media technologies to derive maximum benefit to the organization.

Open Innovation: It is a process of using social media for generating collective ideas leading to user-driven innovation. Companies collect feedback and comments on new, innovative products as part of the product development process.

Social Media Value Chain: It is an interdisciplinary, integrated activity to streamline and organize the delivery of product or service to the public. This complex activity involves a number of players like content generators, advertising agencies, social media service providers and users.

Social Product Development: It is a product development framework for developing new innovative product/service which is conceptualized by an organization and improved by involving crowdsourcing technique and social media tools.

Web 2.0: The web 2.0 standards are proposed to transform the mode of content generation from the company-based to the user-generated one.

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3.10 Self-Assessment Test

1. Define the term ‘crowdsourcing’. Support your answer with a suitable example.
2. Discuss the concept of social media value chain.
3. List five factors which improve business using social media.
4. Many people lack awareness regarding social media and its business potential. Suggest a few techniques to spread its awareness.
5. Explain the social product development in detail.

3.11 Suggested Readings / Reference Material

1. Rodney Heisterberg and Alakh Verma (April 2022). “Creating Business Agility: How Convergence of Cloud, Social, Mobile, Video and Big Data Enables Competitive Advantage,” Narrated by Stephen Graybill.
2. Jonathan S Walker (2021). Social Media Marketing For Beginners - How To Make Money Online: Guaranteed Strategies To Monetizing, Mastering, & Dominating Any Platform For Your Brand, JW Choices.
3. Barry Connolly (2020). Digital Trust: Social Media Strategies to Increase Trust and Engage Customers, Bloomsbury Business.
4. Seema Gupta (6 August 2020). Digital Marketing McGraw Hill; Second edition.
5. Tracy L. Tuten, Michael R (15 June 2020). Solomon et al, Social Media Marketing, SAGE Publications Pvt. Ltd; Third edition.
6. Paul Martin Thomas Erickson (2019). Social Media: Usage and Impact, Global Vision Publishing House, 2 edition.
7. Steve Randazzo (2019). Brand Experiences: Building Connections in a Digitally Cluttered World, Paipen publishing.

3.12 Answers to Check Your Progress Questions

1. (b) Crowdsourcing

Using social media, companies can maintain fan pages to engage users and collect feedback for product development.

2. (c) Internal content

Open innovation does not include internal content. It is totally based on user-generated inputs only.

3. (b) Social media policy

The healthcare sector has not yet made many inroads into social media technology. This is because it does not have a well-defined social media policy, and a well-defined social media policy will boost the market.

4. (b) Internal content

Social product development does not include internal content for analysis.

5. (c) Paid content

Paid content has no role in social media-based product development lifecycle.

6. (d) Internal content

The social media value chain includes a number of players like content generators, advertising agencies, social media service providers and users as stakeholders. But it does not include internal content.

7. (b) Web 2.0

Web 2.0 standards are proposed to transform the mode of content generation from the company-based to the user-generated one.

8. (e) Incentive payment

Incentive payments are not part of the promotion strategy to improve organizational performance using social media.

9. (a) Lack of strategy

Lack of strategy is the major issue in using social media for product development, and other issues are the associated risks with it.

10. (c) Enterprise 2.0

Enterprise 2.0 specifications made companies to integrate with social media technologies to derive maximum benefit to the organization.

Unit 4

Customer Relationships through Social Media

Structure

- 4.1 Introduction
- 4.2 Objectives
- 4.3 Opportunities and Challenges in Customer Relationship Management
- 4.4 Social Side of Customer Relationship Management
- 4.5 Social Media to Brick and Mortar Sales
- 4.6 Connecting Stores with Social Media using Technology
- 4.7 Building Long-Term Customer Relationships through Social Media
- 4.8 A Social CRM Solution
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- 4.11 Self-Assessment Test
- 4.12 Suggested Readings/Reference Material
- 4.13 Answers to Check Your Progress Questions

“Social Media is about the people! Not about your business. Provide for the people and the people will provide for you.”

- Matt Goulart, Founder, Ignite Digital

4.1 Introduction

Online business organizations need to realize that though the platform they use for business and growth is internet, trade is always between people of both sides at the end of the day, and they need to excel in customer relationship at each touch point, especially exploring various popular social media platforms.

Social networking platform builds a chain of relationships between people of diverse areas and geographical locations. It creates a larger network base in itself. The market targets the same to channelize products, services, and to get ideas from crowdsourcing. We have discussed this in the previous unit. In this unit, we will go one step further to connect customer relationships through social media.

We live in a time and age where an increasing amount of products/services are bought/experienced through online shopping websites, aggregator sites and smartphone applications. With India having the world's youngest population, which is IT savvy, it is imperative that companies should have a presence online

Unit 4: Customer Relationships through Social Media

to reap maximum benefits in terms of sales. In the past, companies used to employ survey feedback forms and sales personnel, who directly collect structured information from customers for tailoring their products and services.

An entire generation of the young population is hooked to the social media websites like Facebook, LinkedIn and Twitter. They use this medium to air their satisfaction, complaints about anything under the sun, in a free-flowing unstructured conversation mode on a daily basis. Companies have begun to take serious note of the content of discussions that happen on social media to get a better and a real-time picture about their brand image, product acceptability and service gaps. Most of the big organizations now employ CRM (Customer Relationship Management) solutions as part of their engagement with customers.

When “established customer relationship management” is combined with the power of opinions on the social media, it becomes a powerful tool for companies to understand consumer behavior. The clear understanding of consumer behavior can result in much better tailored marketing communications, personalized customer service, better customer retention and improved brand image. Companies are slowly waking up to the fact that this amazing idea of combining CRM and social media data is highly challenging to implement and worth investing in.

The purpose of CRM implementation in corporates is to acquire the new customer, retaining the old and termination of customer-provider relation, which can be explained by three basic components of the traditional CRM process: relationship initiation (acquisition), maintenance (retention), and termination. The methods of relationship building and maintaining with customer have been evolved with time as the social media space is evolving rapidly, and new applications are continually introduced into the market. Therefore there is a need to identify the ways in which the emergence of social media influences the customer for adopting and accepting the product, and the effective use of social media as a tool in promotion and penetration of market in competitive era.

With the advancements in the field of information technologies based CRM tools and activities, companies have changed the method of capturing and processing the data in real time. As the uncertainty of market has always been noticed, the real-time processing of predefined variables and models in IT systems need careful monitoring of data to ensure their validity under unpredictable market conditions.

The company can measure the success of its data and information technology infrastructure by evaluating the ability to access data and its ability to merge social media data with data from CRM systems. Unfortunately, many companies are limited in their ability to identify which social media activities attract customers with the highest profitability, or who among their current customers

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best promotes or supports their products on social media platforms such as Facebook, Twitter or Pinterest. Overall, organizations are yet to see the return on investment.

We can conceptualize the term '*Customer Relationships through Social Media*' as social CRM which is composed of two dimensions: a CRM dimension and a social media dimension. For example, American Express started a new service called "Sync" that allows its cardholders to have access to exclusive offers when they propagate information related to affiliated products/services through social media. While it may not be difficult for American Express to assess how many people use such services, it is difficult to assess the value they create. Therefore we can define social media CRM as a customer relationship management software tool with a focus on social customer care.

4.2 Objectives

After going through this unit, you will be able to

- Infer the challenges and opportunities in Customer Relationship Management (CRM).
- Explain the importance of the social side of CRM.
- Outline different ways in which "Brick and Mortar" stores can utilize social media to increase their store sales.
- Show how technology enables an integration of social media and the stores.
- Illustrate with examples how long-term customer relationships can be strengthened using social media.
- Relate to the requirements of a good social CRM solution

4.3 Opportunities and Challenges in Customer Relationship Management

Even during the abysmal slides of the recession of the software industry a few years ago, it was noted that the CRM market was one of the few that continued to do well amidst the ruins. Companies want to deliver a differentiated customer experience using the possibilities of technology to survive in the current competitive market. This is where CRM comes into the picture. The demand for CRM solutions was on the up if the evidence from the figures put out by Gartner is any indication.

Social media is a great way to connect with your customers and develop a loyal bonding. The following are the ways to control social media to build strong relationships:

- a) **Focus on the customer, not the sale:** The representatives of the company should not be very focused on the short term sales target, rather the customer

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satisfaction should come first. The social media tool can be used more to focus on delivering information which is more interesting and relevant to the customer which may include the news stories of the company, blogs, offers, new launching etc. When customer interest is not clear, companies may conduct the survey to forecast the interest, like and dislike, inclination of current targeted customer keeping other demographic factors in mind. The social media can be very helpful tool in online poll conduction to discover what content customer would like to see more or less.

- b) **Be genuine:** Social media provides businesses with an opportunity to showcase their brand's personality and values. Customers prefer businesses to communicate in an authentic way, so pay attention to your tone and style of communication. Having a distinct voice can help you to build a community of followers.

Ask for feedback: Through such type of platform, the feedback can be collected very quickly and managed efficiently. Requesting feedback about your customer experience could be a very impressive way to connect with them and to show your concern. Then after, the way you respond to their feedback can make the difference in improving your customer service. This can give you the scope to boost your reputation and foster relationships with new and existing customers.

Richard Boardman of Mareeba Consulting goes to the extent of indicating that certain employees at higher levels view the absence of CRM in their organization as a big negative. The opportunities of using CRM are becoming increasingly better, and are the leading way to increased improvement in project management skills (customer communications), and improvement in the estimation of the costs of projects (negotiations with right users). The development of cloud-based database management also reduces the infrastructural strains on the implementation of CRM.

The benefits that accrue to companies from CRM implementation are as follows:

- Better understanding of historic consumer trends to schedule the sales promotions.
- Identification of ways to manage customers who are of low value.
- Identifying the profitability of customers and what drives them to buy at stores.
- Opportunities for cross-selling of products based on the pattern of behavior exhibited by customers.
- Better tailored marketing communications that feel highly personalized.
- Assessment of ways to retain existing customers, and deriving maximum value from existing customers by retaining their loyalty.
- Receiving feedback on ways to improve and modify existing offering.

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The challenges that stand in the way of CRM implementation and adoption are also to be understood:

- The senior management needs to handle the entire organization throughout the process of implementation and train the executives of all departments in the complexities of the system, which rarely happens.
- Unclear understanding of the benefit of CRM implementation and difficulty in measuring the impact of CRM on the increase in the sales metrics. When sales go up after CRM implementation, the sales staff can always claim with sales figures that they worked harder than ever before and confuse the management on the actual ROI (Returns on Investment) on CRM.
- Likelihood of making systems integration difficult as most CRM implementations do not collect, store, mine and access customer information directly.
- Resistance to change from the staff.
- Incompatibility of the different platforms on which the CRM is implemented across different branches, departments and zones.
- Solution provider not fully grasping the intricacies of the business model followed by the company implementing the CRM.
- Too much focus on technology rather than on the use of that technology.
- Lack of skills in data mining and data warehousing results in an organization having the technology, but ignorant of its proper use.

Example: British Airways CRM

The British Airways (BA) Executive Club CRM was called Teradata. It maintained the track of all their customers to re-engage them with various opportunities and customer deals based on their levels of membership number of travels made. The club encourages customers to accumulate 'Avios' points. These points can be earned during purchasing flight tickets, planning holiday trips, renting cars through BA, staying at BA hotels, allied groups and partners. Avios points were useful which helped customers to redeem for discounts on BA activities like travel and stay. BA Teradata system remembers many of the customers' preferences which facilitated reduction in re-booking experience. Customers moved up the levels of Executive Club membership as they continue association.

Source: <https://www.expertmarket.co.uk/crm-systems/customer-relationship-management-case-studies>, 20th April 2021, accessed on 14th June, 2022

4.4 Social Side of Customer Relationship Management

“To successfully exploit the potential of social media, companies need to design experiences that deliver tangible value in return for customers' time, attention, endorsement and data.”

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Companies have come to realize that a more holistic view of customer behavior and psychology can be had only when social media responses are merged with the traditional CRM platform. Customers interact in a more natural environment on social media and tend to reveal their frank opinions and choices than on a traditional structured survey model of feedback. This can go a long way in improving customer support initiatives, identifying new business and product opportunities. Most companies now have a Facebook, Twitter or LinkedIn account through which they engage actively with the organization that sells or offers products and services respectively. This is now being known as social CRM. Involuntarily or voluntarily, customers open up much more freely on social media than on traditional feedback modes. Even a simple action like “liking” a Facebook page or sharing a video can give insights to many sales officials who are “listening in” into such patterns of approval, dislike or indifference towards products or services. Almost all organizations that are into social CRM make their services accessible via mobile applications, also people can still share their views even if they are on the move.

An effective social CRM system might help the organization in the following ways:

- Streamline communicating with customers through social media
- Track how social media users engage with your brand online
- Perform social listening for online mentions and reviews
- Label users and conversations
- Organise team work
- Report on all your social customer care activities

The benefits that flow in from social CRM are as follows:

- Authentic, unadulterated, free-flowing information from customers without the fear of being watched or observed.
- The insights so obtained give lots of ideas to improve areas of dissatisfaction for customers, improve the messaging content of promotions.
- Big Data and social CRM platforms combine together to give ideas that could never be filtered out of traditional survey feedback forms.
- Near real-time feedback and observed sentiments available for leveraging.

Example: Coca-Cola CRM

Coca-Cola, in partnership with Salesforce, created CRM software that helped in permanent access to every customer history. This benefitted them dealing efficiently with customer complaints, and achieved the set targets. With *Salesforce*, Coca-Cola Germany’s team also resolved and presented issues with customers or suppliers.

Contd....

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It also helped them to respond by deputing field service professionals to attend to the problems in real time; it resulted in a 30% raise in productivity enhancing the customer service team's happiness.

Source: <https://www.expertmarket.co.uk/crm-systems/customer-relationship-management-case-studies>, 20th April, 2021, accessed on 14th June, 2022

4.5 Social Media to Brick and Mortar Sales

“Understanding what customers value, especially when they are in the unique environment of a social platform, is a critical first step toward building a Social CRM strategy.”

The retail sector is one that has been transformed with the advent of the ease of online shopping. Online shopping sites like Amazon, Alibaba, Flipkart, Snapdeal, to name a few, have rewritten the way Indian customers buy products from retailers, coupled with safe payment gateways that are secured by companies like VeriSign. The initial hitches of the last decade have been removed and customer traffic on such sites has reached unforeseen volumes of proportions.

Social media has played a big role in the way in which the retail sector has changed the way it functions. Some of the ways in which social media is integrating itself with brick & mortar sales are listed below:

- Companies are concentrating on engaging customers first and selling later. If a customer connects regularly with a particular brand on the social media platform, it is because of the availability of information which is relevant to them. Companies are now trying to put in content on their social media platforms in such a way that it promotes customer engagement, thereby boosting sales as an outcome.
- Companies are tailoring their strategies by understanding their customers properly. Twitter has a word limit and is very impulsive as a medium of interaction with the customers tweeting many times on a particular day. Facebook has the image of being more relaxed with lesser updates given on a day. For serious sales between B2B partners, LinkedIn provides a more professional platform to link among participants. This differentiation of the various social media options is being recognized and utilized well by companies now.
- Social media platforms like Freecharge.com allow customers the use of shopping coupons that can only be redeemed in its designated stores. Special offers come bundled with compulsory store visits. These kinds of communications will naturally drive up the sales in the store and footfalls at retail outlets.
- Companies are taking care not to digress from their core communications strategy on the social media by maintaining a definite message thread throughout their campaigns so that store visits are maintained high.

Example: How Brick and Mortar Retailers are Gaining Wins

TYLER, Texas, who were specialists in Tennis and running equipment, grew to be market specialty retailer, specializing in apparel, footwear and accessories. They moved online, and designed approaches for increased customer experience. They targeted on Facebook and Instagram, email marketing methods, which enhanced navigation, on-site search, and fraud protection.

Source: <https://www.bigcommerce.com/articles/offline-to-online/brick-and-mortar-retailers/#examples-of-successful-offline-to-online-merchants>, 2022, accessed on 14th June, 2022

Activity 4.1

Using Social Media to Enhance Customer Base

Select one brand of a product each from beauty segment, healthcare, cereals, beverages and chocolates. Identify their presence in the social media. Study how they try to improve their brand image and their connectivity with customers through the social media. Enlist different topics of discussion that take place on different forums used by these brands.

Answer:

Check Your Progress - 1

1. Which one of the following is a challenge, that stand in the way of CRM implementation and adoption?
 - a. System integration is easy
 - b. Resistance to change by staff
 - c. Established transition modle
 - d. Available models for corss platforms
 - e. Abundant use of technology like Data warehosues, mining
2. Social Media can filter out unseen patterns of customer behavior when coupled with Advertisements and which of the following?
 - a. Sales Promotion
 - b. Big Data Analytics
 - c. Twitter Comments
 - d. Written Customer Survey Feedback Forms
 - e. Inputs from sales Representatives

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3. A good social CRM solution does not need to be supported by which of the following?
 - a. Business Analytics capability
 - b. Environment for Transparent conversations
 - c. Quick response teams to handle complaints
 - d. Ability to Filter Data Effectively
 - e. Transfer of all sale to Online mode
4. Allowing customers access to information about nearest stores that match our requirements is through which of the following messages?
 - a. Geo-targeted
 - b. Short Message Service
 - c. E-mail
 - d. Telephone
 - e. Letter
5. Which among the listed is not a benefit out of social CRM?
 - a. Authentic, unadulterated, free-flowing information from customers.
 - b. The insights give lots of ideas to improve areas of dissatisfaction for customers.
 - c. Big Data and social CRM platforms combine together to give ideas that could never be filtered out of traditional survey feedback forms.
 - d. Near real-time feedback and observed sentiments available for leveraging.
 - e. Improved brand image and Increased sales.

4.6 Connecting Stores with Social Media using Technology

Some of the ways in which social media connects stores using modern technology are listed below:

- GPS (Global Positioning System) enabled mobile apps now send push messages of special offers that are available only in stores that are located close to your present location. These are called Geo-Targeted messages.
- 3D viewing of different products on offer on the website allows customers to actually get a store environment when on the internet. There are helplines, toll-free numbers and discussion forums that enable comments and complaint handling in real time.
- Brands that are discussed most on the social media will have more shelf space allotted in the store. Social media platform Pinterest actually practices this with products that have been “pinned” the most.

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- There are retailers who map in-store Wi-Fi browsing patterns to understand the search patterns of customers so that they can offer better services next time the same customer arrives at a store.
- Retail stores now have Radio Frequency Identification technology (RFID), which can help combine information gleaned from the POS (Point of Sale) counters to build a profile of the customer's buying patterns. Thus, when used in conjunction with the data mining capacities of the retailer, this can throw up amazing patterns of behavior of customers, and allied association analysis can be very useful to the store.
- Instagram is playing a huge role in allowing customers to satisfy their ego needs of posting a picture of themselves at the store wearing a particular fashion accessory or a new dress, thereby motivating other people in their friends circle to try out the same, thereby increasing footfalls at the retail store.
- Hotel industry uses the social media in a large way as most travelers now use aggregator sites like Tripadvisor.com, Cleartrip.com, etc., to make a decision on the available options with them. The amazing and scathing reviews that customers post after their experience of staying at a particular hotel goes a long way in future clicks on the hotel website, which leads to increased business through new customers.
- Sites like HolidayIQ.com, booking.com proactively ask hotel guests to be part of the review panel and offer discounts for regular reviewers.

Example: BingoBox's Unmanned Stores

China's BingoBox had thousands of 24/7 public use convenience stores located in and around China. Customers used the technology of scanning QR code with 'WeChat app' to gain access and get inside the store and browse up to 800 items. This helped customers to pick up items, which may be awkward to present before a human cashier. There was a self-checkout provision based on RFID, on all the purchased packaging. The payment was to be done by WeChat account or AliPay. An intelligent security system identified products with a visitor, those are not paid for.

Source: <https://econsultancy.com/examples-digital-technology-in-retail-stores/>, March 4, 2021, accessed on 14th June, 2022

4.7 Building Long-Term Customer Relationships through Social Media

Companies should consider the following to lay the foundation for a successful social media program that will help them reinvent their customer relationships:

- **Recognize social media is a game changer.**

The companies must create their social media program in a very interactive way as this could be a gateway to all type of interactions. This can also give a holistic view of customer interest and expectations.

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- **Be clear on the differences between social media and other channels.**

Social CRM is about enabling engagement with the customer for the mutual benefit of the customer and the business. The traditional model of managing the customer relationship needs to adapt to the reality that the customer is now in control.

- **Make the customer experience seamless across social media and other channels.**

If you know your customer in one channel, you need to know him or her in other channels as well. This means the social solution should not be devised as an isolated standalone program, but needs to be thoughtfully integrated with other customer-facing initiatives.

- **Start thinking like a customer.**

Instead of asking why your company should engage in social media, ask why a customer would choose to interact with your company in a social platform. Recast social interaction strategies to focus on giving customers the value they seek and the customer intimacy will come.

- **Monetize social media, if that's what customers want.**

Making it very quick and easy for customers to transact directly within a social media experience can make system more beneficial to the organization and customer too. By developing the social commerce campaigns to target a specific customer need with time-sensitive offers or discounts might motivate the customers to get loyal. By offering incentive to the customer who shares the content on behalf of the company with other prospect customer, the company may capitalize the viral benefits of community platform offers.

Social media is not a tool that companies use to promote sales for a short term. Companies are waking up to its potential as an aid in maintaining and improving long-lasting customer relationships. The biggest advantage with social media is that customers can express opinions and offer suggestions whenever they log on to the portal, rather than the earlier method of answering a feedback form only when it is given to the customer or through a toll-free customer care number.

Methods: If we log on to Flipkart.com, every customer who has an account on Flipkart.com has a dedicated Login page which serves as his account, with the purchase history. If we choose a particular book, it suddenly throws up different options for combo book purchases and also a section called “People who bought this book also bought”, thereby triggering possible extra purchases in situations where the customer might have logged in only to buy one book. This makes the customer feel that the retailer is keeping a tab on the reading pattern of the customer and the entire online shopping experience is very personalized.

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Brands try to build long-term relationships through social media by following different methods. They are:

Easy Accessibility

The reputation and repeat usage of the services of a particular brand increases many fold when the ease of access to the service is much better than that of the competitor. Flipkart.com did not have any competition in India till Amazon.co.in invested heavily in the Indian online retail shopping sector. A lot of customers had shifted to Amazon.co.in because of several features that were differentiated from Flipkart, who had no Cash On Delivery (COD) facility in many cities due to the problems it had in negotiating contracts with different courier companies. Amazon.co.in went in with a strategy of using its own Distribution Centers (DC) which helped it offer a COD facility at almost all places. As a response to this, Flipkart started a facility called “Same Day Delivery” in many metro cities which became a big hit. Flipkart has recently also tied up with the famous Mumbai’s Dabbawalas and Amazon with Indian Post to have the last mile connectivity for delivery to customers.

The race to provide easy accessibility has seen some funny moments in the social media segment. Social media facilitates such business wars online so that customers can finally decide which side they will veer onto.

Reward Schemes

All big retailers offer loyalty cards similar to credit cards to their high volume customers. For example, the Landmark retail chain which carries the brand Max Retail offers a card called Inner Circle, which has options that allow customers to redeem their points earned through purchases. Customers can be retained through tie-ups with several banks whereby their debit cards could be earning points that can also be redeemed during a shopping period.

Coupons are provided by several shoppers that can be availed online but only redeemed in the store. Big Bazaar offers huge discount coupons to shoppers which can be checked online but redeemed only in its brick-and-mortar stores.

Groupon conceptualized connecting subscribers with local merchants by providing activities, travel, goods and services in more than 28 countries.

Holiday IQ.com proactively gives discounts to hotel guests for posting good reviews, when they book rooms the next time at the same hotel. These are ways in which reward schemes strengthen long-term relationships.

Gaining Trust

Online retailers like Snapdeal, Amazon and Flipkart offer “Free Replacement Guarantee” in case a shopper does not like the product bought. Huge retailers like

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Walmart and Reliance offer a ninety day replacement period during which the customer can return the product bought without any loss. These kinds of initiatives build a very positive and favorable image for the organization in the eyes of the customer. Companies like PepsiCo, Maggie which had run into a lot of issues related to health problems due to junk food engage a lot of customers on Twitter to build up their image. Almost every food and beverage company has a presence on the social media.

Customer engagement: Companies also engage with customers to highlight their environmental initiatives and socially responsible activities on the social media to build up a favorable image of them, thereby increasing their acceptability among the public. P&G's Future Friendly, Ford's People Fleet, and Puma's Project Pink are famous social media Corporate Social Responsibility activities that captured the customers' imagination.

Dell had a customized sales model, even before the advent of social media. It continued with the model and extended it to Twitter, which is its alternative channel now.

Best Practices

To minimize the social media disaster and risks associated with such integration of CRM with social media, the following is the list of do's and don'ts:

Do's:

- Ensure your customer support team have the knowledge to respond quickly to customer queries
- Recognise loyal customers and reward them with discount codes and goodies
- Monitor conversations so you can identify problems before support tickets start rolling in
- Use audience insights to target the right people with your organic and paid communications

Don'ts:

- Treat your social CRM as a standalone tool – it has to work with your broader social media and social customer care strategies!
- Invest in a management tool without creating an action plan and road map
- Be impersonal in conversations with customers – talk to them like a human being!
- Underinvest in CRM solutions if your budget allows – a good tool really makes all the difference

Example: Tips to Build Customer Relationships with Social Media in 2021

Use of User-Generated Content (UGC) at social promotions was a useful approach, for community building, making social calendar with customer driven content. Cupshe was a swimsuit retailer that used UGC while moving to online. It utilized various photos sent by the customers wearing different sizes and styles of the products, as part of the social strategy. They built a community of customers of their products. They encouraged their customers to share their experiences and make photos with their products, to build a recognizable hashtag among the social fraternity.

Source: <https://sproutsocial.com/insights/build-customer-relationships/>, June 20, 2022, accessed on 14th July, 2022

4.8 A Social CRM Solution

Paul Greenberg, who is considered the pioneer of CRM, explains social CRM as a strategy-driven philosophy that uses technology as a platform to engage with customers collaboratively to provide mutual benefit in a transparent environment by taking hints from the conversations that happen online.

Difference between a Traditional CRM and a Social CRM

Traditional CRM collects data through data mining and data warehousing methodologies whereas the social CRM indulges multiple customers in a constant dialogue through social media platforms, with the topic of discussion being the brand and how it is perceived across different geographical locations.

Social CRM engages the customer across different layers of interaction compared to the structured single layer interaction of a traditional CRM. He/She is also supported or opposed by many other customers in real-time as the expression of opinion goes on. This feature is not possible on a traditional CRM. In the traditional CRM, the company is the focal point, whereas in social CRM the customer is the focal point. A concept of crowdsourcing of reviews, information, updations, suggestions, opinions, criticisms evolves in social CRM.

Functions that are handled in a Social CRM Solution

The following functions are simultaneously handled on a good social CRM Solution used by any organization:

- Brand Advocacy
- Sales promotion through word of mouth publicity in discussion forums
- Facility for customers to avail sales support on their own
- Involving in engaging dialogues on new product launches, development and improvements to existing products

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- Listening to the company's ongoing discussions to get new ideas
- Tracking of any threats from competitors' ideas and products
- Measurement of the metrics involved in a recently concluded campaign
- Viral Marketing campaigns

Social CRM Solution requires the following environment for a proper implementation and success:

- Business analytics to measure the social interactions that happen online regarding the brand or product.
- An environment where customers feel confident and open enough to engage in no-holds-barred discussions.
- Very quick response support teams who take action immediately on the ground when a problem is encountered or a negative opinion is voiced online.
- An ability to glean out profiling data from the database so that social media initiatives can correctly be focused on the right target audience.

Social CRM Solution also needs the capacity to measure the following metrics:

- Number of website visits and time spent on the sites
- Number of "Likes"
- Number of re-tweets
- Number of visits to related pages
- Number of uploads and downloads of content on the company websites

In a nutshell, the social CRM is a socialistic solution one step ahead of the existing traditional CRM. The very concept of social CRM consists of peoples' participation at various stages of interactions. Thus, the customer becomes a focal point in social CRM. It is used for brand advocacy, sales promotion, after sale service, digital viral marketing, etc.

Example: Social Customer Relationship Management

The Greek family business hotel had 10 rooms with necessary fire-place and Jacuzzi in all rooms. There were weekend customers who check-in to locate the hot springs and the ski centers in the surroundings. They adopted social media: Facebook, Twitter, Foursquare and YouTube, as well as Trivago, Trip Advisor for word-of-mouth marketing and customer participation and booking. They implemented Social CRM leading to increase of the bookings by 7-8%. The branding also saw a positive improvement, and a salient point was abroad customer base getting added.

Source: https://www.researchgate.net/publication/319641762_Social_Customer_Relationship_Management_A_Case_Study, 05-July-2022, accessed on 14th July, 2022

Activity 4.2

Social media for apparel market

Consider that you have been approached by an apparel retailer. The retailer functions by using a brick and mortar model. You have been approached by the promoters of the firm as a social media consultant. Suggest ways in which you can advise the client to use the social media to improve his brand recall amongst the customers.

Answer:

Check Your Progress - 2

6. Which of the following is considered the pioneer of CRM?
 - a. Rodrigues Thomas
 - b. Rama Rao Nandgaonkar
 - c. Jim Kotler
 - d. Paul Greenberg
 - e. Sunny David
7. Which of the following is considered better with serious sales discussions between B2B partners?
 - a. Facebook
 - b. Twitter
 - c. LinkedIn
 - d. Instagram
 - e. Twitter and Instagram
8. Social CRM has the capability to measure one of the metrics used from the following. Identify the same from the following.
 - a. Number of likes
 - b. Number of dislikes
 - c. Number of odds
 - d. Number of evens
 - e. Number of odds and number of evens

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9. What does RFID stand for?
 - a. Ready for Identification
 - b. Redirection for Identity
 - c. Redesign for Identified item
 - d. Redeploy for Identity recognition
 - e. Radio Frequency Identification
10. Who becomes the focal point in CRM?
 - a. Web Services
 - b. Application suite
 - c. Service provider
 - d. Customer
 - e. Supplier

4.9 Summary

- The world of Marketing is increasingly shifting to the online sphere. With a whole new generation of tech-savvy youngsters deciding the fate of products and services through word of mouth publicity and online reviews on social media platforms, the companies now know that they are doomed without a presence on the social media.
- Currently, the majority of companies have a presence on Facebook, LinkedIn, Twitter, Instagram, Pinterest and Wikipedia to name a few. The challenge during this paradigm shift is in measuring the impact of responding to social media in terms of the increase in product sales.
- Companies have still not explored all functionalities of social CRM solutions. There is a huge opportunity ahead.
- Sentiment analysis: Using statistics, or machine learning methods to extract, identify, or otherwise characterize the sentiment content of a text unit, and is referred to as opinion mining, although the emphasis is on extraction.

4.10 Glossary

Brand Advocacy: The word of mouth publicity that is spread across the market by a few brand loyal customers through different media.

Customer Relationship Management: The management of a company's interaction with its present and potential customers, using the aid of technology and data mining software to coordinate and implement sales & marketing plans, customer service & support activities and delivery mechanisms.

Social CRM: The use of opinions, reviews, complaints, criticisms and suggestions taken from social media regarding a product, service or brand to integrate it with the CRM software to provide better and real-time engagement with the customers so as to improve the customer experience with the brand.

Social CRM Metrics: These are measurable performance indicators of social CRM like number of hits, number of likes, etc. which can help organizations understand a great deal about the traffic that is generated due to several social media marketing initiatives undertaken by them, to ascertain the success or failure of campaigns.

Viral Marketing: A marketing method where the information about a company's products and services is spread across the internet at an exponentially increasing rate.

4.11 Self-Assessment Test

1. How is traditional CRM different from social CRM?
2. Explain the different functions that are handled on a good social CRM solution.
3. Explain the different ways in which stores can improve footfalls by connecting technology with social media.
4. Analyze the strategies used by Procter & Gamble in their Old Spice social media Campaign.
5. Collect from literature about the companies, who have used social media for customer relationship strengthening.
6. Identify some "Brick and Mortar" stores which utilize social media to increase their store sales.

4.12 Suggested Readings / Reference Material

1. Rodney Heisterberg and Alakh Verma (April 2022). "Creating Business Agility: How Convergence of Cloud, Social, Mobile, Video and Big Data Enables Competitive Advantage," Narrated by Stephen Graybill.
2. Jonathan S Walker (2021). Social Media Marketing For Beginners - How To Make Money Online: Guaranteed Strategies To Monetizing, Mastering, & Dominating Any Platform For Your Brand, JW Choices.
3. Barry Connolly (2020). Digital Trust: Social Media Strategies to Increase Trust and Engage Customers, Bloomsbury Business.
4. Seema Gupta (6 August 2020). Digital Marketing McGraw Hill; Second edition.
5. Tracy L. Tuten, Michael R (15 June 2020). Solomon et al, Social Media Marketing, SAGE Publications Pvt. Ltd; Third edition.

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6. Paul Martin Thomas Erickson (2019). Social Media: Usage and Impact, Global Vision Publishing House, 2 edition.
7. Steve Randazzo (2019). Brand Experiences: Building Connections in a Digitally Cluttered World, Paipen publishing.

4.13 Answers to Check Your Progress Questions

1. (b) Resistance to change by staff

Any change is not easy in an established environment. Change management needs to be adopted to bring in the change for seeing success.

2. (b) Big data Analytics

Big Data analytics is a very important development that helps companies identify hitherto unseen patterns of behavior through proper Data Mining and Data Warehousing software. This is imperative for companies that handle huge volumes of sales data across the globe which cannot be managed by normal data analytics tools.

3. (e) Transfer of all sales to online modes

The aim of the use of social media in CRM is to improve the eventual footfalls in your brick and mortar store through proper use of the online media. It will not be successful if the focus of the company was only to completely transfer all sales from an existing brick and mortar setup to online.

4. (a) Geo-targeted

Geo-Targeted - Allowing customers' access to information of nearest stores that match their requirements is through geo-targeted messages.

5. (e) Improved brand image and Increased sales

CRM is aimed at establishing better customer relations and allied activities which focus on customer directly. Thus, improved brand image and sales may be a by product of the process but not a direct benefit.

6. (d) Paul Greenberg

Paul Greenberg is considered the pioneer of CRM.

7. (c) LinkedIn

For serious sales discussions between B2B partners, LinkedIn is considered better.

8. (a) Number of Likes

Social metrics include number of likes in measuring the usage of Social CRM.

9. (e) Radio Frequency Identification

RFID stands for Radio Frequency Identification that is used to identify the object on which the RFID tag is used.

10. (d) Customer

The customer becomes the focal point to be served and the satisfaction of the customer only decides the future of business.

SMACS (Social, Mobile, Analytics, Cloud, and Security) Technologies for Business

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