4TH SEM BCOM FINANCE \CO-OPERATION

CALICUT UNIVERSITY

PROFESSIONAL BUSINESS SKILLS

2019 ADMISSION

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BCM3A PROFESSIONAL BUSINESS SKILLS

Lecture Hours per week: 5, Credits 4

Internal: 20, External: 80, Examination 2.5 Hours

Module 1

Professionalism: Meaning -Definition - Characteristics - Traits and Qualities of a good professional - Professionalism in business - Professional Skills: important soft skills for business success Professionalism in Communication: Verbal Communication: Professional Presentation - Different Presentation Postures Written Communication: Email Significance of Email in business - Email etiquette format rules - dos and don'ts - Technical Documentation: Standards – Types (15 Hours 15 marks)

Module 2

E-Learning :Introduction of electronic learning - benefits and drawbacks of e-Learning Online education - Digital age learners - Knowledge resources on internet E-books, Audio, Video and other means for e-learning- Introduction to content development and tools - Online libraries - MOOCS - The e-Learning as a service Industry - major technologies used in e-learning different approaches for e-Learning delivery - E-learning in India (12 Hours, 12 marks)

Module 3

Business Data Analysis: Features of New Generation Computers - Concept of data analysis Business Data Analysis - Data Analyst - Types of analysts - organisation and source of data, importance of data quality, dealing with missing or incomplete data- Social Networking Analysis - Big Data Analysis - Role of Data Scientist in Business & Society - Role of Artificial lutelligence and Intelligent Agents in e-business - Ethical and Legal considerations in Business Analytics (18 Hours, 18 marks)

Module 4

Socio - Cyber Informatics: IT and society - Digital Divide - Digital natives-Cyberspace New opportunities and threats - Cyber ethics. Cyber-crimes Types - Cyber Laws - Organisations related with cyber law-Cyber addictions - Information overload - Health issues - e-waste and Green Computing Recent E-governance initiatives in India (15 Hours 15 marks)

Module 5

Digital Marketing Introduction to Digital marketing Environment -means Need for digital marketing - Advantages and disadvantages of digital marketing- Types of digital marketing - Business models in digital marketing - Business to Business (B2B) ,Business to Customer (B2C), Customer to (C2C) ,Business to Employees (B2E), Business to Government (B2G) - Online advertising - types of online advertising - Top e-commerce websites around the world

and its scenario in India. PPC (Pay per Click) advertising - Search engine Analytics - Search engine ads - social media channels and ads

(20 Hours. 20 marks)

References Books

1. Professional Business Skills- Lee Pelitz 2 Edition

2. Peter Norton, fintroduction to Computers. Tata McGraw Hill Private Limited. New Delhi.2009

3. Alan Evam, ITL ESL, Leslie Lamport. Dolores Etter, Danen George. Kenneth Loudon, Gary Rogers, Rainer Handel. INFORMATICS -Technology in Action,Pearson Education, Delhi, 2009.

4. V.Rajaraman, Introduction To luformation Technology, PHI Learning Private Limited. New Delhi, 2009

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Module 1

Professionalism

Introduction

- Professionalism means possessing the qualities of a professional.
- Professionalism is not all about outer appearance by any means, but the way one present himself does play an important part.

Meaning and Definition of professionalism

Professionalism is the way an individual conduct himself at work to represent both himself and his company in a positive way. It includes standards for behavior that might be required in an organisation.

According to "Eric Mochnacz ,"professionalism is someone's inherent ability to do what is expected of them and deliver quality work because they are driven to do so ."

Characteristics of professionalism

- Specialized knowledge
- Competency
- Commitment and confidence
- Responsibility and dependability
- Honesty and integrity
- Initiative and accountability
- Good image
- Self-control

Traits and qualities of a good professional

- Excellence
- Organizational skill
- Time management
- Good communication

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- Soft skills
- Positive attitude
- Focus and hard work
- Ethical behaviour
- Continuous learning
- Seeks advice
- Advancing in profession
- Teaches new generation
- Appearance
- Demeanour

Professionalism in business

Professionalism help companies success in following ways

1. Establishment Of Proper Boundaries
2. Encourages Personal Improvement
3. Promote And Maintain Accountability
4. Establishes Respect
5. Minimizes Conflict
6. Increased Job Satisfaction
7. The Sense Of Responsibility
8. Personal Growth

Professional skills

1. Communication skills
2. Decision making skills
3. Problem solving skills
4. Leadership skills
5. Interpersonal skills
6. Organizational skills
7. Time management skills

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8. Stress management skills
9. Teamwork
10. Work ethic
11. Flexibility

Professionalism in communication

Communication is about passing information from one person to another.

- Verbal communication: any interaction that makes use of spoken words is considered as verbal communication.
  Public speaking: another form of verbal professional communication is public speaking or making a formal presentation to a group of people.

Factors of effective verbal communication

- Wide reading
- Preparation
- Listen carefully
- Body language
- Think in terms of listener's perspective
- Speak with confidence
- Develop skills

Digital communication

In a digital communication system the information or the thought is encoded digitally as discrete signals and transferred electronically to the recipient

Professional presentation

There are three primary skills required for effective presentation

- Verbal communication skills
- Content
- Non verbal communication

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Organisation of presentation

A good presentation should organize in the following way

- Introduction
- Body
- Summary
- Visual aids

Presentation techniques

- gather information
- write down main ideas
- develop introduction and conclusion
- practice the speech
- set a delivery style
- use of the podium
- length of delivery have been decided in advance
- eye contact
- keep good voice modulation
- speak calmly
- question and answer session

Different presentation postures

- Standing posture: how people stand is a strong indicator of their mindset. Stand straight but not rigid. Lean forward just a little and knees should be straight but not locked.
- Hands: when speaker is not actively engaging in Gesturing, he can rest his hands in one of two places: the first option is rest the hands at his side with your fingers slightly curled.

  Second option is nest one hand with other, keeping both at navel level when not gesturing.
- Holding like a basketball between your hands: It indicate confidence and control

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- Palms up: this gesture indicates openness and honesty.
- Palms down: it is the sign of strength, authority and assertiveness.
- Steeple the hands: steeple the hands means when all five fingertips on one hand touch the five fingertips on the opposite hand.
- Change the position frequently

Written communication

Written communication means the sending of messages, orders or instructions in writing through letters,circulars,manuals,reports,office memos,bulletins etc…it is a formal method of communication and it becomes a permanent record for future reference.

Forms of written communication

- Letters
- Memo
- Notice
- Circular
- Report
- Minutes

Four Common errors which must avoid in order improving writing competency

- Confusing language
- Verbosity: it means use of too many words.
- Poor sentence structure
- Information overload

Advantages of written communication

- Permanent record
- Authoritative document
- Accuracy
- Legal document

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- Long distance communication
- Easy understanding
- Delegation of authority
- Suitable for long messages
- Less possibility of distortion
- Develops confidence
- Goodwill and image building

Limitations or disadvantages of written communication

- Time consuming
- Expensive
- No secrecy
- No instant feedback
- Less flexible
- Lacks personal touch
- Unsuitable for illiterate people

Important soft skills for business success

Soft skills are a cluster of productive personality traits that characterize one's relationship in a milieu. It include

- Communication
- Coping under pressure
- Empathy and emotional intelligence
- Flexibility, openness and ability to adapt to change
- A growth mindset

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Email: electronic mail

Advantages of using email

- Fast client communication
- Availability and portability
- Reduce mailing cost.

Disadvantages of email

- Vulnerability to loss
- Accessible to others
- Difficult to interpret emotions.

Significance of email in business

- Easy and fast
- Used for both internal and external communication in organization
- Easy retrieval of mails.
- Economical
- Marketing
- Privacy and confidentiality
- Security
- Sending group emails to workgroups
- Alternative means of physical document.

Email etiquette

Email etiquette refers to the principals of behavior that one should use when writing or answering email messages. It is also known as code of conduct for email communication.

Company implement email etiquette rules for the following reasons

- Maintain professionalism
- Efficiency
- Protection from liability

Format of email

Before compose

1. Identify the relevance: Email as a means of communication can be effective only when it is relevant

   The first step in writing e-mail message includes the following

   a) Identify the purpose of the message
   b) Focus on objective
   c) Focus on content
2. To line
3. Cc line (carbon copy
4. Bcc line
5. Subject line
6. Salutations
7. Content
8. Use formal tone
9. Proper usage of good language
10. Writing a complaint: when making complaints, should briefly state the history of the problem to provide context for your reader and explains the attempts made previously to resolve the problem.
11. Attachments
12. Privacy: email is not and never has been private .confidential information can be sent in a locked format like PDF, use coded attachments etc...
13. Check and review
14. Response time
15. The closing: always sign off with the name of the sender at the end of the message.

    Signatures

    Complementary closings.

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Dos

- Be concise and to the point
- Write in positive tone
- Address all the questions or concerns to avoid delays
- Write about single subject
- Use proper spelling, grammar and punctuation
- Read the email message before send it
- Provide all supporting information
- Use active instead of passive
- Avoid using URGENT and IMPORTANT
- Keep flaming under control
- Add disclaimers to in emails
- Check your inbox just before you leave office

Don’ts

- Do not copy a message or attachment without permission
- Do not use email to discuss confidential information
- Never respond if you are upset
- Don’t attach unnecessary files
- Don’t forget to attach documents
- Never use sarcasm or rude jokes
- Don’t send emotional emails
- Do not write in CAPITALS
- Do not reply to all
- Do not use abbreviations

Technical documentation

Technical documents are more than just user documents. They present specific information and know-how needed to develop, produce, maintain or use a form of technology.

Types of technical documentation in business

- Investment analysis
- Cash flow projections
- Tenders
- Agent contracts
- Leases
- Marketing research statistics
- Annual general reports

Types of documents

1. Description document
2. Installation
3. Configuration
4. User manual
5. System reference

Standards

Standards are essential for producing good documentation. They provide guidelines on what content to include, the writing style and the format of document.

Industrial standards

Industrial standards are generally adopted by organisations to ensure documentation they produce is of good quality.

Standards of documentations

- Clarity
- Simple language
- Avoid jargons
- Indexing.

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Attributes of good documentation

- Content listings
- Stated purpose
- Navigation tools
- Accuracy
- Accessibility
- Clarity
- Coherent
- Concise
- Complete and comprehensive
- Consistent.

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Module 2

E-Learning

E-Learning

E-Learning means learning conducted via electronic media, typically on the internet.

Advantages of E-Learning

- Convenience
- Enhanced learning
- Cost effective
- Individual learner's difference
- Flexible
- Anonymity
- Interaction
- Innovative teaching
- Improved administration
- Savings
- Minimize physical resources
- Easy access to resources
- Multimedia based resources

Disadvantages of E-Learning

- Isolation
- Less effective
- Health related concerns
- Lack of interaction
- Negative effect on communication
- Greater chance for malpractices
- Piracy and plagiarism

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- Less role for socialization
- Not suitable for all disciplines

Principles for successful E-Learning

1. Match to the curriculum
2. Inclusion
3. Learner engagement
4. Innovative approaches
5. Effective learning
6. Formative assessment
7. Summative assessment
8. Coherence, consistency & transparency
9. Cost-effectiveness

Online education

Online education can be defined as electronically supported learning that relies on the internet for teacher/student interaction and distribution of class materials.

According to carliner (1999) defined online learning as educational material that is presented via computer.

Online education programs

- 100% online education
- Hybrid education
- Online courses
- MOOCs

Features of online learning

- Focus has shifted from teaching to learning
- Online learning is student centered
- Online learning is dependent upon the development of learning environment

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- Online learning is active
- Online learning should be interactive and collaborative

Role of the faculty member in online learning

- Organization and structure
- Creation and selection
- Assessment
- Moderation and facilitation
- Supporting learning strategies
- Orientation of collaborative learning

Positive and negative effects of online learning

Positives

- Flexibility
- There is no commuting or parking hassles
- Learners learn to become responsible for their own education with information available at their fingertips.
- The submission of assignment easy and convenient
- It is easy to make interaction with other students and teachers
- It allows them to study and take tests at a time and place that works best for them, learn at their own pace.

Negatives

- Miss the face to face interaction with the teachers and among students
- May prefer to attend traditional classes with teachers who teaches and guide them through the course
- Find access to the necessary technology challenging and the availability of technical support limited.

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Digital age learner

Digital learning is any type of learning that is accompanied by technology or by instructional practice that makes effective use of technology.

The first skills that digital age learners must need digital literacy and digital fluency.

Digital learners are also known as the Net generation, technology –savy students.

Characteristics of digital learners

- Busy
- Impatient
- Impartial
- Social
- Technical

Knowledge resources on internet

The use of ICT and the internet in particular, enhance any component of the teaching and learning process, including design, delivery and assessment of learning opportunities.

E – learning activities are supported and facilitated through electronic communications delivery methods and technologies, such as the **internet, computer networks, interactive television, satellite broadcast, web based conferencing, e-books, virtual classrooms, group, collaborative software, CD-ROM, DVD, audio and video tape.**

E-book

Electronic book published in an electronic format.

There are currently three ways to read e-books

- Portable e-book reading devices
- On PC or Mac using special software

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Features of e-book

- Tangibility
- Browsability
- Searchability
- Referenceability
- Hybridity

Advantages of E-Books

- Low update cost
- Multimedia format
- Searchable
- Convenience
- Portability
- Less space
- Print on demand
- Interactivity
- Personalisation
- Add-ons
- No shipping cost
- Environmentally friendly

Disadvantages of e-books

- Not convenient to read
- Prefer printed text
- Piracy
- Costly
- Not compatible with the computer or device
- Risky
- Not all book formats are compatible with the reader.
- E –books can cause eyestrain
- E-books do not have a defined life

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- E-books can be hacked

Sites with free e-books

- Project Gutenberg
- Google books
- Freetech books
- O'Reilly open books
- Bookboon
- Wiki books
- 25 free computer science books
- Freebooks4doctors
- Devfreebooks
- Siyavula

Audio in e-learning

Audio is definitely powerful and it can do several things in e-learning, including

- Spoken word
- Feedback
- Sound effects
- Music

How to use audio in e-learning

- Avoid text –speech redundancies
- Use audio with visuals for more complex subject matter
- Use high quality audio
- Assess learners knowledge through creating an audio presentation
- Provide audio instructions for more complicated assignments
- Allow learners to control the audio playback and volume
- Choose audio with the right tone, jargon and pace
- Enhance the experience with suitable background music.
- Use voice over actors to make course professional and personal

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- Create fun and creativity with customized songs.

Videos in e-learning

Video is an electronic medium for the recording, copying and broadcasting of moving visual images.

Benefits of using video in e-learning

- More engaging
- Easy understanding
- Easy retention
- Greater attention
- Good rapport
- Reinforcing the information
- Encourage discussions
- Better learning experience

Video formats in online instruction

1. Web conferencing

Effective use of videos in e-learning

- Concise
- Interactive
- Use transcript
- Short file sizes
- Use videos for scenarios and simulations

Other means for e-learning

- YouTube

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Webcams:

A webcam is a video camera that feeds or streams its image in a real time to through a computer or computer network.

E –content

A digital text and images designed for display on WebPages which is suitable for particular audience is called e-content.

Technically it can be defined as digital content that can be transmitted over a computer network such as the internet.

Characteristics of e-content

- Technologically friendly
- Learner friendly
- Learner centric
- Teachers friendly

Types of e-content

- Assembled e-content
- Created e-content

Forms of e-content

- Text
- Pictures
- Sound
- Video
- Animation
- Simulation
- Presentations

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Application of e-content packages in education

- Adobe acrobat's portable document format (PDF)
- Microsoft reader's literature (LIT)
- Rich text format (RTF)
- Night kitchen's tool kit 3(TK3)
- HTML(hyper text markup language)

Types of e-content authoring tools

- SCORM(Sharable Courseware Object Reference Model)
- AICC(Aviation Industry Computer-Based Training Committee)
- PROMETEUS(Promoting Multimedia Access to Education And Training in European Society)
- ARIADNE
- ADL(Advanced Distributed Learning Initiative)
- AASL(American Association Of School Librarians)
- LTSC(Learning Technologies Standard Committee)

Phases of e-content development

- Analysis phase
- Design phase
- Development phase
- Testing phase
- Implementation phase
- Evaluation phase

Advantages of e-content

- Hyper linking
- Non –linearity
- Use of multimedia
- Data density

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- searching

Online libraries

Digital libraries are also referred by many name such as electronic libraries, virtual libraries, libraries without walls, hybrid libraries etc...

Definition

Sun microsystems (2002) defines a digital library as : “the electronic extension of functions users typically perform and the resources they access in a traditional library”.

Characteristics of the online library

1. Collection of technologies
2. Searching and distributing materials.
3. Less space

Advantages of online library

- No physical boundary
- Round the clock availability
- Multiple accesses
- Structured approach
- Information retrieval
- Less space
- Linking
- Low cost

Disadvantages of online library

- Costly affair
- Technology obsolescence(hardware & software)
- Storage media relate
- Dominance of data creators and publishers
- Trained manpower
- User education and training

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- Security against hacking & sabotage

MOOC (massive open online course)

MOOC is an emerging technology, is evolving new pedagogy to benefit teachers and students.

A MOOC is a model for delivering learning content online to any person who wants to take a course, with no prescribed attendance.MOOCs are courses delivered online and accessible to all for free.

Massive because enrolments are unlimited
Open because anyone can enrol
Online because they are delivered via the internet
Course because their goals are to teach a specific subject.

Features of MOOC

- Educator involvement
- Engagement
- Re-watchable
- Large no of students
- Assessable
- Customised learning experience

Difference between formal online courses and MOOCs

	Online courses	MOOCs
Cost of user	Fees	No fees
Entrance requirements	As per conventional courses	None
Scale	Limited, capped by resources available for support and assessment.	Thousands ,saving due to limited lecturer support
Lecturer's role	Responsible for curriculum alignment, quality assurance and support	Flexible role regarding the curriculum. Limited individual support.

Copyright	Largely proprietary	Some open content may be proprietary or open. User-generated content often © MOOC provider
Providers	Distance education providers	Traditional residential research universities partnered with private companies
Analytics	No ,not usually	Yes ,one of the promises
Certification	Conventional	Non – conventional
Quality	Assurance aligned with the usual formal courses QA processes	As per non-formal offerings.

Categories of MOOCs

- Teaching showcase
- Gateway skills
- Graduate literacy
- Professional showcase
- Research showcase

MOOC – type courses

- OBC –open boundary course
- SPOC – small private online course
- MOC – massive online course
- Wrapped MOOC

Concerns about MOOCs

- Forms of certification
- Digital and critical literacy
- Connectivity

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- Language
- Copyright

MOOC platforms in India

- ERNET (education and research network)
- EDUSAT
- CEC(consortium for educational communication)
- INFLIBNET(information and library network centre)

Some organizations to support online platform

- NPTEL (national programme on technology enhanced learning)
- MOOKIT
- IITbombayX
- SWAYAM

E-learning as a service industry

The E-learning industry in India is a prolific one, witnessing a steady growth rate of 25 per cent year-on-year and is projected to be a $1.96 billion industry by 2021. With a network of more than 1.5 million schools and 18,000 higher education institutes, the market for digital education in India is enormous

Major techniques used in e-learning

- Mobile learning
- Micro learning
- Internet of things(IoT)
- Cloud based e-learning
- Gamification
- Adaptive e-learning
- Augmented reality
- Video e-learning

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- Beacon e-learning
- Artificial intelligence

Different approaches for e-learning delivery

- Synchronous
- Asynchronous
- Linear learning
- Collaborative learning

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Module 3

Business Data Analysis

Features of new generation computers

- Speed of operation
- Accuracy
- Storage
- Versatility
- Automatic operation
- Diligence
- Complexity
- Reliability

Concept of data analysis

Data is a set of values of qualitative or quantitative variables about one or more persons or objects, while a datum (singular of data) is a single value of a single variable.

Information

Information is organized or classified data, which has some meaningful values for the receiver. Information is the processed data on which decisions and actions are based.

Different forms of data

- Qualitative data
- Quantitative data

Types of quantitative data

- Categorical data
- Continuous data

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Business data analysis

Data analysis is the process of collecting and organizing data in order to draw helpful conclusions from it.

Business data analytics is the process of collecting storing, processing and studying business data and using statistical models and iterative methodologies to transform data into business insights.

Importance of business analytics

- A methodology for commercial decision making
- Operational efficiency
- Competitive advantage
- Valuable information

Types of data analysis

- Descriptive analysis
- Diagnostic analysis
- Predictive analysis
- Prescriptive analysis

Phases of data analysis

- Data requirements specification
- Data collection
- Data processing
- Data cleaning
- Data analysis
- Communication

Components of business analytics

- Data aggregation

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- Data mining
- Association and sequence identification
- Text mining
- Forecasting
- Predictive analytics
- Optimization
- Data visualisation

Challenges faced by business analytics

- Executive distrust
- Poor collaboration
- Lack of commitment
- Slow information maturity

Business analytics tools

- R programming
- Tableau public
- Python
- Sas
- Excel
- Rapidminer
- KNIME
- BIRT
- Zeppelin by apache
- OmniSci

Trends in business analytics

- Big data

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- Artificial intelligence
- Deep learning
- Neural networks
- The internet of things
- Micro – segmentation
- Cloud computing

Advantages of business analytics

- Increase efficiency
- Insight through data visualisation
- Keep update
- Better decision making
- More effective marketing
- Better customer service
- More efficient operations
- Plan for the future

Disadvantages of business analytics

- Lack of alignment, availability and trust
- Lack of commitment
- Low quality of transactional data

Business data analyst

Business data analyst performs routine business analysis using various techniques, e.g. Statistical analysis, explanatory and predictive modelling, data mining.

Responsibilities of data analyst

- Producing report
- Spotting patterns

- Collaborating with others
- Collecting data and setting up infrastructure

Skills required for data analysis

- Programming language
- Creative and analytical thinking
- Strong and effective communication
- Data visualisation
- Data warehousing
- SQL databases
- Database querying languages
- Data mining and cleaning
- Advanced Microsoft excel
- Machine learning

Organisation and source of data

- Data
- Information
- Knowledge

Source of data

Internal data

- Accounting resources
- Sales force report
- Internal experts
- Miscellaneous reports

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External data

- Government publications
    - A) Register General of India
    - B) Central Statistical Organisation
    - C) Director General of Commercial Intelligence
    - D) Ministry of Commerce and Industries
    - E) Reserve Bank of India
    - F) Labour Bureau
    - G) National Sample Survey
    - H) Department of Economic Affairs
- **Non-government publications**
    - The Indian cotton mill association
    - Various chambers of commerce
    - The Bombay stock exchange
    - Various association of press media
    - Export promotion council
    - Confederation of Indian industries(CII)
    - Small industries development board of India
    - Different mills like –woollen mills, textile mills etc.
- **Personal data and knowledge**

Data collection

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes.

Methods of data collection

- **Primary data**
    a) Personal investigation
    b) Collection via investigators
    c) Questionnaires

d) Telephonic investigation

- **Secondary data**
    a) Official publications such as the ministry of finance, statistical departments of the government, federal bureaus, agricultural statistical boards etc. Semi –official sources include state bank, boards of economic enquiry
    b) Data published by chambers of commerce and trade association and boards
    c) Articles in the newspaper, journals and technical publications

Data quality

Data quality is a measure of the condition of data based on factors such as accuracy, completeness, consistency, reliability and whether it's up to date.

Importance and benefits of data quality

- More informed decision making
- Better customer targeting
- More effective content and market campaigns
- Improved relationships with customers
- Easy to use
- Competitive advantage
- Increased profitability
- Improved customer relations

Components of data quality

- Accuracy
- Completeness
- Consistency
- Relevancy
- Validity
- Timeliness

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How to collect high quality data?

- Implement a data collection plan
- Set data quality standards
- Create a plan for data collection
- Plan for data integration and distribution across departments.
- Set goals for on-going data collection

Data integrity

Data integrity is the maintenance of, and the assurance of the accuracy and consistency of data over its entire life-cycle, and is a critical aspect to the design, implementation and usage of any system which stores, processes, or retrieves data.

Data integrity can be ensured by addressing the following five issues

- Uniformity
- Version
- Completeness check
- Conformity check
- Genealogy check or drill down.

Missing data or incomplete data

Missing data (or missing values) is defined as the data value that is not stored for a variable in the observations of interest.

Types of missing data

- Missing completely at random(MCAR)
- Missing at random(MAR)
- Missing not at random(MNAR)

Techniques of handling missing data

- List wise or case deletion

- Pair wise deletion
- Mean substitution
- Regression imputation
- Last observation carried forward
- Maximum likelihood
- Expectation –maximization
- Multiple imputation
- Sensitivity analysis

Social network analysis (SNA)

Social network analysis means analysing various characteristics of the pattern of distribution of relationship and drawing inferences about the network as a whole or about those belonging to it considered individually or in groups.

Basic terminology of SNA

- Centrality
- Betweenness
- Closeness
- Degree

Need for social network analysis

- Users are dealing ever growing data sets and it is need of the hour, the capabilities that can help to filter network information faster and with more efficiency.
- Users need to quickly identify the crucial individuals/groups for better optimization of limited resources due to dynamism of target networks.
- To identify the characteristics of networks and to analyse how those networks are dynamic over time.
- Users know that all relations or connections in a social network are not equal and methods. Such as weighting relationship between people should be used to study the impact of such relations on the network.

General applications of social network analysis

- For improved customer targeting, for potential promotions based on their past purchase history.
- In identifying loyal customers who are vocal, active and passionate and can be characterized as brand ambassadors.
- In fighting terrorist activities by characterizing the network organisations to determine the likelihood and impact of terrorist activity.
- In detecting health care fraud by detecting patterns, establishing linkage between individuals, and to connect non-obvious relationships.

Business applications of social network analysis

- Social network analysis for creating usable customer intelligence
- Social network analysis in organisational change
    1. Managing human resources in large enterprises
    2. Business process management
    3. Strategic restructuring
- Social network analysis for understanding health behaviour

Software used in social network analysis

- Data collection : e.g. spreadsheet software
- Data analysis : e.g. social network analysis software
- Data visualisation : e.g. network visualisation software

Big data analysis

Big data is often described as extremely large data sets that have grown beyond the ability to, manage and analyse them with traditional data processing tools.

Dimensions of big data

- Volume
- Variety

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- Veracity
- Velocity

Types of big data

- Structured
- Unstructured
- Semi –structured

Technologies and concepts of big data

- Business intelligence (BI)
- Data mining
- Statistical applications
- Predictive analysis
- Data modelling

How big data works

- Integrate
- Manage
- Analyse

Advantages of big data

- Improved business processes
- Businesses can utilise outside intelligence while taking decisions
- Improved customer service
- Fraud detection
- Early identification of risk to the product/services

Drawbacks or disadvantages of big data

- Traditional storage can cost lot of money to store big data
- Lots of big data is unstructured

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- Big data analysis violated principles of privacy
- It can be used for manipulation or customer records
- It may increase social stratification
- Speedy updates in big data can mismatch real figures
- Big data analyses not useful in short run.
- Big data analysis results are misleading sometimes

Data scientist

A data scientist is a professional responsible for collecting, analysing and interpreting extremely large amounts of data.

Role of data scientists in business and society

- Empowering management to make better decisions
- Directing actions based on trends
- Challenging the staff to adopt best practices
- Identifying opportunities
- Decision making with quantifiable data
- Testing the decisions
- Identification and refining of target audiences
- Recruiting the right talent for the organisation

Artificial intelligence

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving

Some examples of AI in E-commerce

- Chatbots
- CRM
- Internet of things

Benefits of AI in E-business

- Sales forecasting
- Superior services at affordable costs.
- Enhance customer satisfaction and promote sales
- Personalised content
- AI in marketing
- Customer service

Intelligent agents

An intelligent agent is a software program that supports a user with the accomplishment of some task or activity by collecting information automatically over the internet and communicating data with other agents depending on the algorithm of the program.

Dimensions of intelligent agents

- Agency
- Intelligence
- Mobility

Features of Intelligent agents

- Mobility
- Goal oriented
- Independent
- Intelligent
- Reduces net traffic
- Multiple tasks

Intelligent agents in e-commerce

- Identification
- Brokering
- Negotiation

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- Payment and delivery
- Product service and evaluation

Advantage of intelligent agents to buyers

- Easy shopping
- Identification of stores and brands
- Make comparisons
- Reduce cost
- Act as a representative of seller
- Building relationships

Limitations of intelligent agents

- Stealing data and illegal access
- Free use of resources
- Unauthorised program execution
- Data stripping or alteration (by server)
- Deceitful agent behaviour

Ethical and legal consideration in business analytics

- Comply with legal requirements
- Cultural and social norms
- Interest of stakeholders
- Accountability
- Data protection
- Due care
- Confidentiality

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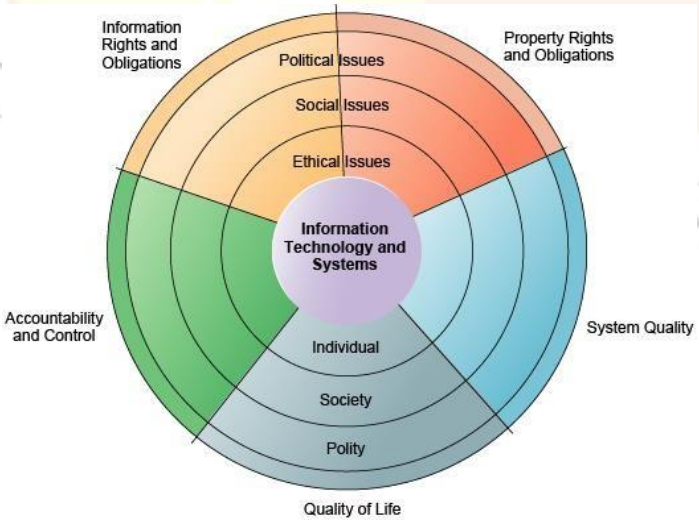
MODULE 4

Socio Cyber Informatics

Key topics

- IT And society
- Digital Divide
- Digital Native &Cyber Space
- IT & industry -opportunities and treats
- Cyber Ethics
- Cyber Crimes & Cyber Laws
- Cyber addiction
- Information Overload
- E-Waste & Green Computing



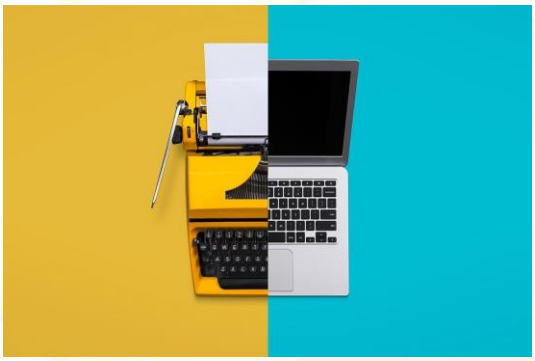
Social and Ethical Issue of IT

Ethics are the principles of right and wrong individuals, acting as free moral agents, use to make choices to guide their behavior. Information systems raise new ethical questions for both individuals and societies because they create opportunities for intense social change.

1. Privacy and Freedom
2. Internet and Privacy
3. Information System and Intellectual Property
4. Accountability, Liability and Control
5. Employment and productivity
6. Individuality
7. The quality of life
8. Security of information
9. Computer Crime and Abuse

Digital divide

It refers the gap between people who possess regular access to information technology and those who do not have this access.



Factors that Contribute to the Digital Divide

- Gender
- Physical disability
- Physical access
- Lack of ICT skills and support

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- Attitudinal factors
- Relevant content
- Age
- Family structure
- Motivation

Effects of Digital Divide

- Economic inequality
- Effect on education
- Democracy
- Economic growth
- Social mobility

Digital Natives

It refers to a person born or brought up during the age of digital technology and so familiar with computers and the Internet from an early age.

The term digital native describes a person who has grown up in the digital age, rather than having acquired familiarity with digital systems as an adult, as a digital immigrant… They are often used to describe the digital gap in terms of the ability of technological use among people born from 1980 onward and those born before.

Grouping of digital natives

1. Avoiders
2. Minimalists
3. Enthusiastic participants

Cyber space

Cyberspace refers to the virtual computer world, and more specifically, is an electronic medium used to form a global computer network to facilitate online communication. In short cyberspace is the environment of the Internet.

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IT AND INDUSTRY-Opportunities and threats

Opportunities

- Infrastructure outsourcing
- Hardware support
- IT Consulting
- Business Process Outsourcing (BPO)
- Infrastructure and Network Integration Service
- Application and Software related services
- Hardware

New Threats

- Hardware and Software failure
- Malware
- Viruses
- Spam, scams and phishing
- Human error

Identity theft

Identity theft is the crime of obtaining the personal or financial information of another person for the sole purpose of assuming that person's name or identity to make transaction or purchases.

In other words Identity theft is the deliberate use of someone else's identity, usually as a method to gain a financial advantage or obtain credit and other benefits in the other person's name, and perhaps to the other person's disadvantage or loss

Examples of Identity Theft

- Stolen Checks. If you have had checks stolen or bank accounts set up fraudulently, report it to the check verification companies. ...
- Fraudulent Change of Address
- Social Security Number Misuse
- Driver License Number Misuse
- False Civil and Criminal Judgments

Identity theft is mainly done in the following ways

- Stealing
- Dumpster diving
- Phishing/spam
- Social engineering
- Shoulder surfing
- Hacking

SPAM

Irrelevant or unsolicited messages sent over the Internet, typically to a large number of users, for the purposes of advertising, phishing, spreading malware, etc.

Methods to avoid spam

- Black list: - Blacklist is a real-time list that identifies IP addresses or domains that are known to send spam.
- Spam filters: - It detects unsolicited, unwanted, and virus-infested email (called spam) and stops it from getting into email inboxes.
- Legal approaches
- Separate email accounts
- Caution when filling out online forms
- Install firewall
- Safeguard login information

Cookies

Cookies are messages that web servers pass to your web browser when you Visit Internet sites. Your browser stores each message in a small file, called cookie.

Cookies themselves aren't harmful, but they can carry sensitive personal data and that makes them potential targets for hackers. Internet cookies are neutral—not good but also not bad— they're simply a part of how the Internet operates.

It's like money, it's not inherently good or bad, it's how it's used that matters.

Adware

Adware, or advertising-supported software, is software that generates revenue for its developer by automatically generating online advertisements in the user interface of the software or on a screen presented to the user during the installation process.

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Adware falls under the heading of malware and is primarily not dangerous, but very inconvenient because the software can change the browser home page, bringing unwanted advertising on the screen or even installing a new toolbar

Spyware

It is a type of malware that aims to gather information about a person or organization without their knowledge, and send such information to hack another entity without the consumer's consent.

Furthermore, spyware asserts control over a device without the consumer's knowledge, sending confidential information to another entity with the consumer's consent**.**

Who is spying?

- Online Attackers
- Marketing organization
- Spying by a trusted insider

Malware

It is short for malicious software and is typically used as a term to refer to any software designed to cause damage to a single computer, server, or computer network**.**

Common malwares

- Virus: Viruses are designed to damage its target computer by corrupting data, reformatting your hard disk, or completely shutting down your system. ...
- Worm
- Trojan horse
- Spyware
- Ransom ware

Phishing

Phishing is a cybercrime in which a target or targets are contacted by email, telephone or text message by someone posing as a legitimate institution to lure individuals into providing sensitive data such as personally identifiable information, banking and credit card details, and passwords.

Phishing is the fraudulent attempt to obtain sensitive information or data, such as usernames, passwords and credit card details, by disguising oneself as a trustworthy entity in an electronic

communication.

Internet Hoax

A hoax attempts to trick or defraud someone. Internet hoaxes are stories that spread throughout the internet, often through email, forums and blogs or showing images that are untrue or alterations of truth.

A hoax could be malicious, instructing users to delete a file necessary to the operating system by claiming it is a virus or other harmful file. It could be a phishing attack that convinces users to click on a link and log into a website. It could also be a scam that convinces users to send money or personal information.

Hacking

Hacking refers to activities that seek to compromise digital devices, such as computers, smart phones, tablets, and even entire networks. It is unauthorized intrusion into a computer or a network. The person involved in this process is named as a hacker.

Hacking is an unauthorized entry into a network or a computer to steal or manipulate information, data or files. Computer hacking is done using several types of programs such as Rootkit, Trojan, Key logger etc.

Hacker

Hacker is a person engaged in hacking activities is generally referred to as a hacker.

Types of Hacking

- Website Hacking
- Network Hacking
- Email Hacking
- Ethical Hacking
- Password Hacking

Remedies against Hacking

- Checking System Security
- Use of Firewalls
- Data Encryption

Methods

- Securing Your Accounts

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- Securing Your Phone or Tablet
- Securing Your Computer
- Staying Safe Online

Trojan horses

It is a program designed to breach the security of a computer system while ostensibly performing some innocuous function.

Trojan is a type of malicious code or software that looks legitimate but can take control of your computer. A Trojan is designed to damage, disrupt, steal, or in general inflict some other harmful action on your data or network.

In computing, a Trojan horse, or Trojan, is any malware which misleads users of its true intent. The term is derived from the Ancient Greek story of the deceptive Trojan horse that led to the fall of the city of Troy.

Trojans may allow an attacker to access users' personal information such as banking information, passwords, or personal identity. It can also delete a user's files or infect other devices connected to the network.

Computer Threats

Cyber criminals take the following single or combined activities to commit crime.

1. Computer viruses
2. Worms
3. Logic bombs and Time Bombs
4. Web Jacking
5. Email bombing
6. Salami attacks
7. Internet time theft

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1. Computer viruses

A computer virus is a type of computer program that, when executed, replicates itself by modifying other computer programs and inserting its own code.

Protection from viruses

- Antivirus Programs
- Acquisition of Software from Reliable Sources
- Testing new applications in single computer

2. Worms

A computer worm is a type of malware that spreads copies of itself from computer to computer. A worm can replicate itself without any human interaction, and it does not need to attach itself to a software program in order to cause damage.

3. Logic bombs and Times Bombs

A logic bomb is a program, or portion of a program, which lies dormant until a specific piece of program logic is activated.

Time bombs are commonly used in pre-release software when the manufacturer of the software does not want the beta version being used after the final release date.

4. Web jacking

It is derived from the term hijacking. In these kinds of offences the hacker gains access and control over the web site of another. He may even change the information on the site. This may be done for fulfilling political objectives or for money.

5. E-mail Bombing

An email bomb is a form of net abuse consisting of sending large volumes of email to an address in an attempt to overflow the mailbox.

6. Salami Attacks

A salami attack is when you take a very small amount of money from an awful lot of accounts. This kind of crime is normally common in the financial institution or for the purpose of committing financial crime.

7. Internet Time Theft

It refers to the theft in a manner where the unauthorized person uses internet hours paid by another person.

Cyber Ethics

The term "cyber ethics" refers to code of safe and responsible behavior for the Internet community. Practicing good cyber ethics involve understanding the risk of harmful and illegal behavior online and learning how to protect ourselves, and other internet users, from such behavior. It also involves teaching young people, who may not realize the potential for harm to themselves and others, how to use the Internet safely and responsibly.

Cyber crime

A generalized definition of cyber-crime may be "unlawful acts wherein the computer is a tool or target or both". Cyber-crime includes, computer crime, e-crime, high-tech crime which are referred to criminal activity where a computer network is the source, target, or place of a crime**.**

Broadly there are 3 ways of committing computer crime

- The computer as a target
- The computer as a weapon
- The computer as an accessory

Types of cyber crimes

- Hacking
- Cyber stalking
- Spamming
- Cyber pornography
- Phishing
- Software piracy

Cyber criminals

The cyber criminals belong to different groups. This categorization has made on the basis of the object that they have in their mind in committing crime.

Different types of criminals are

- children and adolescents between the age group of 6-18 years,
- organized hackers,
- professional hackers/ crackers
- Discontented employees.

Computer frauds

- Unauthorized use,access,modification and destruction of computer hardware ,software and data
- Theft of money by altering computer records
- Theft of computer time and computer related assets
- Use of computer to commit an offense etc.

Cyber laws

Cyber laws comprise of a set of legal provisions to regulate the activities of the cyberspace or internet. To ensure that there is a mechanism to protect the rights of internet users, cyber laws have been formulated.

In India, cyber laws have been defined under the IT Act, 2000, the provisions of which are revised from time to time depending upon requirements.

The information technology bill (IT Bill) passed by Indian Parliament on May 17, 2000. The Information Technology Act (IT Act) came into effect on 17 the October 2000.

The main objective of the Act is to provide legal recognition for transactions carried out by means of electronic data interchange and other means of electronic communication and storage of information to facilitate electronic filing of documents with the government agencies.

Information Technology (Amendment) Act, 2008

Rapid increase in the use of computer and internet has given rise to new forms of crimes like, sending offensive emails and multimedia messages, child pornography, cyber terrorism, publishing sexually explicit materials in electronic form, video voyeurism, breach of confidentiality and leakage of data by intermediary, e-commerce frauds like cheating by personating – commonly known as phishing, identity theft, frauds on online auction sites, etc.

Information Technology Act (2020)

In a bid to stop unlawful content going viral online in India, the government is on the verge of amending the Information Technology Act (2020). If the new intermediary guidelines receive green lights, social media companies will be more responsible for such potentially harmful content.

To better put things into perspective, the current section 79 of the IT Act (2000) states that an intermediary is not responsible for content uploaded by third parties. It has led to situations where any type of content created on a particular platform (for example, TikTok), but it went viral on Face book. Under current guidelines, Facebook is not responsible or accountable for this viral content.

The amended act mainly addresses this issue.

- TikTok is the most downloaded social media app during lockdown in India
- Facebook takes a big step towards mind-controlled social media

Organisations related with cyber laws

- New media wing(NMW)
- Electronic media monitoring center(EMMC)
- Ministry of communication and information technology
- Department of electronics and information technology(DEITY)

Cyber Addictions

Cyber addiction can be described as too much use of the computer and internet, affecting the routine life of an individual such an individual who becomes too much dependent on computer and internet is called cyber addict. The compulsive behaviour takes the form of various activities that might include any or all of the following.

- Relationships
- Money
- Information searching
- Gaming
- Sex

Problems associated with internet addiction

- Skipping meals, losing sleep and time for other things
- Rearranging daily routines and neglecting studies or other activities
- Badly affect to relationships
- Financial problems
- Physical problems

Risk factors for internet addiction

- Depression
- Anxiety
- Hostility
- Psychosis
- Social isolation
- Impulse control problems
- Substance use disorders, such as alcoholism or drug abuse

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Managing internet addiction

- Identity any underlying reasons that need treatment
- Increase the coping skills
- Strengthen the relationships
- Encourage other interest and social activities
- Monitor computer use and set clear limits.

Information Overload

Information overload is a phenomenon of having so much information that the very volume creates the additional work of having to decide what is important, rather than helping executives to solve problems and make decisions**.**

Causes of information overload

- People
- Technology
- The organization
- Processes and Tasks
- Information Attributes

Health Issues

A world- wide survey (Reuters, 1996) found that two third of managers suffers from increased tension and one third from ill- health because of information overload.

Health problems which may arise on account of information overload are as follows.

- Increased BP
- Low energy
- Insomnia
- Vivid dreams
- Diminished productivity etc.
- Confusion and frustration.
- Impaired judgment based upon overconfidence.
- Decreased benevolence to others due to an environmental input glut.
- Weight gain or weight loss.
- Sleep disturbance.
- Severe headaches.
- Back aches and neck aches.

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- Dry eyes or stained vision.
- Pain in the hands and wrists.

Solutions to information overload

- Filtering
- Be choosy about choosing
- Identify three to five priorities
- Understand the importance
- Put a time limit on information gathering
- Schedule related tasks together

E- Wastes:

Electronic waste, popularly known as ‘e-waste’ can be defined as electronic equipments or products which have become obsolete due to advancement in technology, changes in fashion, style and status and nearing the end of their useful life.

E wastes create lot of health effects. These electronic equipments are manufactured using numerous toxic contents and harmful components. These substances severely affect humans and environment in general.

Impact of e-waste

- Environmental impact
- Economic impact

Management of E-waste

- Inventory management techniques
- Production-process modification
- Volume reduction

- Recover and reuse
- Sustainable product design

Basel convention

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, usually known as the Basel Convention, is an international treaty that was designed to reduce the movements of hazardous waste between nations, and specifically to prevent transfer of hazardous waste from developed to less developed countries (LDCs). It does not, however, address the movement of radioactive waste.

The Convention was opened for signature on 22 March 1989, and entered into force on 5 May 1992. As of October 2018, 186 states and the European Union are parties to the Convention. Haiti and the United States have signed the Convention but not ratified it.

Green computing

This term generally related to the use of computing resources in conjunction with minimizing environmental impact, maximizing economic viability and ensuring social duties.

It is " the study and practice of designing, manufacturing, using and disposing computers, serve and associated sub systems- such as monitors, printers, storage devices and networking and communication systems efficiently and effectively with minimal or no impact on the environment.

To comprehensively and effectively address the environmental impacts of computing / IT, we must adopt a holistic approach and make the entire IT Life cycle greener by addressing environmental sustainability along the following four components.

- Green use
- Green disposal
- Green design
- Green manufacturing

Benefits of green computing

- Environmental sustainability
- Better resource utilization
- Cost saving

- Improved corporate and social image

E-governance

Electronic governance or e-governance is the application of IT for delivering government services, exchange of information, communication transactions, and integration of various stand-alone systems between government to citizen (G2C), government-to-business (G2B), government-to-government (G2G), government-to-employees (G2E) as well as back-office processes and interactions within the entire government framework.

Definition

United Nations (www.unpan.org) definition (AOEMA report): "E-government is defined as utilizing the Internet and the world-wide-web for delivering government information and services to citizens."

Stages of E-governance

- Computerization
- Networking
- Websites
- On-line interactivity

Types of E-governance

Government to Citizens (G2C)

- Interaction between the government and the citizens.
- This enables citizens to benefit from the efficient delivery of a large range of public services.
- Expands the accessibility and availability of government services and also improves the quality of services
- The primary aim is to make government citizen-friendly

Government-to-business (G2B)

- It enables the business community to interact with the government by using e-governance tools.
- The objective is to cut red-tapism which will save time and reduce operational costs. This will also create a more transparent business environment when dealing with the government.
- The G2B initiatives help in services such as licensing, procurement, permits and revenue collection

Government to Government (G2G)

- Enables seamless interaction between various government entities.
- This kind of interaction can be between various departments and agencies within government or between two governments like the union and state governments or between state governments.
- The primary aim is to increase efficiency, performance and output

Government to Employees (G2E)

- This kind of interaction is between the government and its employees.
- ICT tools help in making these interactions fast and efficient and thus increases the satisfaction levels of employees.

Advantages of e-Governance

- Access to information and quality services for citizens
- Time saving
- Cost reduction
- Transparency
- Accountability
- Improved efficiency
- Extended reach of governance

Disadvantages of E-governance

- Lack of equality in access to the internet
- Lack of trust and cyber crime
- High surveillance
- False sense of transparency and accountability
- Costly infrastructure

E-governance initiatives in India

1. FRIENDS

FRIENDS (Fast Reliable Instant Efficient Network for Disbursement of Services) Jan Sevana Kendrams has been designed as a single-window facility where citizens can make government related transactions with ease & comfort and without delay. In FRIENDS bills/dues to government are collected under a common roof. Adopting an easy-to-recall acronym ‘FRIENDS', the facility is now operational in all the 14 districts of Kerala.

FRIENDS centres are providing service for different departments and agencies like the Motor Vehicle Department, Revenue Department, Civil Supplies Department, KSEB, KWA, Universities, Local Bodies, Electrical Inspectorate and BSNL. Each counter follows a token management system which eliminates the need for queues and inordinate delays in making remittances. At each centre, there is a special Help-Desk to guide the public who are not well conversant with the payment procedures.

2. Bhoomi

The 'Bhoomi' project was undertaken and developed by the State Government of Karnataka. It was done so in order to computerize all the records of the land in Karnataka. However, the Ministry of Rural Development, Government of India had sponsored the project in togetherness with the State Government of Karnataka.

Features.

- Software for printing land records at any time (i.e. whenever the records needed to be printed) was created
- Online updation of record certificates for farmers.
- Using the software for generation of reports on soil, land-holding size, types of crops grown and many more (to make informed policy decision).
- Bio-Login metrics system (from Compaq): Authentication of users through fingerprints; to avoid imitation of users and hack of the database system

3. e-seva(Electronic seva)

E-seva launched on the 25th of august 2001.It is an improved version of TWINS project launched in 1999, in the twin cities of Hyderabad and Secunderabad in Andhrapradesh

All the services are delivered online to consumers /citizens by connecting them to the respective government departments and providing online information at the point of service delivery.

The project has become very popular among the citizens especially for the payment of utility bills.

4. CARD (Computer aided administration of registration department)

CARD in Andhrapradesh is designed to eliminate the maladies affecting the conventional registration system by introducing electronic delivery of all registration services. CARD was initiated to meet objectives to demystify the registration process, bring speed, efficiency, consistency and reliability, substantially improve the citizen interface etc.

5.Gyandoot

Gyandoot is an Intranet-based Government to Citizen (G2C) service delivery initiative. It was initiated in the Dhar district of Madhya Pradesh in January 2000 with the twin objective of providing relevant information to the rural population and acting as an interface between the district administration and the people. The basic idea behind this project was to establish and foster a technologically innovative initiative which is owned and operated by the community itself. Initially, computers were installed in twenty village Panchayat centres and connected to the District Rural Development Authority in Dhar town. These were called Soochanalayas which were operated by local rural youth selected for this purpose (called Soochaks). No fixed salary or stipend was paid to them.

6. Vidhyavahini

The portal provides the opportunity for schools, teachers and students all across the nation, to express and share their creative and academic potential via the internet. The portal aims at creating such an environment by providing facilities for content development and collaboration. The government's initiative to connect 60,000 Indian schools is aimed at providing a thrust to computer-aided learning for rural students.

Shiksha India is a non-profit organization launched in December 2001 to equip schools with the 5 Cs: computers ,connectivity, coaching, content and models of commercial sustainability.

8. DRISHTEE-Connecting India village by village

Drishtee is an India-based business that provides information technology goods and services to rural India through village kiosks that are run and managed by local entrepreneurs. These kiosks are developed using a franchise and partnership model. Some of the services provided by Drishtee include computer education, English courses, rural BPO, government services, health, insurance, e-commerce, microfinance etc. One of Drishtee's primary objectives is to empower rural communities by supporting local entrepreneurship and thus helping to stem the distress migration of people from rural to urban parts of the country.

9. TARAhaat

Launched in 2000, TARAhaat Information and Marketing Services Ltd. introduced Information Technology (IT) services in rural India. These services include literacy, vocational skills and other products needed in rural communities.TARAhaat.com mother portal, together with franchised networks of local enterprises for connectivity and for delivery of information, goods and srvices.Other services are weather forcast,email service, educational opportunities etc.

10. Akshaya

The Akshaya project, first started in the rural Malappuram district of Kerala, India, and now spread all around the state, was the first district-wide e-literacy project in India and one of the largest known Internet Protocol (IP) based wireless networks in the world. In November 2002, the state government of Kerala put into place a project, piloted in Malappuram, with the goal of at least one person in every family to be computer literate in that district.

The project provides self-employment to around 3000+ persons and direct employment to about 3-5 persons in each of the multipurpose community technology centres called Akshaya e-kendras.

11.CONCERT

Country wide Network of Computerized Enhanced Reservation and Ticketing developed by CRIS is a total networking solution to Indian Railways Passenger Reservation System**.**

12. SAKSHAT

Initiative to provide solution to educational requirements of students, scholars, teachers and lifelong learners**.**

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Module 5

Digital marketing

Key topics

- Introduction to digital marketing
- Need ,advantage & disadvantages
- Trends in digital marketing
- Types of digital marketing
- Business models of digital marketing
- Online advertising
- Social media channel & advertisements

Traditional marketing

Traditional marketing refers to any type of marketing that isn't online. This means print, broadcast, direct mail, phone, and outdoor advertising like billboards. From newspapers to radio, this method of marketing helps reach targeted audiences.

Limitations of traditional marketing

- Expensive
- Time consuming
- Customization

Digital marketing

Digital marketing is the use of the Internet, mobile devices, social media, search engines, and other channels to reach consumers.

Principles of digital marketing

- Immediacy
- Personalisation
- Relevance

Difference between digital marketing and traditional marketing

Basis	**Traditional marketing**	**Digital marketing**
Interactivity	Less interactivity	High interactivity
Immediacy	Traditional marketing takes more time to go from a concept to finished products.	Digital marketing takes almost instanteous time.it also can get into the customers simultaneously.
Cost	Traditional marketing promotes the products of a brand through ads on paper, billboard, television, radio and more. This marketing strategy spends huge amount to keep the promotion activities.	Digital market can also carry cost ,but there are numerous online marketing strategies that are virtually free.
Coverage	In traditional marketing, coverage of product will be printed on paper media or aired on television and radio. The exposure to products will be for short duration.	Online coverage will be always there for like forever.it will be archived on the internet and ready to be found easily whenever our customers need it.
Audience	Traditional marketing is more effective for target customers which out of reach of internet.	People who are never without internet in their reach, such as teenagers and businessmen, are easier to reach through digital marketing
tracking	It is difficult to keep track of traditional strategy.	Digital marketing is easy to track.

Real-Time Result	With traditional marketing methods, the company must wait for weeks or months to get the result.	Online marketing or digital marketing gives quick results and thus it is easy to get real time marketing results.
Interruptions	Consumers cannot choose to skip advertisements or other things that are causing interruptions.	Digital marketing/online marketing methods let the consumers/customers/buyers skip the interruptive part and continue to engage with the product(s)/service(s).

4 P's of digital marketing

- Product
- Price
- Place
- Promotion

Features of digital marketing

- Branding
- Completeness
- Functionality
- Interactivity
- Visual communication
- Relevant advertising
- Community connections
- Virality
- Measuring output

Digital marketing channels

- Search engine optimisation (SEO)

SEO stands for Search Engine Optimization, which is the practice of increasing the quantity and quality of traffic to your website through organic search engine results.

- Social media marketing

Social media marketing is the use of social media platforms to connect with your audience to build your brand, increase sales, and drive website traffic.

- Online paid advertising

Online paid advertising ,pay per click advertising (PPC) are online advertising model in which advertisers pay each time a user clicks on one of their online ads.

Need for digital marketing

- Provides equal opportunity for every business
- Wider reach
- Digital consumers
- Increase brand reputation
- Increases revenue
- Easy to track and monitor marketing campaigns
- Brand becomes more interactive
- The cost-effective form of marketing

Advantages of digital marketing

- Interactive
- Anytime ,anywhere
- Global reach
- Direct exposure
- Reduced cost
- Measurability
- Brand engagement
- Demographic targeting
- Real-time results
- Meet competition
- Long term exposure
- Product information
- Catch attention

Disadvantages of digital marketing

- Dependence of internet
- Cluttering

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- High competition
- Negative approach
- Harm image
- Suitable for specific categories of products
- Not always targeted to perspective

Trends in digital marketing

- Voice search
- Smarter chat
- Micro-moments
- Augmented and virtual reality marketing
- Live videos-more stories
- AI and machine learning
- Engagement based email marketing
- Rich lead profiling
- Browser push notifications
- Content personalization

Types of Digital marketing

- Content marketing
- Search engine optimization (SEO)
- Search engine marketing (SEM)
- Social media marketing(SMM)
- Pay per click advertising(PPC)
- Affiliate marketing
- Email marketing
- Instant messaging marketing

Digital marketing models

1. **Business to business (B2B)**

Business-to-business (B2B) simply means business-to-business, which is a business model that focuses on selling products and services to other companies.

Benefits of B2B Model

- B2B digital marketing helps to remove barriers raised by geographic fragmentation of the market
- While buyers get to know about new sellers with better products, suppliers discover new buyers
- B2B also helps in eliminating unnecessary inventory build-up for the both buyers and sellers.
- As B2B promotes information flow and enhances transparency, supply chain management becomes possible.
- In addition, both the sellers and sellers enjoy reduced order processing costs and lower cost of interacting with each other.

2. Business to consumer (B2C)

Business to consumer is the type of commerce transaction in which businesses sell products or services to consumers.

Benefits of B2B Model

- Lower marketing costs
- Lower order processing cost
- Better customer service
- Lower customer support cost
- Wider markets

3. Consumer to consumer (C2C)

Consumer –to-consumer (C2C) digital marketing consists of individuals using the internet to sell products and services directly to other individuals. An online auction is a very good example of C2C.

Eg :eBay,craigslist.org

4. Business to government (B2G)

Business to government (B2G) is the sale and marketing of goods and services to federal, state, or local agencies.

A website offering business to government services could provide businesses with the following:

- ❖ A single place to locate applications and tax forms for one or more levels of government (city, state or local)
- ❖ To provide the ability to send in filled out forms and payments
- ❖ To update corporate information
- ❖ To request answers to specific questions.

5. Business - To –employee (B2E)

Business to employee (B2E) refers to the digital marketing which utilizes the intra business network that allows the companies to render services and also at times products to their own employees. Most of the companies use the business to employee processes to automate the employee related issues for the corporate purpose.

Emerging business models

- Consumer to consumer (C2C) business models
- Peer to Peer (P2P) business models
- 3.M-commerce business models

Businesses suited for internet

- Professional services
- Digital goods
- Publishing
- Catalogs

Online advertising

Online advertising, also known as online marketing, Internet advertising, digital advertising or web advertising, is a form of marketing and advertising which uses the Internet to deliver promotional marketing messages to consumers.

Types of online advertising

1. Banner advertisement

This is the classic form of advertising on the net.it traditionally appears as rectangular graphics near the top of the page. Most banner advertisements are a graphic of some type (.gif, .jpg or animated .gif) usually placed at the top, or along the side, of the web page.

The important payment models of internet advertising are as follows.

a) Cost per click (CPC)
b) Cost per impression or cost per thousand impressions
c) CPA (Cost per Action)
d) CPL (Cost per lead)

2. Floating Advertisement

These advertisements appear on the window of the user. These may float or stay on the window for a specified time of 10-30 seconds. Floating ads generally have escape options such as close or exit buttons.

Floating advertisements are popular for several reasons

- They take the viewer's attention and cannot be ignored
- They are animated
- They have audio/video content like TV advertisements
- They can take up the entire screen
- They have high click through rate

3. Interstitials

Interstitial ads are full-screen ads that cover the interface of their host app. They're typically displayed at natural transition points in the flow of an app, such as between activities or during the pause between levels in a game. When an app shows an interstitial ad, the user has the choice to either tap on the ad and continue to its destination or close it and return to the app.

4. Unicast advertisement

A Unicast advertisement is an Internet advertisement that consists of a video played like a TV commercial, usually in a pop-up or pop-under advertisement.

5. **Pop –up advertisement**
6. **Contextual advertisement**

   Contextual advertising is advertising on a website that is relevant to the page's content. In traditional contextual advertising, automated systems display ads related to the content of your site based on keyword targeting. One of the more well-known examples of contextual advertising is Google AdSense
7. **Advertorials**

   An advertorial is a form of advertisement in a newspaper, magazine or a website which involves giving information about the product in the form of an article.
8. **E-zines(electronic magazine)**
9. **Newsletters**
10. **Auctions**
11. **Spam e-mail**
12. **Targeted email**
13. **Opt in email**

Benefits of online advertising

- Global accessibility
- Rich content
- Affordability
- Speed
- Quick updating
- Provides brand relevant information
- Easy collection of data
- Greater flexibility
- Better customer relation
- Facilitate purchase decisions

Weakness of online advertising

- Not a substitute for traditional advertising
- Unsolicited in nature
- Misdirection
- Emergence of contextual mobile advertisements

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- Cluttered appearance
- Not suitable for all products and services
- Less dependable
- Ad on traditional lines
- Blocking of Ad
- Mistrust
- Disabling features

Measures the effectiveness of online advertising

- Increased traffic
- Conversions
- Engagement
- Reach

Search engine analytics

Search engines have three primary functions

- Crawl
- Index
- Rank

Online market research

1. Define the problem
2. Determine research design
3. Design & prepare research instrument
4. Collect the data
5. Analyse the data
6. Visualize data & communicate results

Search engine advertising

Search-engine advertising (SEA) is a branch of online marketing. Advertisements in the form of a text or images are posted on search engines such as Google or Bing. These ads then appear prominently in the search engine result pages (SERPs)

Features of SEA

- Posting ads on search result pages or other websites using methods such as CPC
- Booking ads in the SERPs based on bids on keywords for which the ads are placed
- Good ranking can be achieved through optimisation of text ads and offers
- Clear control of advertisement measures with calculable success
- Means to increase traffic or improve the brand
- It can be part of remarketing
- Acknowledged as advertising.

Social media channels and advertisements

Types of social media

- Social networking
- Blogs and micro-blogging
- Visual media sharing
- Professional networking
- Reviews and ratings
- Forums
- Content
- Social publishing
- Social advertising

Need for social media Ads

- Customers are on social media
- Consumers receptiveness
- Increase brand recognition
- Increases inbound traffic
- Help to reach specific audiences
- Helps to target and retarget ideal consumers
- Cost effective
- Improve your search engine rankings
- Competition is on social media
- Higher conversion rates

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Types of social media Ads

a) Facebook ads

Facebook offer different options for making advertisements

- Photo ads
- Video ads
- Stories ads
- Carousel ads
- Slideshow ads
- Collection ads
- Instant experience ads
- Messenger ads
- Lead generation ads
- Instagram ads

2. Twitter ads

Twitter ads work towards five different business objectives

- Website click
- Tweet engagements
- Followers
- Awareness

3. Snapchat ads

4. LinkedIn ads

5. YouTube ads

6.Pinterest ads

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