Lecture 6.
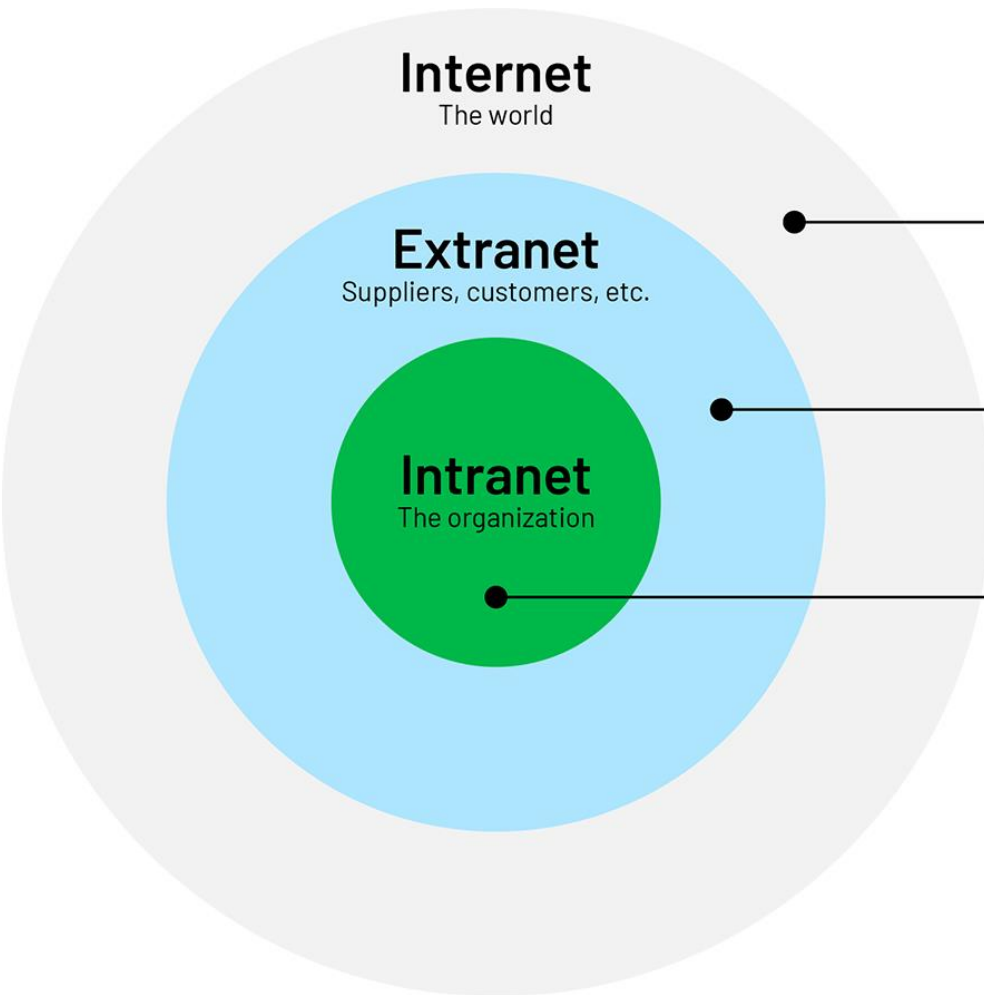# The Internet

SEM II, AY2022/2023

1.Definition of the Internet

Internet definition (Wikipedia)

- The **Internet** is the global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to link billions of devices worldwide.
- It is a **network of networks** that consists of millions of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.
- Information super highway

Forms of Internet

Internet
The world

Extranet
Suppliers, customers, etc.

Intranet
The organization

The **internet** creates connections between computers around the world.

An **extranet** creates connections beyond (or outside) an organization.

An **intranet** creates connections inside an organization.

Internet

Extranet

Suppliers

Intranet
LAN
employees

Customers

partners

Public
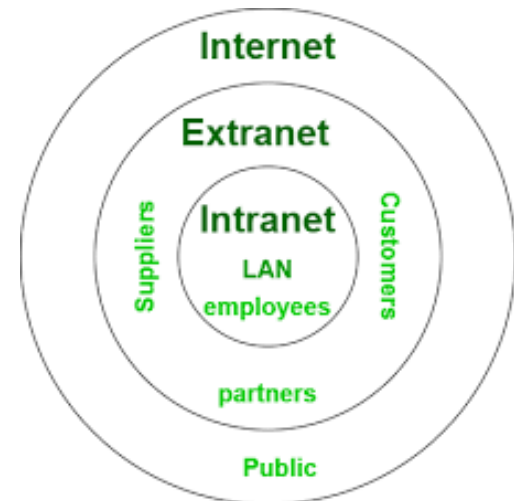
Intranet

- Intranet is defined as private network of computers within an organization with its own server and firewall.
- PCs in intranet are not available to the world outside of the intranet.

Intranet…/2

◦ An intranet is an internal internet, available to individuals within a specific organization.

◦ The intranet also refers to a closed community of users, often within an organization. Intranets are designed to be used for internal business purposes only.
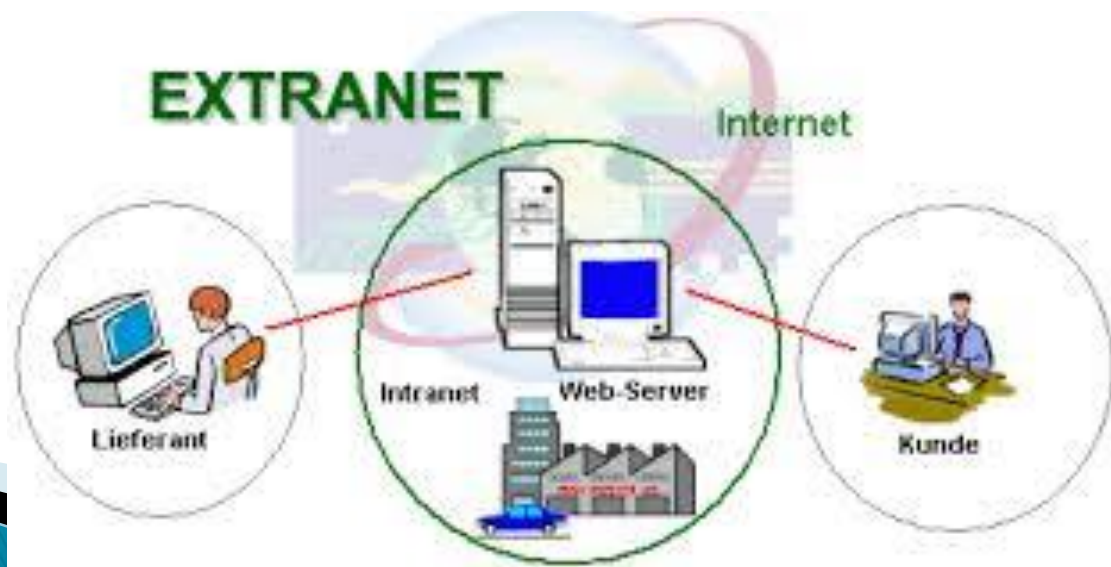
Intranet…/3

◦ Usually each company or organization has their own Intranet network and members/employees of that company can access the computers in their intranet.

◦ Every computer in internet is identified by a unique IP address.

◦ Each computer in Intranet is also identified by a IP Address, which is unique among the computers in that Intranet
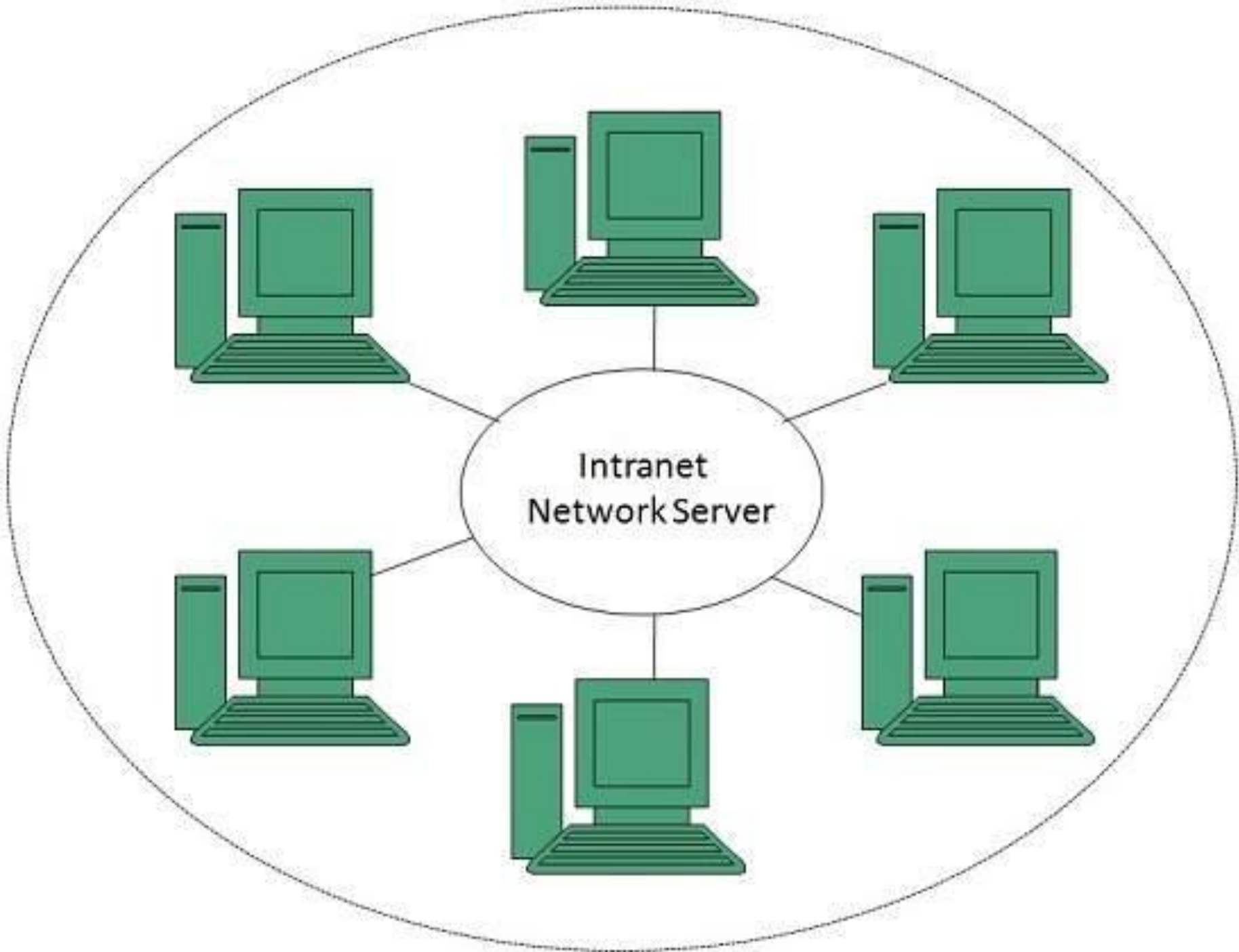
Intranet
Network Server

# Extranet

▸ Extranet refers to network within an organization, using internet to connect to the outsiders in controlled manner. It helps to connect businesses with their customers and suppliers and therefore allows working in a collaborative manner.

Extranet…/2

- An extranet is an extension of an organization's Intranet. The difference is that an extranet is accessible to selected people or groups outside the organization e.g. organization's suppliers, distributors and corporate customers.
- An individual can obtain a password authorization and then be routed to the organizations extranet to conduct transactions & obtain information not available to the public.

Internet

Individual users

Firewall

Company

Extranet
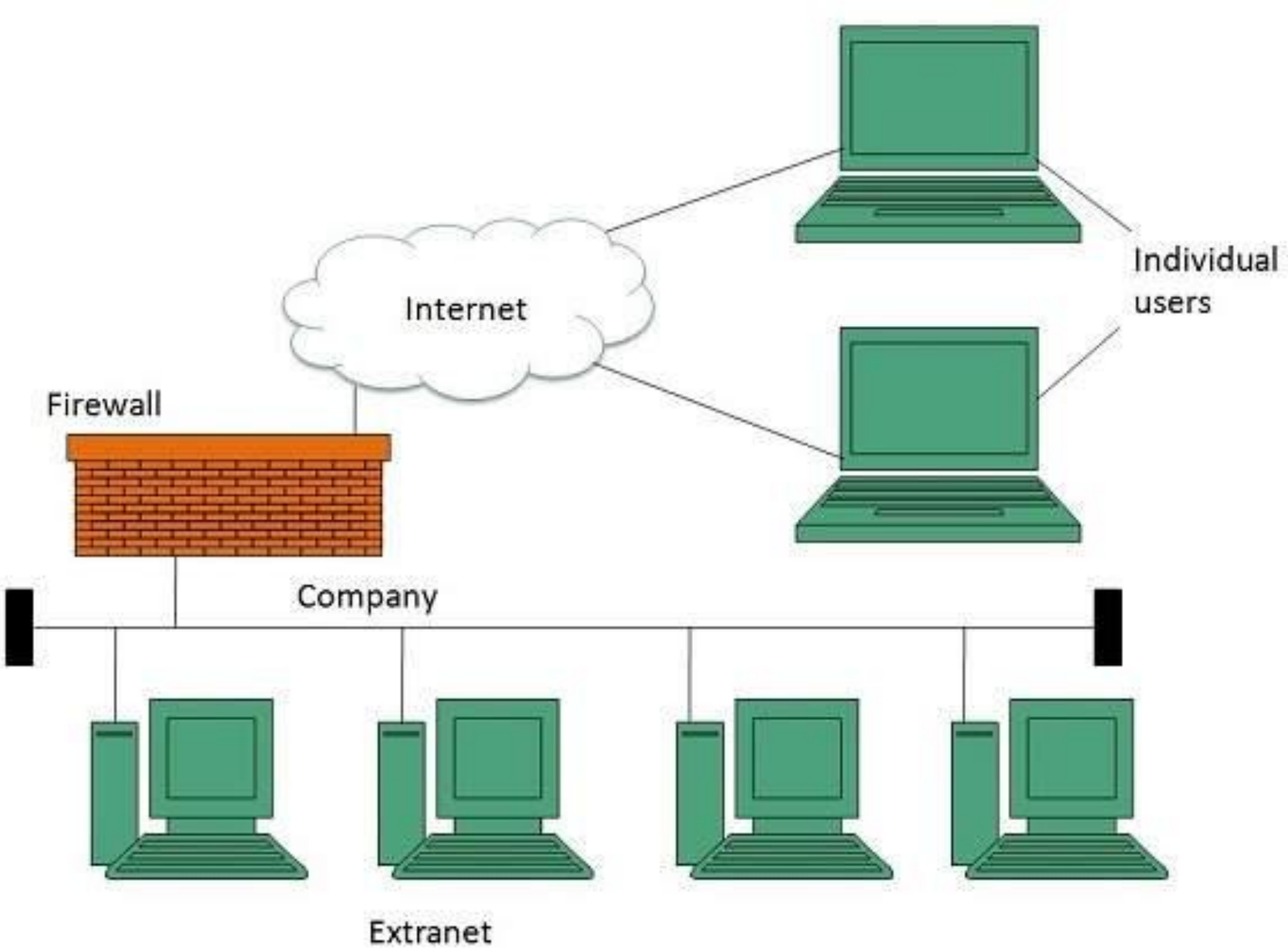
Internet Timelines/History
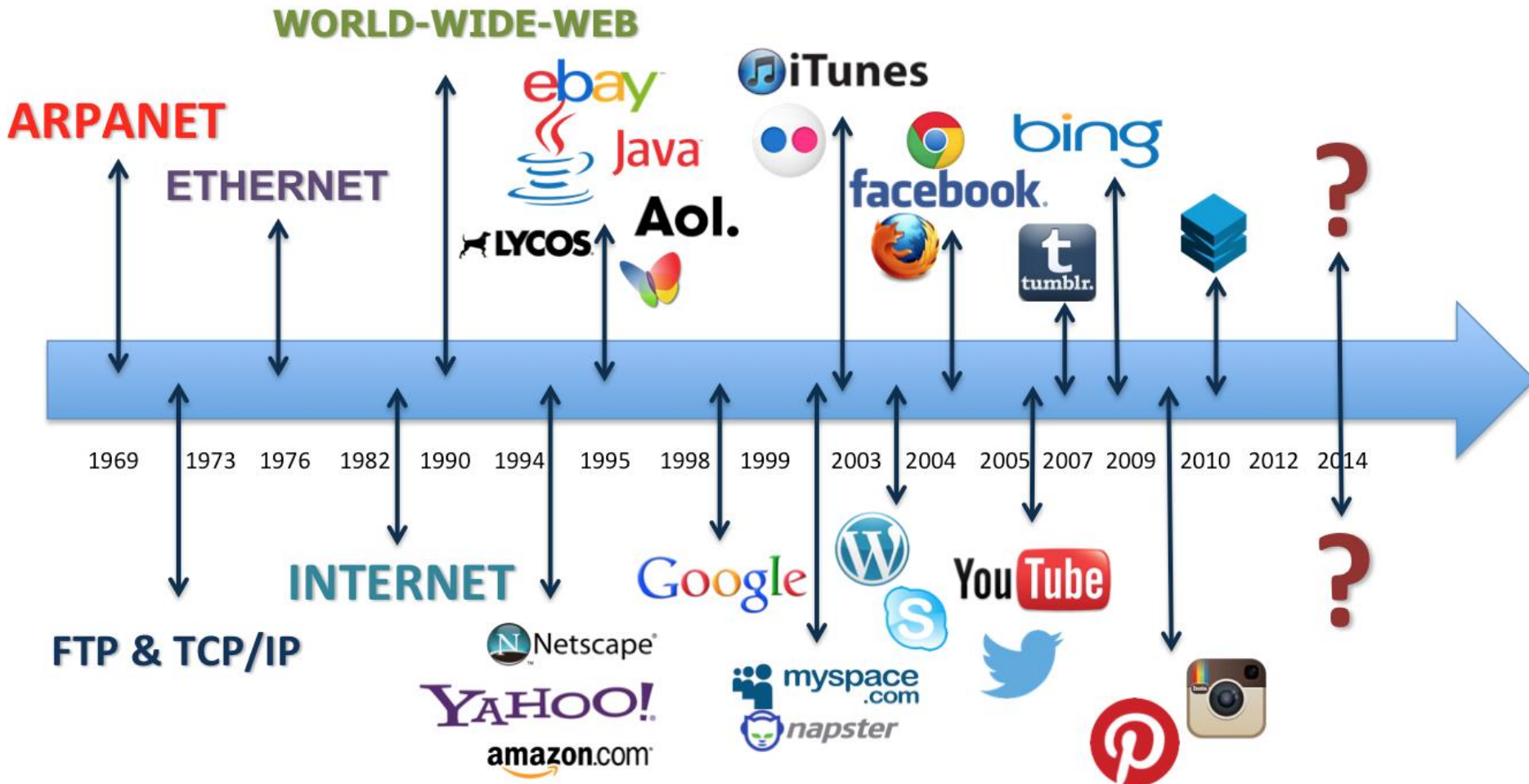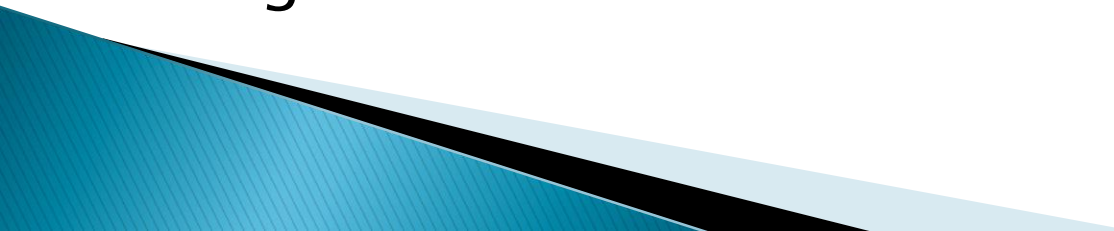
ARPANET

- The **Advanced Research Projects Agency Network** (**ARPANET**) was the first wide-area packet-switched network with distributed control and one of the first networks to implement the TCP/IP protocol suite.
- It became the technical building block of the Internet.
- The ARPANET was established by the Advanced Research Projects Agency (ARPA) of the United States Depart of Defense.

2.Basic internet terms

- **Internet**: Refers to the global interconnection of computers and computer networks to facilitate global information transfer. It is an interconnection of computers throughout the world.

- **Email**: This is a worldwide system for sending and receiving electronic messages from one computer to another.

- **HTTP (Hyper Text Transfer Protocol)**: This is a standard protocol for communications between a web browser and a web server.

- **Web browser**: This is a program that lets the user browse through information in the web. Some of the common types of web browsers are Internet Explorer, Firefox, Chrome, Microsoft Edge, Torch, etc. It works in the same manners as intranet but provides information to selected users outside the organization.

- **Intranet** – Is an internal corporate network used in an organization to enable the sharing of documents among coworkers.

Basic internet terms…/2

- **World Wide Web (WWW)**: This is a global (international) system of connected web pages containing information such as text, pictures, sound and video.

- **Web pages**: Documents published by an organization and individuals who are interested in putting themselves on the web.eg text, pictures, sound, video,

- **Website**: Collection of web pages belonging to an organization or individual

Basic internet terms…/3

- **Web hosting**: A WWW server is a computer with programs that answers requests for documents from clients [browsers] over the internet.

- **Web address**: (Uniform Resource Locator URL) An address is a location of a file. Each web page in the world has a unique internet address or location. The internet addresses are called URLs. e.g. URL of Microsoft is http://www.microsoft.com

Internet terminologies.../2

- **TCP**/**IP**, or the Transmission Control Protocol/Internet Protocol, is a suite of communication protocols used to interconnect network devices on the internet.

- **TCP**/**IP** can also be used as a communications protocol in a private network (an intranet or an extranet).

Internet terminologies…/3

- **Domain Name Server: System** (DNS) is a hierarchical decentralized naming system for computers, services, or other resources connected to the Internet or a private network.

- It associates various information with domain names assigned to each of the participating entities

Internet terminologies…/5

- **A router** is a device that connects two or more packet-switched networks or sub networks.

- It serves two primary functions:
  - **Managing traffic** between these networks by forwarding data packets to their intended IP addresses, and

  - **Allowing multiple devices** to use the same Internet connection (https://www.cloudflare.com/)

Internet terminologies.../6

- Every computer in internet is identified by a unique IP address.
- IP Address is a unique set of numbers (such as 192.145.236.94) which identifies a computer location.
- A special computer DNS (Domain Name Server) is used to give name to the IP Address so that user can locate a computer by a name

Internet terminologies…/7

▶ Internet is accessible to every user all over the world.

▶ For example, a DNS server will resolve aname **http://www.mubs.ac.ug** to a particular IP address (192.145.236.94) to uniquely identify the computer on which this website is hosted.

▶ **Network configuration**: This is the process of setting network controls, flow, and operation to support the network communication of an organization and or network owner. It is also known as network set up.

Essential internet technologies

- A reasonably powerful computer/Server
- A modem that works at a high transmission rate.
- Computer software/telecommunication program
- Telephone lines/ Fiber Optic Cables/ Wireless Access Points/Radios
- Internet Service Provider (ISP)

3. How the internet works

How the internet works Video 1

- https://www.youtube.com/watch?v=7_LPdttKXPc

How the internet works Video2

- https://www.youtube.com/watch?v=Sfzo4xm5eX8

How the internet works Video 3

- https://www.youtube.com/watch?v=x3c1ih2NJEg

4. Digital communication & collaboration tools

Collaborative tools for business

- Save time and resources
- Increase productivity
- Improve communication
- Remote collaboration is made easier
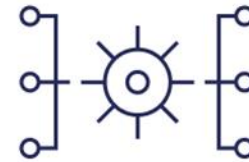- Boost team morale

COVID-19 is pushing companies

to scale remote work
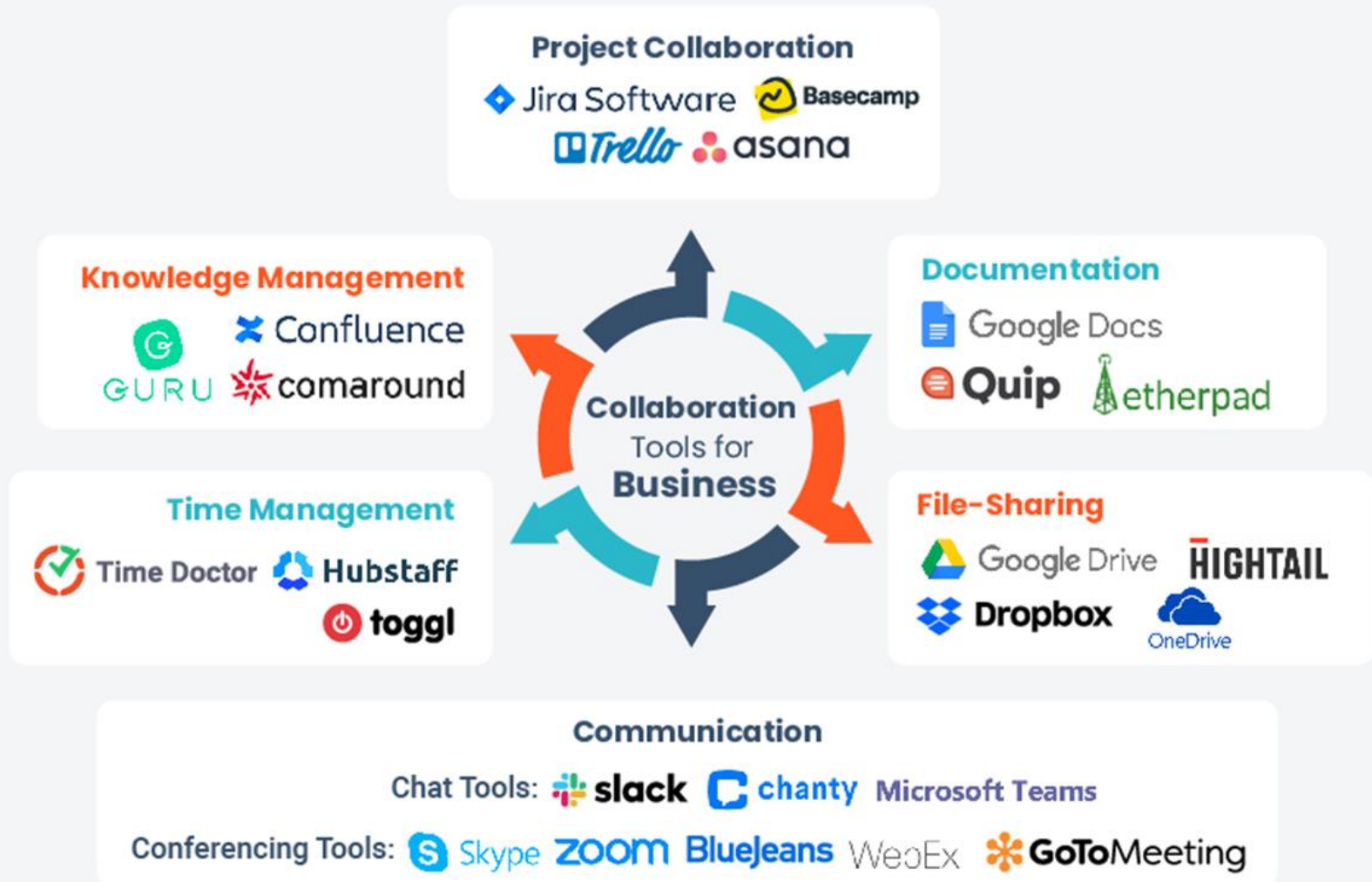83%

to accelerate digitalization
84%

to accelerate automation
50%

Source: Future of Jobs Report 2020, World Economic Forum.

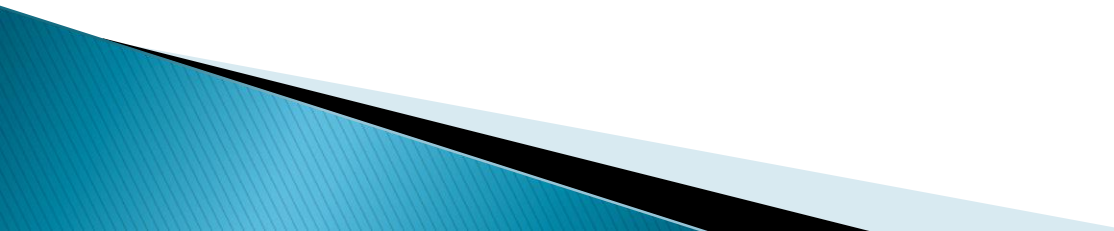# Digital communication & collaboration tools

Social Networking

- Social networking is about engage with others in society.
- Social networking is about communication, collaboration, conversation and interaction by and with various actors in the community.
- Information shared is mostly personal.
- Social networking is about community, friendship and sharing.

Social Networking

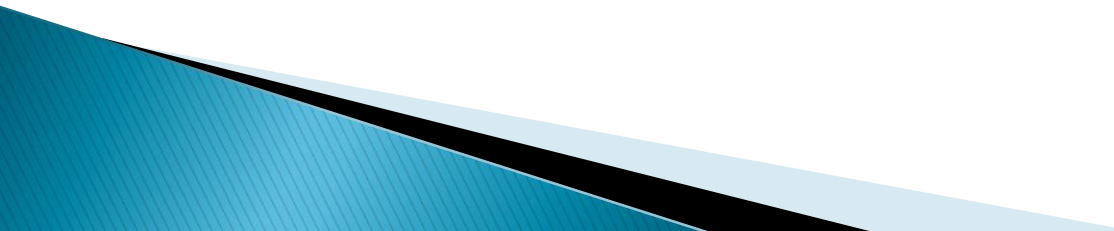| Friendship	Sharing	Community
• Keeping in Touch • Developing new relationships	• Photos • Links • Interests	• Causes • Beliefs • Advocacy • Teaching

Social Networking

▸ Social Networking is *the use of communities* to engage with others: Facebook, Google Plus, MySpace, LinkedIn, Twitter, WatsApp, etc...... Social Networking sites often include social media tools to facilitate the interaction and conversation

What is Social media?

Social Media is

- Consumer generated media It is media that is designed to be shared,
- Sharing means that it is easy to comment on, to send, with no costs associated with viewing the media and always available.
- Social media enables people to share information with friends and colleagues using the Internet
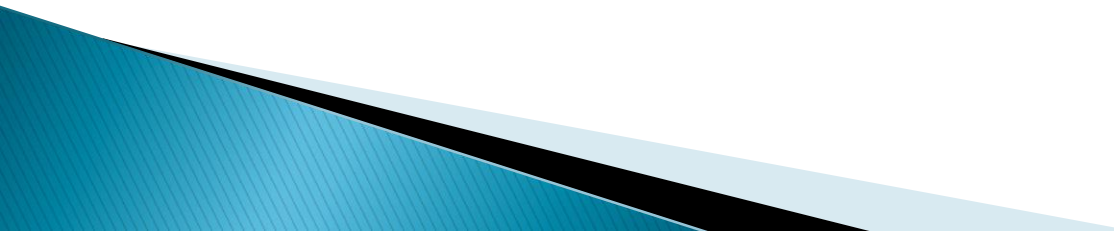
SOCIAL MEDIA ICONS

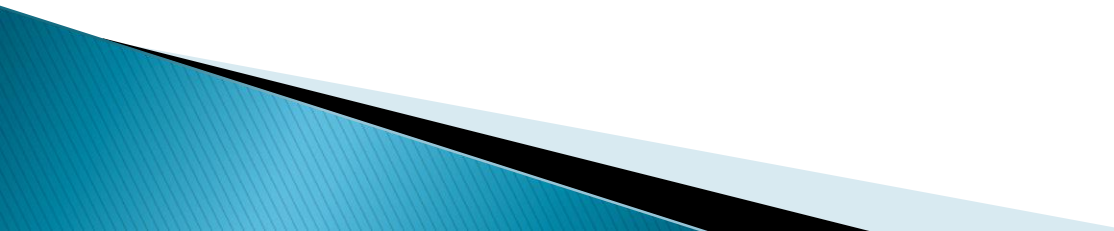# Which social media applications do you use and why?

Social media type used

1. ....
2. ....
3. ....
4. ....
5. ....

Benefits of Social Media

1. ....
2. ....
3. ....
4. ....
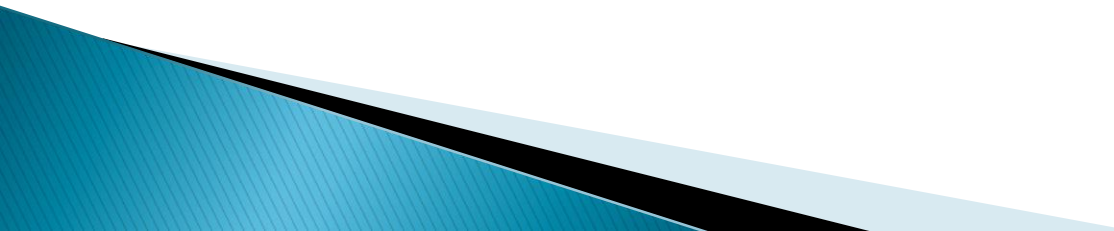5. ....

Why is Social Media important?

- Everybody is online – using a smart phone, computer, TV or other electronic device according to a new study from the Kaiser Family Foundation.
- Growing up online has shaped how teens and young adults receive, process and act on information.
- They expect information to be brief, instant and always on (there are no office hours

How popular are Social Networks?

- According to the analysts at Hitwise, social networks in general are more popular than search engines in some parts of the world
- Facebook's overall web traffic pulled ahead of Google's
- Facebook dominated the crop of social networks, accounting for the majority (55%) of all social site visits. When compared to the wider web, Google gets around 9.3% of all web traffic, while Facebook captures just over 7%

WEB TRAFFIC REFERRALS FROM SOCIAL MEDIA

SHARE OF WEB TRAFFIC ARRIVING ON THIRD-PARTY WEBSITES VIA CLICKS OR TAPS ON LINKS PUBLISHED IN SOCIAL MEDIA PLATFORMS (ANY DEVICE)

GLOBAL OVERVIEW

FACEBOOK	TWITTER	PINTEREST	INSTAGRAM	YOUTUBE
74.13%	**7.73%**	**7.65%**	**4.50%**	**3.88%**
YEAR-ON-YEAR CHANGE	YEAR-ON-YEAR CHANGE	YEAR-ON-YEAR CHANGE	YEAR-ON-YEAR CHANGE	YEAR-ON-YEAR CHANGE
+7.9% (+541 BPS)	-33.8% (-395 BPS)	-36.8% (-446 BPS)	+124% (+249 BPS)	-8.1% (-34 BPS)

REDDIT	TUMBLR	LINKEDIN	VKONTAKTE	OTHER
1.06%	**0.46%**	**0.33%**	**0.15%**	**0.11%**
YEAR-ON-YEAR CHANGE	YEAR-ON-YEAR CHANGE	YEAR-ON-YEAR CHANGE	YEAR-ON-YEAR CHANGE	YEAR-ON-YEAR CHANGE
+179% (+68 BPS)	+12.2% (+5 BPS)	+10.0% (+3 BPS)	+15.4% (+2 BPS)	+120% (+6 BPS)

we are social

Hootsuite

Why do colleges invest in Social Media?

- For many of the same reasons they invest in more traditional marketing and advertising
  - Create awareness
  - Encourage connection
  - Inspire loyalty
  - Create ambassadors
  - Recruit best fit students
  - Build powerful relations with alumni
  - Create stronger reputations

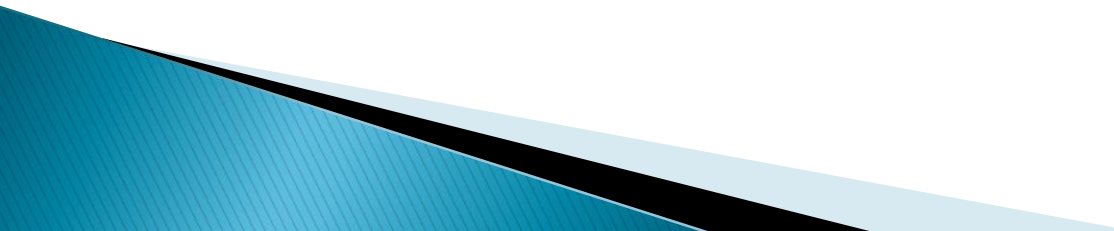# How can Universities use Social Media to enhance student support? (Tattersfield, 2017)

1. Connecting with experts on topics via social media
2. Institutions communicate with students via YouTube and Facebook
3. It helps in Research process
4. Enhanced Learning management systems
5. Facebook, YouTube, G+ (some examples – education programme information, housing, orientation, announcements)
6. Online Student Support

Types Of Social Media (Kakkar, 2018)

1. Social networking (Facebook, LinkedIn, Google+).
2. Media Sharing Networks (Instagram, Snapchat, YouTube)
3. Discussion Forums (Reddit, Quora, Digg)
4. Bookmarking and Content Curation Networks (Pinterest, Flipboard)
5. Consumer Review Networks (Yelp, Zomato, TripAdvisor)
6. Blogging and Publishing Networks (WordPress, Tumblr, Medium)

Types Of Social Media (Kakkar, 2018)

7. Social Shopping Networks (Polyvore, Etsy, Fancy)
8. Interest-based Networks (Goodreads, Houzz, Last.fm)
9. Microblogging (Twitter, Tumblr).
10. Photo sharing (Instagram, Snapchat, Pinterest).
11. Video sharing (YouTube, Facebook Live, Periscope, Vimeo).
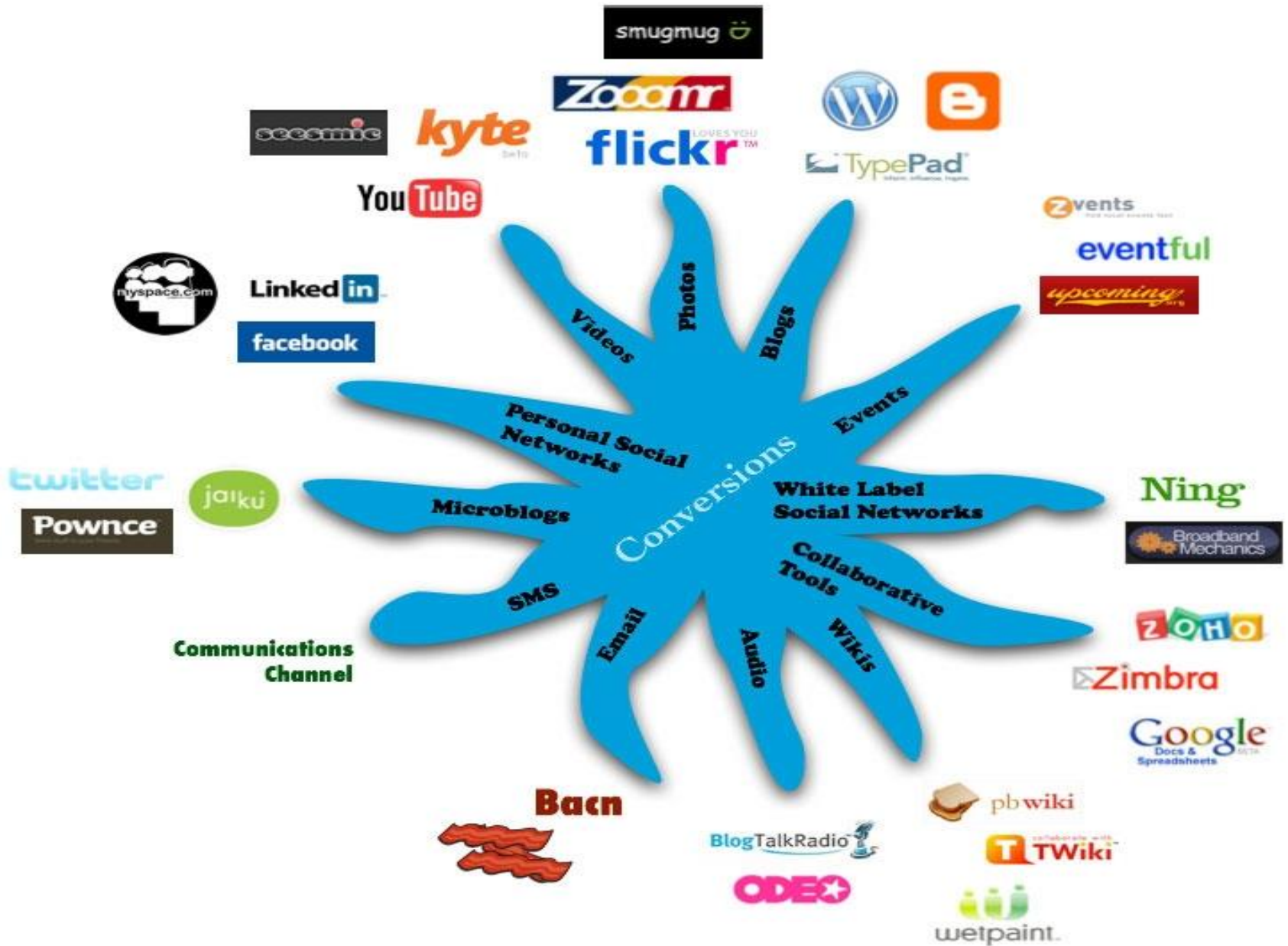
Question

▸ Identify any five organizations in Uganda and discuss how they are utilizing social media in their business today.

5. Internet business opportunities

Digital professions at a glance

In France

800,000 full-time employees

1,8 % average annual growth rate

In Europe

2M ICT specialists positions have been created in the EU in the last 10 years

By 2020, Europe could face a shortage up to **900,000 skilled ICT workers**

Sources:
« Vision prospective partagée des emplois et des compétences de la Filière numérique », France Stratégie report, 2017
« Les besoins et l'offre de formation aux métiers du numérique », European Commission report, 2015

New Professions in the digital world

Customer Acquisition and Retention

SEO Manager

SEM Manager

Project Manager

E-commerce Manager

Social Network Manager

Webmaster

Quality Assurance and Tester

Graphics and Media Developer

Online Content Writer or Curator

User Experience Specialist

5 MOST COMMON JOB TITLES FOR EACH SEARCH QUERY

DIGITAL MARKETING	CONTENT MARKETING	SEO	SOCIAL MEDIA MARKETING	PPC	GOOGLE ANALYTICS
Digital Marketing Manager	Marketing Manager	Digital Marketing Manager	Marketing Manager	Digital Marketing Manager	Digital Marketing Manager
Digital Marketing Specialist	Content Marketing Manager	Marketing Manager	Marketing Coordinator	Paid Search Specialist	User Experience Manager
Marketing Manager	Content Strategist	Web Developer	Recruiter	Marketing Manager	SEO Specialist
Account Executive	Social Media Manager	SEO Specialist	Digital Marketing Manager	Digital Marketing Specialist	Digital Marketing Specialist
Digital Marketing Analyst	Content Marketing Specialistt	Digital Marketing Specialist	Social Media Manager	SEO Specialist	Marketing Manager

Source: Indeed.com, June 2015

Most common occupations requesting digital literacy

Sales & marketing representative
Financial investment advisor
Recruitment consultant
Purchasing officer
Personal assistant
Legal secretary
Retail supervisor
Project administrator
Human resources advisor
Public relations manager
Accountant
Finance manger

Financial broker
Technical sales rep
Analyst
Management consultant

Grapic designer
Industrial designer
Advertising manager
Media producer
Art director

Civil engineer
Environmental engineer
Dentist
Software engineer
Veterinarian

Software and applications manager
ICT project manger
Developer/Programmer
ICT support and test engineers
Web developer
Systems analyst
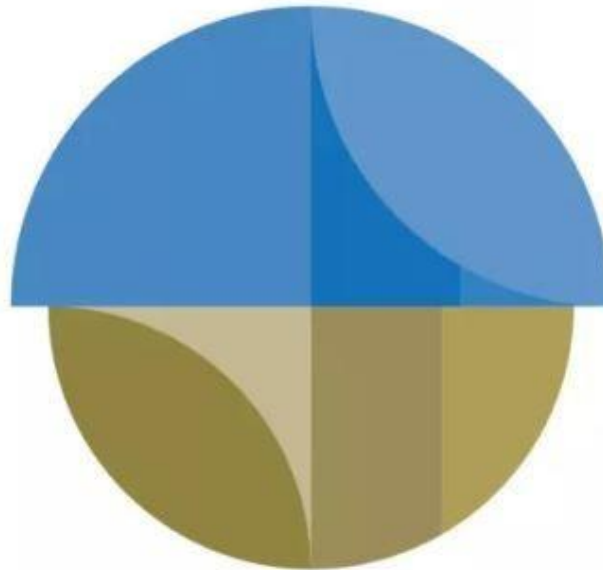
51

Job landscape

By 2025, new jobs will emerge and others will be displaced by a shift in the division of labour between humans and machines, affecting:

97 million

85 million

Growing job demand:

1. Data Analysts and Scientists
2. AI and Machine Learning Specialists
3. Big Data Specialists
4. Digital Marketing and Strategy Specialists
5. Process Automation Specialists
6. Business Development Professionals
7. Digital Transformation Specialists
8. Information Security Analysts
9. Software and Applications Developers
10. Internet of Things Specialists

Decreasing job demand:

1. Data Entry Clerks
2. Administrative and Executive Secretaries
3. Accounting, Bookkeeping and Payroll Clerks
4. Accountants and Auditors
5. Assembly and Factory Workers
6. Business Services and Administration Managers
7. Client Information and Customer Service Workers
8. General and Operations Managers
9. Mechanics and Machinery Repairers
10. Material-Recording and Stock-Keeping Clerks

Source: Future of Jobs Report 2020, World Economic Forum.

2022 Skills Outlook

Growing

1. Analytical thinking and innovation
2. Active learning and learning strategies
3. Creativity, originality and initiative
4. Technology design and programming
5. Critical thinking and analysis
6. Complex problem-solving
7. Leadership and social influence
8. Emotional intelligence
9. Reasoning, problem-solving and ideation
10. Systems analysis and evaluation

Declining

1. Manual dexterity, endurance and precision
2. Memory, verbal, auditory and spatial abilities
3. Management of financial, material resources
4. Technology installation and maintenance
5. Reading, writing, math and active listening
6. Management of personnel
7. Quality control and safety awareness
8. Coordination and time management
9. Visual, auditory and speech abilities
10. Technology use, monitoring and control

Source: Future of Jobs Report 2018, World Economic Forum

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Internet based business applications

- Electronic mail or e-mail.
- Electronic conferencing.
- Electronic education / learning/ research.
- Electronic chart services.
- Electronic collaboration.
- Electronic medicine.
- Electronic shopping.
- Electronic entertainment.
- Electronic marketing/selling products or services.
- Electronic funds transfer/purchase products.
- Electronic banking.
- Electronic commerce
- E.t.c.

Internet business opportunities Cont'

1. Use of the Internet and extranets to transmit customer orders from has led to the provision of better customer service by reducing delay in filling orders.
2. Transmission of customer orders also improves cash flow by speeding up the billing of customers.
3. Generating new revenue from online sales or electronic commerce applications is a growing source of business value.

Internet business opportunities

4. Desktop videoconferencing between a company and its business partners reduces expensive business trips, allows customers, suppliers, and employees to collaborate, thus improving the quality of decisions reached.

5. Business–to–business e– Commerce website for transactions with suppliers and customers leads to fast, convenient services lock–in customers and suppliers.

6. Credit authorization at the point of sale using online POS networks.

7. Credit inquiries can be made and answered in seconds.

Assignment

▸ Students should review the online business opportunities on the link below;
  ◦ https://smallbiztrends.com/2016/11/online-business-ideas.html

6. Benefits of the internet to a business

a) Attract new customers via Web marketing and advertising and online sales with innovative products.

b) Increase the loyalty of existing customers via improved Web customer service and support.

c) It fosters communication interactively with customized information and services to individual customers.

Benefits of the internet to a business/2

d) Reduced costs and cost savings through online sales and customer support.

e) Develop new Web-based markets and distribution channels for existing products.

f) Develop new information-based products accessible on the Web.

7. Limitations of the internet for a business

a) **Laws:** The Business owner is subject to the to the laws of the countries where customers access internet based business

b) **Lack of Trust:** online consumers are sometimes worried of purchasing products online

c) **Copycats:** Internet business idea is expensive to copyright or patent globally

d) **Customer Support:** An online business lacks face-to-face interaction

Limitations of the internet for a business../2

e) **Cost to Start: High** initial cost for creating and maintain website by experienced professionals, web hosting, SEO etc

f) **Negative Reviews:** Buyers may use social media to share their frustrations and opinions about businesses

g) **Competition:** High competition in the internet world

8. Netiquette

- What is Netiquette?
- Netiquette ="net" + "etiquette" or
- Internet etiquette = "internet + etiquette"
- Refers to **the rules of conduct for respectful and appropriate communication on the internet.**

RULES OF NETIQUETTE

Rule 1 — Make it Personal
Remember the HUMAN
Do No Harm
Share and express feelings

Rule 2 — Look around! Lurk to Learn
Know where you are in the digital space.
Permissions & practices

@hj_dewaard

Rule 3
Real life REFLECTS
Online life
Follow the laws
Be ethical
Don't Steal

Rule 4
Respect time and bandwidth.
Dial-Up 3G 4G
You ARE NOT THE CENTER
Make Messages Meaningful

Rule 5 — BE POLITE
Check facts and links!
Make yourself look good online.
Quality NOT Quantity
Grammar matters!
Edit it!

Rule 6
Share EXPERT knowledge.
Share experiences
Create summaries

Rule 7
Check your OPINIONS and EMOTIONS
Argue IDEAS not people

Rule 8
Respect other's PRIVACY
Don't publish without permission
Link or share with appropriate license

Rule 9
Don't abuse your power

Rule 10
Be Kind
FORGIVE MISTAKES
We are all NEWBIES once
Turn to wonder
Address issues politely and privately

Telephone and mobile phone etiquette

1. Answer the call within three rings.
2. Immediately introduce yourself.
3. Speak clearly.
4. Only use speakerphone when necessary.
5. Actively listen and take notes.
6. Use proper language.
7. Remain cheerful.
8. Ask before putting someone on hold or transferring a call.
9. Be honest if you don't know the answer.
10. Be mindful of your volume.
11. Check for and respond to voicemails.

Image by Jiaqi Zhou Ã‚Â© The Balance 2019

Virtual meetings etiquette and ground rules for hosts

- Make sure you understand the software
- Prepare a clear agenda
- Dress appropriately
- Be punctual
- Speak to the camera
- Begin with a round of introductions
- Minimize distractions
- Take breaks
- Record and share the meeting
- lose with what's actionable

Virtual meeting etiquette for attendees

- Start on mute by default
- Minimize movement
- Be responsive
- Have a clear background
- Limit your keyboard use
- Avoid eating
- Don't interrupt, use the question tab
- Leave well

2020's Most Embarrassing Zoom Moments

https://www.youtube.com/watch?v=yZpEpNPaxsw