

**ADDIS ABABA INSTITUTE OF TECHNOLOGY**

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DEPARTMENT OF **SOFTWARE ENGINEERING**

Assignment related to lecture one

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# History of Internet

Long before all the technological advancements we have today, many visionary and bright minded scientists like Nikola Tesla, Paul Otlet and Vannevar envisioned an idea of a world that would interconnect and share information.

Even though the idea of interconnected networks and sharing of information has been floating around minds of many computer scientists, the prac¬¬tical emergence of the internet began some 70 years ago during the late 1950s and the early 1960s in the Semi-Automatic Ground Environment (SAGE) program as a military project whose main intentions were to regain the lead in technology of the Soviet Union who launched the first ever human made satellite Sputnik to space in 1957 with the aim of building a system of large computers and associated networking equipment that coordinates data from many radar sites and process it to produce a unified image of the air space over a wide area. The program was led by a visionary scientist called J.C.R. Licklider who is known for his idea of an “Intergalactic Network” which served as a base concept for other advancements to come in the field.

Since the main goal was interchanging of data from a certain node (computer) in a network to the other end or node, the main problem to solve was how the data should be sent and computer scientist struggled for some time until the concept of packet switching was invented by Paul Baran and later on by Donald Davies in the UK at National physics Laboratory (NLC). The idea behind was breaking up the data to be sent in to smaller pieces of packets that contain a header (contains information about the destination for a networking hardware) and payload (contains a small piece of data that is extracted and used by an application software) in order to increase efficiency and speed.

After the achievements made in packet switching concept the US Department of Defense contracted for the development of the Advanced Research Projects Agency Network (ARPANET) also known as the predecessor of internet which was the world’s first wide area packet switching network with distributed control that was managed by a recruit of Licklider named Lawrence Roberts.

Though packet switching was a major breakthrough in the process, there was no guide line or protocol that would let different packet switching networks to communicate in the network of networks but the year 1973 changed everything; a protocol suite that we still use to run the internet called Internet protocol suite was published by Vinton Cerf, at Stanford university, and Bob Khan, at ARPANET. The Internet protocol suite is a set of conceptual protocols that specify how packets should be packetized, routed, addressed, transmitted and received. It is also known as TCP (Transmission Control Protocol)/IP (Internet Protocol).

The 1980’s were the golden ages for the birth of the internet because several ground breaking achievements were made like the development of the Domain Name System (DNS) architecture, the adoption of the TCP/IP globally and Time Berners-Lee’s World Wide Web (WWW) in 1989/90 that linked hypertext documents into an information system which we call a website today.

To sum up the emergence of internet did not just happened overnight and it is not owned by a certain company or a person but it’s a technology that many computer scientists, mathematicians, electrical engineers, hardware engineers, physicist and many other people devoted their time and knowledge for its very existence. As result of this and its decentralized nature we say that no one owns it.

## Major milestones in the birth and growth of the internet

1969:

* Computers at Stanford and UCLA (University of California, Los Angeles) were connected for the first time.
* The first message was sent across the network that was intended to say “Login” but the full text was unable to be sent and the system crashed after several trials and the successful sent string was “LO”.

1970:

* An Arpanet network was established between Harvard, MIT, and BBN (The creator of interface message processor)

1971:

* E-mail was developed by Ray Tomlinson.
* The “@” symbol begun to be used to separate username from computer name and later on changed to domain name.
* Project Gutenberg was created to make books and documents available electronically for free.

1972:

* France built an ARPANET like network called CYCLADES that pioneered a key idea: “the host computer should be responsible for data transmission rather than the network itself”.

1973:

* ARPANET established the world’s first trans-Atlantic connection with the University of London.

1977:

* The first PC modem was made by Dennis Hayes and Dale Hearthington.

1978:

* The first unsolicited commercial email message (spam) was sent.

1983:

* ARPANET switch over to TCP/IP.

1984:

* The domain name system along with the first Domain Name Servers was created. That made addresses human friendly.

1986:

* Protocol wars began between the Europeans Open Systems Interconnection and the ARPANET protocols.

1987:

* Hosts on the internet grew tremendously to 30,000 hosts.

1988:

* The first major malicious internet-based attack.

1989:

* The World Wide Web (WWW).

1990:

* ARPANET was over.
* The first commercial Internet service provider(ISP) was found.

1991:

* The first ever webpage was created.
* The first webcam was developed.
* MP3 format was accepted as a standard.

1993:

* The first graphical web browser called Mosaic created.

1995:

* JavaScript was developed and web development went to a whole another level.

1996:

* The first web based webmail.

1998:

* Google was created and changed the game.

2008:

* The first internet election was held in the US.

# View popular websites of your choice from web archive URL and put your observation and assessment

In order to observe and assess websites in different years three creiterias user interface (UI), interactivity and url changes are considered in which UI and interactivity are rated out of 10.

1. Ethiopian airlines: <https://www.ethiopianairlines.com/>

|  |  |  |  |
| --- | --- | --- | --- |
| Date | UI (10) | Interactivity (10) | Url |
| Dec 1998 | 3 | 2 | [www.ethiopianairlines.com](http://www.ethiopianairlines.com) |
| Dec - 2002 | 4 | 3 | [www.flyethiopian.com](http://www.flyethiopian.com) |
| Dec - 2004 | 6 | 4 | [www.flyethiopian.com](http://www.flyethiopian.com) |
| Dec - 2006 | 6 | 5 | [www.flyethiopian.com](http://www.flyethiopian.com) |
| Dec -2010 | 7 | 5 | [www.flyethiopian.com](http://www.flyethiopian.com) |
| Dec - 2012 | 7 | 6 | [www.flyethiopian.com](http://www.flyethiopian.com) |
| Dec - 2015 | 8 | 7 | [www.flyethiopian.com](http://www.flyethiopian.com) |
| Dec - 2018 | 9 | 8 | [www.ethiopianairlines.com](http://www.ethiopianairlines.com) |

Observation:

* For quite some time the UI has not been user friendly but after 2006 it started to improve.
* Booking and ticketing has not been in the features of the site until the late 2000’s (the site then became a web app).
* After 2018 the site became responsive.
* The loading speed of the site increased.
* Embedded JavaScript increased in time to increase the interactivity of the site.
* There was fluctuation of the site’s url.

1. The Guardian

|  |  |  |  |
| --- | --- | --- | --- |
| Date | UI (10) | Interactivity (10) | url |
| Jul - 2013 | 5 | 3 | [www.theguardian.com](http://www.theguardian.com) |
| Jul - 2014 | 5 | 3 | [www.theguardian.com](http://www.theguardian.com) |
| Jul - 2016 | 6 | 4 | [www.theguardian.com](http://www.theguardian.com) |
| Jul - 2018 | 8 | 6 | [www.theguardian.com](http://www.theguardian.com) |
| Jan - 2020 | 8 | 8 | [www.theguardian.com](http://www.theguardian.com) |

Observation:

* There was a consistency in the url.
* The UI was not that much friendly in the early stages but grew to become better and better over time.
* The site became responsive.
* Interactivity of the site became better over time.

1. The Prime minister office of Ethiopia

|  |  |  |  |
| --- | --- | --- | --- |
| Date | UI (10) | Interactivity (10) | url |
| Feb - 2017 | 5 | 3 | [www.pmo.gov.et](http://www.pmo.gov.et) |
| Feb - 2018 | 5 | 3 | [www.pmo.gov.et](http://www.pmo.gov.et) |
| Aug - 2019 | 9 | 9 | [www.pmo.gov.et](http://www.pmo.gov.et) |
| Jan - 2020 | 9 | 9 | [www.pmo.gov.et](http://www.pmo.gov.et) |

Observation:

* The site had a poor design and unfriendly environment until 2019.
* Responsiveness was introduced to the site in 2019.
* Interactivity was taken to a whole another level in 2019.
* Speed slightly decreased.
* Url is consistent.

1. Facebook

|  |  |  |  |
| --- | --- | --- | --- |
| Date | UI(10) | Interactivity (10) | url |
| Feb - 2004 | 4 | 5 | [www.facebook.com](http://www.facebook.com) |
| Feb - 2006 | 4 | 5 | [www.facebook.com](http://www.facebook.com) |
| Feb - 2010 | 6 | 5 | [www.facebook.com](http://www.facebook.com) |
| Feb - 2013 | 7 | 6 | [www.facebook.com](http://www.facebook.com) |
| Feb - 2016 | 7 | 7 | [www.facebook.com](http://www.facebook.com) |
| Feb - 2018 | 7 | 7 | [www.facebook.com](http://www.facebook.com) |
| Feb - 2020 | 9 | 8 | [www.facebook.com](http://www.facebook.com) |

Observation:

* After 2010 the UI only changed slightly.
* The loading speed of the site decreased overtime.
* The site is responsive.
* Has a stable url.

1. Bloomberg

|  |  |  |  |
| --- | --- | --- | --- |
| Date | UI (10) | Interactivity (10) | url |
| Oct – 1996 | 0 | 0 | <http://www.bloomberg.com/> |
| Oct 1998 | 3 | 3 | <http://www.bloomberg.com/> |
| Oct – 2000 | 3 | 3 | <http://www.bloomberg.com/> |
| Oct – 2002 | 3 | 3 | <http://www.bloomberg.com/> |
| Oct – 2004 | 4 | 4 | <http://www.bloomberg.com/> |
| Oct - 2007 | 5 | 4 | <http://www.bloomberg.com/> |
| Oct – 2010 | 7 | 6 | <http://www.bloomberg.com/> |
| Oct – 2015 | 8 | 8 | <http://www.bloomberg.com/> |
| Jan – 2020 | 9 | 9 | <http://www.bloomberg.com/> |

Observation:

* The UI has been the same for several years but became better over time.
* Interactivity also increased (increased user experience).
* Responsiveness was introduced to the site.
* Loading speed decreased slightly.

# List 5 website each on the 12 categories you learned

1. Web portals

A web portal is a carefully-designed Web page at a website which brings information together from diverse sources in a uniform way. Some examples are:

* Law Ethiopia: [https://ww.lawethiopia.com](https://ww.lawethiopia.com/) is an Ethiopian legal information portal.
* Addis Ababa University (AAU): <https://portal.aau.edu.et> is portal designed to give students the ability to view their grades, register their course and so much more.
* Forest Hills Paediatrics portal: <https://www.foresthillspediatrics.com> is a patient portal that gives its user the ability to request appointments, refills and other functionalities.
* Santander Bank portal: [http://www.santanderbank.com](http://www.santanderbank.com/) is a banking portal that includes retail banking services features and ability to open new accounts and manage day-to-day banking operations.
* Ifeng: [http://www.ifeng.com is](http://www.ifeng.com/) the portal website of phoenix television.

1. News websites

A news website is a website which serves the news online. Some examples are:

* The reporter Ethiopia: <https://www.thereporterethiopia.com> is an Amharic active newspaper website.
* The guardian: <https://www.theguardian.com> is the website of a British newspaper agency.
* Fox News: <https://www.foxnews.com> is American conservative cable television news channel website.
* NBC News: <https://www.nbcnews.com> is an American broadcast television network NBC news division website.
* BBC News: <https://www.bbc.com/news> is a British air television news channel website.

1. Informational website

An informational websites are special kinds of website whose purpose is to give people information about a certain content. Some examples are:

* 50states: <https://www.50states.com> is an informative website about the 50 states in the United States of America.
* IMDB: <https://www.imdb.com> is a popular website that we could get a lot of information about TV shows, movies trailers and so much more.
* Businessballs: <https://www.businessballs.com> is a website that information about business articles.
* Census: <https://www.census.gov> is a website that gives information regarding the census of the United States of America could be found.
* Hometown locator: <https://www.hometownlocator.com> is a website that gives facts and information about any city in the US.

1. Educational websites

These are website of educational institution and other organizations whose primary goal is providing educational materials or information about an educational institution. Some examples are:

* Addis Ababa University (AAU): <https://www.aau.edu.et> is the official website of Addis Ababa University (AAU) in Ethiopia.
* Coursera: <https://www.coursera.org> is an online platform that provides a massive open online course.
* University of Oxford: <https://www.ox.sc.uk> is the official website of Oxford University.
* Massachusetts institute of technology (MIT): <https://www.mit.edu> the official website of MIT.
* Edx: <https://www.edx,org> is a free massive open online course provider.

1. Business/Marketing websites

They are websites that are meant to represent a certain business. Some examples are:

* Walmart: [https://www.walmart.com](https://www.walmart.com/) is a retail corporation that operates a chain of hypermarkets and gives its users the ability to shop online marketing by giving its customers the ability to save money and provide cheap products.
* Alibaba: <https://www.alibaba.com> is a Chinese online marketing website.
* EBay: <https://www.ebay.pl> is an e-commerce website that facilitates transactions between customer to customer and business to customer..
* Jingdong: <https://www.jd.com> It is another Chinese e-commerce company that uses B2C (business to computer) concept.

1. Entertainment website

They are website that are built in the intention to entertain people. Some examples are:

* Buzzfeed: [https://www.buzzfeed.com](https://www.buzzfeed.com/) is an American news and entertainment company.
* The onion: [https://www.theonion.com](https://www.theonion.com/) is American satirical digital media company and newspaper website.
* xkcd: <https://xkcd.com> is a web comic created by an American author Randall Munroe.
* ComicBook: <https://comicbook.com> is a website that Provides variety of comic books for entertainment purposes.
* Bbspot: <https://www.bbspot.com> is a website that provides satirical news.

1. Advocacy website

They are websites that are built for the purpose of influencing people about a certain movement, idea or opinion. Some examples are:

* Human rights watch: [https://www.hrw.com](https://www.hrw.com/) it is a website of an international non-governmental organization that conducts advocacy on human rights.
* American cancer society: [https://www.cacner.org](https://www.cacner.org/) is a non-voluntary organization with the mission of freeing the world from cancer.
* Children: <https://www.children.org> is a non-profit organization with the mission of letting every student to learn.
* The kidney foundation: [https://www.kidney.org](https://www.kidney.org/) it is a non-profit organization that is dedicated to preventing kidney and unary diseases.
* Boston women fund: [https://www.bostonwomensfund.com](https://www.bostonwomensfund.com/) is a non-profit organizations that Works on empowerment of girls and fights injustice deeds.

1. Content aggregator

Content aggregator websites are websites that collect information from various websites that put organize and put it in one place for people easily access it. Some examples are:

* Alltop: <https://www.alltop.com> is a content aggregator for news and other information.
* Popurls: <https://www.popurls.com> is a site that aggregates headlines from popular websites.
* WP news desk: <https://www.wpnewsdesk.com> is a content aggregator which focuses on WordPress.
* Web List: <https://www.theweblist.net> is a site that collects variety of content from different websites.
* Google news: <https://news.google.com> is news aggregator form Google.

1. Blog sites

They are regularly updated websites that are usually run by an individual or small group. Some examples are:

* Food52: <https://food52.com> is a food blog site.
* The sartorialist: <https://www.thesartorialist.com> is a fashion blog site.
* GameSpot: [https://ww.gamespot.com](https://ww.gamespot.com/) is a video gaming blog site that provides news, previews, downloads and other things related to games.
* Cinema Blend: [https://ww.cinemablend.com](https://ww.cinemablend.com/) is movie blog site.
* The budged fashionista: <https://www.thebudgetfashionista.com> is fashion blogsite.

1. Wiki

A wiki is a website that allows collaborative of its content and structure by its users. Some examples are:

* Wikipedia: <https://en.wikipedia.org> is a multilingual online encyclopaedia that is created and maintained by a community of volunteer editors.
* wikiHow: <https://www.wikihow.com> is a Wiki style community with an excessive database of how-to guides.
* Wikimedia: <https://www.wikimedia.org> is a wiki site that Contains free educational content.
* Wikileaks: <https://wikileaks.org> is a wiki site that publishes news leaks, secrets and classified media provided by anonymous sources.
* Fandom/wikia: <https://www.wikia.org> is a wiki site that everyone can contribute share and discover knowledge.

1. Social network

A social network is a websites are sites that allows people to share ideas, photos and videos to inform others to their current activities. Some examples are:

* Facebook: <https://www.facebook.com> is the biggest social network with over 2.5 billion users.
* Tinder: <https://www.tinder.com> is an online dating and geosocial network.
* Twitter: <https://www.twitter.com> is a microblogging and social network website.
* Tumblr: <https://www.tumblr.com> is a microblogging and social network website.
* Instagram: <https://www.instagram.com> is a photo and video sharing social network.

1. Personal websites

Personal websites are websites that someone creates for themselves that contain things that are personal. Some examples are:

* Nia Shanks: <http://www.niashanks.com>
* Simon Sinek: <https://www.simonsinek.com>
* Joshua McCartney: <http://www.joshuamccartney.com>
* Seth Godin: <http://www.sethgodin.com>
* Anna Santos: <http://www.annasantons.com>

# What are the guidelines for evaluating the value of a website?

There are over 4.5 billion websites that are currently indexed by search engines which is barely a small number from that of websites that are not indexed (the deep and dark webs) by our search engines and because of the huge number of websites that we have to day we need to find a way or ways for evaluating the quality and value of the content of websites that we use. There are commonly 6 guidelines used for evaluating a certain website

* Authority

It states whether or not the person, or institution responsible for the authority of the website has the knowledge and qualification for the job. For a website to fulfil the authority guideline it should be able to answer:

* Authorship : is the author identified
* Does the author has enough knowledge and recognized as an expert?
* Is there enough information about the author’s credibility?
* Is it possible to find references about the author elsewhere?
* Is there a clear contact information?
* Accuracy

For a website to in order to fulfil the state of accuracy there are some things it should fulfil and answer; some them are:

* Is the author reliable and affiliated by a well know respectable institution
* What is the purpose of the document and why was it produced?
* Is it grammatically correct?
* Has the document been through a proper editing process and is reviewed?
* The author should include a bibliography
* Is the information comparable to other sites in the exactly same topic?
* Objectivity

For a website to fulfil the objectivity guide line it should answer or satisfy certain things like:

* It should present information minimum or a certain bias.
* The site advertising should not conflict with the audience.
* Is the site trying to explain, inform, persuade or sell something?
* How detailed is the information?
* Currency

Currency of a website mainly refers to whether or not the site is up-to-date and some other meet some other requirements like:

* The links should be up-to-date.
* The information presented should be current.
* Whether or not the site is maintained or updated often.
* Links provided should be reliable.
* Dead links or referenced links that are moved should not be there on the page.
* Coverage

To evaluate the scale of coverage of a site through the use of links can be infinite and difficult. But one author may claim comprehensive coverage of a topic while another may cover just one aspect of a topic. Evaluating a web site for coverage should answer or fulfil:

* Does the site claim to be selective or comprehensive?
* Whether the topics are explored in depth or not.
* Do the links go outside the site rather than its own?
* Is it all images or a balance of text and images?
* Are the links (if any) evaluated and do they complement the documents' theme?
* Purpose

The purpose of a website and the reason why the content is found there should be clear. To evaluate a website for purpose:

* Is the site organized and focused?
* Does the site evaluate the links?
* Is the information intended for a specific audience?
* Does the content support the purpose of a site?

## Examples of evaluating a site

* **CNN**
  + Authority: the site has no kind of authority problems
  + Accuracy: the site is most of the time reliable and problems due to the accuracy of the page is minimal.
  + Objectivity: the purpose and audience of the site are very clear because it is a media website and the contents found are related to news and other issues that are intended for the world.
  + Currency: because the site is always looking for new things about the world the information are up-to-date and the sources that the authors have are most of the time primary.
  + Coverage: the contents that are found in the site are always explored in depth.
  + Purpose: the purpose of the contents that we found in the site is crystal clear which is informing people about current situations of the world.

To sum up we could say that [www.cnn.com](http://www.cnn.com) is a trust worthy and reliable source.

* **Quora**: Is a question and answer website where questions are asked, answered and edited by internet users.
  + Authority: the site clearly states the identity of the contents posted by a person but whether or not that person is qualified enough cannot be assured.
  + Accuracy: the accuracy of the content depends on who wrote it since any one can be a member of the community. Though this could lead unreliable information to be transmitted, the large active community could easily see the defect in the content and will try to correct it but still we could not be 100% sure.
  + Objectivity: since the site has a large community that contribute to it the contents are often presented in a fair and balanced way.
  + Currency: most of the time the site has no currency issues but there are some factors that depend on who the person responsible for the content.
  + Coverage: the site is more of a selective kind since only certain topics are explored at a time but the depth that they are explained depends on the topic and the person which lead to an inconsistence.
  + Purpose: the reason why the content is found always common it is because people who are asking for answer for their question, advice and more.

Therefore Quora is most of the time a reliable source for information but we should not full depend on it.

* **Wikipedia**: an online encyclopaedia website.
  + Authority: the website has trust issues in some cases since anyone can make changes to the documents which could lead to inconsistency.
  + Accuracy: the accuracy of the document always depends on the person writing the content therefore there is no certainty.
  + Objectivity: the site has no problems about objectivity.
  + Currency: this also depends on the person responsible for that content.
  + Coverage: the website provides a comprehensive knowledge in the world.
  + Purpose: the site fulfils the purpose guideline.

To conclude Wikipedia most of the time but we should not depend on it since contents can easily be changed and biased.

# Reference

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