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CENTER OF INFORMATION TECHNOLOGY AND SCIENTIFIC COMPUTING

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The Internet and world wide web

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Table of Contents

[1 Introduction 1](#_Toc34400885)

[2 The Evolution of internet 1](#_Toc34400886)

[3 Observing web pages 3](#_Toc34400887)

[4 Categories of web pages 5](#_Toc34400888)

[5 Criteria for evaluating the value of a web page 12](#_Toc34400889)

[5.1 AUTHORITY 12](#_Toc34400890)

[5.2 OBJECTIVITY 12](#_Toc34400891)

[5.3 COVERAGE 12](#_Toc34400892)

[5.4 CURRENCY 13](#_Toc34400893)

[5.5 ACCURACY 13](#_Toc34400894)

[6 References 15](#_Toc34400895)

# Introduction

The Internet is a worldwide system of interconnected computer networks that use the TCP/IP set of network protocols to reach billions of users. It is a network of networks that serves as a global data communications system that links millions of private, public, academic and business networks via an international telecommunications backbone that consists of various electronic and optical networking technologies.

World Wide Web, which is also known as a Web, is a collection of websites containing text pages, digital images, audios and videos or web pages stored in web servers and connected to local computers through the internet.

The internet and world wide web can be used interchangeably but they are not exactly the same. One can think the internet as a vast hardware and software infrastructure that enables computer interconnectivity and the world wide web as collection of documents and other resources connected by hyperlinks. In simple words users access content of the web from any part of the world over the internet.

# The Evolution of internet

The Internet started in the 1960s as a way for government researchers to share information. Computers in the '60s were large and immobile and in order to make use of information stored in any one computer, one had to either travel to the site of the computer or have magnetic computer tapes sent through the conventional postal system.

In 1962, J.C.R. Licklider of MIT proposes the concept of galactic network for the first time with the idea of having global network. On the other hand, the advanced research projects agency (ARPA) was considering ways information could still be disseminated even after a nuclear attack which eventually led to the formation of the ARPANET (Advanced Research Projects Agency Network) having J.C.R. Licklider as the head researcher in 1969. ARPANET is the network that ultimately evolved into what we now know as the Internet. ARPANET was a great success but membership was limited to certain academic and research organizations who had contracts with the Defense Department. In response to this, other networks(ways) were created to provide information sharing such as Gmail in 1971.

In 1972, Network Control Protocol was introduced to allow computers running on the same network to communicate with each other. But the various computers which were on different network were not able to communicate. As a result, a new communications protocol was established called Transfer Control Protocol/Internetwork Protocol (TCP/IP). This internet protocol allowed the computers to talk with each other. ARPANET and the Defense Data Network officially changed to the TCP/IP standard on January 1, 1983, hence the birth of the Internet.

1986, the National Science Foundation funded NSFNet as a cross country 56 Kbps backbone for the Internet. They maintained their sponsorship for nearly a decade, setting rules for its non-commercial government and research uses. As the commands for [e-mail](javascript:newWindow('../glossary/e.html#e-mail')), [FTP](javascript:newWindow('../glossary/f.html#ftp')), and [telnet](javascript:newWindow('../glossary/t.html#telnet')) were standardized, it became a lot easier for non-technical people to learn to use the nets. It was not easy by today's standards by any means, but it did open up use of the Internet to many more people in universities in particular. Other departments besides the libraries, computer, physics, and engineering departments found ways to make good use of the networks to communicate with colleagues around the world and to share files and resources.

While the number of sites on the Internet was small, it was fairly easy to keep track of the resources of interest that were available. But as more and more universities and organizations and their libraries connected, the Internet became harder and harder to track. There was more and more need for tools to index the resources that were available. Advanced Network & Services (ANS) was formed to research new ways to make internet speeds even faster. The group developed the T3 line and installed in on a number of networks. Then a hypertext system was created and implemented by Tim Berners-Lee while working for CERN. This led to the invention of the most amazing tool in the internet world, the world wide web which Now a days are estimated to be over 1billion of them. The technology world kept on improving, growing, hosts kept on increasing and reached to the point of inventing a wireless network, most commonly known as Wi-Fi in 1999. It became standard afterwards.

The Internet has definitely made many aspects of modern life much more convenient. From paying bills and buying clothes to researching and learning new things, from keeping in contact with people to meeting new people, all of these things have become much more convenient thanks to the Internet. The Internet has also turned into big business and has created a completely new marketplace that did not exist before it.

# Observing web pages

Stack Overflow

At the start, just like other websites, it was simple and with less content. But it got better throughout the years. In 2013, the website changed for the better. Since it was about question and answer, the user interface was simple and easy to understand. In 2016, it allowed users to sign up and be part of the Stack Overflow community. Afterwards, it had kind of the same format.

In the present day, Stack Overflow became an open community for anyone that codes. It helps to get answers to toughest coding questions, share knowledge with coworkers in private. This website welcomes with a simple art that relates to its purpose and clearly stated objective at the top. There is also a search engine above the art which makes it easy to access for users. It has a great flow of content and catchy coloring. The contents on the user interface may not be detailed but they are on point with precise links redirecting to other related contents. Generally, this website has clear and easy-going user interface.

W3Schools

About the time it was developed which is around 1996, W3Schools was just a simple plane text website with no complicated html tags and styles. It was basically kind of the same until 2000. Around this year it just made a little change on the arrangement of contents. A significant change was made in 2006. They made a noticeable change on the user interface: a search engine was added, used some images, and content arrangement was slightly changed. Another significant change was made around 2014. This change was a major one: the user interface completely changed, it became attractive and added icon images.

In the present day, W3Schools became an educational website for programmers or anyone who is interested in programming. One can easily understand what the website is about from the content. It doesn’t have too much coloring which is good because users might get distracted from their study as it is an educational website. It has all the programming language any one could ever ask for plus ready-made quiz for more practice. On the right side of the home page, all the languages are listed which is easy to find. The most amazing fact about this website is that it can be translated to more than 99 languages just by clicking the button that says translate on the right top. It doesn’t contain links redirecting to any other websites.

BuzzFeed

From 2002 – 2004 the domain was underdevelopment. The website started to become active in 2007. At that time, it was simple but at the same time not attractive. The contents were not detailed and satisfying but still it was providing hot topics of that time supported by pictures. There wasn’t a significant change until 2013. There after the user interface changed; more and more images were used, detailed content, and its coverage increased.

In the present day, BuzzFeed became digital media company delivering news and entertainment. The web page starts with some of options to choose at the top and hot topics right below. The next thing that come is the advertisement area. On the right top, there is a menu with all the options and categories to choose. it contains variety of images and story lines which are catchy. So, this website can be listed under different categories: news, entertainment, and informative. It has links redirecting to other websites under this company such as: BuzzFeednews and tasty. It provides up to date news and information.

Food Network

Around the year 2001, the website was just a text stating about what Food Network is and its aim. But around 2003 there was a major change on the website: images, beautiful user interface, and aim related contents were added. There is a change on the website every year. Tried to come with a better user interface every time it was updated. There wasn’t a significant change from 2009 – 2014 but later on videos and more quality pictures were added and a better user interface.

In the present day, Food Network became a network, magazine, and website that connects viewers to the power and joy of food. The user interface with smoothly arranged contents has a great impact on the look of the web page. The good quality food pictures and the detailed easy recipes are not to pass without mentioning. All the contents relate to food and are easy to understand. It has links redirecting to both the magazine and app of Food Network. Contact information and other social media pages are all found in one.

wikiHow

in 2006, WikiHow looked so confusing for a user and unattractive. The content was not detailed. In 2006, there was a significant change: the content got broader and the user interface changed. In 2014, the page made the major change on the user interface: a lot of artistic and attractive images linked to other sites of its own, detailed content and target meeting articles.

In the present day, WikiHow a webpage that helps users to learn how to solve any small or large problem. The user interface has a light coloring and smooth flow of content. It has two search engines; each placed at the bottom and top. Clearly states its goal and purpose on About. It starts by listing articles about solutions to the most searched and current problems of the society. It even allows users to browse problems with categories using the language that suits them.

# Categories of web pages

**Portal Websites**

Allianz: <https://www.allianz.com/en.html>

* It is a wealth management/insurance portal

MedImpact: <https://www.medimpact.com/>

* It is a benefit program portal which provides pharmacy benefit programs to hundreds of organizations, each with their own unique combination of offerings for members.

CarreFour Bank: <https://www.carrefour-banque.fr/>

* It is a financial customer self-service portal.

Addis Ababa University Portal: <https://portal.aau.edu.et/>

* It is a university portal where students view their results and register.

Council of Europe: <https://www.coe.int/en/web/portal>

* It is a government program portal with several different operational entities and allows users to manage content across these sites.

**Information Websites**

RoadFood: <https://roadfood.com/>

* It is a food website which helps you get your favorite food while on the road.

Mental Floss: <https://www.mentalfloss.com/>

* It is an IQ sharpener full of quizzes and intellectual curiosity, interesting information or random blogs.

Techcrunch: <https://techcrunch.com/>

* It is a website of technology and startups.

Trip Advisor: <https://www.tripadvisor.com/>

* This one is like a city guide search engine that helps you find the city’s best restaurants and “things to do” while you are away from home.

eHow: <https://www.ehow.com/>

* It is a website that provides step by step information on a variety of topics.

**News websites**

CNN: <https://cnn.com/>

* A website for latest breaking news, special reports, video, audio, photo galleries, and interactive guides.

BBC: <https://bbc.com/>

* A website where you can access breaking news, sport, TV, radio and a whole lot more.

Fox News: <https://foxnews.com/>

* Breaking News, Latest News and Current News.

The Guardian: <http://www.theguardian.com/>

* It is a website that provides the world's latest news.

USA Today: <http://www.usatoday.com/>

* It delivers current local and national news, sports, entertainment, finance, technology, and more.

**Educational websites**

SkillShare: <https://www.skillshare.com/>

* It offers courses on business, advertising, fashion, design, photography, video, music, writing, publishing, and IT.

CodeSchool: <https://www.codeschool.com/>

* It offers written materials, coding challenges, and videos will help you learn the basics of coding, and once you reach a certain level, even some of the advanced stuff.

Docsity: <https://www.docsity.com/en/>

* It is an online social network designed for learning. Users can share document, notes, study materials, as well as gain access to published articles, and video courses.

Quora: <https://www.quora.com/>

* It is a platform where you can spend hours or days doing research on a particular subject and have fun the process, interacting with other users, and receive a detailed answer written by an expert.

Udemy: <https://www.udemy.com/courses/>

* It is an online learning platform where anyone can access plenty of courses and studying materials.

**Entertainment websites**

Youtube: <https://youtube.com/>

* It is a page where Share your videos with friends, family, and the world.

Netflix: <https://netflix.com/>

* It is an entertainment page where you can Watch Movies & TV Shows Online or Streaming right to your TV via Xbox, Wii, PlayStation & many other devices.

Vimeo: <https://vimeo.com/>

* It is the home for high-quality videos and the people who love them.

Spotify: <https://spotify.com/>

* It is a digital music service that gives you access to millions of songs.

Daily Motion: <https://dailymotion.com/>

* It is an entertainment website with latest music videos, short movies, tv shows, funny and extreme videos where you can Upload, share, and embed your videos.

**Advocacy websites**

Arts for LA: <https://www.artsforla.org/>

* Advocation for art education for the low income/underprivileged students.

Global Zero: <https://www.globalzero.org/>

* It is the international movement for the elimination of all nuclear weapons.

International justice mission: <https://www.ijm.org/>

* It is a website with the aim of changing lives by spreading the message of modern day slavery and helping advocates put an end to it.

iKnow Politics: <https://www.iknowpolitics.org/en>

* It is an on-line workspace designed to advance women in politics worldwide.

Trocaire: <https://www.trocaire.org/>

* Irish charity striving to overcome the challenges of poverty and injustice.

**Blog Websites**

Tumblr: <https://www.tumblr.com/>

* It is a place to express yourself, discover yourself, and bond over the stuff you love. It's where your interests connect you with your people.

Blogger: <https://www.blogger.com/>

* It is a place where you publish your passions, it could be knowledge, experiences or the latest news.

Ghost: <https://ghost.org/>

* The world's most popular modern open source publishing platform.

WordPress: <https://www.google.com/>

* It is a blog site hosting service by automattic where you can get a free blog with basic features.

Weebly: <https://www.weebly.com/>

* It is a free website, blog, or online store builder.

**Wiki Websites**

Wikitravel: <https://wikitravel.org/>

* Open source travel guide featuring up-to-date information on attractions hotels restaurants travel tips and more.

WikiHow: <https://www.wikihow.com/Main-Page>

* It is an online wiki-style community consisting of an extensive database of how-to guides.

WikiBooks: <https://en.wikibooks.org/wiki/Main_Page>

* It is a Wikimedia community creating a free library of educational textbooks that anyone can edit.

Stranger Things Wiki: <https://strangerthings.fandom.com/wiki/Stranger_Things_Wiki>

* It is a fan made wiki about a TV series called Stranger Things.

Wikispecies: <https://species.wikimedia.org/wiki/Main_Page>

* It is a complete catalog of all **Animalia, Plantae, fungi, bacteria, archaea,** and**Protista in the world.**

**Social Network**

**Facebook:** <http://www.facebook.com/>

* **One of the most widely used social networking site.**

**Whatsapp:** <https://www.whatsapp.com/>

* It is a freeware, cross-platform messaging and Voice over IP (VoIP) service.

WeChat: <http://www.wechat.com/>

* It is an all-in-one communications app for messaging and calling (similar to WhatsApp) that enables you to connect with the people of your choice.

Instagram: <http://www.instagram.com/>

* It is a social networking platform that was completely based on sharing photos and videos.

Twitter: <http://twitter.com/>

* It is a social networking site that enables you to post short text messages (called tweets), containing a limited number of characters (up to 280), to convey your message to the world.

**Content Aggregator**

Feedly: <https://feedly.com/>

* It is one of the best news aggregator websites with a clean and simple design.

Techmeme: <https://www.techmeme.com/>

* A brilliant technology-themed aggregator site that pulls in tech stories from all over the spectrum.

Pocket: <https://getpocket.com/>

* news aggregator which enables users to sync is and view articles from a range of categories.

The Morning News: <https://themorningnews.org/>

* It is a U.S.-based daily online magazine.

Metacritic: <http://www.metacritic.com/>

* It is an aggregate of music, game, tv, and movie reviews from the leading critics.

**Personal**

Gary Sheng: <http://www.garysheng.com/>

* It is a personal website with detailed personal information about himself.

Raf derolez: <https://rafaelderolez.com/>

* It a modern, cool, and informative personal website which shows his personality, branding, and development skills.

Quinton Harris: <http://quinntonharris.strikingly.com/>

* It is a personal website discussing about his educational background , work experience, and skills.

Tony D'Orio: <http://tonydorio.com/>

* It is a personal website filled with his portfolio of artistic pictures.

Verena Michelitsch: <https://verenamichelitsch.com/>

* It is a website covered with her art works. she chose to exhibit multiple colors, styles, and dimensions so visitors can see just how much range she has as a designer.

**Business/Marketing**

DMN: <https://www.dmnews.com/>

* It is a resource for [marketing and sales professionals](https://www.marketingeye.com.au/) that explores all realms of digital and data driver marketing in an unbiased and incisive manner.

Eventmarketer: <https://www.eventmarketer.com/>

* It is a marketing website that provides the information needed for strategic brand-side event [marketers and agency executives](https://www.marketingeye.com.au/about-us/marketing-team.html) ranging from face-to-face to corporate events.

Fortune: <https://www.fortune.com/>

* It is a business media brands which is accompanied by a multinational monthly magazine, daily website and conference series.

MarketingProfs: <https://www.marketingprofs.com/>

* It serves marketers by providing practical marketing training and education on everything from developing, executing, and measuring successful campaign.

Inc: <https://www.inc.com/>

* It is a website that provides owners and managers of [growing small businesses](https://www.marketingeye.com.au/marketing-blog/small-business-marketing/growing-your-business-but-not-getting-anywhere.html) real solutions for their business.

# Criteria for evaluating the value of a web page

It is so easy to find information on any topic on the internet. Whether or not that information is reliable, up to date and unbiased is really the big question for everyone doing research on the web. So, it is important to take time to make sure to examine the information and the website using the following five commonly used and important criteria.

## AUTHORITY

Authority reveals that the person, institution or agency responsible for a site has the qualifications and knowledge to do so. When evaluating a web site for authority:

* It should be clear who developed the site
* Contact information should be clearly provided
* the author should state qualifications, credentials, or personal background that gives them authority to present information
* Check to see if the site supported by an organization or a commercial bod

## OBJECTIVITY

Objectivity of the site should be clear. Beware of sites that contain bias or do not admit its bias freely. Objective sites present information with a minimum of bias. When evaluating a web site for objectivity, we need to be cautious of these questions:

* Is the information presented with a particular bias?
* Does the information try to sway the audience?
* Does site advertising conflict with the content?
* Is the site trying to explain, inform, persuade, or sell something?

## COVERAGE

It is difficult to assess the extent of coverage since depth in a site, through the use of links, can be infinite. One author may claim comprehensive coverage of a topic while another may cover just one aspect of a topic. When evaluating a web site for coverage, we need to check:

* whether topics are explored in depth
* Whether the site claim to be selective or comprehensive
* The value of the site’s information compared to other similar sites
* If the links go to outside sites rather than its own
* If site provide information with no relevant outside links

## CURRENCY

Currency of the site refers to: how current the information presented is, and

how often the site is updated or maintained. It is important to know when a site was created, when it was last updated, and if all of the links are current. Evaluating a web site for currency involves finding when the date information was:

* first written
* placed on the web
* last revised

Then ask if:

* Links are up-to-date
* Links provided are reliable.
* Information provided is so trend related that its usefulness is limited to a certain time period.
* the site has been under construction for some time

## ACCURACY

There are few standards to verify the accuracy of information on the web. It is the responsibility of the reader to assess the information presented. When evaluating a web site for accuracy, questions to ask:

* Is the author affiliated with a known, respectable institution?
* do statistics and other factual information receive proper references as to their origin?
* Does the reading you have already done on the subject make the information seem accurate?
* Is the information comparable to other sites on the same topic?
* Does the text follow basic rules of grammar, spelling and composition?
* Is a bibliography or reference list included?

Let's evaluate the following websites according to the above criteria:

**BuzzFeed**

This website clearly states the founder and the developer together with all the team members. It also provides a means of contact. The content isn’t biased or affecting a particular group. It is about presenting the latest news and entertainment to the world. The topics are explained to certain extent (appropriate). This website is more of a comprehensive one including almost all types of information. The majority of the links refer to its sites plus it doesn’t provide information without a relevant outside link. Provides up-to date and trend related news and entertainment. It doesn’t have any reference list. It sure does seem to have no exaggerated content which any viewer would believe.

**WikiHow**

It is a comprehensive website that provides in-depth guides so that readers can tackle problems and complete projects with confidence. The contents are explained in detail with basic rules of grammar and spelling for deeper understanding. The articles or solutions provided relate to the problem they intend to refer. This website provides viewers a brief explanation of its working so that they will know what they are looking at and how it got on the website. Contents are always up-to date. It provides all the necessary contact information. Every link refers to its own site.

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