

## Content Management System

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### ABSTRACT

**Purpose:** The purpose of this study is to understand Content management system along with its advantages and disadvantages. Although it has always existed, we now think of content as a digital idea. We've been looking for ways to organize material for as long as there have been people making it. The exponential growth of information was accelerated by the Industrial Revolution and the development of technology. The capacity to produce and distribute material now fell from its ivory tower and into the hands of the general public. Today, almost anybody can make a website. This led to the need of an optimal technique to manage all that content. At some crude level, content was managed.

**Design/Methodology/ Approach:** To comprehend secondary data has been used. The paper is conceptual in nature.

**Findings:** CMS has turned out to be a deal breaker in the case. It allows managing content in any certain manner based on filters. For instance, Twitter provides a trending section which gives users an insight of the current environment of the user's society/ nation. As we saw in preceding sections how the CMS has evolved after the introduction of the Internet. It allows users to collect, manage and analyze data in a comprehensive manner. CMS systems that are traditionally database-based are fast giving way to headless/decoupled systems that are driven by APIs.

**Originality/value:** The paper uses Secondary data available from different authentic sources. Both past and recent data has been used. The paper studies Content management systems along with its advantages and disadvantages.

**Paper Type:** View Point.

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## Introduction

Information created during the editorial process that is ultimately meant for human consumption through publishing is referred to as content. A fundamental duality of content management is shown by the definition. Content is produced, managed, published, and finally supplied to the consumer. Different knowledge and perspectives are needed for these two fields. “Editorial process” is the procedure used to generate content. Humans prepare material for release to an audience in this way. It requires authoring, reviewing, approving, versioning, comparing, and controlling in addition to modeling and editing. Even if the purpose is the same, two editorial teams may produce two very different pieces from the same material owing to the human element involved in the editorial process. Content is arbitrary and subject to interpretation. It is subtle. Content is information that we produce with the objective of disseminating it and ultimately having other people consume it in the best way possible. The future may have value for content. It might be consumed for a long time. It may serve as a starting point for a lot more studies. Content is a future investment rather than a repository of the past.

## How do I define a content management system?

A software package known as a content management system (CMS) offers some level of automation for the duties necessary to manage material properly. The discipline of content management does not have a single, agreed-upon definition; instead, it has a number of contested best practices.

**Traditional CMS-** Early CMSs were not server-based and were instead traditional. Early content management systems (CMSs) included client-side templating tools like City Desk, Mars Edit, and Radio User Land. These were desktop-based software programmes that editors may install and use to modify material.

**Modern CMS-** A content management system (CMS) enables editors to produce new material, modify old content, apply editorial procedures to the content, and then make the content accessible for other users to consume. In order to draw in customers, it seeks to make the feed interactive. A CMS should logically consist of several components. Behind the scenes, the editing interface, repository, publication method, etc., may all be different, independent components of the system. A non-technical editor, however, sees all of these components as a single, cohesive whole, or “the CMS.”

## Types of CMS

**Web content management (WCM):** WCM is the process of managing material with the main goal of distributing it to

a large audience online. When it comes to separating content from publishing to various channels, WCM shines.

**Enterprise Material Administration (ECM):** It is the management of general business content, such as employee resumes, incident reports, memoranda, etc that is crucial for organizational purposes but is not always intended for mass dissemination or consumption. Traditionally, this flavor was referred to as “document management.”

**Digital Asset Management (DAM):** The administration and modification of digital media for use in other media is known as digital asset management (DAM). DAM specializes at reconditioning and metadata. It offers special rendering and transformation techniques for digital objects.

**Records Management (RM):** All business transactional information, which might not be essential for everyone but is a necessary data for analysts. It RM excels at retention and access control.

**Core functions of CMS:** We can take back control of our material thanks to a CMS. It “knows” the location of our stuff, its state, who has access to it, and how it links to other content. It offers fundamental control features. The value of material is increased when it is used in several contexts and ways. It is simpler to query and alter because all of our content is in one place. If our material is properly organized, we may edit it to show in various forms or filters, publish it to other sites, and reorganize it as needed to better meet the demands of our visitors. With the help of a strong CMS, editors can publish more material more quickly and manage and the published content with a lower amount of friction on their process

**Headless CMS vs Decoupled CMS** Content creation and editing features are offered by Headless CMS. However, “publishing” content refers to making it accessible via an API. It is based on the supposition that you and your geeky front-end development team can tackle the remaining tasks using your preferred frameworks and technologies. A decoupled CMS, on the other hand, makes no assumptions. It does everything a headless CMS does, but it doesn’t stop there, as it also asks “Hey, we’ve got some templating tools here so you aren’t working from scratch.” If you’re shopping around for a headless/decoupled CMS, you’ll notice that the jargon doesn’t end with these two terms. Below, We’ve specified a few phrases that suppliers of headless CMS frequently use. A hybrid CMS combines the editing capability available in a standard CMS with the headless content management of a headless CMS. As a result, the hybrid CMS might be considered a decoupled CMS under a different moniker. It refers to the fact that a CMS uses APIs to distribute content when it advertises that it is API-first or API-driven. A headless or decoupled CMS is essentially the same thing as an API-first CMS.



Pushing content to a native app, such as an Android or iOS app, makes use of headless APIs, also known as content API or REST API. Even commerce systems like POS (Point of Sale) systems and voice-activated programmes like Alexa, Cortana, and Siri may get content from it.

## What is Content – as – a – service (Caas)?

Software as a Service Service has little to do with a CMS's technical operations. Instead, it's the strategy that brands and suppliers employ to market and sell software. Many businesses are deciding to use cloud-based software that they may subscribe to on a monthly basis rather than developing their own technology or paying license fees to software suppliers. The provider manages and hosts the software, allowing the brand free to "borrow" the technology to expand and enhance their online presence. As a result, it is software that takes the shape of a service. As headless content management gained popularity, the phrase "Content-as-a-Service" followed suit. As you are probably aware, a headless CMS is entirely focused on the content.

### Role of headless CMS with Omni – channel marketing:

Marketers may provide Omni-channel consumer experiences by using headless or decoupled CMS. A smooth, integrated, and continuous experience across all contact points and devices is made possible by omni-channel marketing, eliminating a broken customer experience should the consumer transition from one device to another. Multi-channel marketing differs from omni-channel marketing in that it uses each channel independently and does not tie the experiences together.

**Open – source headless CMS platforms:** Developers are permitted to directly alter the source code of software that has been distributed under an open-source license. With this level of platform control, developers may alter a CMS to suit the requirements of their group. People who are unfamiliar with the platform or have particular concerns about how it operates can contact seasoned programmers within the community to receive their answers because developers from all over the world collaborate with the source code in an open environment. The three well-known open-source CMS providers are Strapi, Cockpit, and Directus.

Strapi is an open – source CMS platform that's built on Node.js and works with the database and self-hosting solutions of your choice. The primary goal of Strapi is to build a solid API, while offering an intuitive admin panel. Strapi is **ideal for small companies** that need a flexible API for their front-end.

Cockpit is an open-source free, lightweight CMS that's built to work with NoSQL databases like MongoDB and SQLite. It's headless and API-first, meaning the CMS focuses only on backend APIs to manage meta-data and data entries. There's no presentation layer, so developers have

total freedom to choose & manage the front – end. Clients that seek a straightforward installation and a flexible content layout should choose Cockpit.

Directus is an open-source software platform suitable for projects that use customized database structures, as it comes with a wrapper to serve content from SQL databases via an API. Through the Admin App, Directus also enables non-IT users to control content. A robust version control mechanism on the platform enables rollbacks and the retrieval of prior versions. Directus is **ideal for small to mid-size businesses that use traditional SQL databases**.

## Is a headless CMS secure?

Developers can use a headless CMS with its traditional counterpart if suitable APIs are available. It is better for firms with traditional architecture to use API calls with their existing CMS to avoid a costly migration.

One of the concerns when migrating to a headless CMS platform is security. Many traditional CMS platforms have shown vulnerabilities in their security measures. It doesn't mean that a headless CMS is automatically more secure. Therefore, it's essential that IT teams only shortlist and select headless CMSs with strong track records as well as security technologies and protocols that protect against cyberattack.

A headless CMS can be secure if its APIs follow industry standards and IT teams ensure the infrastructure uses security best practices, but it comes down to the individual implementation, not just the software chosen. We analyze a few interesting researches based on the content management applications. Here, we have compiled four different researches in this field which shows how exciting this field can be.

**Content analysis of textual data:** In the article, the authors suggested using content analysis of textual data in e-commerce systems to automate e-business and allow the right person to make decisions. Only filtered user comments must be posted on the website in order to generate demand for the items. Detailed analysis of comments helps in the analysis of product's demand. The aim of this article is to design a typical architecture for CMS as there is no standardized approach to architectural design of web resources processing. This analysis showed that selection of the text information description model depends on the design of the probabilistic and linguistic test and the method used to extract specific units from the text information. The mathematical statistics, combinatorial analysis, and probability theory models are used in the probabilistic modeling of textual data. Content analysis simplifies the business dealing & problems facing business process participants. It is feasible to use content analysis of the user text information distribution, qualitatively evaluate the content flow in e-commerce systems for later decision-making by a relevant person.

**Table 1: Qualitative content analysis stages.**

Stage name	Stage Characteristics
Text wrapping on blocks	For processing and encoding, integrated content units are created.
Content stream reconstruction	The arguments are reconstructions of each source text's values, opinions, attitudes, and belief systems
Conclusions forming	Generalizations are eliminated by contrasting the values of various systems.

**Table 2: Quantifiable content analysis stages.**

Name of phases	Characteristics of phases
The analysis unit selecting	Converting linguistic measures into a form that can be processed.
Units frequency counting	The connections between language units are revealed
Categorization	To gather quantitative information about their appearance, categories of finite and excess aggregate are established.  Unusual sequences are grouped, and new generalized categories are obtained.
Data Mining	Through various quantitative analyses, new knowledge in the content flow is found.  the next step is to classify them.
Results interpretation	Results that are both content- and semantically-rich are achieved.

The Web management stage consists of 3 stages:

1. Content editing
2. Content analysis
3. Content presentation

The following table describes the above stages and processes involved:

**Table 3: Phases of Web content management**

**Stage 1: Content editing**

Name of process	Features of process
Theme definition of content	establishing a purpose, the contented, and the framework;
Content presentation's form definition	HTML templates, graphical data, alphabetical data (news stories, articles), back-end programming, etc.;
Management tools selection	Word processors, graphic design software, and HTML editors.

**Stage 2: Content analysis**

Process Name	Process features
Rights to access the assignment	Full or limited access to content
Identification of Process	Standard process of new information content creation.
Content saving	In a database or repository.
Information interactive	Content regarding the following performer;
Audit for event	Save the content version;
Processes logging	Creation, transmission and storage processes;
Analysis of text content	either qualitative or quantitative
Access to Versions	Encourage users who may wish to access earlier versions of the content.
Access to Business process	Definitions of goals, roles, and duties; default roles to user groups;

**Stage 3: Content Presentation**

Process Name	Process features
Static	Without any discernible reasoning
Dynamic	localization, personalization, and globalisation.

This article explains why the development of information resource processing techniques and tools is necessary for e-commerce content. This is accomplished through enhancing the architecture of web-based systems. The article also lists the flaws in the current CMSs. This article outlines a general design for ordinary Web systems as well as defined procedures for these systems' information resource processing. We may identify the frequency of any aspect of the texts under study by using the content analysis.

**Problem Statement**

In this section, we employ one the approaches explained in the previous section & demonstrate how it can be used to design a blog managing website. It allows multi – user blogs with time – stamped entries. This project was chosen because in the previous section we described how an already existing web application can be used to build a simple website. The approach used is Web Engineering Method (WEM), which focuses on the methodologies and tools that are the foundation of Web application development. In this approach, we first specify a requirement and then we implement it using certain tools available. myBlog is designed with the hope that any non – technical content creator can easily post their creation on the blog.



The technologies used to design this web site are: HyperText Markup Language (HTML), Cascading Style Sheets (CSS), JavaScript, jQuery, Ajax, Hypertext Preprocessor (PHP).

## Future Scope

A profile for authors. All the creation under a single feed. Options to follow the author for latest updates.

A user profile to avoid repetitive insertion of the user details every time. Options to share content on other social media platforms. An effective algorithm to show the trending posts. Number of likes and comments displayed with the post. Option to delete the comment by the user.

## Conclusion

CMS systems that are traditionally database-based are fast giving way to headless/decoupled systems that are driven by APIs. In order to deliver top-notch Omni-channel customer experiences, organizations must simply meet consumers where they are using more devices and channels than ever before. The easiest approach to do it is to become headless, whether that is done through a pure headless CMS or through a decoupled CMS. The major limitations of this project are that the user can't create a profile. To engage in a post, users have to provide a username and an e-mail id. User has to click on the left/right buttons to swipe stories. Post can't be shared to other social media's walls directly. Reported flag is stored in the database, it does not give a count of reports automatically to the user. Numbers of likes are not displayed on the post. Even though it ensures that a device is not used to like the post only once. No verification whether the e-mail entered by the user.

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- <https://www.coredna.com/blogs/headless-vs-decoupled-cms>

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The Editorial Board had used the Turnitin – a Swedish anti-plagiarism software tool which is a fully-automatic machine learning text-recognition system made for detecting, preventing and handling plagiarism and trusted by thousands of institutions across worldwide. Ouriginal by Turnitin is an award-winning software that helps detect and prevent plagiarism regardless of language. Combining text-matching with writing-style analysis to promote academic integrity and prevent plagiarism, Ouriginal is simple, reliable and easy to use. Ouriginal was acquired by Turnitin in 2021. As part of a larger global organization GJEIS and Turnitin better equipped to anticipate the foster an environment of academic integrity for educators and students around the globe. Ouriginal is GDPR compliant with privacy by design and an uptime of 99.9% and have trust to be the partner in academic integrity (<https://www.ouriginal.com/>) tool to check the originality and further affixed the similarity index which is {08%} in this case (See below Annexure-I). Thus, the reviewers and editors are of view to find it suitable to publish in this Volume-15, Issue-1, Jan-Mar 2023.

## Annexure 15.10

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### Reviewers Memorandum

**Reviewer's Comment 1:** The article on content management is a comprehensive and insightful piece that explores the various facets of content management and its importance in the digital age. The author provides a clear definition of content management and highlights the challenges that businesses face in managing their content effectively.

**Reviewer's Comment 2:** The article on content management provides valuable insights and tips on how to effectively manage content. However, the author could have utilized secondary data more rigorously to increase the article's overall credibility.

**Reviewer's Comment 3:** One of the strengths of this article is the way the author presents the different types of content management systems available and the benefits of each. Also it covers a wide range of topics related to content management, including its definition, its importance for businesses, and the different types of content management systems available. One of the limitations I must highlight here is that Article could have been more structured with more organized heading and subheading, providing readers with a nuanced understanding of the subject.

### Editorial Excerpt

The article has 8% of plagiarism which is the accepted percentage as per the norms and standards of the journal for publication. As per the editorial board's observations and blind reviewers' remarks the paper had some minor revisions which were communicated on a timely basis to the authors (Aniket, Anita and Kirti), and accordingly, all the corrections had been incorporated as and when directed and required to do so. The comments related to this manuscript are noticeably related to the theme "**Content Management System**" both subject-wise and research-wise. The article on "content management" is a comprehensive and informative piece that offers readers a detailed overview of the subject. The author has done an excellent job of breaking down the complex concept of content management into easily digestible sections, making it accessible to readers of all levels of familiarity with the topic. After comprehensive reviews and the editorial board's remarks, the manuscript has been categorized and decided to publish under the "**View Point**" category.

### Acknowledgement

The acknowledgment section is an essential part of all academic research papers. It provides appropriate recognition to all contributors for their hard work and effort taken while writing a paper. The data presented and analyzed in this paper by (Aniket, Anita and Kirti) were collected first handily and wherever it has been taken the proper acknowledgment and endorsement depicts. The authors are highly indebted to others who facilitated accomplishing the research. Last but not least, endorse all reviewers and editors of GJEIS in publishing in the present issue.

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