



POLISH-JAPANESE ACADEMY
OF INFORMATION TECHNOLOGY

Content Management Systems (CMS)

Lecture 04: Content Management Systems – presentation of popular solutions

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Agenda

- Presentation of several free systems.
- Popularity of CMS.
- Security of CMS.
- New trends
- Summary.

Introduction

● Sources:

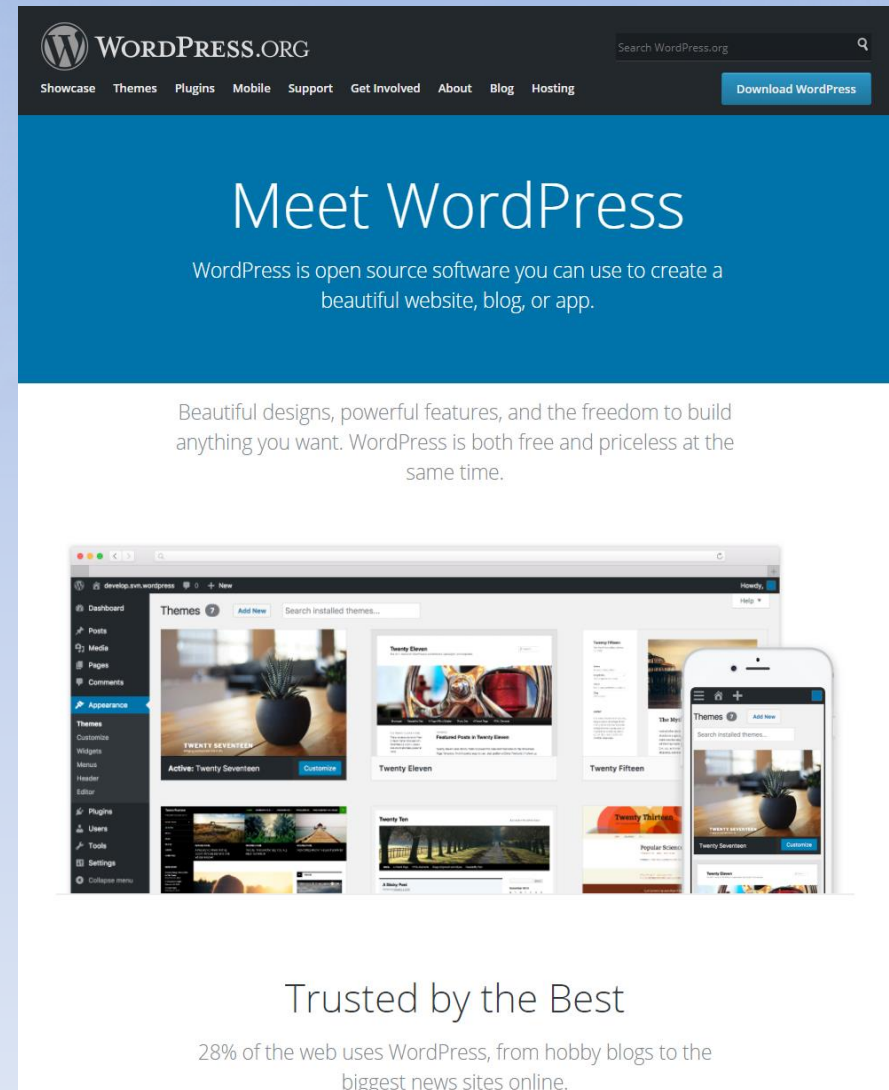
- The 20 point CMS test from <http://www.openadvantage.org>
- <https://www.ionos.com/digitalguide/hosting/cms/cms-comparison-a-review-of-the-best-platforms/>

Some popular CMSs (open-source)

- WordPress
- Drupal
- Joomla
- Xoops
- Exponent CMS
- Plone
- Typo3
- Exponent CMS
- Orchard
- Magnolia
- Contao
- Neon

WordPress

- Used to be a blogging system.
- Currently:
 - powerful,
 - universal,
 - easy to use CMS system.
- One of the most popular in the world.



The image shows the WordPress.org homepage at the top, featuring the WordPress logo, the text "WORDPRESS.ORG", a search bar, and navigation links like "Showcase", "Themes", "Plugins", "Mobile", "Support", "Get Involved", "About", "Blog", and "Hosting". A prominent "Download WordPress" button is on the right. Below this is a large blue banner with the heading "Meet WordPress" and the text "WordPress is open source software you can use to create a beautiful website, blog, or app." Underneath the banner, it says "Beautiful designs, powerful features, and the freedom to build anything you want. WordPress is both free and priceless at the same time."

Below the banner is a screenshot of the WordPress dashboard. The dashboard shows a sidebar with links to "Dashboard", "Posts", "Media", "Pages", "Comments", "Appearance", "Themes", "Customize", "Menus", "Widgets", "Editor", "Plugins", "Users", "Tools", "Settings", and "Collapse menu". The main content area displays a grid of theme thumbnails, including "Twenty Seventeen", "Twenty Eleven", "Twenty Fifteen", "Twenty Nineteen", and "Twenty Twenty". A smartphone is shown on the right, displaying the WordPress mobile app interface.

At the bottom of the image, it says "Trusted by the Best" and "28% of the web uses WordPress, from hobby blogs to the biggest news sites online."

WordPress (2)

● Features

- Dashboard with customizable widgets;
- Preview of visual themes without applying them;
- Simple image editing for articles;
- Dedicated tag for automatic splitting of posts into pages;
- Automatic media embedding;
- Support for multiple portals on a single installation;

WordPress (3)

● Features – *cont.*

- Very good WYSIWIG editor (classic and block-based);
- Ability to specify the publication date;
- Dedicated mobile applications for Android and iOS;
- Optional blocking of posts with a password;
- Draft content;
- Good search system;
- Friendly urls;

WordPress (4)

● Features – *cont.*

- Multi-language support (GUI);
- Importing content from other systems;
- Automatic core and plugin updates;
- REST API to facilitate potential integration with other systems;
- Possibility of authentication using external services, e.g. *Active Directory*;
- Automatic generation of RSS streams;

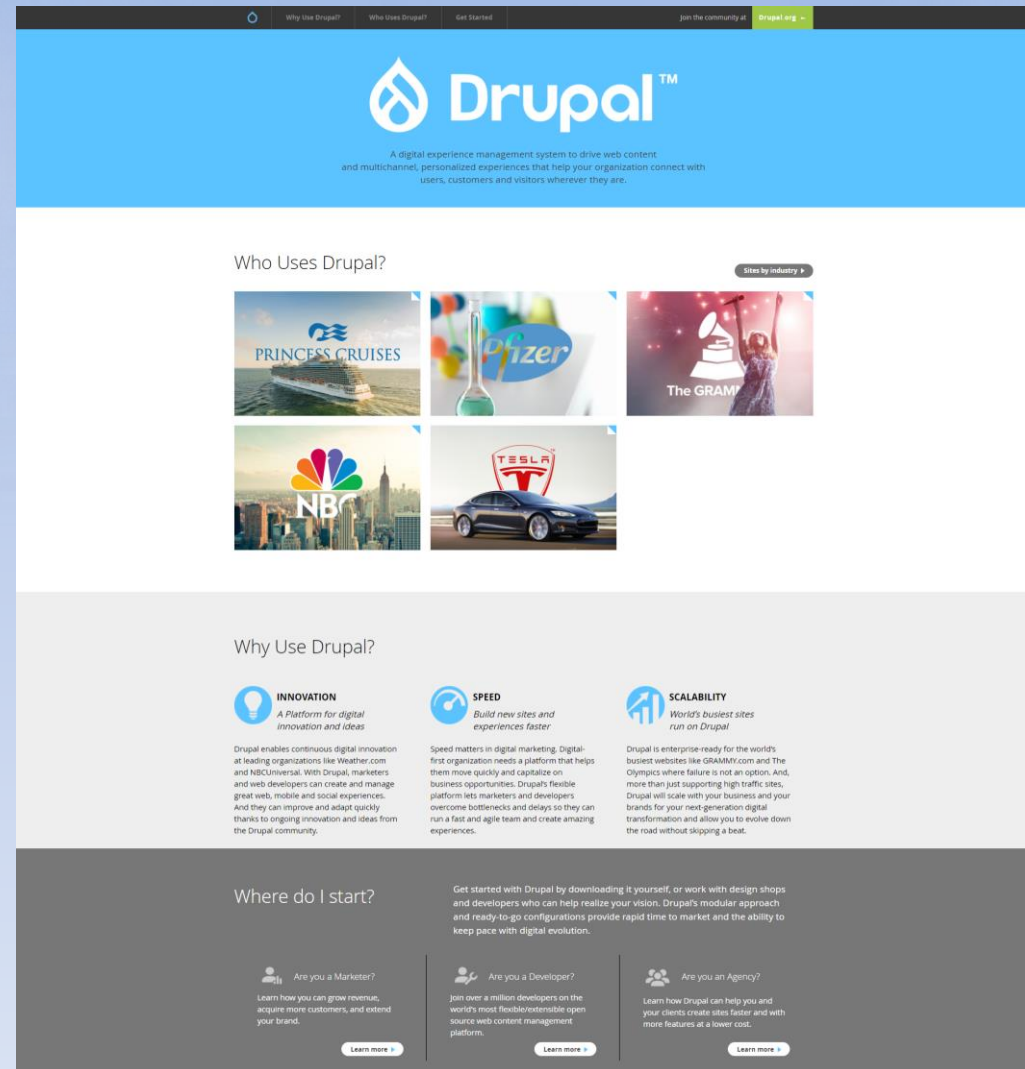
WordPress (5)

● Features – *cont.*

- The ability to comment on any content with extensive moderation;
- Protection against spam;
- Notification system;
- Extensive SEO possibilities;
- No advanced workflows;
- Very big number of plugins;
- Due to their popularity, websites using WP are vulnerable to various attacks.

Drupal

- Publishing standard web pages (HTML5).
- Simple authorization of articles (there is no sophisticated management of workflows).
- Ability to generate custom RSSs.



Drupal (2)

- Blog + Blog API + potential integration with other sites.
- Use of a calendar control to display archival material.
- Book. A special environment facilitating the joint work of the parties.
- Comments. Any item can be commented by users.

Drupal (3)

- Discussion forum
- Surveys
- Dictionaries/Tags whose help to classify content.
- Saving important operations.
- Tag system with powerful possibilities.

Drupal (4)

- Accelerate page generation using cache.
- Searching system.
- Additional modules: Export to PDF, Categorization, Files, Anti spam, WYSIWYG editor, form editor.
- No backward compatibility.
- Graphic themes.

Drupal (5)

● 10 Reasons to Use Drupal :

- Advanced URL management (URL aliases, Global Redirect, friendly URLs);
- Custom data types and views (currently integrated with the core):
 - Content Construction Kit (CCK),
 - View module.
- Content version management;
- Taxonomies, tags, categories, dictionaries;

Source: <http://tips.webdesign10.com/drupal/about-drupal-311.html>

Drupal (6)

- 10 Reasons to Use Drupal - *continued*:
 - Advanced user management (custom roles);
 - Custom page titles and meta tags (SEO);
 - Extensive documentation;
 - PHP templates (PHPTemplate theme engine);
 - Code snippets;
 - Very large community.

Source: <http://tips.webdesign10.com/drupal/about-drupal-311.html>

Joomla

- User interface with optional WYSIWYG content editor.
- Clear separation of public and administrative parts.
- Easily add images to your content.
- Templates using PHP and HTML.



Joomla (2)

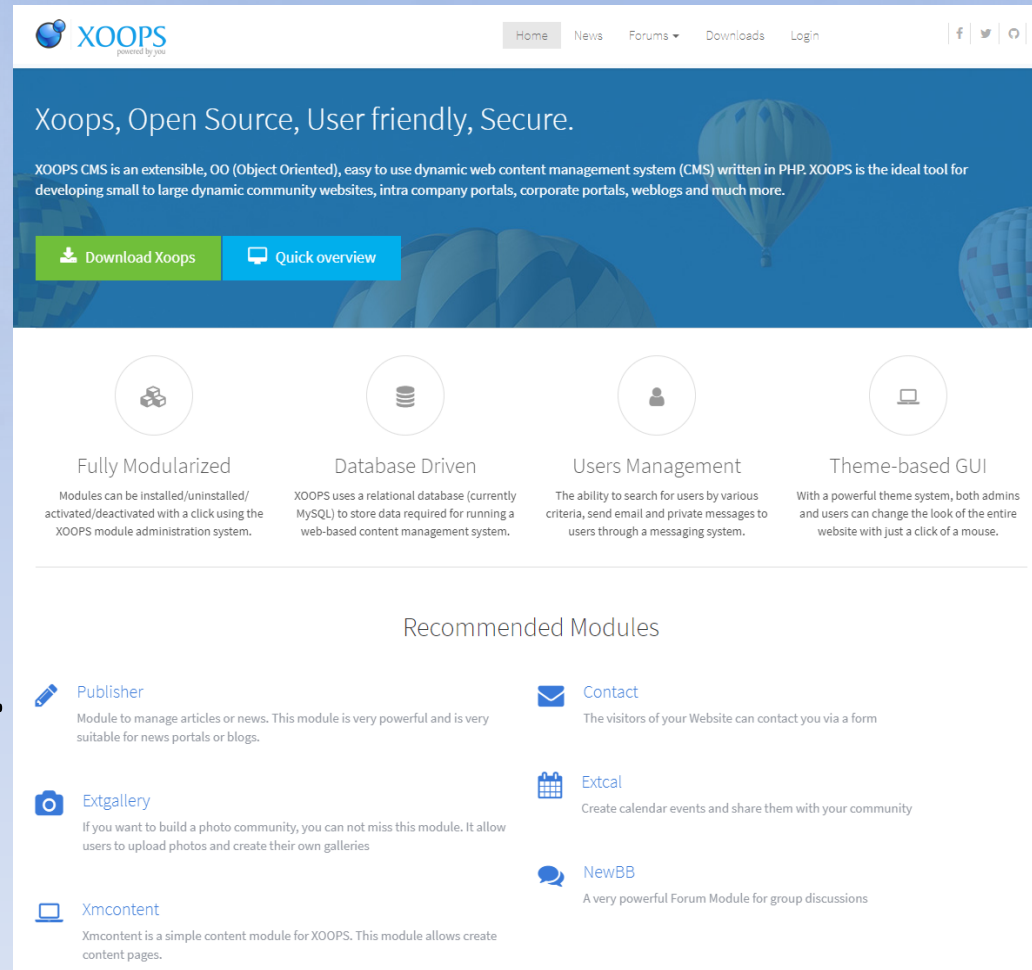
- Export content to PDFs.
- ~~● Extensive help system.~~
- ~~● Fairly poor management system for users and roles.~~
- No version management.
- Easy to modify / add menu items.
- ~~● Not very dynamic development of the project.~~

Joomla (3)

- Additional modules:
 - Manage downloads.
 - Calendar
 - ...
- Arrangement of elements (banner, message, logo) is easily modified by the appropriate interface.
- Many extras are paid services.
- Quite low quality of the source code (?)

Xoops

- Use of MySQL database.
- Full modularization. Module management is done through a convenient interface.
- Users can edit graphic themes, edit their profile, etc.



Xoops (2)

- Convenient user data management.
- Supported by many local (including PL) communities.
- Manage permissions.
- Many different graphic themes.

Xoops (3)

● Broad selection of additional modules:

- administrative
- social
- commercial
- Images management
- communication
- navigation
- statistical
- support

Exponent CMS

- Unique GUI for portal management.
- Metaphor for module and container:
 - Adding containers to any page,
 - The container contains other containers and / or modules,

The screenshot shows the Exponent CMS website. The header features the Exponent logo, the tagline "Content Management, Simple.", and navigation links for HOME, ABOUT, DOCUMENTATION, NEWS, BLOG, and DOWNLOADS. A search bar is located on the right. The main content area has a large banner with the text "Why sacrifice design, development, administrative, or SEO capabilities, when you can have them all with Exponent CMS?" and an image of a laptop. Below the banner, there is a "WELCOME TO EXPONENT" section with a "Exponent Version Status" section showing four circular progress indicators for DAYS (217), HOURS (22), MINUTES (31), and SECONDS (40). The "LATEST NEWS" section features a post about "Bootstrap 5 Integration Coming..." dated Jun 19, 2020. On the right side, there is a "Join the Exponent Community" section with a "TWEETS" section showing recent tweets.

Exponent CMS
Content Management, Simple.

HOME Exponent Portal ABOUT What's Exponent? DOCUMENTATION How to use Exponent CMS NEWS Latest on Exponent BLOG Tips and Tutorials DOWNLOADS Get Exponent Log In Keywords

Why sacrifice design, development, administrative, or SEO capabilities, when you can have them all with Exponent CMS?

WELCOME TO EXPONENT

Exponent Version Status

DAYS 217 HOURS 22 MINUTES 31 SECONDS 40

since the release of Version 2.5.1 (stable) which is now available!

LATEST NEWS

Bootstrap 5 Integration Coming...

Jun 19, 2020

Now that Twitter Bootstrap v5.0.0 alpha 1 has been released we have begun integrating support into Exponent CMS. The next release (v2.5.2 or v2.5.1 patch4) will include optional support for the new framework. Though it will initially be shipped as an optional add-on, the basic support will be included in the main package. Just as with the integration of Bootstrap 4 there will be a separate 'beta' package to add the additional file including a sample theme. Please bear in mind that until Bootstrap 5 reaches a beta stage there will be breaking changes with their implementation. ...

Join the Exponent Community

Keep in the Know | f t

Like 600 people like this. Be the first of your friends.

TWEETS

Follow @ExponentCMS

on July 8, 2013 via TweetDeck, @exponentcms wrote:
Get Your Google Analytics on:
<http://t.co/qmQIBnB8s> #SEOTIPS by @cjeinATL

on June 28, 2013 via TweetDeck, @exponentcms wrote:
Advanced SEO Tips for @exponentcms Webmasters - XML Sitemaps by @cjeinATL
<http://t.co/wUXosYopvi> #SEO #Opensource #CMS

on June 26, 2013 via TweetDeck, @exponentcms wrote:
Advanced #SEO Tips for Exponent CMS sites by @cjeinATL - Webmaster Tools
<http://t.co/CoeNTXgX6>

Exponent CMS (2)

- The module contains any content.
- A convenient WYSIWYG editor.
- Easy module management.
- Content appears automatically in the menu.
Possibility to edit them later.
- Easily add columns of text with the ability of any organization on different pages.

Exponent CMS (3)

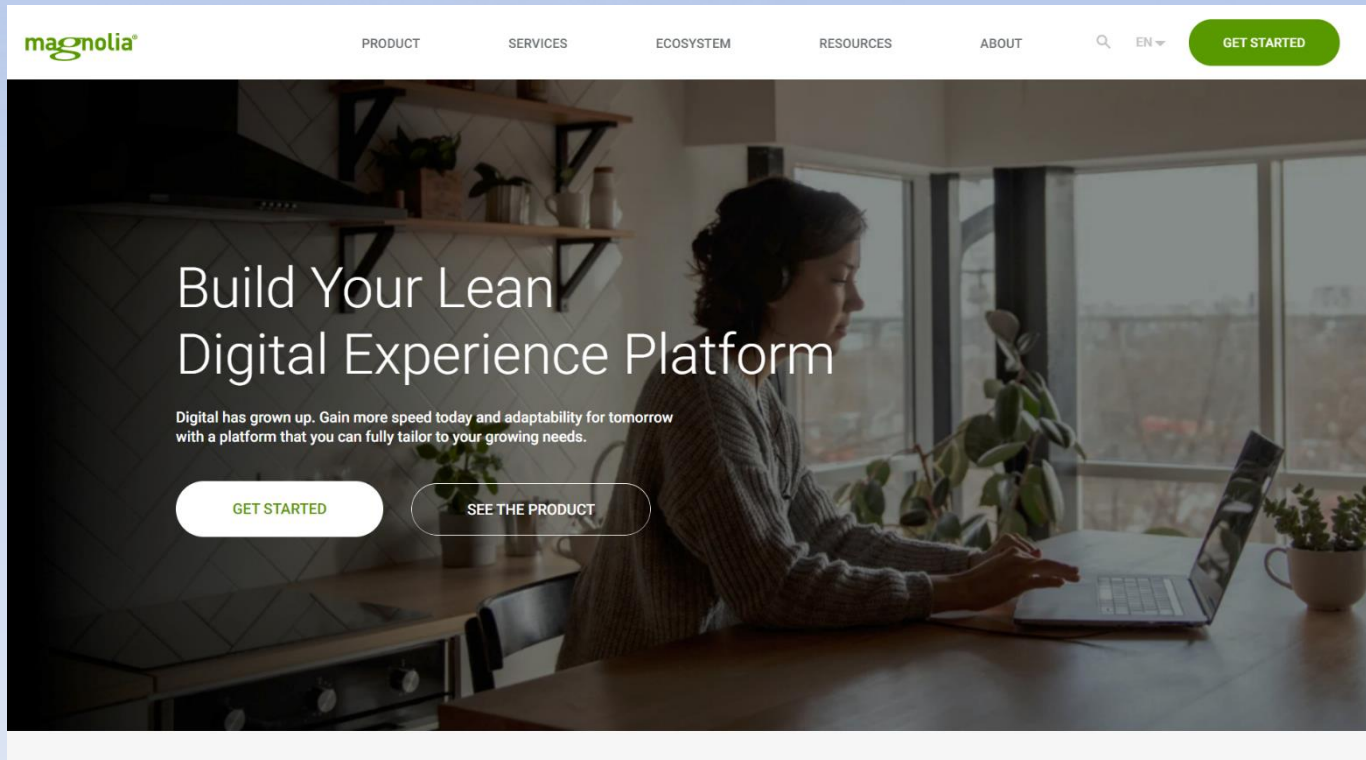
- Easily reuse of the content by using special referrers (picker).
- Convenient page layout.
- File management.
- Ability to specify start and end date of publication.

Exponent CMS (4)

- Rich workflow configuration options.
- Advanced permission management system.
- Few additional modules.
- Flexible pattern system.

Magnolia CMS

- Java platform,
- Both free (limited) and commercial versions.

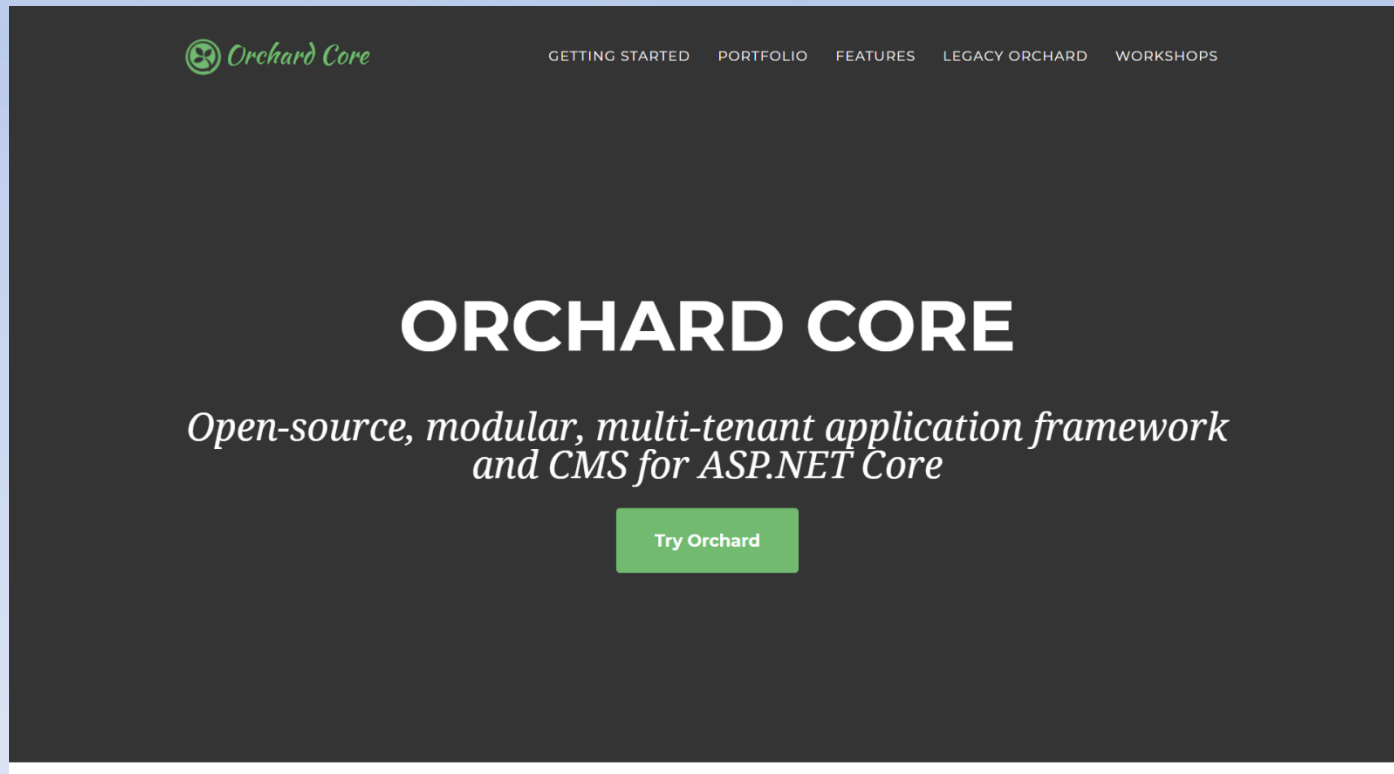


Magnolia CMS (2)

- Targeted at large companies/organizations.
- Full-text search.
- Document indexing.
- Versioning.
- Modifiable templates.
- Convenient WYSIWIG editor.
- Relatively few plugins/add-ons.

Orchard

- .NET platform;
- Free and open source;



Orchard (2)

- Custom content types and metadata;
- Multi-language support with the ability to share content;
- Modularity;
- One installation for many portals;
- Permission management;
- Content versioning;
- Defining workflows and event handling.

Plone

- Platform: Python / Zope.
- Most features are managed through a convenient interface.
- WYSIWYG content editor.
- User zones allowing to customize the set of pages, events, etc.

The screenshot shows the Plone website homepage. At the top is a navigation bar with links to PLONE.COM, CONFERENCE, DOCUMENTATION, TRAINING, FORUM, and JOBS. Below this is a secondary navigation bar with links to GET STARTED, COMMUNITY, PLONE FOUNDATION, and a 'More' dropdown, along with search and login options. The main content area features a large banner with the text '800 Contributors 196 Add-ons 40 Languages'. Below this is a section titled 'Get the latest Plone' with a 'Download Plone 5.2' button and links for 'New features' and 'Older releases'. A 'Community activity' section follows, with filters for PyPI, Plone, and Collective. Below this is a paragraph stating that many community activities are not reflected in the numbers. A row of six dark blue boxes displays community statistics: Downloads (1119509), New Issues (7), Commits (8358), Blockers (0), Pull Requests (267), and Need Review (123). The footer contains a grid of links organized into six columns: Plone Foundation, Support, Downloads, Documentation, Contribute, and Stay up to date. The bottom of the page features the Plone logo and three columns of legal disclaimers regarding trademarks and licensing.

PLONE.COM CONFERENCE DOCUMENTATION TRAINING FORUM JOBS

Plone

GET STARTED COMMUNITY PLONE FOUNDATION More Search Login

800 Contributors 196 Add-ons 40 Languages

Get the latest Plone

Responsive theming, through-the-web content types, multilingual built-in, and lots more exciting features!

Download Plone 5.2

New features Older releases

Community activity PyPI Plone Collective

There are many community activities that are not reflected in these numbers; after all, Plone thrives mostly because of the community talking. These numbers are aggregated from a variety of sources.

DOWNLOADS 1119509

NEW ISSUES 7

COMMITTS 8358

BLOCKERS 0

PULL REQUESTS 267

NEED REVIEW 123

Plone Foundation
Donate & Sponsors
Meeting minutes
Current board
Foundation members
Code of Conduct

Support
Commercial services
Chat room
Forums
Local user groups

Downloads
Get Plone
All add-ons
Security
Check hotfixes
Browse source

Documentation
Full documentation
Training
Installation
Sites using Plone
About this site

Contribute
Roadmap
Report bugs in Plone
Report website issues
Contribute skills
Contribute code

Stay up to date
Newsletter signup
Planet Plone (blogs)
@plone on Twitter
PloneCMS on Facebook
In Plone LinkedIn group

Plone

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Plone (2)

- Any added message becomes part of the global message stream.
- The same applies to events in the calendar.
- Templates describing the portal design compatible with HTML5. Extremely easy to modify.
- Very advanced workflow management system.
- Extensive possibilities for using your own types (Archetypes).

Plone (3)

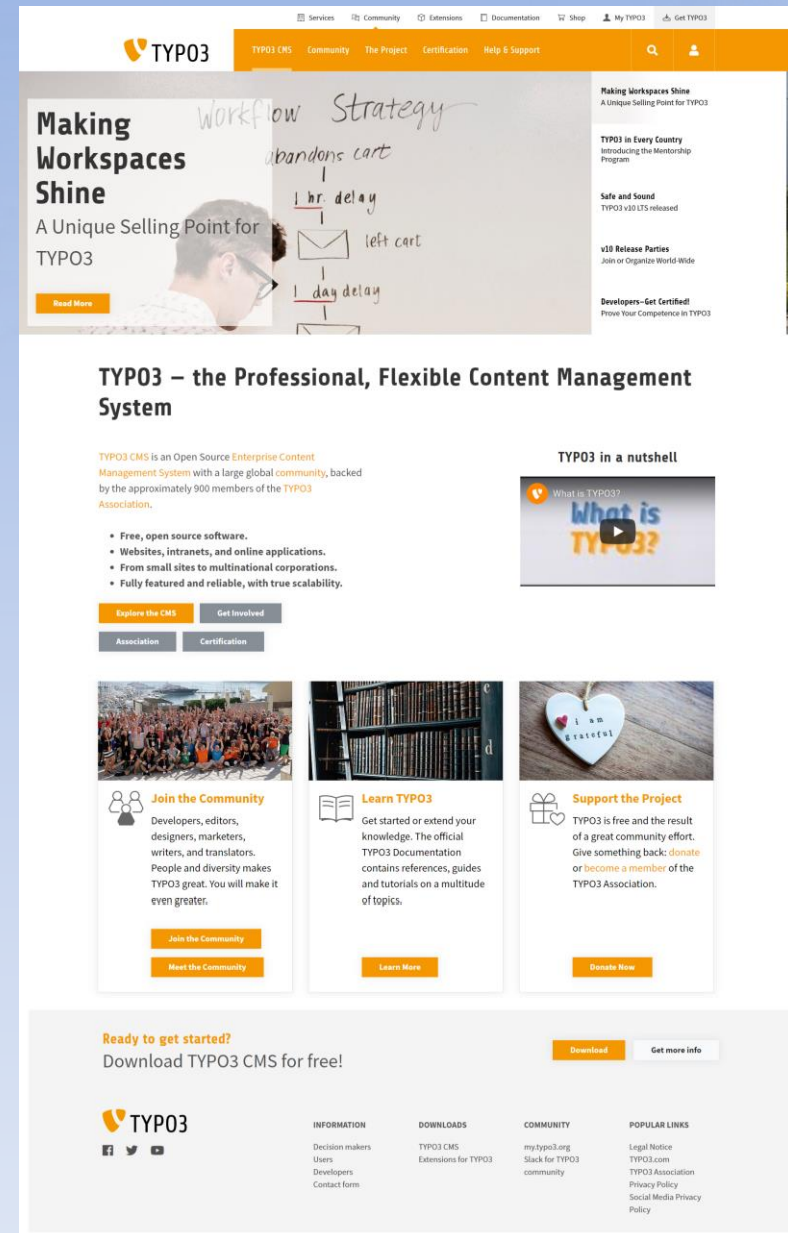
- Additional modules:

- Blog
- Extended calendar
- Wrappers for external databases (MySQL, PostgreSQL, Firebird, SQL Server, Oracle) for downloading / processing and displaying their contents.
- ...

- Ability to connect servers in clusters to improve performance.

Typo3

- PHP, MySQL /MS SQL Server/PostgreSQL / Oracle/Firebird
- Dedicated for complex portals run by large organizations / companies.
- Flexible permission management system.

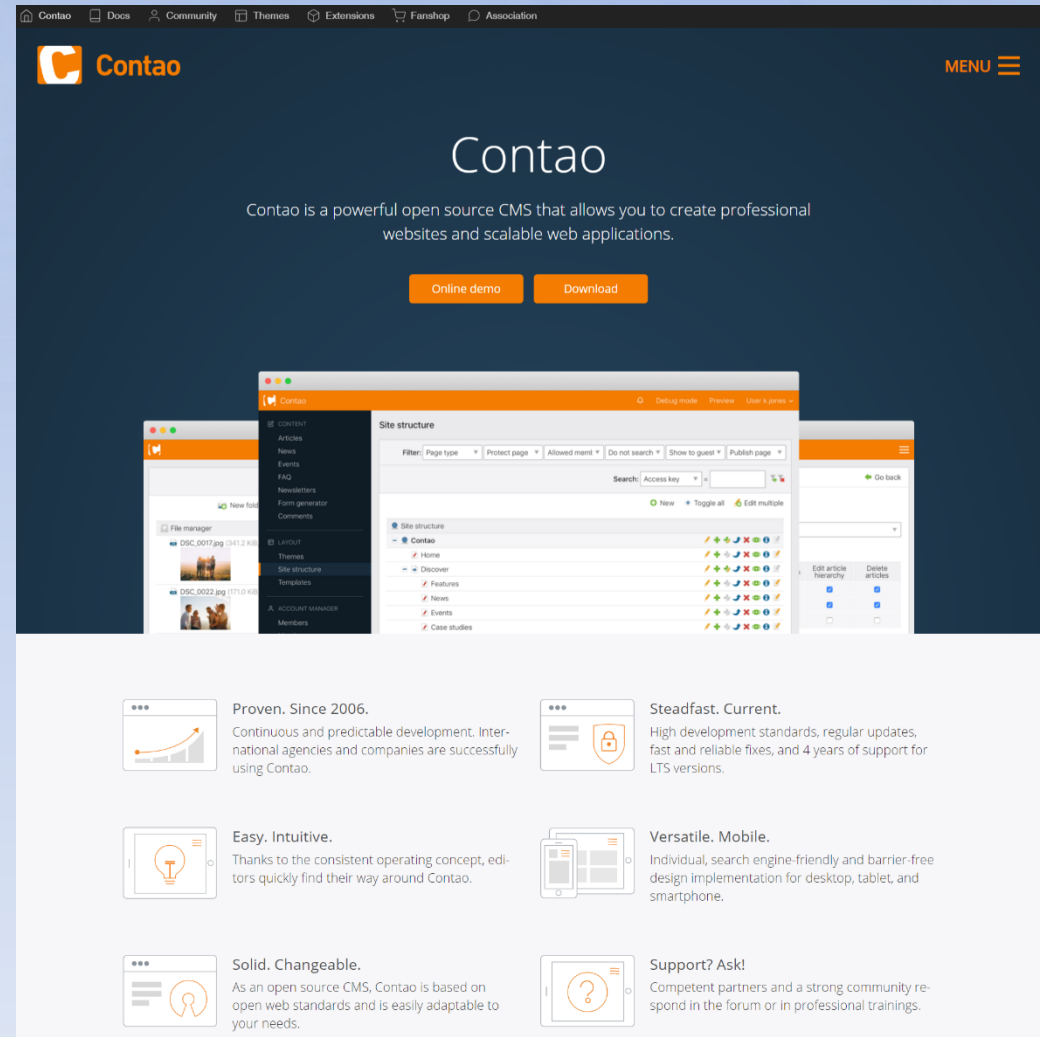


Typo3 (2)

- Possibility of integration with other systems, such as CRM or ERP.
- Large community and the possibility of commercial consulting.
- Support for multilingual content.
- Quite complex management requiring relatively long training.
- High hosting requirements.

Contao

- PHP 5.6.0, MySQL.
- Pretty easy to handle.
- Strict HTML5 implementation.

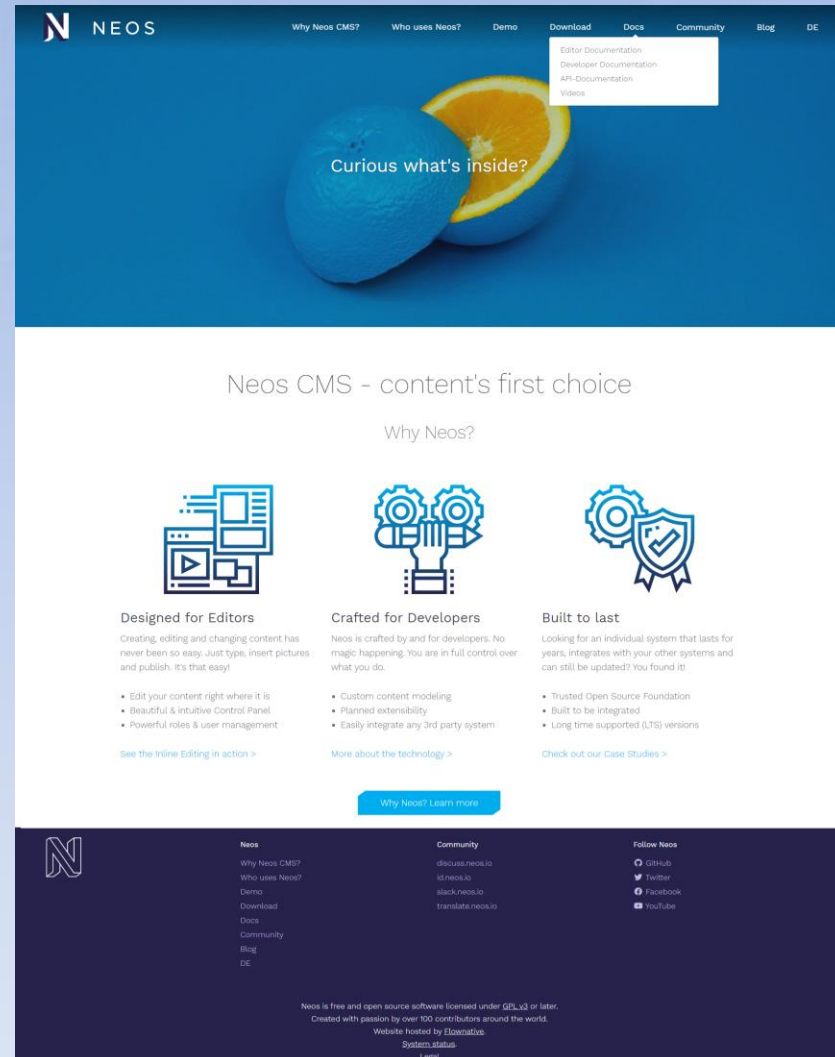


Contao (2)

- Quite a lot of plugins (around 2000).
- Multi-language support.
- Two-factor authentication.
- Powerful integrated graphic theme configurator.
- High security standards.
- The LTS version has 4 years of guaranteed support.
- No advanced workflows.

Neos CMS

- PHP, MySQL / MariaDB / PostgreSQL
- Intended for complex portals run by large organizations / companies.
- Support for multiple portals in one installation.



Neos CMS (2)

- Designed for:
 - editors: extended WYSIWIG editor (editing „in-place”),
 - programmers: a modern system that takes into account extendibility and connection with external solutions, e.g. ERP, CRM.
- SEO support.
- Special tools dedicated for mobile solutions.
- Easy access to external resources/assets, such as Google Drive, Dropbox.

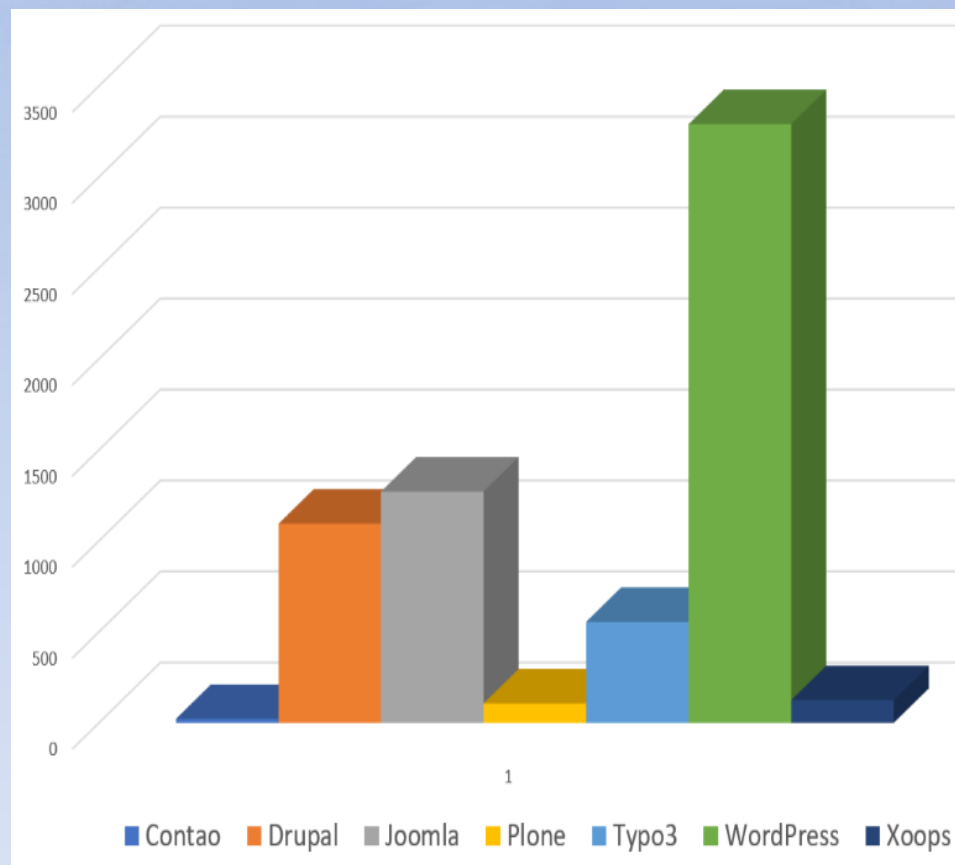
Security: reported issues (CVE)

● The number of reported security issues (2020-10):

- Contao: 22 ([CVE](#)),
- Drupal: 1094 ([CVE](#)),
- Joomla: 1271 ([CVE](#)),
- Plone: 107 ([CVE](#)),
- Typo3: 555 ([CVE](#)),
- WordPress: 3290 ([CVE](#)),
- Xoops: 125 ([CVE](#)),

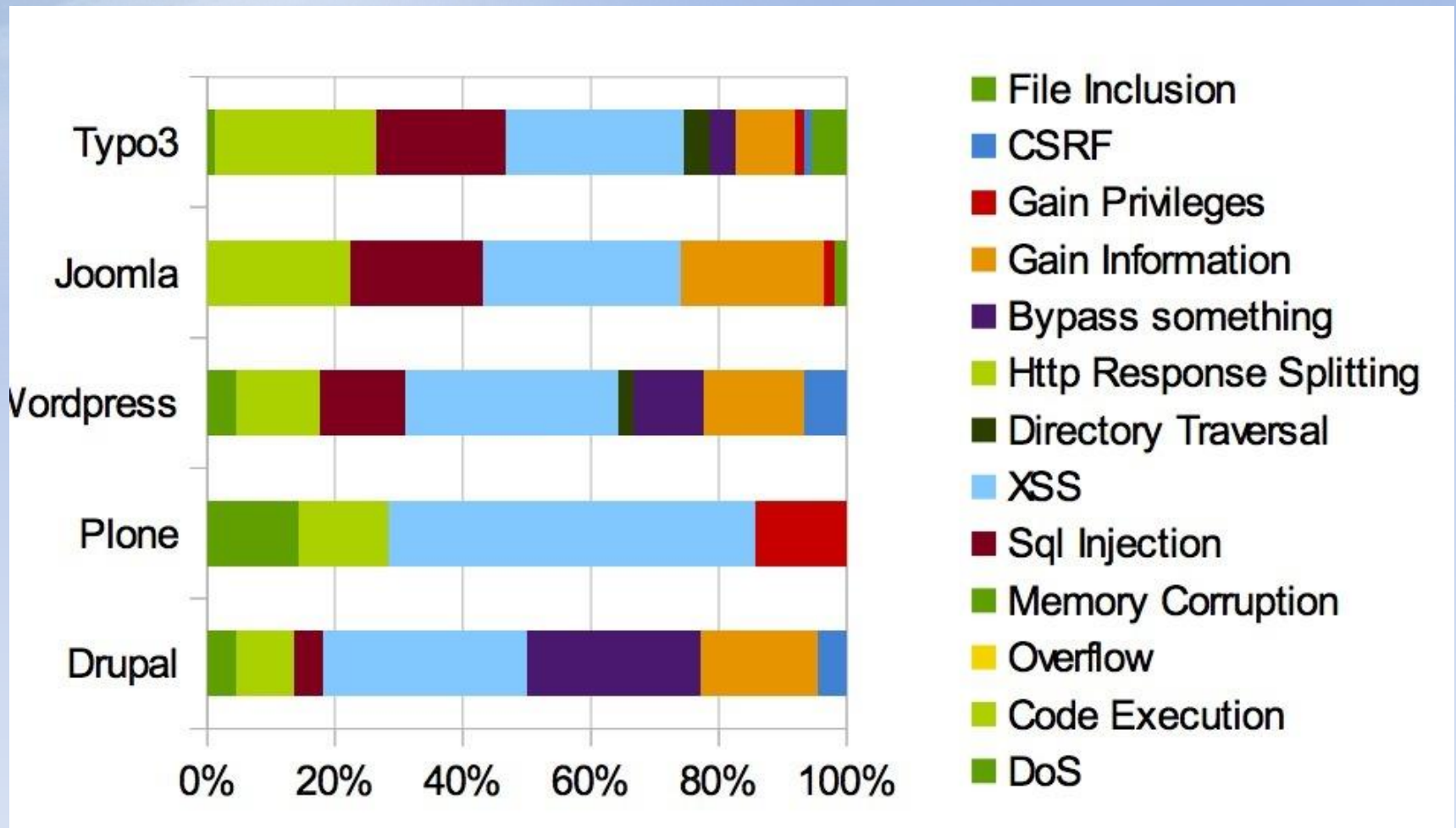
● Interpretation of the results:

- popularity,
- how long on the market,
- system core or plugins,
- severity of the problem, etc.



Used: Common Vulnerabilities and Exposures (CVE)

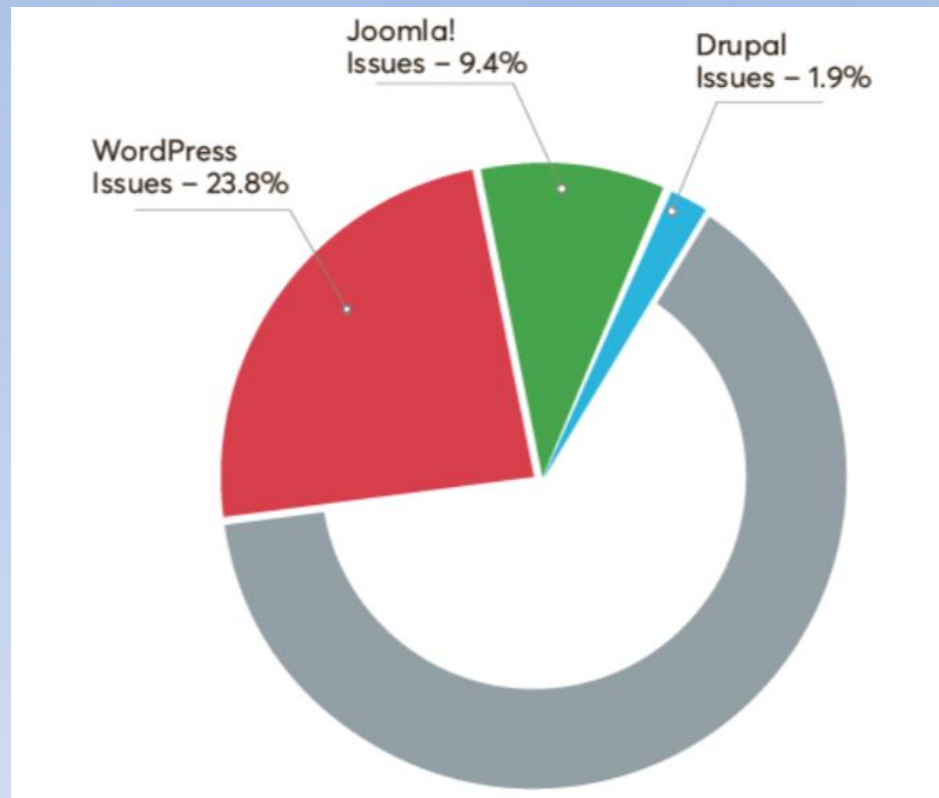
Security: different vulnerabilities



Source: Report prepared by Germany's Federal Office for Information Security (BSI)

Security: different systems

- CMS scanned with a dedicated tool.
- Approximately 35% of the systems had security problems (of varying severity).



Source: Acunetix Web Application Vulnerability Report 2020
<https://www.acunetix.com/acunetix-web-application-vulnerability-report/>

Popularity according to Alexa service

● Alexa Rank for project sites (less = better):

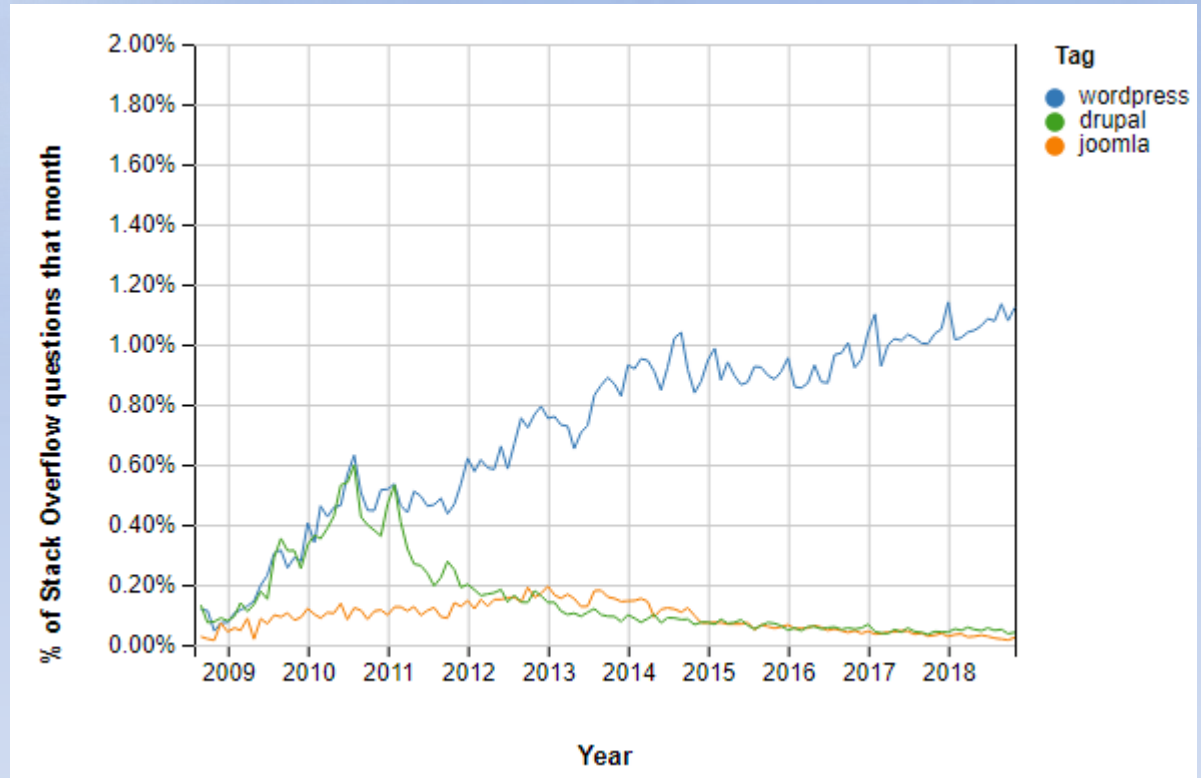
- drupal.org: [12 493](#),
- joomla.org: [9 531](#),
- typo3.org: [90 974](#),
- wordpress.org: [490](#),

● Number of links to project sites (more = better):

- drupal.org: [10 087](#),
- joomla.org: [27 326](#),
- typo3.org: [1 416](#),
- wordpress.org: [489 368](#),

Popularity according to StackOverflow

- Number of tag occurrences for each CMS on StackOverflow.



Source: CMS Comparison: Joomla vs Wordpress vs Drupal in 2020
<https://www.guru99.com/joomla-vs-wordpress-vs-drupal.html>

● To be continued during the next lecture ...