Hybrid Content Management

Platform Overview

INGENIUX

Content beyond boundaries

Contents

Summary

It's time to rethink headless CMS.

Headless simply means separating content managed in a CMS from the site or application displaying that content; usually using an API to request content from the CMS. Headless has many advantages: fast to set up and integrate, more control for the front-end design and development, true dev ops support, and often better information security practices.

The headless CMS approach also has many limitations. A headless CMS is simply a content database. The database does not know – or care – what content will look like, where it will be used, or how the site or app will be managed. Moreover, because the headless CMS market is relatively new, many platforms are comparatively immature and lack key features that many organizations require to manage content.

At Ingeniux, we think there is a better way. Ingeniux CMS provides a hybrid CMS architecture that blends traditional web experience capabilities with modern decoupled and headless content delivery approaches.

At a baseline, Ingeniux CMS delivers everything a headless CMS delivers. But, Ingeniux can also do much more. For example, Ingeniux CMS:

- Provides contextual editing with a high-fidelity preview of how content will render on a page, screen or device.
- Can manage routing and navigation for SPAs and apps using Angular, React, and other frameworks, allowing for new content creation without manual development pre-building for new content pages.
- Supports native XML and JSON content requests, but also provides partial templating allowing content blocks to be pre-formatted and easily assembled and used in headless projects.

Read on to get more details on Ingeniux CMS and how it can help you build better content-enabled experiences on every channel and application.

Breaking Down Ingeniux Headless CMS Capabilities

Let's go through each of the core capabilities you get with Ingeniux CMS that support headless content delivery.

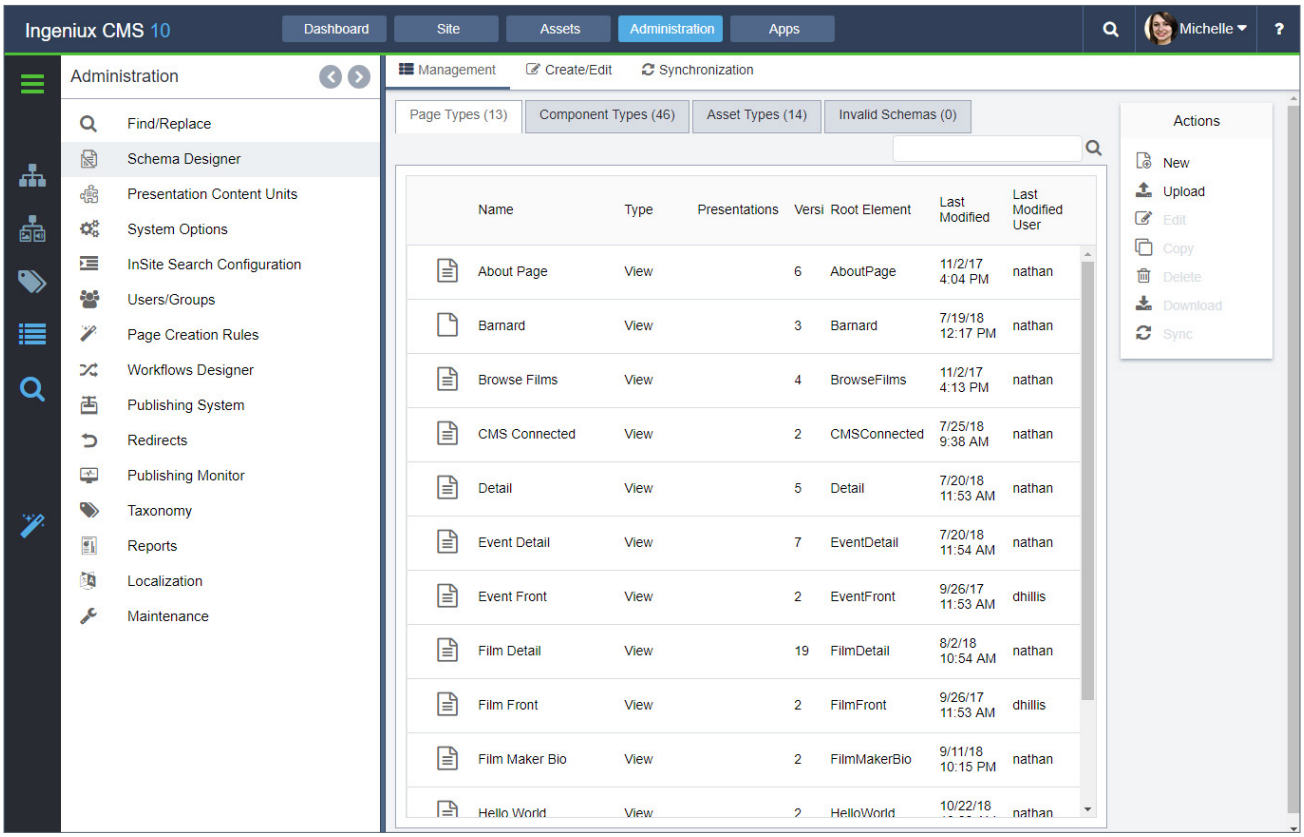
1. Content Modeling with Schema Designer
2. Content Categorization and Meta Data with Taxonomy
3. Native JSON Document Store (NoSQL database) content repository
4. Content API for accessing content in the repository
5. Routing/Navigation for managing Information Architecture
6. Content Editing Interface for creating and editing content
7. Digital Asset Manager (DAM) for managing digital assets
8. Support for Multiple Languages and Locales
9. Secure Content with Robust Governance Model

Content Modeling with Schema Designer

Ingeniux CMS supports a structured, intelligent, content model that separates content from how it is presented in any given channel or device. During a content strategy phase you define content types and their associated elements, including all metadata. These content types are then created in the Ingeniux CMS by modeling XML schemas using the Ingeniux Schema Designer.

There are over 25 standard element types in Ingeniux CMS, such as Text (string), XHTML (WYSIWYG editing), image, media file, database query, navigation, etc., that can be used to define the data model for an asset. The elements are parsed by the CMS to provide the authoring forms.

The Ingeniux Schema Designer provides versioning and control as well as syncing and replication to propagate changes across existing content items. It allows content models to change and web administrators to selectively update existing content with those changes.



Content Categorization and Meta Data with Taxonomy

Ingeniux CMS has a powerful tagging and classification system for applying topical categories to content. The taxonomy manager provides an interface for creating categories, associating them with content assets, adding synonyms, and setting security. It displays a hierarchical category tree so you can easily see the taxonomy you create.

Taxonomy categories are created by users who have permission to manage the taxonomy system, typically a site administrator. Once the taxonomy is defined, categories are then associated with content entries and assets. Taxonomy categories are useful for repurposing content for different audiences and for presenting content by topic. Ingeniux CMS Taxonomy supports browse-by-topic navigation, faceted navigation, guided search, related content, tag clouds, audience segmentation, and other capabilities.

Native JSON Document Store

Ingeniux CMS uses the RavenDB NoSQL database. It is a native .NET NoSQL database. Content stored in Ingeniux CMS is schema-free. All content is either stored natively as JSON and XML or is wrapped with intelligent metadata as in the case of binary objects such as documents or media. Files are versioned and managed through a file-locking system that checks pages out for editing. Any changes to the content model are automatically available within the CMS repository.

All content in the repository is indexed and cached in memory, enabling information to be quickly processed and delivered without any performance impact, database IO, or SQL injection risk. The repository supports millions of topics and documents. Easy clustering allows the repository to scale out without DB administration or development costs. The Ingeniux RavenDB content store leverages Apache Lucene, which is the backbone to the Ingeniux search architecture.

Content API for Accessing the Content Repository

Ingeniux has a full content API available in REST and native .NET that provides content natively as XML or JSON. The API can return raw content based on different requests and parameters, including ny content item, by audience or topic, or by language or locale.

There are several key features of the Content API including:

- Easy to understand and use
- Cross-platform compatible
- Combines many internal actions into a single method for easier integration.

Ingeniux also supports applying partial templates to content requests via the API. Pre-formatting content blocks works with delivering promotions or branded content elements and can be used and assembled by a front-end web or mobile framework.

Beyond the Content API, Ingeniux offers a CMS API for interacting with the content management platform and automating key tasks and services. Ingeniux has a powerful automated task system as well as pre-built connectors to databases and web services so you can integrate and schedule data polling and deployment for database, catalog, and other structured data.

Manage Routing and Content Navigation

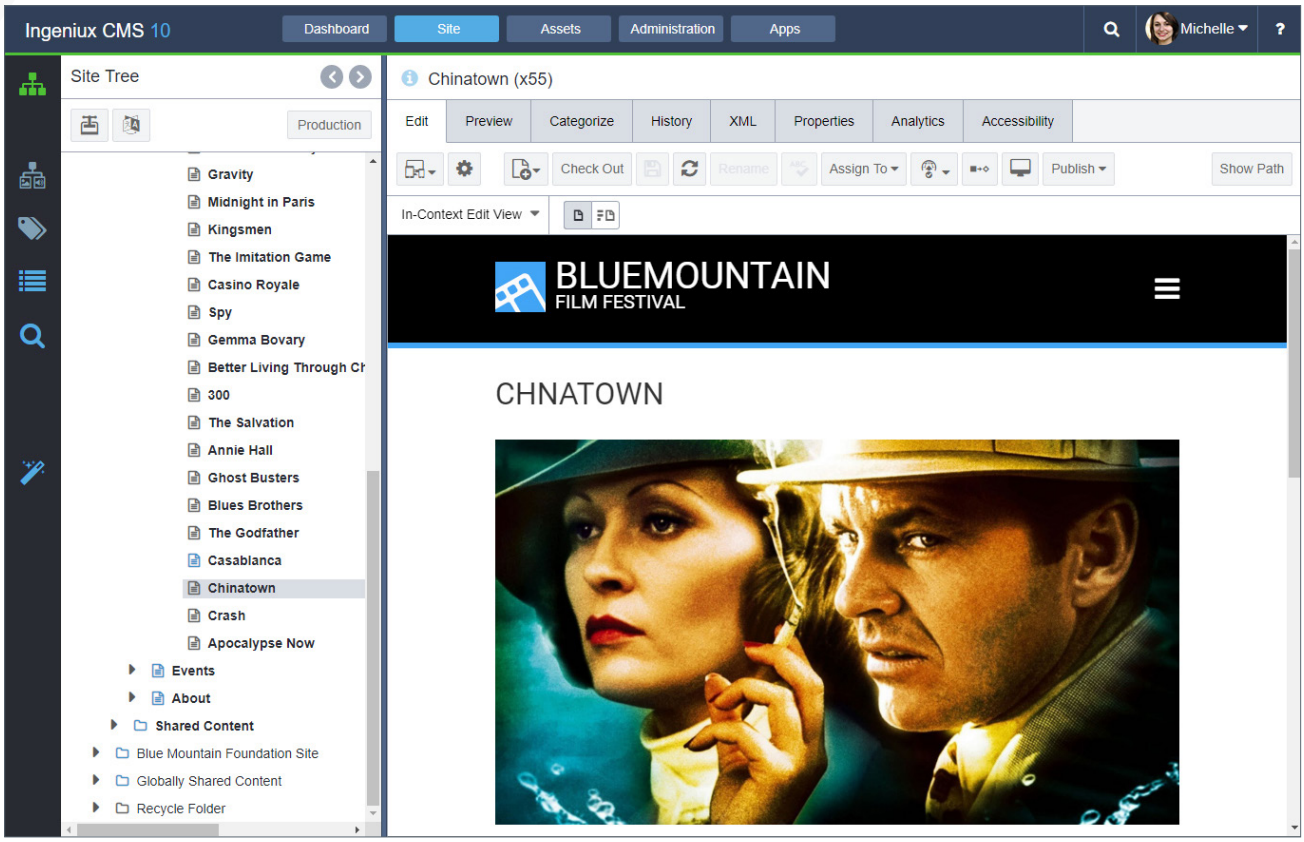
Often in headless content management projects there is a disconnect between the management of the site or app and content creation. A headless CMS is often just a content endpoint and has no understanding of the site or app structure. In this model, developers are relegated to creating every page and screen first and then setting up the API calls to fetch the content. This may be a costly and time intensive process.

One of the advantages of Ingeniux CMS is that it supports generating navigation and routes for headless sites and apps. Ingeniux goes beyond traditional headless content delivery by providing the ability to create new screens or pages and define routing with content linking and navigation. Even with Angular builds and Dev Ops programs, with Ingeniux you can not only manage content, but also the information architecture – whether it's a navigation or a route – allowing content creators to create and manage new pages, and freeing developers from pre-building pages for new content items.

With Ingeniux CMS you can create new pages, and then drag-and-drop your pages in a tree to automatically update the

navigations and information architecture. This enables a business user to control the site or app structure for the sections they are working on. Ingeniux also supports content reuse because it's aware of the connection between pages, something not easily supported in a traditional headless CMS.

Preview and Edit Headless Content In-Context



One of the challenges in using a traditional headless CMS approach is that there is no preview for content while authoring or making updates and edits. Because a traditional headless CMS is simply writing content into a database that is available via an API, it's not aware of where that content will be used or how it will look once published. This disconnect can create inefficiencies in content creation, quality assurance, and dev ops processes because authors need to render the content in the project, see it, make changes, and redeploy in order to meet branding, layout, and formatting standards.

While at a baseline Ingeniux CMS also supports “blind” content editing, what makes Ingeniux CMS unique is support for In-Context Editing for headless content. In-Context Editing, or ICE for short, allows authors to edit content using a set of editing controls available in the preview of the Web CMS eliminating review loops using external preview or builds.

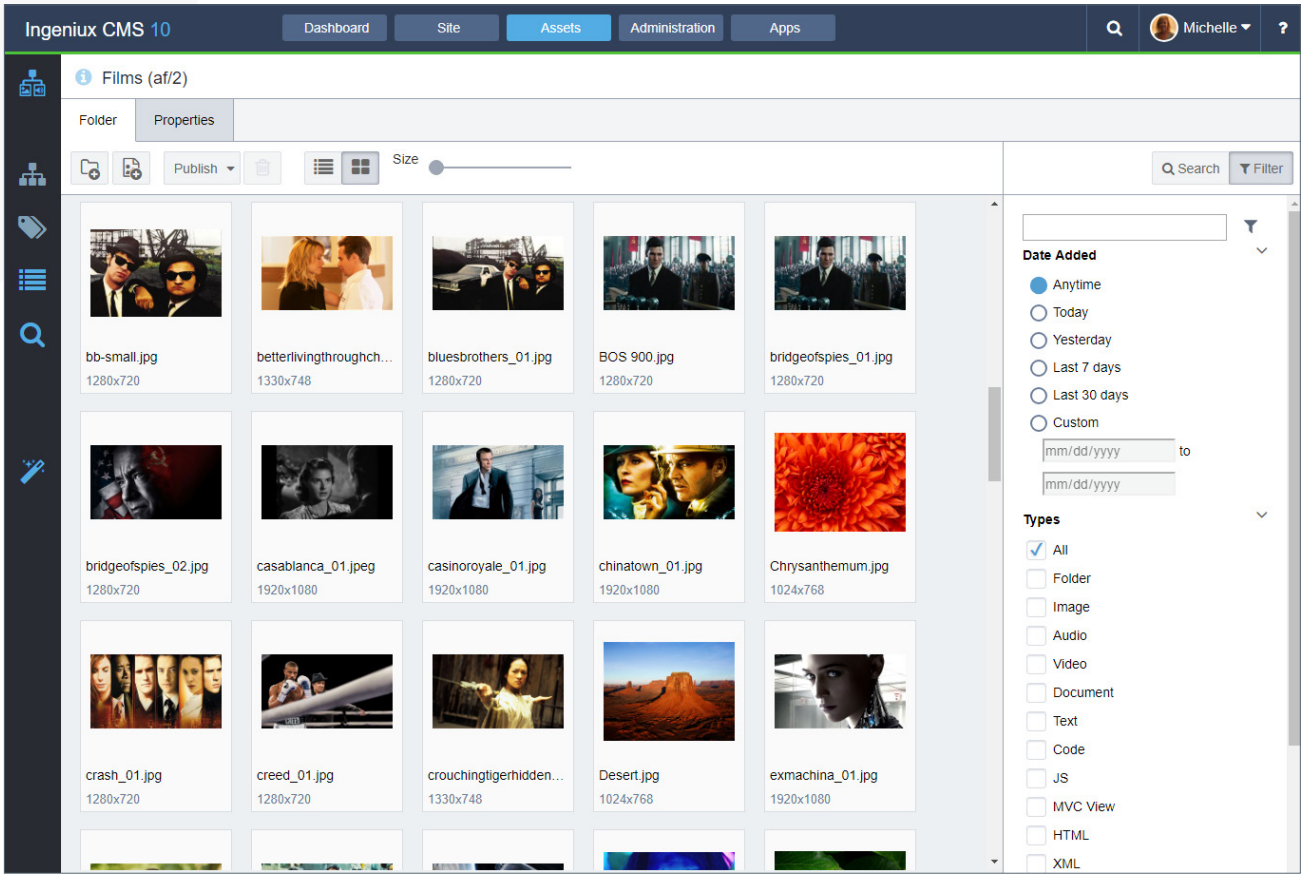
Ingeniux supports in-context editing for headless content using its Remote Editing feature. The Ingeniux CMS editor provides a window that renders the presentation of the project from a remote location. Content editing is delivered via web service calls that inject content editing elements into a development or design-time build of the project. Projects can be set up to run as a service on external servers where you may view external applications and services for pages that consume content outside of the CMS application environment.

Automate Content Review and Approval with Workflow

Ingeniux CMS provides a fully integrated content workflow system. While other headless CMS’ provide basic approval workflows, Ingeniux offers full-featured workflow design, reporting, and management.

Workflow actions are triggered at each transition. Actions are used to automate CMS tasks, such as check-in, archive, schedule start and end dates, publish, send email notification, and post to social media. For end users, workflow is as simple as advancing a content item to the next state and sending a transition message, if desired. Content can be advanced or rescinded or can bridge to other workflows.

Manage Assets with the Digital Asset Manager (DAM)



In Ingeniux CMS digital assets are managed as first-class citizens. In other words, anything you can do with text-based content you can also do with a digital asset, such as an image, video, document, or other binary file. Assets may be retrieved via the API, mapped to taxonomy and metadata definitions, replicated to a storage, CDN, or cloud location, and localized in different languages.

Ingeniux CMS' support for asset meta data improves how assets are found and displayed in search, used in web pages (including personalized web experiences) and in applications. Assets are editable including full metadata and usage rights, supporting group-level security and collaboration.

Having digital assets managed within the same CMS platform should help reduce the number of redundant or duplicate assets because you can use a single asset across Web, mobile, and social experiences.

Support for Content Delivery Networks (CDNs)

The Ingeniux CMS supports true federation; including media servers (such as YouTube or Vimeo) and CDNs for rich media storage, and file level storage in NAS and SAN systems. Assets stored this way are linked in Ingeniux CMS providing the ability to manage the asset as a native content item while keeping it in another cloud or application.

Ingeniux integrates with all leading CDNs including Akamai, Amazon CloudFront, Microsoft Azure CDN, and Limelight.

Support for Multiple Languages and Locales

Ingeniux CMS is designed to manage content sets for different languages or locales. The Ingeniux headless API makes it easy to request content by language and is structured with flags that allow developers to switch the language for any content item.

Ingeniux also localizes metadata. You can develop your taxonomy once and use it for every country site and language variation, maintaining search capabilities, facets, audience targeting, and browse-by-category capabilities. Ingeniux CMS offers pre-built workflows designed to make translation easy and manageable. Starting a translation only requires one click.

The Ingeniux Translation Dashboard enables content creators to import and export content for localization. With connectors for many leading localization solutions and a flexible interface, Ingeniux can integrate seamlessly into your existing translation process.

With Ingeniux CMS you can publish content using a wide range of character sets. Ingeniux CMS supports bidirectional (bidi) text, UTF-8, Unicode, and other character formats, empowering teams to publish content in any language regardless of the text flow or encoding.

Ensure Content is Secure with Permissions-based Governance Model

Ingeniux has a robust governance model, including security and permissions for users, groups, and content assets, along with content creation rules.

Users, Groups, and Roles: Ingeniux CMS supports single sign-on integration with Active Directory, LDAP, the CMS users' system, and a host of custom providers. Authentication enables organizations to utilize multiple identity providers to manage access and group-level security in the CMS.

Content Level Permissions: You can apply access rights to any content item in the CMS application. Within the CMS client (where content is created and managed), content may be granted full access, read only, or hidden. You can also apply external access rights to content that requires log-in or authentication to view gated content.

Using the global group settings, users are restricted to what features are visible within the CMS client, whether they can publish content or just advance content in a workflow, what elements of a content asset they can edit, whether they can roll-back content to previous versions and many other options. The user manager provides security templates for simplifying permission management.

Built for the Cloud – and On-Premise

Ingeniux supports SaaS, PaaS and On-Premise deployment. Most headless CMS deployment options are SaaS only but Ingeniux provides true enterprise deployment options with application services and content management capabilities required to meet the operational and security requirements of many organizations.

Ingeniux SaaS

Ingeniux CMS software-as-a-service and cloud services provide customers with a fully deployed and managed web presence and application environment. The CMS application is hosted in managed co-location facilities using virtual servers or is available as a managed service for Microsoft Azure. The back-end CMS application uses a NoSQL framework designed for cloud hosting, and the deployment tier supports CDN and auto-scaling with fast file-based delivery and edge caching.

Ingeniux goes beyond traditional multitenant SaaS solutions by providing each customer with a dedicated environment for its Ingeniux CMS application. Using this approach, each customer can define the network configuration needed to meet business, security, and compliance requirements.

The Ingeniux approach also provides greater flexibility. Upgrade when you want, manage file-level access, write customizations and integrations, install additional applications or databases, and, perhaps most importantly, move the application to your servers if you want in the future.

The cloud provides greater scalability, less management overhead for IT teams, and the peace of mind of having one number to call to address your web software, performance, and uptime services.

Cloud and PaaS

Organizations are increasingly moving their web and portal experiences to the cloud to take advantage of expandable storage, higher availability and increased scalability. Ingeniux CMS supports deployment to both Azure and AWS PaaS. Key features include:

- App Services and Auto-scaling on AWS or Azure scale out automatically with real-time updates of content. Ingeniux supports Azure App Services and AWS Elastic Beansprout for scaling content delivery.
- Support for Blob storage: Ingeniux Dynamic Site Server (DSS) supports loading content from “blob” storage: AS3 and Azure File Services. Content is stored into buckets enabling multiple applications instances to read from the bucket at the same time.

On-Premise

Not every organization is ready to move to the cloud, or they have business needs that require them to run software on their internal networks. For those customers, Ingeniux provides an on-premise edition of Ingeniux CMS.

Ingeniux on-premise CMS provides the ability to install Ingeniux CMS software on dedicated servers or VMs and configure publishing targets to deploy content to multiple web servers or other endpoints within the network or other locations. On-premises is available with a perpetual license to the software and an unlimited support and maintenance program.

Ingeniux Hybrid CMS vs Headless Only CMS

FEATURES	INGENIUX HYBRID CMS	HEADLESS ONLY CMS
Content API	✔	✔
JSON Content Model	✔	✔
Ingeniux supports both JSON and XML Content Models		
Content Model Flexibility	✔	✖
Ingeniux CMS can sync changes across content types and selectively update the model on pages.		
In context-Editing	✔	✖
Ingeniux offers In-Context Editing for both CMS pages and Headless pages		
Workflow Processes	✔	✖
With a headless CMS, you need to build workflow or reviews using the WebHooks and an API. There is no built-in workflow system.		
Page Creation	✔	✖
In a headless CMS, there is no concept of a "page"		
Partial Templating	✔	✖
Visual Page Building	✔	✖
Ingeniux provides a visual page builder based on responsive design frameworks		
Remote Preview	✔	✖
Routing and Navigation	✔	✖

FEATURES	INGENIUX HYBRID CMS	HEADLESS ONLY CMS
Automatic Redirects and Vanity URLs	✔	✖
With Ingeniux you get a full URL management system, with URL history, redirecting, and vanity/ custom URLs.		
Multi-Environment	✔	✖
A headless CMS has "Spaces" where you can sandbox content but does not manage the production environment. Ingeniux manages staging and production, with full versioning and publishing between all environments.		
On Premises Deployment	✔	✖
While Headless CMS' are generally multi-tenant SaaS only, Ingeniux supports on-premises, cloud, PAAS (with auto-scaling), and full SaaS deployment.		
Modules for Faster Implementation	✔	✖
Website Search	✔	✖
Ingeniux includes InSite, a powerful enterprise search application that is native to the Ingeniux platform.		
Support for website uptime	✔	✖

Capabilities Definitions:

- **Content API:** A programming interface for accessing content.
- **JSON Content Model:** Availability to access content in the JSON format for integration.
- **In context-editing:** Ability to edit content in the preview of the web page to see how your edits effect layout
- **Partial Templating:** Create content blocks with formatting pre-applied and then injected in the calling application.
- **Visual Page Building:** Update the layout of the page without coding.
- **Remote Preview:** View content changes as they would appear in the calling application.
- **Routing and Navigation:** Creating an information architecture and organization for your content that mirrors the live website. One of the core benefits of a CMS is managing all the links between pages and how your site is organized.
- **Page Creation:** Create a new page like a news article or product detail in the CMS.
- **Automate Redirects and Vanity URLs:** Server-side redirects when content is retired or moved and ability to name pages with a custom URL. Important for site quality, inbound marketing and SEO.
- **Multi-Environment:** Manage content between development, staging, and production
- **On Premises Deployment:** Install a CMS application in your own network or cloud.
- **Workflow Processes:** Route content for approvals and automate key tasks and business processes.
- **Content Model Flexibility:** Change your content model once pages are created
- **Modules for faster implementation:** Pre-built website functionality like rotators, forms, calendars, and other functionality
- **Website Search:** A built-in search engine for website search and search-based experiences for catalog and other content.
- **Support for Website Uptime:** Does the vendor support your website or just the CMS application?

About Ingeniux

Ingeniux is the leading provider of web content management and digital experience software. We enable organizations to orchestrate the entire customer experience from acquisition through to sales to support and service, across any device, application, or website.

Ingeniux software is available as a fully managed software as a service or as an on-premise application. Ingeniux delivers unparalleled service and support to customers worldwide.

To learn more about Ingeniux portal and web content management solutions, e-mail info@ingeniux.com.

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