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Technical Strategy v2

Indiana State Technical Strategy

Website Redesign | May 2022

Introduction

Carnegie and Indiana State University held several discovery discussions in Winter 2021 as part of the Indiana State website redesign initiative. A subset of these discussions focused on the functional and technical aspects of the current web presence at www.indstate.edu.

Indiana State currently uses Drupal 7 as the content management system. The website relaunch project will introduce an all new design system, content, and a new implementation of Drupal 9 CMS.

Top concerns for the project to address include:

- Launching and maintaining an accessible website that is high performing and meets WCAG 2.1 AA standards.
- Deploying a new CMS that supports more decentralized editors with ease of use and flexibility.

- Migrating existing features into the new website environment.
- Establishing a foundation that allows the University to sustain and evolve the site.

This document captures the go-forward recommendation for the features of the new site. It also includes an inventory of key website functionality and provides recommendations for how each feature area should be addressed in the new website implementation.

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Solution Approach

Indiana State needs a more sustainable approach to Drupal, with a single theme and codebase, and the ability to support a large site with a larger number of content editors. Rather than maintain multiple separate instances of Drupal, we recommend Indiana State build the new site on a single instance of Drupal 9. This offers several benefits around reducing complexity and redundancy. Code and theme differences between sites, development workflow, content sharing, permissions, and access are among the things simplified by a single site.

Permissions
For managing permissions and content access for a large number of editors, we recommend using Group. Most organizations that leveraged Organic Groups in Drupal 7 moved to Group in Drupal 8/9.

Drupal Content Types and Templates

The new Drupal website will rely on Content Types in Drupal, as well as [Drupal Paragraphs](#) to implement page templates and modular content components which can be used to build flexible pages. The functional specifications created for the project will outline the specifics once the content strategy and design of templates is complete. High level details of the approach include:

- Editors will indicate the page template a page uses by the content type selected. For example, a landing page content type will contain the components and options for landing page template and render using the landing page design.
- Content Types may also be specific to functionality. For example, news content may display using a standard tertiary page sidebar template from a design standpoint, but have specific fields such as author, date, and a taxonomy attached to the content.

- Reusable blocks of content for elements appearing across pages will be managed as content types as well. For example, infographics or feature items displayed on multiple pages will be defined as content types. Editors will create this structured content, and also be able to select the content to display within a page from existing, matching content types.

- Drupal Paragraphs will be used within content types (and re-used across content types, where applicable), to give editors control over individual components of the page, whether they are present on a particular page, and the order they appear.

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Drupal Architecture - Group

High level overview:

- Content Types are made available to Group Types
- Each Group will have a menu that is automatically created when the Group is created
- Custom roles can be established at the Group Type level and assigned to individual group members on a per-group basis. These roles can be configured to work in concert with roles at the site level.
- Content publishing workflow can be enabled within groups, content revisions are supported
- The combination of the previous two points means that a user who belongs to two groups may only have publishing rights in one of the two groups

Recommended Modules:

- group - this is the main module and it is in full release
- group node - this module allows nodes to be associated with groups, it is in full release
- group content moderation - this module enables content moderation within groups, it is in beta2 and installed on many sites and actively maintained
- group taxonomy - this submodule allows for taxonomy vocabularies to be created within groups, it is in beta7 and actively maintained
- group content menu - this module creates a menu when a group is created, it is in full release
- automatic entity label - this module allows is used to enforce naming conventions for nodes using token values

Front-End Development

Our approach to custom HTML

Carnegie uses a modern build process to produce HTML / CSS / JavaScript from the ground up, leveraging tools like SASS, webpack, and NPM. We will use our "from scratch" approach on this project and will not use any front-end framework such as Bootstrap. We follow industry best practices for front end development.

This approach yields efficient, high-performing, and browser-compliant code and avoids the "bloat" that comes with utilizing frameworks. The front-end code and the related build processes are non-proprietary and we will train and orient the Indiana State team on the details. There will not be a steep learning curve for web developers and Indiana State will have the flexibility to work with other agency partners or developers in the future.

- Our front-end code deliverable acts as a living style guide for the site.
- The front-end code deliverable serves as a starting point for styling other Indiana State websites and web applications.

- We use our custom HTML to build a new theme within Drupal.

- Our code deliverables are non-proprietary and belong to Indiana State. We will train the Indiana State team on our front-end process and workflow as part of handing over the code at project completion.

Drupal Architecture

Reference links:

- Module documentation: https://www.drupal.org/docs/contributed-modules/group
- Introductory blog post from main contributor to the module: https://www.deeson.co.uk/blog/group-alternative-organic-groups
- Content editor access video: https://www.drupaleasy.com/video/2016/04/using-group-module-administrator-content-editor-access-control-drupal-8
- Conference presentation for harnessing the power of Group: https://www.youtube.com/watch?v=Ns4SUtyiYFs
- Conference presentation explaining how Group met the needs of a few use cases: https://2020.badcamp.org/session/what-can-group-module-do-me

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Feature Inventory

Drupal Implementation

A new implementation in Drupal 9 allows the University a fresh start and ground-up approach for the new website. A few specifics Carnegie plans to account for in a new implementation:

- A new theme for Indiana State, built from the ground up in Drupal 9.
- A modular approach to implementing the design system, using re-usable content types, paragraph types, and taxonomy to offer editors flexibility to mix and match components on pages to fit the content and extend templates beyond fixed content regions.

- The new site will leverage the Drupal media library, along with our responsive HTML, to help Indiana State manage image sizing and optimization using the capabilities of the CMS.
- Key modules and integrations will extend the core CMS functionality into other areas Indiana State needs from the new site.

The following pages outline specific feature recommendations and the path forward for key features and functions of the new website.

Web Events Calendar

Indiana State maintains web event content with Drupal, while some units use Google Calendar embeds or tie in to separate WordPress sites. A new solution for web event calendaring is required for the University. Solution alternatives include:

Implement a calendar within Drupal.

- Could leverage a calendar module or custom content types in Drupal.
- Would require use of the additional scope budget of project.

A third-party web event calendar. Our top recommendation for this is Localist, used by several institutions we've worked with, including the University of North Dakota, Loyola Marymount University, and the University of Southern Mississippi.

- Higher cost, but higher-end features in a comprehensive, hosted, and supported solution.
- Indiana State would need to separately license and implement a third-party tool. Feeds of event content from a third-party tool can be implemented within Drupal webpages as part of the redesign project.

Use The Events Calendar Pro plugin for WordPress to implement a new event calendar within today.indstate.edu.

- This solution depends on maintaining today.indstate.edu as a separate newsletter/events website.
- Effort and cost to create in maintain is relatively low for good functionality.
- Wilkes University uses this approach to maintain their calendar (and news) in WordPress, separate from their primary CMS.

Feature Recommendations

Function	Recommendation	Details
Directory	Indiana State maintains its directory on the existing Drupal website and integrates with both Banner and Digital Measures for some information. We recommend separating the directory, which could be internally facing, from faculty profiles, which should be externally facing. The new site requires a new version of any integrations.	● Carnegie will create integrations to bring in necessary Banner data into the directory. ● A taxonomy will be required to group individuals and enable directory listings by department or unit. ● Indiana State will collaborate with the Carnegie team on the necessary details for the Banner and Digital Measures integrations, including the fields to include.
Faculty Profiles	Faculty profile pages integrate with the Indiana State directory presently. We recommend separating these, with the option of linking to profiles from the directory. Faculty profile pages will be content pages in Drupal, with integrated Digital Measures and Banner data for some fields/content.	● Carnegie plans to design a faculty profile template. Once the design is established, mapping Banner and Digital Measures into the template can take place for inform the integrations. ● Carnegie will create the integration necessary to bring Digital Measures content into faculty profile pages. The exact implementation will depend upon the capabilities of Digital Measures data as well as the design.

Feature Recommendations

Function	Recommendation	Details
News and stories	News currently lives outside of Drupal in a legacy site https://www2.indstate.edu/news/. Indiana State should implement news using a distinct content type in the new Drupal implementation, and retire the old site.	- The Carnegie team will create a content type to power news functionality in the Drupal site, leveraging taxonomy, fields for author and date, and feeds as needed for content syndication. - The tertiary page design will be used as the page template for news. - Listings of news will be implemented per the design, as well as re-use of news within other templates where the design requires news and stories.
Email newsletters	Indiana State manages announcements and email newsletters with a WordPress site at https://today.indstate.edu/. This functionality will remain outside of Drupal.	Styling the WordPress site to match the new design will be the responsibility of the Indiana State team. If Indiana State chooses to add event calendar functionality to WordPress (per the calendar recommendations), further discussion will be required to configure feeds of events, and consider additional aspects of styling events pages.

Feature Recommendations

Function	Recommendation	Details
Styling existing systems	Where desired or appropriate, Indiana State should plan to style other websites and systems to match the new site design.	As previously noted, Carnegie's HTML / CSS / JavaScript deliverable serves as an effective starting point for styling other systems.
Web forms	Indiana State uses several forms tools on the current website. The new site will continue to rely on more than one solution: ● Slate CRM forms for inquiries and other admissions needs. ● Drupal web forms for non-admissions web form needs. ● Qualtrics forms on an as-needed basis.	● Carnegie will install and configure Drupal webforms, along with styling and configuration of three forms. Additional forms will be created by the Indiana State team. ● Qualtrics forms can be embedded into Drupal pages as needed. Styling and configuration of Qualtrics forms is the responsibility of the Indiana State team.

Feature Recommendations

Function	Recommendation	Details
Redirection	Redirects will be required and implemented in the production server environment, hosted by Pantheon. Typically two types of 301 redirects are considered: ● Code-level redirects and patterns within Drupal ● Page-level redirects added by editors in Drupal	● Indiana State should plan to build a map of old URLs to new URLs based on changes to page locations from the old site to the new site. This task often takes place during content migration. ● The redirect plan will include moving remaining pages on the existing www site to another subdomain, allow www2 to remain, and position the new site as www.indstate.edu. ● The Carnegie team will assist with implementation of code-level redirects.
CMS Authentication	Implement sign-on via Indiana State network IDs	Carnegie will configure authentication in Drupal against the Indiana State provider. Indiana State IT will need to be available to provide necessary details to complete the configuration.

Feature Recommendations

Function	Recommendation	Details
CRM forms	Slate is the new CRM for Indiana State. Forms will be embedded in Drupal pages per the design and content strategy. Other forms are hosted on the Slate server, independent of Drupal.	Slate forms will be embedded into Drupal pages and styled by the Carnegie team where the design calls for them. Styling for Slate-hosted forms will be carried out by Indiana State, using the Carnegie HTML / CSS / JavaScript deliverable as an aid.
Search	Indiana State will use Funnelback Search to power site search results on the the new website.	- Carnegie and the Indiana State team will collaborate on the data sources and features of the Funnelback higher ed search product to implement. - Styling will derive from the Carnegie HTML / CSS / JavaScript. - Timing for beginning the search implementation will be once HTML is complete.
Emergency Alert	Site-wide alerts will be implemented in Drupal.	The Carnegie design will include styles for the alerts, including color options, to display at the top of the page, powered by editor updates in Drupal.

Feature Recommendations

Function	Recommendation	Details
Analytics	Google Tag Manager will be used to manage Google Analytics and other tracking code embedded on the site. Indiana State also uses SiteImprove and CrazyEgg.	Carnegie will conduct an analytics review and work with the Modern Campus team to ensure tracking code for the necessary tools, including Google Analytics 4, is placed on the new site for launch.
Accessibility	Indiana State uses SiteImprove to monitor accessibility of the site.	The new website implementation will deploy SiteImprove tracking code to ensure continuity in the use of its toolset.
Social Media	We recommend Juicer for a third party tool to allow social media integration with the site. ● Indiana State is responsible for creating a Juicer account and connecting social accounts to it ● Carnegie will connect Juicer content to the new website templates per the design	We've successfully implemented Juicer numerous times. It is cost effective (and has a free option) and provides flexibility to bring multiple social accounts into the site. It also allows us to style social content to match the site, in addition to the out-of-the-box display options Juicer provides.

What's Next

+ **FRONT-END DEVELOPMENT**

+ **FUNCTIONAL SPECIFICATIONS**

+ **DRUPAL IMPLEMENTATION**

Thank You!