



DATA TO INSIGHTS

PROPOSED WEBSITE REDESIGN DOCUMENT

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Table of Contents

Introduction	3
Strategy	3
Vision.....	3
Demographics	3
User Personas.....	3
Design Principles	4
Scope.....	4
Design Rationale	5
Primary.....	5
Secondary.....	6
Information Architecture Evaluation	7
RECOMMENDATIONS.....	7
Structure	7
Categories	7
Labels	7
Navigation.....	7
SITEMAP	8
<i>Current sitemap</i>	8
<i>Redesigned sitemap</i>	9
<i>Rationale for redesign</i>	9
Proposed website redesign	10
Paper prototypes.....	10
Wireframes.....	14
Visual Design - Samples.....	19
Choosing a Content Management System (CMS).....	21
A Content Management System allows to build a website around a framework with required standards and at the same time facilitates management of the same over time. As per the discussions and meetings, the following three CMSs were shortlisted:	21
<i>IU WCMS</i>	21
<i>Drupal</i>	21
<i>WordPress</i>	21
Comparison	22
IU WCMS	23
<i>Technical Expertise and User Training</i>	23
<i>User Management</i>	24
References:.....	26

Introduction

The [Data to Insights website](#) constitutes information about various projects, publications, and tools that D2I researches on. A simple web crawler ran on the website file system shows that the entire website consists of more than 100,000 files, folders and links. The home page itself consists of more than 70 clickable links and images. With such humongous amount of data accumulated and displayed in a single page or website, it becomes important to categorize, simplify and display the data in a way that will improve the entire user experience. This document aggregates the redesign rationale, information architecture evaluation, proposed design mock-ups and study of Content Management Systems (CMS). This document will enable the stakeholders to have a clear vision of the redesign need and rationale. It is important to understand that the main purpose of this redesign should not just be beautification but also simplification and organization. Design is a holistic process and hence there are multiple things that needs to be considered before we begin with the actual design.

Strategy

Before we begin to actually start redesigning the website, we need to consider certain facets of the site which will not only provide us a direction for the design but also help us streamline the design process strategy according to the points mentioned below.

Vision

Data to Insights focuses on research projects in data management, big data, text analysis, advanced cyber-infrastructure, provenance capture, management and preservation of scientific data, etc. It is important to keep in mind that the webpage displays should delineate this vision via its design and content organization.

Demographics

Considering the horizons of research that D2I carries out, it is important to know the user demographics for the website. The website is consumed by students, faculty members, university professors, researchers and enthusiastic people in the field of data management and preservation. The overall demographic spreads over a wide variety people visiting the website. This is another factor that needs to be considered during the redesign process.

User Personas

Personas are the types of users who engage with the website. As per the demographics, it is important to keep in mind what kind of users will visit the website and depending on their key goals, behaviors and know-how, categories should be accordingly decided and placed on the website canvas. This is to ensure quick access and satisfaction of the visitor.

Design Principles

The vision, personas and demographics suggest that the new design should be simple, clean, professional and at the same time descriptive enough to provide information to the variety of the users visiting the site.

Scope

The Scope of this redesign project includes the content inventory and the content requirements for the overall content of the website. A crawler was run through the files and folders of the website and the results were later categorized according to their respective types. The crawler result show that the D2I website has more than a 100,000 items in terms of files, folders and links. The excel sheet attached below documents the content inventory for D2I's website.



Design Rationale

The strategy and scope sums up the background of the D2I website in terms of the vision and design principles. However, it is important to know the need for this entire project. The design rationale depicts why a redesign is needed for the current website and it can be summed up with the following reasons:

Primary

- Efficient categorization

D2I's website has extensive data and in order to display it in an easily decipherable way, the content needs to be categorized efficiently. The current site has 8 major categories or main menus. That said, there is scope to reduce this number so that not only redundancy is avoided but the data is presented in a simplified manner.

- Easy navigation

The 8 main menu category clickable areas are fairly small when compared to the overall webpage real estate. There is a central row which depicts the main items which is surrounded by additional blocks of information from both the sides. It is important that the redesigned surface provides enough clickable spaces in order to achieve better navigation and hence user experience.

- Professional look

Considering the demographics of the webpage which comprises of users on a technical side, the appearance of the website should be professional. This will include subtle solid colors with IU branding. The overall design should appear simple and clean so that the personality and appearance of the website reflects the vision and purpose of D2I.

- Aesthetics

The graphical user interface will play an important part in reflecting the professional look and at the same time delivering the content in an efficient manner. Although the main purpose of the redesign focuses on categorizing the information available in an easily understandable manner, it is also necessary that the overall look and feel of the website is up to the mark.

- Responsiveness

The website should have a responsive design so that it can be accessed across multiple devices with different resolutions. Responsive design always adds to the overall user experience and with the number and variety of devices used these days, it becomes essential.

Secondary

- Increase social media presence
Considering the wide variety of audience that this particular website will have, it is important to maintain the number of visitors and add new visitors as well. This can be done by adding plug-ins that allow specific posts or sections to be shared across various social media platforms. This will not only increase the reach of the website but also bring some traffic to the website. The social media pages need to be updated as well.
- Improve communication methods
The contact forms and contact information need to be updated. Links can be provided to the email-addresses, photos can be added to the person to be contacted, multiple contacts' information should be provided. It was also noticed that D2I is not yet on the Google map but there is a provision to add new custom places on Google maps.
- Add high-resolution graphics
The website needs to have high-quality images, logos and icons. This not only improves the visual appeal of the site, but also makes the website look more professional and genuine. Adding high quality data visualizations will help as well.
- Improve search engine results
Although not a primary requirement, the search can be done faster and the search results can be displayed in a better way. The rich text for every link of the search results can be more descriptive.

With all the above facets taken care of, the overall quality of the website will improve at a much larger level.

Information Architecture Evaluation

RECOMMENDATIONS

Structure

The D2I homepage consists of at least 12 blocks of information which according to web usability standards is too high. The structure of the homepage should be simple, intuitive at the same time informative enough for the end user. A recommended system proposes the use of 6-8 information blocks so that the focus is on the content itself and not its arrangement. A minimal design approach would thus be recommended.

Categories

Breaking down the information architecture of the website, one can find that the D2I website has a total of 8 main categories which is not a bad number. However, a standard 4-6 main menus is recommended so that the interface looks clutter-free and is easy for the user in terms of registering a number of items at a time in his mind. Also, each categories have sub-categories which are not balanced throughout the hierarchy which provides a lot of scope for improvement.

Labels

The labels used for the categories are simple and intuitive enough and can be re-used in the redesign. This can also ensure that the old users are not lost in the new website looking and searching through newer labels. Also, currently a table that includes labels for D2I's recent updates and additions is not necessary. This table has random labels from different categories and breaks down the organization of the website.

Navigation

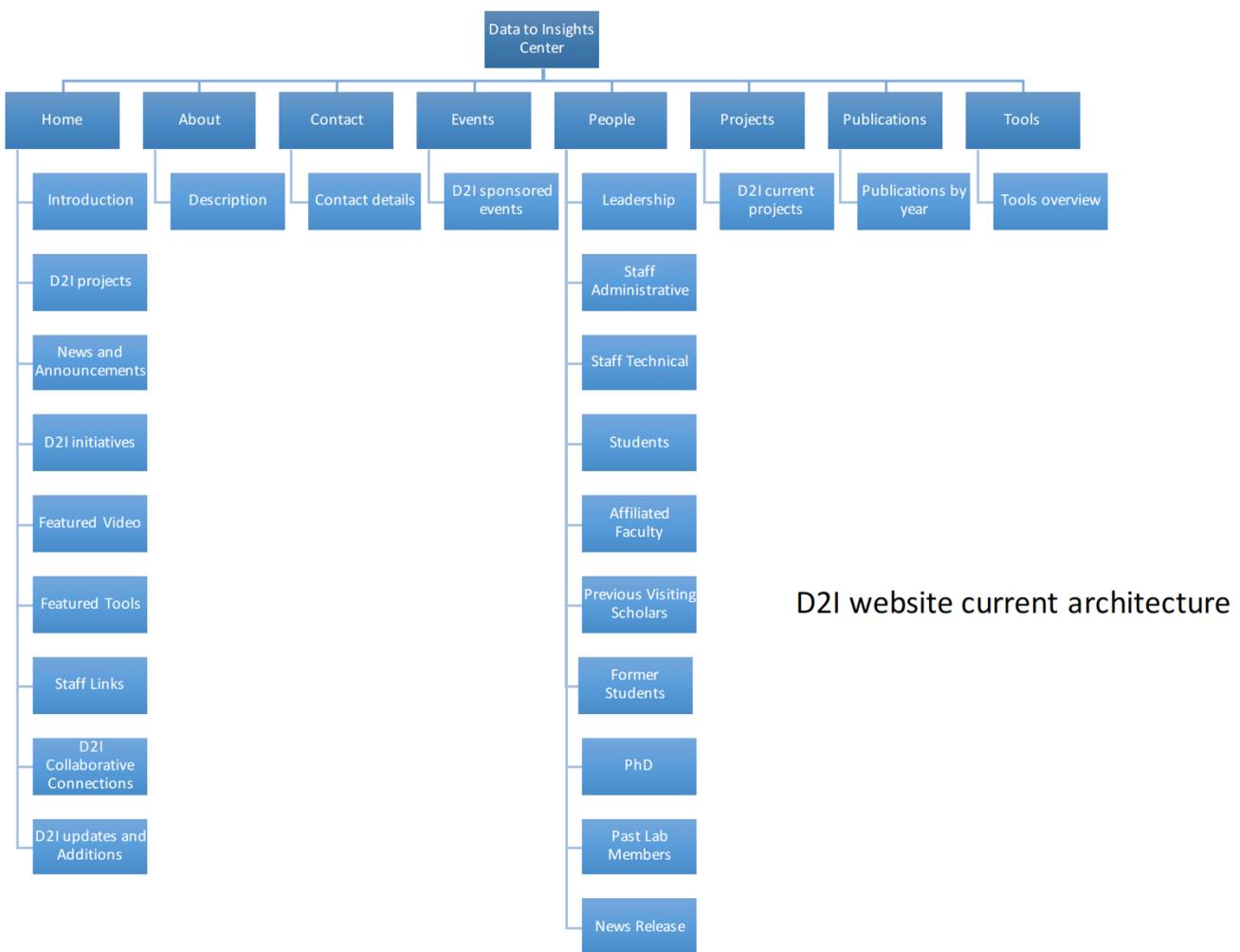
The home page of D2I displays a lot of information. Navigating through at least 12 blocks of information at least on the home page can be quite difficult. There are certain thumbnails with links to other URLs while some open as images. This type of interaction can be confusing. A highlight of all the main categories on the home page is not necessary. A subtle approach of showing only the necessary highlights can be adopted.

SITEMAP

Current sitemap

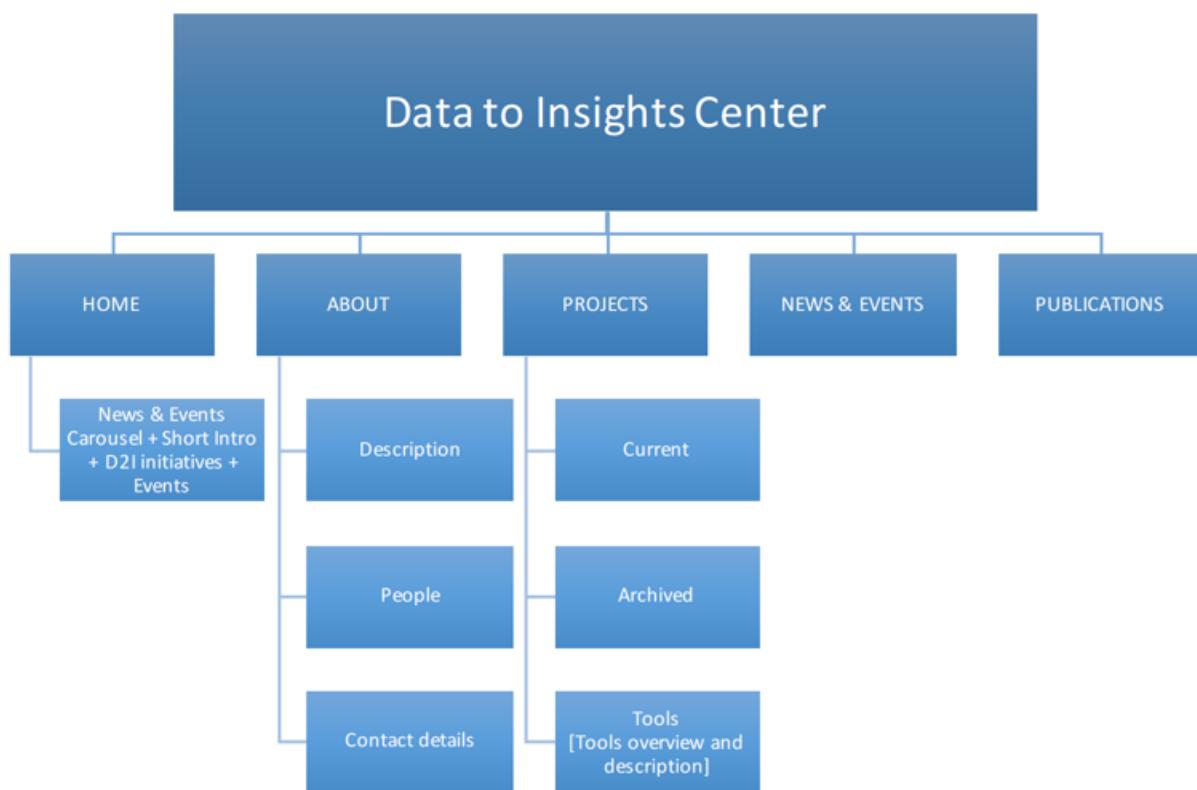
The current sitemap has 8 categories which is not a bad number to have but a recommended number of high level categories is 4 to 6. This is to simplify the amount of information that a user perceives at a time. Some of the categories like 'Tools' and 'Projects' overlap as per their content. Some categories like 'Home' and 'People' have way too many sub-categories.

Categories like 'Contact' and 'Events' on the other hand need to be more descriptive. The overall branching should be well balanced so as to aid the user with a good balance of information specificity and generalization.



Redesigned sitemap

It was decided to break the information architecture and re-classify the same into 5 major categories as shown below. The 'Home' tab will show a carousel of high quality images with linked reports or events, a short bio, some current D2I initiatives and a highlight of upcoming events. The 'About' tab will summarize the description, people in D2I and some important contact details. To avoid the overlap mentioned above, the 'Projects' Tab will cover the current and archived projects and the tools used or created from these projects. 'News and Events' and 'Publications' will be two separate tabs.



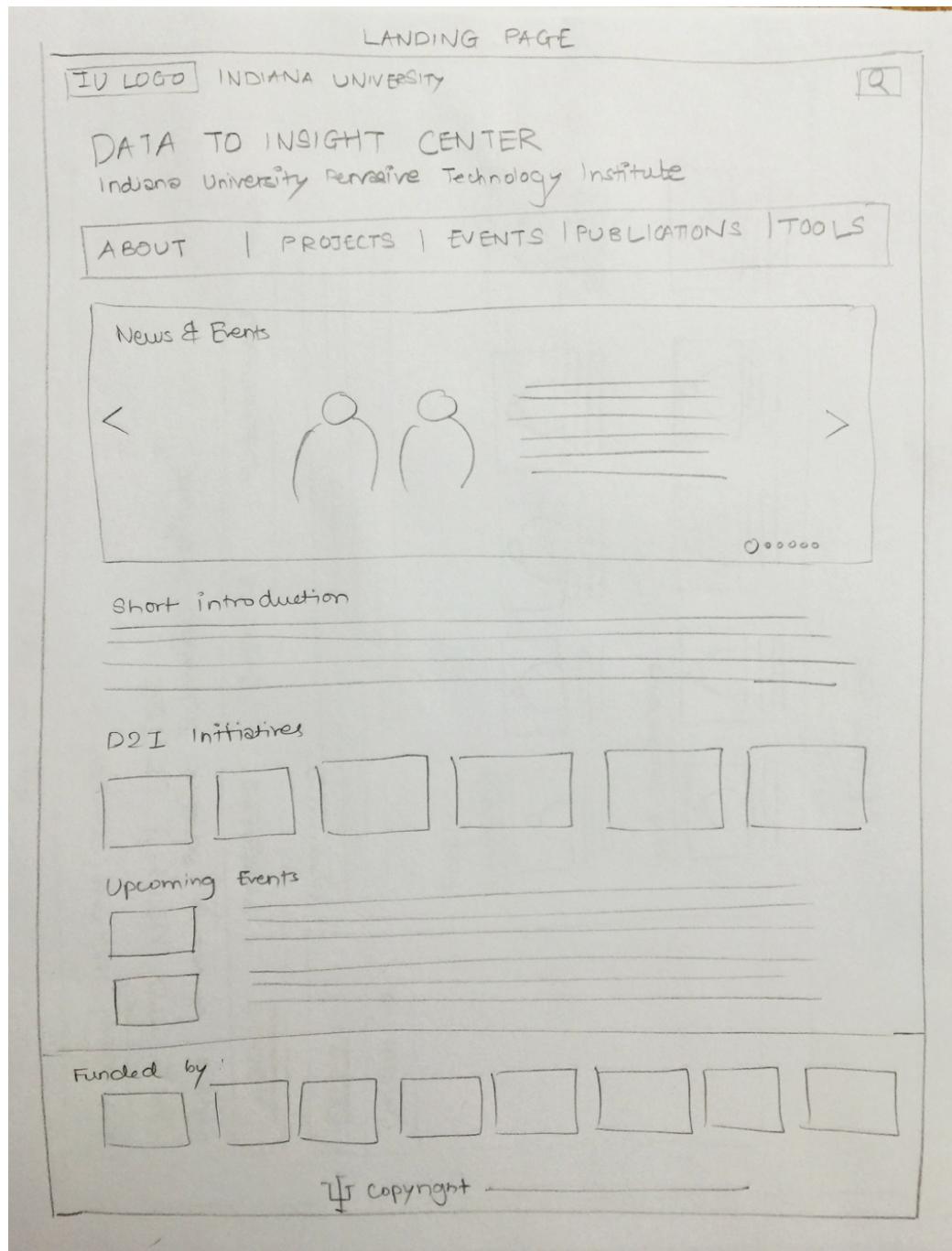
Rationale for redesign

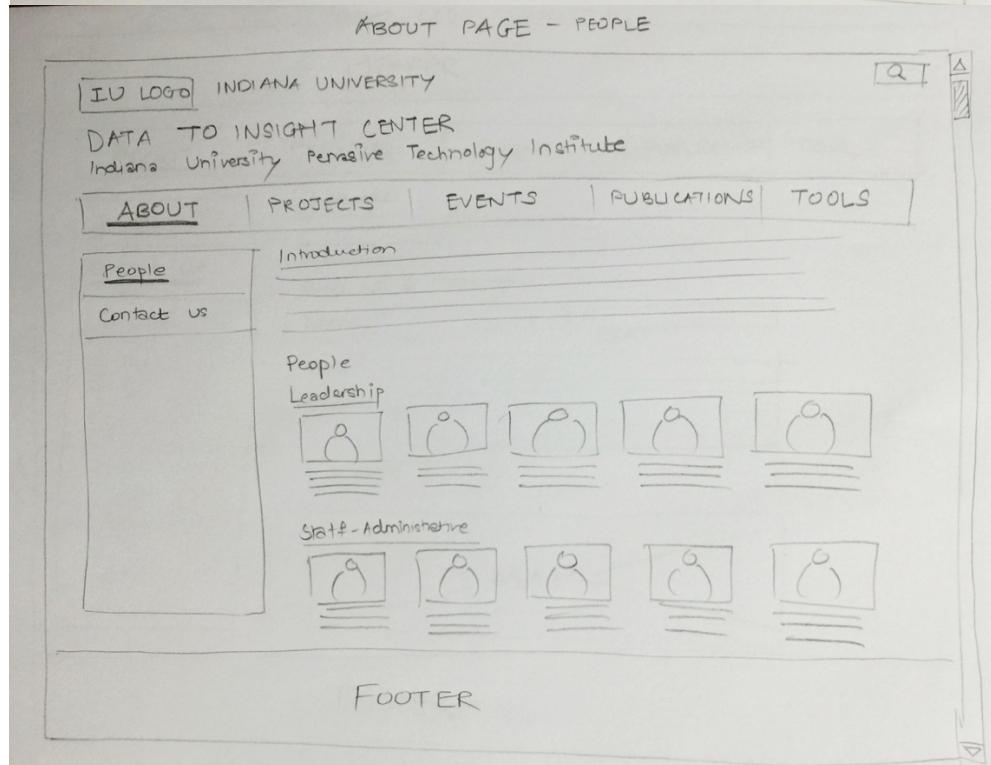
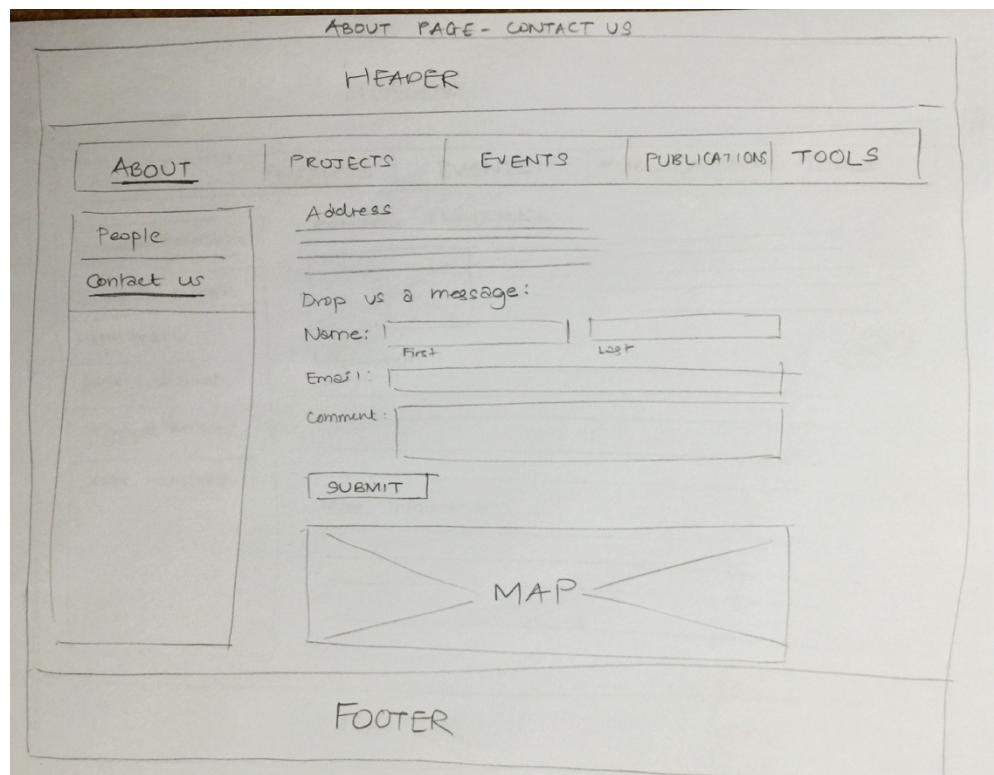
The rationale behind breaking down the information architecture and re-categorizing is to allow chunking of information into small and equal parts so as to help the user register limited information at a time and to facilitate efficient navigation.

Proposed website redesign

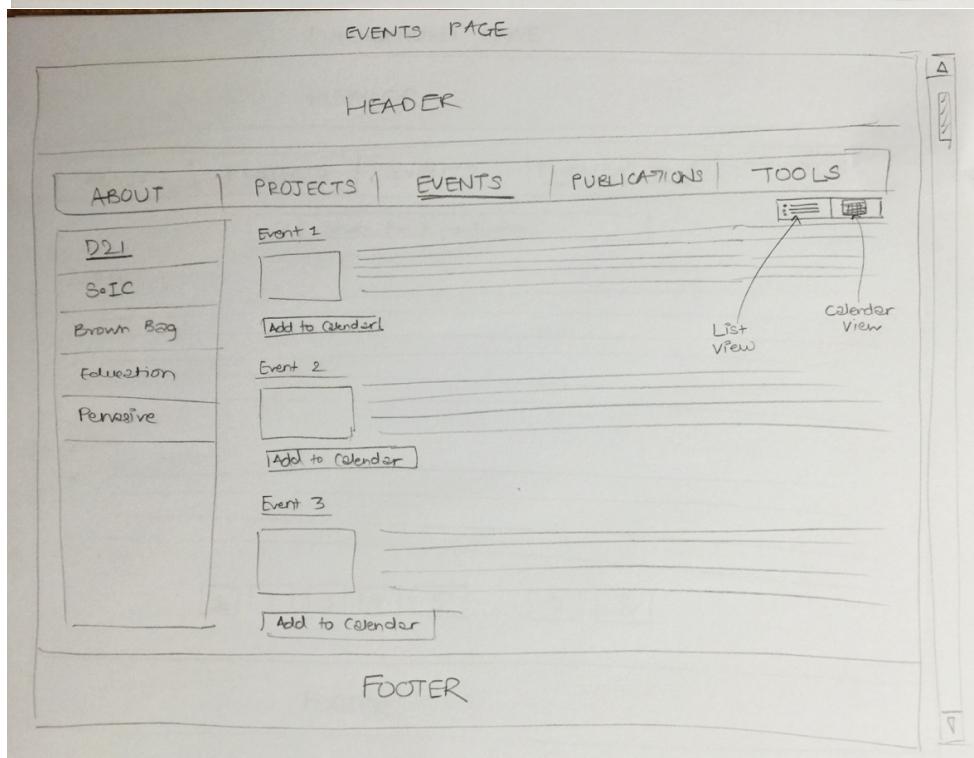
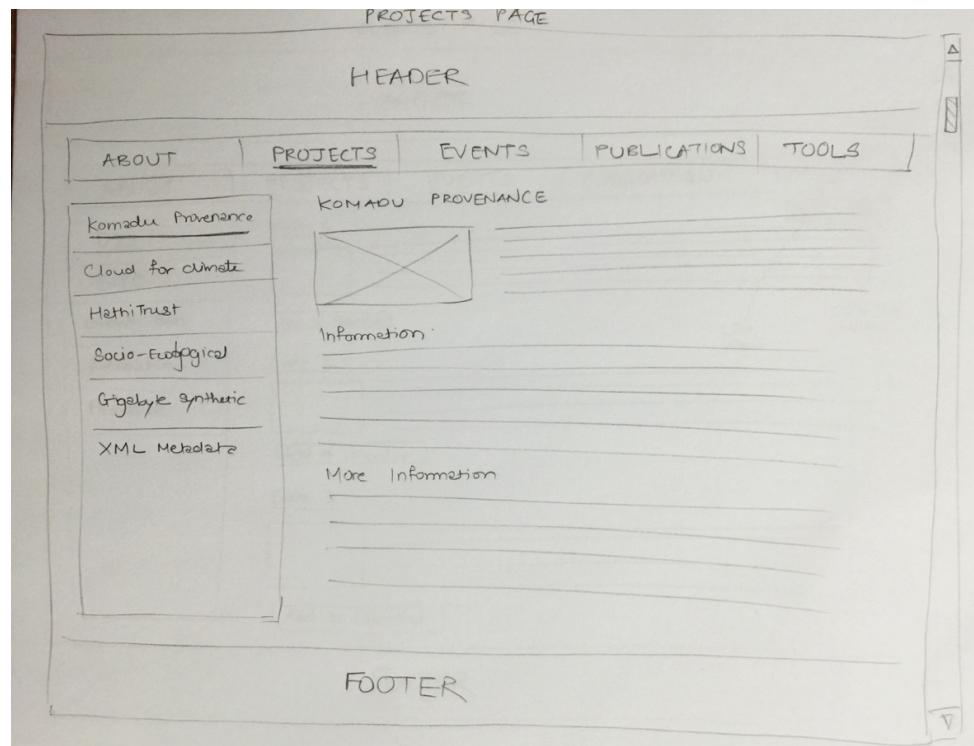
Paper prototypes

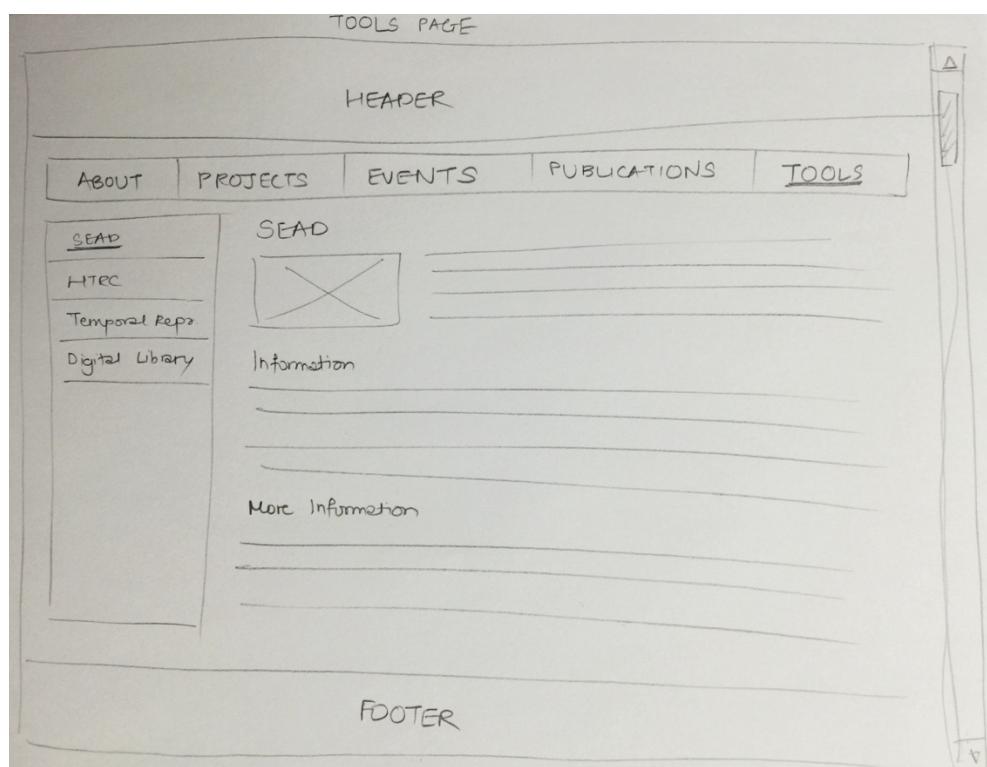
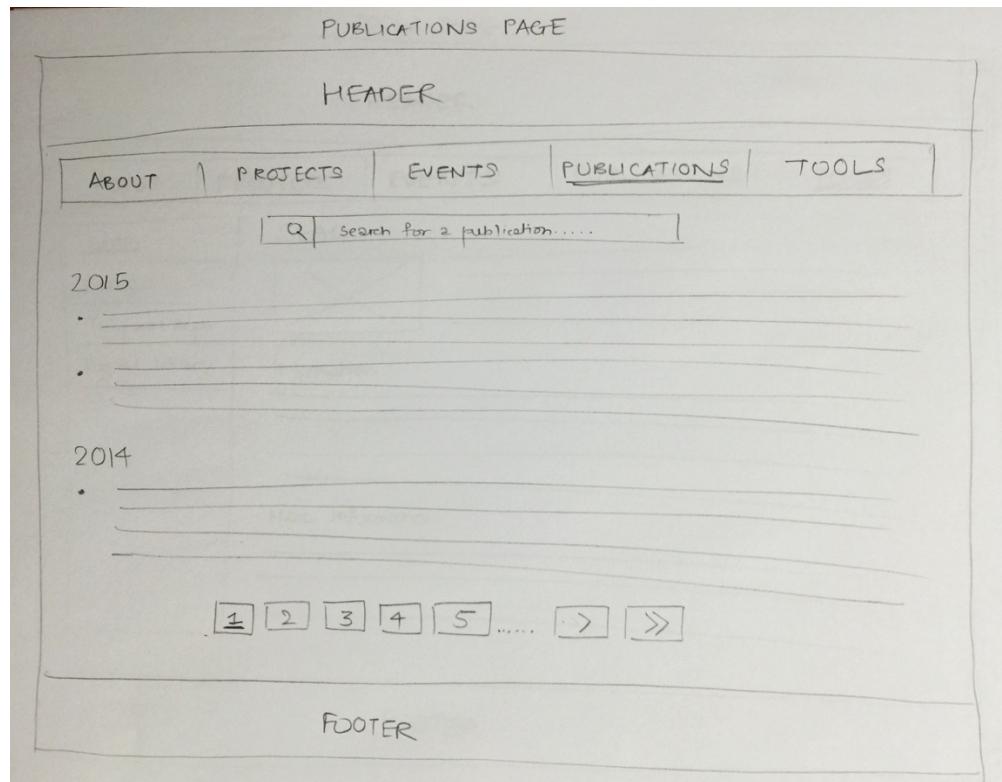
The layout for each of the tabs was sketched out as paper prototypes. The description and rationale for each is described in the respective wireframes in the next section





D2I Website Redesign Document
Indiana University





Wireframes

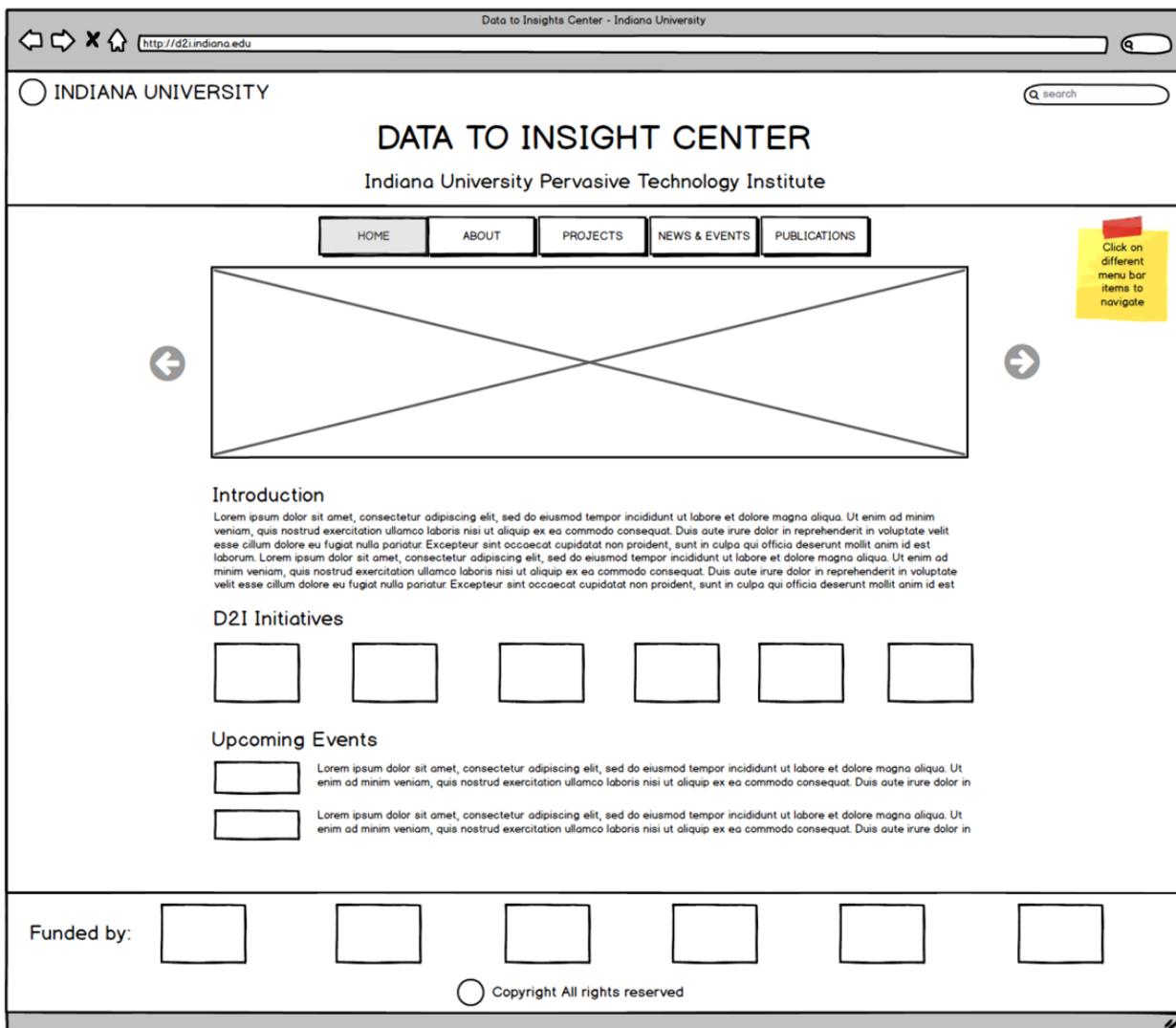
- Home Tab

The homepage will show the five main categories as per the redesigned architecture.

A carousel high-quality images will show current events, developments or other important posts. A short bio will be included along with a list of thumbnails showing D2I initiatives.

A few upcoming events will be highlighted which will show a dynamic list of events so as to keep the website look fresh and updated.

The footer will show a list of thumbnails portraying funding organizations. Additionally, a sitemap can also be included for the same.

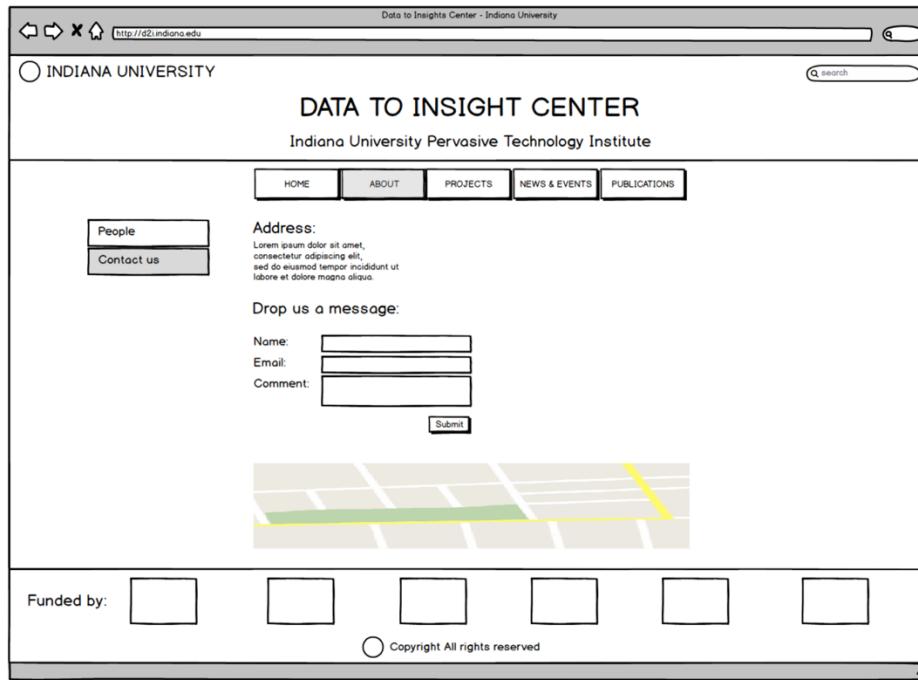
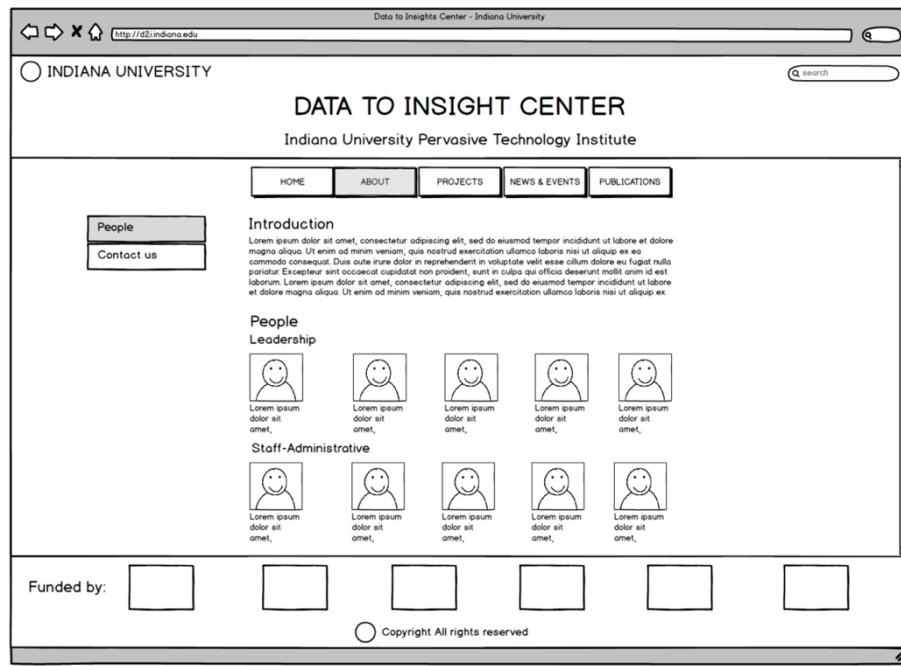


- About Tab

The about tab will have two subcategories:

People: Providing a list of leadership and staff-administrative profiles with a headshot and a short bio for each of them

Contact us: A well laid out list of address, contact information, contact form and a link to the D2I location map.



Projects Tab

The Projects tab is again sub-categorized as Projects and Tools. Each tab lists out the Projects and Tools created, used or related to D2I research with a detailed description for the same. The tabbed approach can be changed to a pagination approach in case the number of projects become to large for such an approach.

The screenshot shows the Indiana University D2I website. The main navigation bar includes links for HOME, ABOUT, PROJECTS, NEWS & EVENTS, and PUBLICATIONS. The PROJECTS link is currently selected. On the left, there are two sections: 'Projects' and 'Tools'. Under 'Projects', the 'Komadu Provenance' project is highlighted. The 'Information' section contains a large image of a document with a large 'X' drawn through it, followed by a block of placeholder text. The 'More information' section also contains placeholder text. At the bottom, there is a 'Funded by:' section with six empty square boxes and a copyright notice.

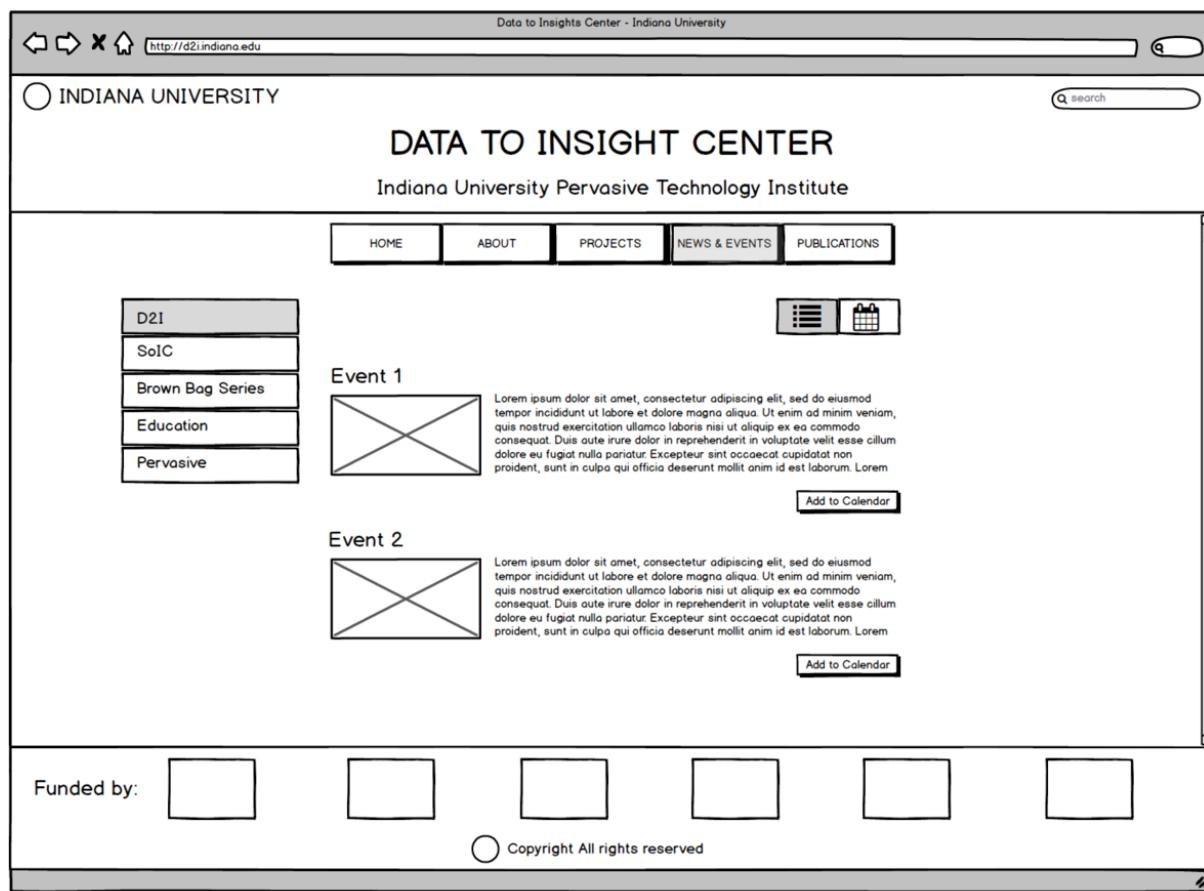
This screenshot shows the same website structure as the previous one, but the 'SEAD' project is now the active item in the 'Projects' section. The 'Information' and 'More information' sections contain placeholder text. The 'Funded by:' section at the bottom has six empty square boxes.

News & Events Tab

This page lists out the upcoming events for D2I. The events are described with a picture wherever possible and a detailed description of the same.

The user will have a choice to view the layout as a list or as a calendar.

The user can add the event directly to his/her calendar in the local system used so that it is synced with the device.



Publications Tab

The publications tab will display a list of publications filtered by year that D2I has published over the years.

The layout will be very simple and clean and will show pagination at the bottom of the page to scroll through the years.

A simple search will also enable the users to do a quick search in finding out the required publication/s.

The wireframe shows a web browser window for the 'Data to Insights Center - Indiana University' website. The header includes a logo for Indiana University, the title 'DATA TO INSIGHT CENTER', and a subtitle 'Indiana University Pervasive Technology Institute'. A navigation menu at the top has links for HOME, ABOUT, PROJECTS, NEWS & EVENTS, and PUBLICATIONS. Below the menu is a search bar with the placeholder 'Search for a publication....'. The main content area displays two sections of publications: '2015' and '2014'. Each section contains a list of five publications, each with a short description. At the bottom of each section is a set of navigation buttons labeled 1, 2, 3, 4, 5, ..., >, and >>. In the footer, there is a 'Funded by:' section with six empty square boxes, and a copyright notice: 'Copyright All rights reserved'.

The complete interactive wireframe file with clickable links for navigation can be found attached below:



Visual Design - Samples

The screenshot shows the homepage of the Data to Insight Center. At the top is a dark red header bar with the Indiana University Bloomington logo and a search icon. Below the header is a large, modern building with a glass facade and a green roof, set against a blue sky with white clouds. A person is walking towards the building from the foreground. A dark red banner across the middle of the page contains the text "SOME INTRO ABOUT OUR CENTER". Below the banner, there are two sections: "NEWS & LATEST SECTION" on the left and "PROJECTS" on the right.

NEWS & LATEST SECTION

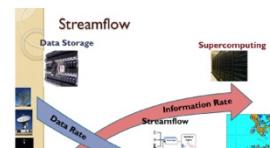


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PROJECTS



RESEARCH CENTER

Our Location:

Communication Services Building
2715 E. 10th St.
Bloomington, IN 47408

Data to Insight Center funded in part by:



FULFILLING *the* PROMISE



Copyright © 2015 The Trustees of Indiana University

Privacy Notice

The wireframe shows the initial layout of the D2I website. At the top is a red header bar with the Indiana University Bloomington logo and a search icon. Below it is a dark blue navigation bar with links for HOME, ABOUT (underlined), PROJECTS, NEWS & LATEST, and PUBLICATION. A sidebar on the left contains 'Current Projects' and 'Archived Projects'. The main content area features two news items: 'RDA Data Share Announces Fellowship Awards' and 'HTRC UnCamp 2015 gets great post!'. Both items include a date, a brief description, and a 'READ MORE >>' link. A horizontal banner at the bottom of the page reads 'FULFILLING the PROMISE'. The footer includes the Indiana University Bloomington logo, copyright information ('Copyright © 2015 The Trustees of Indiana University'), a privacy notice link, and a search icon.

This wireframe shows a revised layout for the D2I website. It features a dark blue header bar with the Indiana University Bloomington logo and a search icon. Below it is a dark blue navigation bar with links for HOME, ABOUT (underlined), PROJECTS, NEWS & LATEST, and PUBLICATION. A sidebar on the left contains 'About', 'People', and 'Contact' links. The main content area is centered and contains a section titled 'About D2I' with text about the center's mission and leadership. Another section discusses the center's interdisciplinary research and engagement with various fields. A horizontal banner at the bottom of the page reads 'FULFILLING the PROMISE'. The footer includes the Indiana University Bloomington logo, copyright information ('Copyright © 2015 The Trustees of Indiana University'), a privacy notice link, and a search icon.

Although these are not the final approved visual designs, these are the combination of the wireframes and skinning and the final product would be similar to these. These layouts also depict the IU theme or branding which is designed as per the IU standards.

Choosing a Content Management System (CMS)

A Content Management System allows to build a website around a framework with required standards and at the same time facilitates management of the same over time. As per the discussions and meetings, the following three CMSs were shortlisted:

IU WCMS

The [IU WCMS](#) is the standard CMS for Indiana University websites. It consists of a standard set of tools for webmasters and designers to build and produce modern, feature-rich web sites. Site managers can also structure intuitive environments where content contributors can create, maintain, and publish web content. The WCMS is available at no cost to all IU departments, campuses, faculty, staff, and to student groups who have a full-time faculty or staff administrative sponsor. WCMS lets webmasters focus on building modern sites, while content contributors create relevant and timely content.

Drupal

[Drupal](#) is one of the most complex and customizable CMS available out there. Drupal is a free and open-source content-management framework written in PHP and distributed under the [GNU General Public License](#). The standard release of Drupal, known as Drupal core, contains basic features common to content management systems. These include user account registration and maintenance, menu management, RSS feeds, taxonomy, page layout customization, and system administration. The Drupal core installation can serve as a simple Web site, a single- or multi-user blog, an Internet forum, or a community Web site providing for user-generated content.

WordPress

[WordPress](#) is one of the simplest and quick-to-learn CMS today. WordPress is a free and open-source content management system (CMS) based on PHP and MySQL. Features include a plugin architecture and a template system. WordPress was used by more than 23.3% of the top 10 million websites as of January 2015. WordPress is the most popular blogging system in use on the Web, at more than 60 million websites.

Based on research and some brainstorming we came up with certain criteria to compare these 3 CMSs against each other. Mentioned on the next page is a table that compares these three CMSs. Each cell for a particular CMS against a particular criteria is highlighted in a specific color. Green represents simple, Yellow is moderate and Orange depicts complex. Based on the table, we were able to select and propose one of the CMSs to be used for D2I's website redesign.

Comparison

	IU WCMS	DRUPAL	WORDPRESS
INSTALLATION	Moderate	Complex	Simple
EASE OF USE	Easy	Moderate	Easy
DASHBOARD USE	Easy	Moderate	Easy
TECHNICAL EXPERTISE	Required	Required	Not Required
PLUG-IN SUPPORT	YES	YES	YES
IU BRANDING	YES	NO	NO
IU TEMPLATES	YES	NO	NO

From the above table, it can be inferred that IU WCMS and Wordpress are good options to go with. However, lack of IU themed templates and IU branding makes IU WCMS more favorable. It is thus recommended that IU WCMS would be the best choice of CMS for the D2I website. In order to know more about IU WCMS, we dug deeper and chalked out the following findings:

IU WCMS

Technical Expertise and User Training

As for IU WCMS, different roles may need to have different levels of technical skills but the overall learning curve is smooth. The editors, those who have control over the content of the website, do not need to be very technical. On IU WCMS, the content is separated from the design, and editors can use the site builder to update or edit text and image content without dealing with the codes, as easy as using WordPress. In fact the biggest advantage of using IU WCMS is all IU web branding elements are provided in the assets folder, so the editors can write content or insert pictures directly in the text editing box and the IU page templates will automatically generate other page elements like main navigation, sub menus, and IU logos.

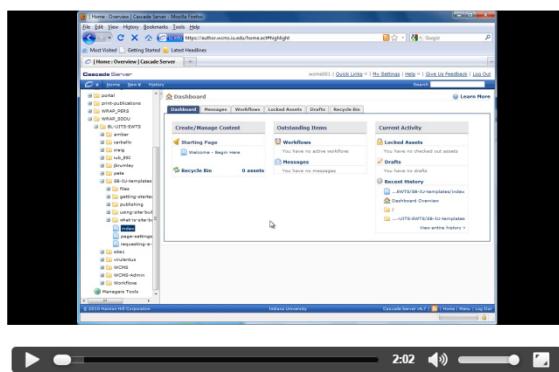
The screenshot shows the IU WCMS Site Builder interface. At the top, there's a navigation bar with links for Home, Site Builder, and Why use Site Builder?. Below the navigation, the main content area is divided into two sections: 'Page Content' and 'Feature Box(es) for this page only (if 3-column layout)'.

Page Content: This section contains a rich text editor toolbar with various formatting options like bold, italic, underline, and alignment. Below the toolbar, the content area displays a paragraph of text about the Data To Insight Center. A status bar at the bottom of this section shows 'Path: span'.

Feature Box(es) for this page only (if 3-column layout): This section includes a configuration panel with fields for 'Active' (set to 'yes') and 'Title'. It also contains a content editor with its own toolbar and a blank content area.

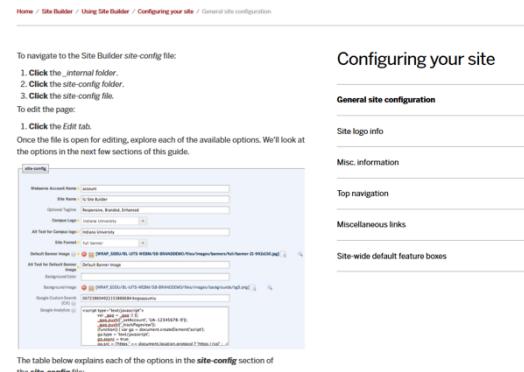
For developers, there are some available help resources for training. At first, users can watch the video tutorials to go over the basic WCMS environment and interface. To learn more about

the structure and the configuration settings, users can refer to the documentation of site builder, which covers every basic feature such as creating pages and folders, creating navigation, and using different sample layouts, of the content management system in detail. The documentation should be the main help resource for developers. Besides, users can always ask specific questions by sending emails to wcmshelp@iu.edu and the IU web team would respond and help, usually within 2 days. Therefore, developers should have enough support when encountering problems.



User Management

We prefer Drupal over WordPress because Drupal is better on user management, especially on setting hierarchies of access. However, in IU WCMS, this can be done easily with their manager tools. IU WCMS provides various tools for user, group, and permission management. A manager of the site can add new users with IU login credentials into their site and set privileges for the users. Different roles may have different levels of privileges. For example, a publisher may not be able to manage user groups, while a contributor can write content but cannot change configurations of the site. To manage the privileges, a manager can create different groups and add users into those groups and each group can have different levels of access.



Use fields below to:

1. select the prefix to which you want to add a new group;
 2. type the name of the suffix for your new group (**you do not need to add the underscore**); and
 3. select a role for the new group.

*** All 3 fields are required**

- All 3 fields are required

BL-INFO-WEB.SBd2L
--select role--

Use the checkboxes below to select which WYSIWYG toolbar options you want your new group to have.

WYSIWYG Toolbar Options:

- Content Formatting
- Text Formatting
- View HTML Source
- Image Insertion
- Table Insertion

create group

Home / Manager Tools / Add New User

The manager tools listed here are currently only functional for web sites using sites.wcms.iu.edu.

If you need to make changes to a site existing on author.wcms.iu.edu you can request a change by using the [Request Legacy Changes](#) form.

Add New User

When adding new users, please be aware of the following:

1. Users need to have a valid IU network id and passphrase.
2. IU group accounts **may not** be added as cascade users.
3. Once a user has been added you need to add that user to one of the groups you manage within cascade. You may do this in one of two ways: [edit the user's group profile](#), or [edit the group's membership](#).
4. Since users may also belong to groups that you do not manage, once added, they may not be deleted. You can, however, restrict their access to only the groups you managed by [editing their group profile](#).

Use the field below to enter the IU network id (username) of the user you wish to add. Remember: IU group accounts **may not** be added as cascade users.

IU network id:

[add new user](#)

Manager Tools

- [Add New User](#)
- [Check Group Access](#)
- [Check User Access](#)
- [Creation of Groups](#)
- [Deletion of Groups](#)
- [Edit User Group Profile](#)
- [Edit Group Membership](#)
- [Edit Access to Site](#)
- [Manage Transports](#)

[Download Site Information](#)

Once we added users and created groups, the manager can also edit group memberships and user group profile with ease. With a list of available users, the manager can assign users to certain groups, or the manager can go to a user profile and assign privileges to that user. Overall, IU WCMS does a great job on user management on both individual and group level. Plus it is easier to follow the IU styles and develop IU looking web pages on IU WCMS, we decided that IU WCMS is more convenient than Drupal.

Edit Group Membership

Use the right and left arrows to edit group membership for user **BL-INFO-WEB.SBd2L_approver**. Available users are in the left box, current users are in the right box. Keep in mind that since you may not remove yourself from #_manager groups, you will not appear as a member of such groups.

Available Users:

echaisso
echarito
eclinda
ecolon
ecord
ecoses
ecrichio
ecurrin
edan
edeerly
edehaan
edelihara

→ longlong

←

Group Role: Approver

Use the checkboxes below to edit the **WYSIWYG toolbar** options:

<input checked="" type="checkbox"/> Content Formatting	<input checked="" type="checkbox"/> Text Formatting	
<input checked="" type="checkbox"/> View HTML Source	<input checked="" type="checkbox"/> Image Insertion	<input checked="" type="checkbox"/> Table Insertion

Edit User Group Profile

Use the right and left arrows to edit group membership for user **longlong**. Available groups are in the left box, current group are in the right box.

Keep in mind that you may not remove yourself from #_manager groups.

Available Groups:

BL-INFO-WEB.SBd2L_approver
BL-INFO-WEB.SBd2L_contributor
BL-INFO-WEB.SBd2L_publisher

→

←

[update longlong's group profile](#)

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