

Comparative Analysis for Wolverine Access Student Center

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INTRODUCTION

In this comparative Analysis we compare the University of Michigan's student self-service application Wolverine Access to other competitors and applications with similar features. Our goal is to evaluate the individual strengths and weaknesses of each system and compare it to Wolverine Access. We will focus to present findings on the main categories "Aesthetics", "Features" and "Usability". Challenging is the fact, that we are evaluating a feature of the product that is not yet rolled out and not available in many competitor products. Furthermore we do not have easy access to competitor products. At the end we summarize our evaluation in a matrix that illustrates our findings of this analysis.

PRODUCT DESCRIPTION

Wolverine Access is the personalized version of the Oracle Campus Solutions suite. It is the Student Administration tool of the University of Michigan that provides tools to manage academic and financial student data. It is implemented and maintained by MAIS. For this project we are focused on the Course Management feature, where students can register and plan classes as well as view degree audits. The new release which will be rolled out for the UofM this fall, combines all these self-service features under one central location called "Student Center". In addition, the new release will have a redesigned interface for Wolverine Access. Our group is evaluating the "planning" part of this application where students will be able to plan their future semesters on a long term basis. The main feature is the ability to plan based on program requirements and track degree progress.

The class planning feature enables students to create semester-based collections of classes. The planning tool will be integrated with the enrollment function and enable students to add the selected courses during registration period. The planning tool supports management of course lists with functionality like "add", "move" and "drop" classes. At the same time the planning tool can access the program requirements and suggest classes to fulfill them. While monitoring academic progress the student will be able to select classes to satisfy specific specialization or program requirements.

USER DESCRIPTION

The users of the systems we evaluate are students, that are familiar with the Internet and go online to perform self service task on a regular basis using this application. They might have used other student self service application from previous colleges. Their goal in addition to other administrative tasks is to plan courses for this and following semesters.

COMPETITION

The competition of Oracle/PeopleSoft that we identified and that we could get access to in such a short time to evaluate the interface is used by Central Michigan University (CMU), Michigan State University (MSU) and Miami University (DARS).

COMPARATIVE ANALYSIS

For this comparative analysis, competitor's strengths and weaknesses will be evaluated in three major areas: aesthetics, usability, and functionality.

AESTHETICS

MSU

STRENGTHS

- Visualize degree colors contrast well. They use a lot of red, blues and greens. [Graphical Enhancement]
- No excessive image use. They only use images in the visualize degree section. [Graphical Enhancement]
- Buttons and links are obviously clickable. [Links and Buttons]
- Links are very noticeable. They are red and underlined. [Links and Buttons]
- Color scheme is consistent with school colors (green and white) and very legible. [Color Scheme]
- The page is very uniform; the navigation always stays in the same place. [Flow and Consistency]

WEAKNESSES

- Use of drop down menus makes actions unclear. [Navigation]
- Vague navigation descriptions do not inform the user accurately about destinations. [Navigation]
- The add course button is a gif image, and is extremely small, which is completely inconsistent with the rest of the page. [Navigation]
- Visualize degree is cluttered and hard to read. [Graphical Enhancement]
- Hyperlinks are red, this is an uncommon design choice. [Links and Buttons]

CMU

STRENGTHS

- Color scheme is very nice to look at, as the colors contrast nicely at and it sticks to the school colors well (maroon and yellow). [Color Scheme]
- Main left navigation is very descriptive. [Navigation]
- Sleek looking icons enhance navigation clarity. [Graphical Enhancement]
- Top banner breaks up monotony of site. [Graphical Enhancement]
- Main page is very consistent. [Flow and Consistency]

WEAKNESSES

- External pages are inconsistent; they don't contain the same navigation. [Navigation] [Flow and Consistency]
- Hyperlinks are poorly distinguished; they are black and not underlined. [Links and Buttons]
- Interactive elements are not consistently in the same style. [Flow and Consistency]

DARS

STRENGTHS

- Navigation is clear, simple and effective, because there is only one link on the top of the page. [Navigation]
- Uses graphics very well including bar and pie charts. [Graphical Enhancement]
- Buttons are obviously clickable, and hyperlinks are underlined and blue. [Links and Buttons] [Flow and Consistency]
- Colors contrast nicely in graphs and charts, these have nice contrasting pastel blues, pinks and greens. [Color Scheme]
- Page legend increases clarity of site. [Flow and Consistency]

WEAKNESSES

- Legend is different font than the rest of the page; it is "Times New Roman" while the rest of the page is "Arial". [Flow and Consistency]
- Color scheme of the overall site is terrible; using an off-white background with red and green text for requirements (see figure 4). [Color Scheme]

WOLVERINE ACCESS

STRENGTHS

- Navigation legible and consistent. [Navigation] [Flow and Consistency]
- Color scheme is consistent across all pages (pastel blue, navy and pastel green. [Color Scheme] [Flow and Consistency]
- Buttons and links are obviously clickable and worded well; links are underlined and blue. [Links and Buttons]

WEAKNESSES

- Color scheme is broken as they attempt to stick to school colors but there is no maize, instead they use a pastel green (see figure 4). [Color Scheme]
- Drop down indicators on navigation are unclear; they are sideways triangles (**see screen shot**). [Graphical Enhancement]
- Visual indicators for course status are poorly represented; a blue square for a closed course, and a yellow triangle for waitlist. [Graphical Enhancement]
- Yellow triangle is re-used for waitlist and for course in progress. [Flow and Consistency]
- The font for navigation and content is too small and hard to read. [Flow and Consistency]

AESTHETICS CONCLUSION

Aesthetically, the new Wolverine Access stacks up well against the competition. The overall look and feel of Wolverine Access is consistent in terms of both colors scheme and navigation location. There were, however, a few curiously colored pale green buttons that should have instead been maize to maintain consistency. Its navigation was superior to that of MSU and CMU in terms of both consistency and clarity. The color scheme of Wolverine Access is much more aesthetically pleasing than that of DARS, although CMU's was clearly on top. The links and buttons on Wolverine Access were very clearly clickable, much more so than CMU's black and non-underlined hyperlinks. DARS's buttons were a little easier to look at, and were a bit simpler than Wolverine's.

Wolverine Access measured up well overall and the only site that was an overall better site aesthetically was DARS, because of it performed well in everything except color scheme, it was a bit cleaner and used less redundant items than Wolverine Access which made it flow nicely.

USABILITY

DARS

STRENGTHS

- Very visual interface helps illustrate complex content and requirements with the help of symbols charts and colors. [Interaction]
- Text links are clear and distinct from content. [Interaction]
- Breadcrumbs indicate where user is at any given point. [Interaction]
- Controls help the user to drill down in requirement details and different reports help understand content. [Ease of Use]
- Content can be collapsed and expanded using single button. [Ease of Use]
- Text is resizable, which enables visually impaired users to scale the text up. [Accessibility]
- Pages are legible with disabled style sheets. [Accessibility]
- Pages are cross browser compatible in Internet Explorer, Firefox and Safari. [Accessibility]

WEAKNESSES

- Interaction with visuals like charts is not always clear, mouse pointer misleading and not always indication for link. [Interaction]
- Print page does not print visual charts. [Ease of use]
- No help available for novice users. [Ease of use]
- Symbol legend explaining symbols and icons only available on first page. [Ease of use]
- Page does not work without JavaScript enabled. [Accessibility]
- Navigation through requirements is only possible using visual charts. [Accessibility]
- Drop down menus are mostly unorganized and unordered. [Ease of use]

CMU

STRENGTHS

- Very simple and clean interface with task oriented navigation along one path. [Interaction]
- Error messages help understand problems with submission of forms and required fields. [Interaction]
- Lengthy requirements page is collapsed by default, which improves usability. [Ease of Use]
- Content can be filtered using dropdown menus to query only requested data. [Ease of Use]
- Text is resizable, which enables visually impaired users to scale the text up. [Accessibility]
- Page still legible with disabled style sheets and works without JavaScript. [Accessibility]

WEAKNESSES

- Link styles are hard to distinguish from content and they change in between pages which prevents recognition. [Interaction]
- No symbols or icons are used to indicate interactive elements or tasks. [Interaction]
- Help system is not helpful since it is targeted to SharePoint developers. [Ease of Use]
- No breadcrumbs that indicate system status and where the user is. [Ease of Use]
- Each page opens in new window, which removes a persistent global navigation and reduces user control and freedom. [Ease of Use]
- Repetitive tasks to extend each collapsed requirements cannot be extended with one click. [Ease of Use]
- Portal queries take very long and activity is not indicated visually. [Ease of Use]
- Long tables are not paginated. [Ease of Use]
- The page is only limited cross browser compatible, portal not in Safari. [Accessibility]

MSU

STRENGTHS

- Simple minimalistic and clean interface. [Interaction]

- Links and buttons are easy to identify and distinct from content. [Interaction]
- Good use of symbols and colors to explain requirements. [Interaction]
- Very extensive help page for novice users. [Interaction]
- Requirements can be filtered with different levels of detail, reduces the page content. [Ease of Use]
- Long pages are paginated and content can be filtered using dropdown menus. [Ease of Use]
- Text is resizable, which enables visually impaired users to scale the text up. [Accessibility]
- Page still legible with disabled style sheets and works without JavaScript. [Accessibility]

WEAKNESSES

- Some interactive elements deviate from general style and are hard to read due to extremely small font. [Interaction]
- No use of icons for common tasks. [Interaction]
- The items in main navigation are not clickable, only open submenus after hovering over them which hides functionality from user and requires extra step. [Interaction]
- Pop-ups open for course details, which can be confusing to user. [Ease of Use]
- Visualization is not easy to use for users. [Ease of Use]
- Can only be used by undergraduate students. [Accessibility]
- Visualization of requirements requires Java. [Accessibility]

WOLVERINE ACCESS

STRENGTHS

- The system status is visible with permanent global and primary tab navigation. [Interaction]
- User can navigate to other parts of the system at any time by using the global or primary navigation. [Ease of Use]
- Interactive elements are easy to identify due to consistent color scheme. [Interaction]
- The use of icons helps identify common tasks such as delete. [Interaction]
- Symbols were used to illustrate states such as “open, closed and waitlist”. [Interaction]
- Delete buttons are held in blue which blends in with the content to make them less prominent and prevents errors. [Ease of Use]
- Interactive buttons have very good “alt tags”, which reveal more information about the expected behavior of the system. [Interaction]
- Requirements are collapsible and provide very detailed information. [Ease of Use]
- Using select boxes, the move task can be performed for multiple items at a time. [Ease of Use]
- Decent performance and page load times are visualized with a “processing” display at the top to indicate activity. [Ease of Use]
- Long pages are paginated or sorted and subdivided by alphabet. [Ease of Use]
- Interface uses common terms that help match the system to information and processes in the real world like “Enroll”, “My Planner”, “Course Catalog” and “Shopping cart”. [Ease of Use]
- Text is resizable, which enables visually impaired users to scale the text up. [Accessibility]
- Page still legible with disabled style sheets and it is cross browser compatible in Firefox, Safari and Internet Explorer. [Accessibility]

WEAKNESSES

- The style and interaction of navigation tabs is not very consistent with other online applications. [Interaction]
- Satisfied and un-satisfied requirements are not visually distinguished using colors or symbols. [Ease of Use]
- The look and feel of buttons deviates from other web applications. [Interaction]
- Missing breadcrumb to identify where the user is and visualize the system state. [Ease of Use]
- No help or documentation is available for novice users. [Ease of Use]
- Lengthy requirements page opens expanded at first which is confusing. [Ease of Use]
- Collapsing of requirements is repetitive, no button to collapse/expand all items at once. [Ease of Use]
- Some tasks can only be performed on one item at a time, such as delete which makes it repetitive. [Ease of Use]

of Use]

- Page titles are not unified enough and redundant with other elements on the page. [Ease of Use]
- The color scheme for text is not very accessible and some combinations of blue text on blue background failed the color contrast analysis. [Accessibility]
- Page will not work without JavaScript enabled. [Accessibility]

USABILITY CONCLUSION

All evaluated systems have their strengths and weaknesses. In today's environments, where the choice of client platforms is diverse, accessibility is of high importance to ensure that content can be displayed to every user. With changing devices, robust and valid websites are necessary to guarantee functionality. The evaluated systems differ in terms of this characteristic. Among the competitors, MSU implements the most stable code whereas Oracle's is lacking enough color contrast with its color scheme and does not work without having JavaScript enabled on client browsers. The systems have very different approaches to getting the job done, but the overall ease of use is comparably good since students will use this system exclusively and on a fairly regular basis once enrolled in a program. CMU is integrating different subsystems with different styles and interfaces which reduces the overall ease of use. Whereas the experience of Oracle in developing integrated systems can be seen by the straightforward and simple design that lets students perform their tasks.

In the third category MSU is lacking an essential simple navigation to identify and perform simple tasks. Again, Oracle is leading the evaluation in terms of Interaction with its consistent and user friendly interface. Repeating tasks are easy to perform, the navigation leads the student to his or her goals and actions are acknowledged with feedback.

FUNCTIONALITY

DARS

STRENGTHS

- "Add" or "Remove" map well to anticipated function to add or remove courses from "Course Cart." [Expected Action]
- Some charts of degree fulfillment are clickable. [Expected Action]
- Each subsection in the list of degree requirements is collapsible. [Helpful Features]
- Little or no function overlap. [Function Duplicity]
- Seeing outstanding requirements is simple. [Task Clarity]
- Links to course information are available where appropriate. [Task Clarity]
- Provides various degree fulfillment visualizations (see figure 4). [Helpful Features]
- Provides "Printer Friendly" documents. [Helpful Features]

WEAKNESSES

- Only some charts of degree fulfillment are click-able. [Expected Action]
- "Move to Planned Courses" function indicates the ability to send a course directly to "Planned Courses," but this is not the case; it must first be added to the "Course Cart" then transferred to "Planned Courses." [Expected Action]
- Lack of consistency in course number click destination. [Expected Action]
- Planned courses are not reflected in degree fulfillment charts despite the presence of a color assigned to them in the legend. [Task Clarity]
- There is little to no benefit of adding courses to "Planned Courses" since they do not interact with the audit. [Task Clarity]

CMU

STRENGTHS

- Displaying degree requirements is simple. [Task Clarity]
- Degree requirements, course descriptions, and an assortment of other items are in a collapsible list. [Helpful Features]
- Searchable course listings. [Helpful Features]

WEAKNESSES

- Can not click on course name or number for course information when searching. [Expected Action]
- Academic bulletin navigation does not perform as expected when browsing selected degree, subject, or department; takes you back to a general listing instead of continuing current browsing trend. [Expected Action]
- "Personalize Class Schedule" and "Personalize Course History" do not actually allow the user to personalize each other those items; simply puts the user's name on the top of either list. [Expected Action]
- "View My Grades" and "View Course History" show the same information but in a different format. [Function Duplicity]
- No degree progress tool. [Task Clarity]
- No interaction between course bulletins and course registration. [Task Clarity]
- There is no academic planning tool. [Task Clarity]
- You need to know the department or course number to search for a course; no keyword search. [Helpful Features]

MSU

STRENGTHS

- Degree visualization has clickable course which show you course information. [Expected Action]
- Course name and numbers all lead to course descriptions and information. [Expected Action]
- Degree completeness can be extrapolated from degree visualization or degree audit report. [Task Clarity]
- Ability to add courses to "selected courses" to be counted towards "courses in progress" in degree audit. [Task Clarity]
- Ability to search for courses that will fulfill outstanding requirements. [Task Clarity]
- Degree completeness can be viewed in a number of different ways: Full Report with Course Status; Outstanding Requirements Report; Short Progress Report. [Helpful Features]
- Has degree visualization feature. [Helpful Features]
- Provides "Printer Friendly" documents. [Helpful Features]
- Searchable course listings. [Helpful Features]

WEAKNESSES

- "Course List" only displays courses taken by the student; expecting full course list. [Expected Action]
- There is a "version" drop down box in the degree audit that shows different fulfilled requirements for difference selection, however the purpose of this function it not at all clear. [Expected Action]
- There is no academic planning tool. [Task Clarity]

WOLVERINE ACCESS

STRENGTHS

- Ability to sort column contents in any table. [Expected Action]
- Clicking on course names or number brings you to a course information page. [Expected Action]
- Has an academic planning tool which allows students to plan course far in advance. [Task Clarity]
- Ability to see outstanding course requirements. [Task Clarity]
- Ability to add courses to planner from course listing. [Task Clarity]
- Some hierarchical items are collapsible. [Helpful Features]

WEAKNESSES

- There are many, many ways to get to "My Planner" : "My planner" link at the bottom of the page; "Plan" link at the bottom of the page; "My planner" tab at the top of the page; "My planner" link in the left navigation; in some case "back to My Planner" link at the top of the page. [Function Duplicity]
- Multiple ways to delete but only one way to move courses. [Function Duplicity]
- Clicking a course name or "yes" for a prerequisite in the "My Planner" tool takes you to the same information. [Function Duplicity]
- If a user changes sections of the site using the navigation in the right pane, the section change is not reflected in the left navigation. [Task Clarity]
- In some cases, if there is only one element in the department listing "Browse Course Catalogue," a check box to add it to the planner does not appear next to it. [Task Clarity]
- For an unknown reason, some courses are not able to be added to the planner from the "Browse Course Catalogue" function. [Task Clarity]
- Course listings are not searchable; must browse alphabetically. [Helpful Features]
- There is the functionality to sort the "select" column in the "Browse Course Catalogue" but there's no reason you'd need to order the fields by which ones you've selected. [Helpful Features]
- Items already in the planner still display "add to planner" button in course detail and still confirm addition of the course to the planner when added multiple times. [Helpful Features]

FUNCTIONALITY CONCLUSION

Much of the functionality offered by the new Wolverine Access is unique among its competitors and was thus difficult to compare them. Nonetheless, all the products were similar enough to evaluate them based on four criteria: does a function perform an expected action; does the solution elicit duplicate functionality; is it clear what functions need to be performed to complete a task; does the software provide features that support overall functionality. By addressing these questions a functionality comparison was conducted.

For the first category, "Expected Action," Wolverine access performed very well by providing accurate function titles and making many text labels function intuitively. Unfortunately, the system did not fair so well in the category of "Function Duplicity;" Wolverine access provides as many as six links to get the "My Planner" tool on a given page. This trend of duplicate functionality was observed a number of times throughout the system while both MSU and DARS were able to maintain sufficient functionality without such redundancy. Both MSU and Wolverine Access scored high in "Task Clarity" adequately and effectively providing pathways to relevant functions; both systems had excellent functionality to display of outstanding course requirements. DARS and MSU tied for the top spot in terms of "Helpful Features," by providing stunning and useful visualization of degree progress, something which both CMU and Wolverine Access lacked. The combination of this visualization functionality and low redundancy makes MSU's system the top competitor in terms of functionality.

	Oracle	MSU	CMU	DARS
Aesthetics				
Navigation	4	2	3	5
Graphical Enhancement	3	3	4	5
Color Scheme	4	4	5	2
Links & Buttons	5	3	3	5
Flow & Consistency	4	4	2	4
Total	4	3.2	3.4	4.2

	Oracle	MSU	CMU	DARS
Usability				
Interface	5	2	3	4
Ease of Use	4	3	2	4
Accessibility	2	4	3	2
Total	3.6	3	2.7	3.4

	Oracle	MSU	CMU	DARS
Functionality				
Expected Action	5	4	2	3
Function Duplicity	1	5	3	5
Task Clarity	4	4	1	2
Helpful Features	3	5	3	5
Total	3.3	4.6	2.3	3.8

CONCLUSION



With an overall average score of 3.83 the DARS system proves to be the leader among this field of competitors. The useful features, degree of ease of use, and an aesthetically appealing design were the main elements contributing to this system's rise to the top. Wolverine access fell short of DARS in a few key areas: Navigation, Graphical Enhancement, Function Duplicity, and helpful features. However, since the new Wolverine Access is still in the development stages there is still a chance to improve in these areas and be the leaders and the best.

REFERENCES

Kuniavsky, Mike (2003). *Observing the user experience: a practitioner's guide to user research*. San Francisco, CA: : Morgan Kaufmann Publishers.

Figure 1 - UofM, Wolverine Access, Oracle/PeopleSoft Student Self-Services

The screenshot displays the Wolverine Access interface for a student named Ira Leibowitz. On the left is a 'Menu' with various options like 'My Favorites', 'Self Service', and 'Academic Planning'. The main content area includes a search bar, navigation buttons for 'Search', 'Plan', 'Enroll', and 'My Academics', and a 'My Planner' section. Under 'My Planner', there are buttons for 'Add courses to Planner using: BROWSE COURSE CATALOG' and 'PLAN BY MY REQUIREMENTS'. Below this is a table of 'Unassigned Courses':

Select	Course	Description	Prereq	Units	Typically Offered	Delete
<input type="checkbox"/>	ACCT 100	General Accounting	yes	1.00	Fall, Spring	
<input type="checkbox"/>	ACCT 556	Mgt Accounting		3.00	Spring	
<input type="checkbox"/>	ACCT 621	Corp Income Tax		3.00	Spring	
<input type="checkbox"/>	ACCT 630	Auditing	yes	3.00	Fall	

At the bottom of the table, there is a 'Move selected courses to Term' dropdown and a 'move' button. Navigation links for 'Search', 'Plan', 'Enroll', and 'My Academics' are at the bottom of the page.

Figure 2 - MSU, Degree Navigator, DAG

The screenshot shows the Michigan State University Degree Navigator (DAG) interface. At the top, it says 'Michigan State University' and 'The World Wide Web Degree Navigator, Version 4.0.4.4'. The main section is titled 'SHORT PROGRESS REPORT, 2/7/2008' for a 'Sample Student' with ID A89898989. It reports 'Completed Credits: 120 of 120' and 'Completed Requirements: 19 of 22'. A progress chart shows '120 / 120' with a full bar. Below the chart is a 'Requirements' list:

- Requirement 1: University Tier I Writing (ATL150) - This requirement is (will be) satisfied.
- Requirement 2: University Mathematics (MTHROMT) - 2 more courses are needed to satisfy this requirement.
- Requirement 3: University IAH201 - IAH210 (IAH201) - This requirement is (will be) satisfied.
- Requirement 4: University IAH211 or higher (IAH211B) - This requirement is (will be) satisfied.

On the right side, there is a 'Profile' window showing a 'Reuse' diagram for a 'Sample Student' with 'ACC230 Survey of Acc Concepts' and 'SS04'. The diagram consists of various course icons (e.g., Mixed, Intern, Ag&Nat, Elective, EC, ANR, Inv_Res, MTH, ATL) connected by lines, representing a degree path. A 'Packaging, BS 0405 (120 credits)' label is at the bottom of the diagram.

Figure 3 - CMU, CMU Portal, SharePoint



Figure 4 - Miami University, DARS, Darwin

