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Technology Consulting in the Community

Spring 2016

Priyank Mehta
CISV Pittsburgh

Final Consulting Report

**Carnegie Mellon University
Pittsburgh, Pennsylvania
www.cmu.edu/tcinc**

Executive Summary

Student Consultant, Priyank Mehta
Community Partner, Ms. Jennifer Burns

I. About the Organization

CISV is a global community of dedicated volunteers creating opportunities for people around the world to experience the diversity across different cultures through their educational programs. CISV was founded by Dr. Doris Allen in the year 1950 with a belief that peace is possible through friendship and that a real difference can be made by starting with children. CISV exists at international, national and local levels and has presence in over 200 different cities across 60 different countries.

Friendship, Inclusiveness, Enthusiasm, Engagement, Cooperation forms the core values of CISV

CISV Pittsburgh, founded in the year 1989, is a local chapter of CISV and is run and managed by a board of committee members comprising of 20 dedicated volunteers. CISV Pittsburgh organizes and participates in various monthly activities and about 5 different major annual activities such as Village, Interchange, Step-Up, Youth meeting and Seminar camp which spans across 8 to 28 days in different countries.

The website for CISV Pittsburgh along with other local chapters of USA, is hosted on a server which is maintained by CISV USA. CISV USA has one full-time employee working as an IT Manager who provides continuous support related to hosting to all the local chapters of CISV USA.

II. Implementation of a Content Management System for the improved user-interface and better management of the website

CISV Pittsburgh maintains a website which is the primary source of communication and interaction between the participants and CISV. CISV Pittsburgh does not possess technological capability to independently update information on its current website and therefore with some external help, updates its website for about 4 times a year to publish information about the upcoming programs.

The activity to update any information on the website creates a bottleneck for the organization as it has to depend on an external entity which brings uncertainty in the process. Several work hours of committee members are wasted every year behind the co-ordination and communication with the external entity to make even a small update in the website, which could be utilized otherwise for other important tasks such as planning events, communication, fund raising, etc.

By implementing a content management system, CISV Pittsburgh will not have to rely on any external entity to manage their website and therefore the members can focus on other important tasks in the organization which will ultimately improve the experience of the participants.

III. Outcomes

The implementation of the Content Management System consisted of several major tasks and milestones such as installation of WordPress on the server, selection and implementation of a Theme and migration of content from the old website.

1. Installation of WordPress: WordPress, due to its convenience and large marketplace for plugins was chosen to be implemented as a CMS for CISV Pittsburgh's website. The IT manager for the CISV USA server installed WordPress and thereafter provided administrator access to further build the website.

2. Implementation of Theme: Multiple themes were evaluated based on the functional and non-functional requirements of the website and a trial version of Agama Pro was installed. The trial version was tested for 4 days and then Ms. Jennifer Burns purchased the premium version of the theme which is now implemented in the website. The premium version of the theme also provides a one year of support to make any customizations or help in implementation of the theme.

3. Migration of content: This activity involved transferring content from the old website to the new website. The community partner Ms. Jennifer Burns, after receiving training from the student consultant, herself migrated all the content from the old website to the new website. The new website consists of 37 pages as opposed to 30 pages in the old website.

IV. Recommendations

Use latest technology and software products to make all the admin process simple so that the volunteers can dedicate their efforts to improve the experience of the participants and to make the execution of other processes smooth and efficient.

These recommendations involve building upon the existing WordPress framework to add additional technical functionality to the website.

1. Use electronic forms for Member registrations

2. Integrate Salesforce, QuickBooks and Constant Contact

Community Partner

Ms. Jennifer Burns
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About the Consultant

Priyank Mehta
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Priyank is a junior in Information Systems. He will begin working as a Technology Consultant upon graduation in December 2016.

I. About the Organization

Organization

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Facilities

In spite of organizing and participating such large activities, CISV Pittsburgh, along with any other local chapter of CISV, does not operate out of any physical office location nor does it employs any full-time employee.

Programs

CISV Pittsburgh conducts multiple programs and camps throughout the year under the umbrella of CISV USA.

It organizes programs such as

a. Village: CISV Villages are international camps that inspire 11-year old children to imagine a more just and peaceful world. The children come together from many different countries to take part in a variety of educational, cultural and fun activities.
b. Interchange: While based on the same educational principles as CISV's camp-based programs, Interchange encourages a deeper encounter between two cultures, by placing young people within families. Group activities during the exchange, such as a mini0camp, are a vital complement to the in-depth family experience.

c. Step-Up: CISV's Step Up program encourages young people to take a leading role in planning and organizing activities. The participants and their adult leaders use CISV's peace education to guide the theme of the camp around which they plan activities, such as identity, democracy, or environmental protection

d. Youth Meeting: Youth meetings bring small groups of young people of similar ages, together from different countries within a region. Youth Meetings are for 25-35 participants (aged 12-13, 14-15, 16-18 or 19+), coordinated by adult staff.

(source: http://www.pitt.cisvusa.org/whatiscisv/cisvprograms.htm)

Staff

CISV Pittsburgh do not maintain any full-time positions, however, it has dedicated volunteers who serves as different roles to run the organization.

Officers

Office	Name	Technology Capability	Accessibility
President	Amy Raslevich	Email, Social media	Laptop
Vice President/Operations	Gina Wynn	Email, Social media	Laptop
Vice President/Programs	Nonie Heystek	Email, Social media	Laptop
Secretary	Dighan Kelly	Email, Social media	Laptop
Treasurer	Dawn Gull	Email, Social media	Laptop

Committees

Committee	Chair	Technology Capability	Accessibility
Newsletter	Jennifer Burns	Email, Social media, WordPress management	Laptop
Recruiting	Megan Zeni	Email, Social media	Laptop
Giant Eagle	Dawn Gull	Email, Social media	Laptop
Merchandise	Elaine Hyder	Email, Social media	Laptop
Insurance	Nancy Wolfson	Email, Social media	Laptop
Jr. Branch Advisor	Nancy Golio	Email, Social media	Laptop
Jr. Branch President	Charlie Wolfson	Email, Social media	Laptop
Leader Training	Ann Anderson	Email, Social media	Laptop
Web Site			
Village Chair	Ann Anderson	Email, Social media	Laptop
Interchange Chair	Sally Nava	Email, Social media	Laptop

Technology Infrastructure

CISV Pittsburgh does not have any permanent infrastructure as it is an organization run and funded by volunteers. However, all the members mentioned above have their own computer systems with Windows 7, 8 and Mac OSX as the major operating systems.

The modification and management of the website requires a modern JavaScript enabled browser installed into each machine along with an Internet connection. The website for CISV Pittsburgh along with other local chapters of USA, is hosted on a server which is maintained by CISV USA. CISV USA has one full-time employee working as an IT Manager who provides continuous support related to hosting to all the local chapters of CISV USA.

Technology Management

Ms. Jennifer Burns handles all the Technology management for CISV Pittsburgh. Current Technology Management involves managing and synchronizing online and offline registration forms with Salesforce, QuickBooks and Constant Contact. CISV USA has one full-time employee working as an IT Manager who provides continuous support related to hosting to all the local chapters of CISV USA.

Technology Planning

Ms. Jennifer Burns handles all the Technology planning of CISV Pittsburgh which includes scheduling updates on website, sending out emails to registered members and implementation of cloud based software such as SalesForce, QuickBooks and Constant Contact. All the communication within the organization is done through email.

Internal and External Communication

Email is the primary mode of communication within the organization. Emails are used to discuss the date and time of a meeting.

Information Management

Presently, the organization manages all the information in form of physical copies. CISV allows a member to download a set of forms from its website. The forms are of the following types
1. Application form
2. Preference form
3. Fee schedule and Family support agreement
4. CISV Parent commitment form
5. Youth Delegate form

The member then fills in the details and submits the signed forms to one of the committee member at CISV. Later, the members upload the data from the physical copies to Salesforce and Quick Contacts manually.
Member registration details is the most critical information to the organization. This information contains details about all the participants, their families, their trip type, their payment status, their number of trips, their trip location. Similarly, the organization maintains information of Donors. All the biographic information of a donor is stored and maintained in Salesforce. Lastly, the organization maintains a database of all the events that have been conducted in past and that are to be conducted in current year.

Business Systems

CISV uses paper based accounting and manages physical records of all the financial documents at a secured location accessed by the Officers at CISV Pittsburgh. CISV Pittsburgh has also started using QuickBooks but it is not their primary tool for managing accounts.

II. Improved Data & Information management across website

Motivation

CISV Pittsburgh maintains a website which is the primary source of communication and interaction between the participants and CISV. CISV Pittsburgh does not possess technological capability to independently update information on its current website and therefore with some external help, updates its website for about 4 times a year to publish information about the upcoming programs.

The activity to update any information on the website creates a bottleneck for the organization as it has to depend on an external entity which brings uncertainty in the process. Several work hours of committee members are wasted every year behind the co-ordination and communication with the external entity to make even a small update in the website, which could be utilized otherwise for other important tasks such as planning events, communication, fund raising, etc.

By implementing a content management system, CISV Pittsburgh will not have to rely on any external entity to manage their website and therefore the members can focus on other important tasks in the organization which will ultimately improve the experience of the participants.
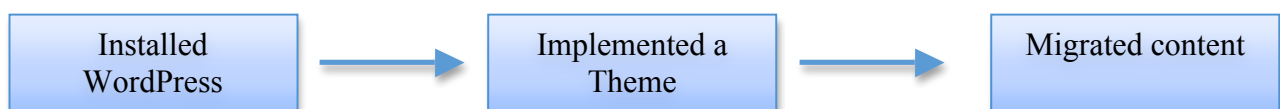
Outcomes

The final outcome of this consulting engagement was a new website built over a content management system that provides functionality to manage content across the website as described later in this section.

The implementation of the content management system consisted of several major tasks and milestones such as installation of WordPress on the server, selection and implementation of a Theme and migration of content from the old website.

1. Installation of WordPress: WordPress, due to its convenience and large marketplace for plugins was chosen to be implemented as a CMS for CISV Pittsburgh's website. The IT manager for the CISV USA server* installed WordPress and thereafter provided administrator access to further build the website.

2. Implementation of Theme*: Multiple themes were evaluated based on the functional and non-functional requirements of the website and a trial version of Agama Pro was installed. The trial version was tested for 4 days and then Ms. Jennifer Burns purchased the premium version of the theme which is now implemented in the website. The premium version of the theme additionally provides a one year of support to make any customizations or help in implementation of the theme.

3. Migration of content: This activity involved transferring content from the old website to the new website. The community partner Ms. Jennifer Burns, after receiving training from the student consultant, migrated all the content from the old website to the new website.

   The new website consists of 37 pages as opposed to 30 pages in the old website. Moreover, the new website has a responsive layout which adapts to the screen resolution of the user-agent*.

Installed WordPress	→	Implemented a Theme	→	Migrated content

* please see the appendix for definition.

The final outcome provides a Dashboard to the client which allows to perform tasks such as:
1. Add pages to the website:
   The client can add as many pages to the website as required limited to the hosting* space available.

2. Remove/Delete pages from the website:
   The client can easily delete any page from the website as required.

3. Update information on the website:
   The client can modify the content of any page or article on the website using the interface provided by WordPress.

4. Add images/videos to the website
   The client can add images, videos and any form of media to the website using the WordPress interface.

5. Manage user access to the website
   The client can manage user roles which allows to manage accessibility of users to the website. For example, the client can specify which user he/she wants to allow to modify content and which user to just read the content.

6. Manage and Monitor the website from a mobile app
   The client can also access all the content of the website from a mobile app of WordPress. This mobile app is available in AppStore and PlayStore free of cost and provides a similar interface to the desktop interface to manage content.

Screenshots demonstrating these functionalities are attached in the Appendix.

The final outcome is also sustainable. It is sustainable technology-wise since it is built upon WordPress which is an open source software and constantly and automatically updates itself. In terms of any technical errors, the IT manager at the CISV USA's office is capable to provide support.

Besides that, the IT manager also regularly takes backup of the database which can be used in case of an emergency or a crash situation.

In terms of managing the website, the community partner has undergone a series of technical education with the student consultant and is now capable enough to manage the content across the website. The community partner has already demonstrated this capability by adding 37 new pages to the website.
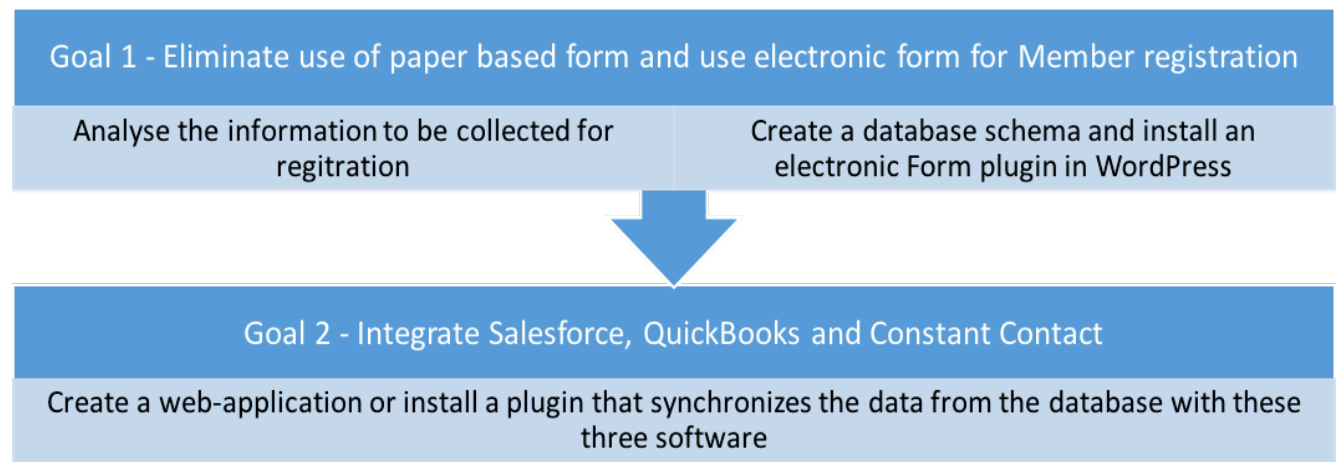
please see the appendix for definition

III. Recommendations

A. Vision

Use latest technology and software products to make all the admin processes simple so that the volunteers can dedicate their efforts to better planning of events which will improve the experience of the participants and will also make the execution of other processes smooth and efficient.

B. Goals

Goal 1 - Eliminate use of paper based form and use electronic form for Member registration

Analyse the information to be collected for regitration

Create a database schema and install an electronic Form plugin in WordPress

Goal 2 - Integrate Salesforce, QuickBooks and Constant Contact

Create a web-application or install a plugin that synchronizes the data from the database with these three software

C. Strategies

Goal 1: Electronic forms instead of physical forms for member registrations:

CISV currently uses physical copies for accepting member registrations. It allows a student or a family member to download a package of forms that they are supposed to fill details in. After filling in the details, they submit that form to any committee members of CISV. The committee members then upload the form data manually into the three software products – i.e. Salesforce, QuickBooks and Constant Contact.

Benefits and Justifications:
The goal is to increase the efficiency of CISV committee members and also to reduce their workload by eliminating the process to collect physical forms and uploading data manually on the website.
By implementing electronic forms, the following improvements will be observed.

1. Reduction in time to collect and upload member data on the website.
2. Increased accuracy of the data stored on the server since the data is now directly entered by the participating member.
3. Increase in speed of communication and membership results.

Implementation Strategies:

The community partner will require to hire an I.T. Consultant to implement this goal. The community partner should look for an I.T. Consultant who has experience in working with WordPress.
The implementation of this goal depends on how well the form fields are designed. Care should be taken such that duplicate fields are not mapped in the database.

An ideal timeline to implement this strategy should be as below.

Task	Time	People Involved
Identify the data to be collected from the member by analyzing the physical forms	2 weeks	Community partner/client
Create a database schema	4 weeks	I.T. Consultant
Create a form interface or simply install a WordPress plugin that creates forms	2 weeks	I.T. Consultant
Education to use the electronic form data	2 weeks	I.T. Consultant/Community Partner
Testing	0.5 week	I.T. Consultant and Community partner
Total Time	10.5 weeks	

Outcomes:

Area of impact	Outcome
Member Registration	Positive – Member registration process will not only speed up but will also become more efficient and accurate
Communication	Positive – The communication between CISV and existing and new members will improve as CISV now maintains electronic data which is updated.

Resources:

Tasks	Resource(s)	Reason
Identifying the data	Community Partner	The community partner understands the need of the data for the organization and therefore should be clear in identifying it.
Creating database schema and	IT. Consultant https://wordpress.org/plugins/ninja-forms/	Ninja-forms is one of the best electronic form provider. It provides forms for all the content management

| implementing WordPress plugin | | systems and also provides great support.

The I.T. Consultant can easily install and configure the plugins to use electronic forms for the website. |
|---|---|---|
| Education | Community Partner and I.T. Consultant | The community partner have already undergone a series of technical education with the consultant to use the WordPress interface. The new I.T. Consultant will require to educate the client to access the electronic form data and to modify and configure form fields. |

Goal 2: Eliminate redundant data entry in Salesforce, QuickBooks and Constant Contact by using a single form on the website.

After collecting registration forms from the members, CISV committee members manually enter data into Salesforce, QuickBooks and Constant Contact.
After achieving Goal 1, CISV will have electronic data of all the members in their database. That data can be synchronized between the CISV website and this three software.

Benefits and Justifications:
Again, our goal is to increase the efficiency of CISV committee members and also to reduce their workload by eliminating the process to enter redundant
By achieving this goal, the following improvements will be observed.

1. A Significant Reduction in time to enter redundant data over three software platforms.
2. Improved communication with members as the data will be synchronized real time over the software.

Implementation Strategies:
The community partner will have to seek help of an I.T. Consultant to implement this solution. The I.T. Consultant will then use the API's provided by the software firms to create a web application or install a WordPress plugin that synchronizes the data from the CISV database to these software.

An ideal timeline to implement this strategy should be as below.

Task	Time	People Involved
Identify the data to be synchronized over these software	2 weeks	Community partner/client

Search for a WordPress plugin that fulfills this requirement or identify an API from these software products that can be used to synchronize data	6 weeks	I.T. Consultant
Create a web application using the identified API or install a WordPress plugin that synchronizes the data	2 weeks	I.T. Consultant
Education to use the new plugin/web-application to synchronize the data	6 weeks	I.T. Consultant/Community Partner
Testing	2 weeks	I.T. Consultant/Community Partner
Total Time	18 weeks	

Outcomes:

Area of impact	Outcome
Overall workload	Positive – The workload will be reduced as all the data will be automatically transferred to these software
Communication	Positive – CISV will see more improved communication as the data in Constant Contact will be always updated real-time. Besides that, the response time for any queries will also reduce significantly as CISV will have access to electronic data

Resources:

Tasks	Resource(s)	Reason
Identifying the data	Community Partner	The community partner understands the need of the data for the organization and therefore should be clear in identifying it.
Searching for WordPress plugin or identifying an API	IT. Consultant Salesforce: https://wordpress.org/plugins/salesforce-wordpress-to-lead/ Constant Contact: https://wordpress.org/plugins/constant-contact-api/ Quick Books: https://wordpress.org/plugins/cartpipe-quickbooks-online-for-woocommerce/	There are some plugins available to integrate salesforce, Constant Contact and QuickBooks into WordPress. The I.T. Consultant can easily install and configure the plugins to use data generated by electronic forms and synchronize it over the cloud based software.
Education	Community Partner and I.T. Consultant	The community partner has already undergone a series of

		technical education with the consultant to use the WordPress interface. The new I.T. Consultant will require to educate the client to access the interface used to synchronize the data among these software.

About the Consultant

Priyank Mehta is a first-year graduate student in Information Systems program at Heinz College, Carnegie Mellon University. Priyank completed his undergrad in May 2015 with majors in Information Technology from India. He then joined Carnegie Mellon University in August for Master's program. He has been an Entrepreneur during his undergrad and has an experience of working with over 25 clients in different industries. He will graduate in December 2016 and will begin his career as a Technology Consultant with a consulting firm for some years before starting his own Consulting firm.

Appendix A.

Hosting:

A host is a computer that stores website files and other related data on the server so that it can be accessed over the internet.

Server:

A server is a computer program or a device that provides functionality for other programs or devices, called "clients". All the data of the website is stored in the server.

Theme:

A Theme is a fixed structure of defined attributes and features that modifies the existing layout of the website. A Theme does not modify the content of the website. A Theme can be thought of as an additional skin on Laptop cover that modifies its appearance but does not change its basic functionality.

User-Agent:

User-Agent is a device from which the client (as described above) access the website. A User-Agent can be a desktop, a laptop, cellphone, tablet or any internet enabled device.
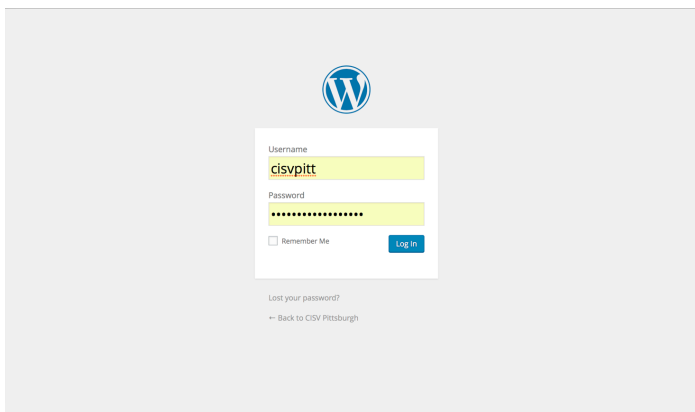

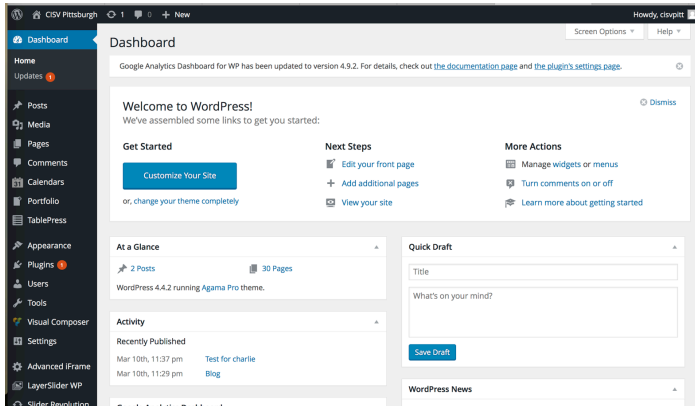Fig 1.1 – Login screen of the new CISV website's admin panel

Fig 1.2 – Dashboard showing various admin functions

This is the main interface of WordPress. The client can perform all the tasks mentioned in the outcome through this interface.
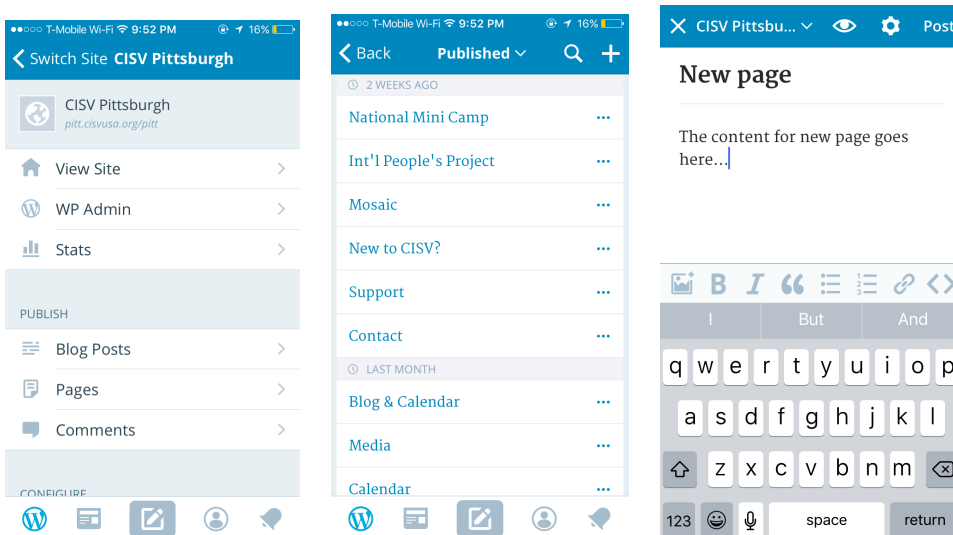

Fig 1.3 – Mobile interface allowing the user to manage content on the website

IOS and Android app for WordPress is available on the App Store and Play Store respectively, free of cost. This app allows the user to manage the content from his/her cellphone without having to log in from the browser.