SOCIALLZ

Project/Thesis ID. 2023: 02

Session: BSc. Fall 2019-2023

Project Supervisor:

Engr. Dr. Muhammad Zaman Fakhar

Submitted By

Syed Ali Abbas
Sidra Habib
Ayesha Kabir

Department of Software

Engineering

University of Azad Jammu and Kashmir Muzaffarabad

Certification

This is to certify that **Syed Ali Abbas**, **2019-SE-40** , **Sidra Habib**, **2019-SE-11** and **Ayesha Kabir**, **2019-SE-17** have successfully completed the final project **Sociallz,** at the **University of Azad Jammu and Kashmir Muzaffarabad**, to fulfill the partial requirement of the degree **BSc. SE.**

External Examiner   **Project Supervisor**

Dr. Nouman Ali   Engr. Dr. Muhammad

                                                              Zaman Fakhar

Chairman, Software Engineering Department   Assistant Professor

Of MUST University AJK

Chairman

Dr. Ghulam Sarwar

Department of Software Engineering, University of Azad Jammu & Kashmir

.

Project Title (SOCIALLZ)
Sustainable Development Goals

SDG No	Description of SDG	SDG No	Description of SDG
SDG 1	No Poverty	✓ SDG 9	Industry, Innovation, and Infrastructure
SDG 2	Zero Hunger	SDG 10	Reduced Inequalities
SDG 3	Good Health and Well Being	SDG 11	Sustainable Cities and Communities
✓ SDG 4	Quality Education	SDG 12	Responsible Consumption and Production
SDG 5	Gender Equality	SDG 13	Climate Change
SDG 6	Clean Water and Sanitation	SDG 14	Life Below Water
SDG 7	Affordable and Clean Energy	SDG 15	Life on Land
✓ SDG 8	Decent Work and Economic Growth	SDG 16	Peace, Justice and Strong Institutions
		✓ SDG 17	Partnerships for the Goals

	Range of Complex Problem Solving		
	Attribute	**Complex Problem**	
1	Range of conflicting requirements	Involve wide-ranging or conflicting technical, engineering and other issues.	
2	Depth of analysis required	Have no obvious solution and require abstract thinking, originality in analysis to formulate suitable models.	
3	Depth of knowledge required	Requires research-based knowledge much of which is at, or informed by, the forefront of the professional discipline and which allows a fundamentals-based, first principles analytical approach.	
4	Familiarity of issues	Involve infrequently encountered issues	
5	Extent of applicable codes	Are outside problems encompassed by standards and codes of practice for professional engineering.	
6	Extent of stakeholder involvement and level of conflicting requirements	Involve diverse groups of stakeholders with widely varying needs.	
7	Consequences	Have significant consequences in a range of contexts.	
8	Interdependence	Are high level problems including many component parts or sub-problems	
	Range of Complex Problem Activities		
	Attribute	**Complex Activities**	
1	Range of resources	Involve the use of diverse resources (and for this purpose, resources include people, money, equipment, materials, information and technologies).	
2	Level of interaction	Require resolution of significant problems arising from interactions between wide ranging and conflicting technical, engineering or other issues.	
3	Innovation	Involve creative use of engineering principles and research-based knowledge in novel ways.	
4	Consequences to society and the environment	Have significant consequences in a range of contexts, characterized by difficulty of prediction and mitigation.	
5	Familiarity	Can extend beyond previous experiences by applying principles-based approaches.	

Abstract

Sociallz is a web-based application includes integration of different social media APIs (Facebook, Instagram, Twitter, LinkedIn, Tumblr, Pinterest, Reddit, Google My Business, Blogger) that allows users to post content in advance to various social media accounts from a single user interface using API endpoints. It automates posting and will allow marketing managers, small business owners and content creators to save time by scheduling social media posts in advance to multiple accounts, view top-level metrics and generate viable leads from social media.

Through the Sociallz users can efficiently manage their social media postings. It will make it easy for you to identify opportunities and to respond quickly. This tool is designed to help marketing managers, small business owners and content creators save time by planning posts in advance, view key metrics and generate leads from social media. Sociallz aim is to improve social engagement, making it easier for users to identify opportunities and respond promptly to their followers and potential customers.

Undertaking

I certify that the project **Sociallz** is our own work. The work has not, in whole or in part, been presented elsewhere for assessment. Where material has been used from other sources it has been properly acknowledged/ referred.

Syed Ali Abbas

2019-SE-40

Sidra Habib

2019-SE-11

Ayesha Kabir

2019-SE-17

Acknowledgement

We truly acknowledge the cooperation and help make by **Engr. Dr. Muhammad Zaman Fakhar, Assistant Professor** of **Department of Software Engineering.** He has been a constant source of guidance throughout the course of this project.

We are also thankful to our friends and families whose silent support led us to complete our project.

Table of Contents

List of Tables

List of Figures

List of Acronyms

ERD	Entity Relationship Diagram
MS	Microsoft
GUI	Graphical User Interface
UML	Unified Modeling Language
PHP	Hypertext Preprocessor
HTML	Hypertext Markup Language
CSS	Cascading Style Sheet
API	Application Programming Interface
OOP	Objected Oriented Programming
PC	Personal Computer

Chapter 1

1.1   Introduction

Sociallz is a web-based application that allows users to post content in advance to various social media accounts from a single user interface. It automates posting and will allow marketing managers, small business owners and content creators to save time by scheduling social media posts in advance to multiple accounts, view top-level metrics and generate viable leads from social media. Scheduling posts ahead of time can help you focus on engagement and creative content generation, instead of manual posting. Social engagement is key to successful relationships with your followers and potential customers. Sociallz will make it easy for you to identify opportunities and to respond quickly.

1.2   Statement of the problem

Today, an effective social media marketing campaign is an indispensable element of any comprehensive content marketing strategy. Previously, the process often involved manual posting on numerous social media accounts. However, this approach became increasingly impractical and time-consuming, particularly when dealing with multiple daily posts. While there are social media management software options available, many of them are limited in functionality. They typically allow for instant content posting but impose restrictions, such as limiting the number of API calls or scheduling capabilities. This limitation poses a significant challenge for social media managers aiming to boost engagement on their accounts and thereby enhance the visibility and success of their business or brand in the highly competitive online landscape.

1.3 Goals/Aims & Objectives

The objectives of the "Sociallz" web-based application are to streamline social media management by automating posting through API integration, providing users with a unified dashboard for publishing, monitoring, and managing multiple social media networks. It aims to save users time and enhance the effectiveness of their social campaigns by allowing advanced content scheduling, reducing manual posting efforts, and increasing engagement. Scheduling posts ahead of time can help you focus on engagement and creative content generation, instead of manual posting. "Sociallz" also intends to improve audience reach and engagement by retrieving, posting, and managing comments on posts. Furthermore, the application offers social media analytics and reporting to track post history and assess performance, enabling users to refine their strategies and compete effectively. "Sociallz" provides geographic insights into follower locations, facilitating targeted content delivery to specific regions for increased relevance and value to the audience.

1.4 Motivation

Previously, the process often involved manual posting on numerous social media accounts. However, this approach became increasingly impractical and time-consuming, particularly when dealing with multiple daily posts. While there are social media management software options available, many of them are limited in functionality. They typically allow for instant content posting but impose restrictions, such as limiting the number of API calls or scheduling capabilities. This limitation poses a significant challenge for social media managers aiming to boost engagement on their accounts and thereby enhance the visibility and success of their business or brand in the highly competitive online landscape.

1.5   Methods

The implementation of the Sociallz System is built on Object-Oriented Programming (OOP) principles, which enhance code reusability, simplify implementation, and improve code comprehension. OOP allows for a linear and structured program flow. Although this is the initial version, we have plans for future upgrades. In subsequent versions, we aim to transition gradually to a PHP framework to enhance security and ensure ongoing development and improvement.

We implemented this system using agile methodology. We have divided the projects into more manageable tasks that will be done in short iterations over the course of the project's life cycle.

1.6   Report Overview

Sociallz is a web-based application includes integration of different social media APIs (Facebook, Instagram, Twitter, LinkedIn, Tumblr, Pinterest, Reddit, Google My Business, Blogger) that allows users to post content in advance to various social media accounts from a single user interface using API endpoints. It automates posting and will allow marketing managers, small business owners and content creators to save time by scheduling social media posts in advance to multiple accounts, view top-level metrics and generate viable leads from social media.

Through the Sociallz users can efficiently manage their social media postings. It will make it easy for you to identify opportunities and to respond quickly. This tool is designed to help marketing managers, small business owners and content creators save time by planning posts in advance, view key metrics and generate leads from social media. Sociallz aim is to improve social engagement, making it easier for users to identify opportunities and respond promptly to their followers and potential customers.

This project will produce a web-based program that can be used to accurately handle daily activities and that can be deployable on any MS Windows.

Following are the tools and technologies used in this project:

- MS Office 2016 for project documentation

- MS Visio 2013 for UML Diagram

- Balsamiq online tool for creation of Mockups

- MS PowerPoint for presentation

- MS Visual Studio 2019

- PHP as a backend language

- HTML, CSS and JQUERY as a front-end language.

- MY SQL Server 2019

- Adobe Photoshop 2020

Chapter 2

2.1 Requirement Analysis

In this use case, the primary actor, a user, engages in various actions related to managing their posts on the social media platform. This includes creating new posts, editing existing ones, scheduling posts for future publication, and interacting with comments by posting, editing, and deleting them. Users also have the capability to report inappropriate comments and content, which may prompt Content Moderators to review and moderate such content. Additionally, an AI algorithm suggests relevant posts to users based on their interests and interactions, and users can choose to follow these suggestions. Membership plans are available for users to select, providing access to premium features or content. Administrators manage user accounts, ensuring a safe environment and smooth user interactions on the platform. This use case covers the core actions users can take to create, manage, and interact with posts and comments while also addressing the roles of administrators, Content Moderators, and AI recommendations for a holistic social media experience.
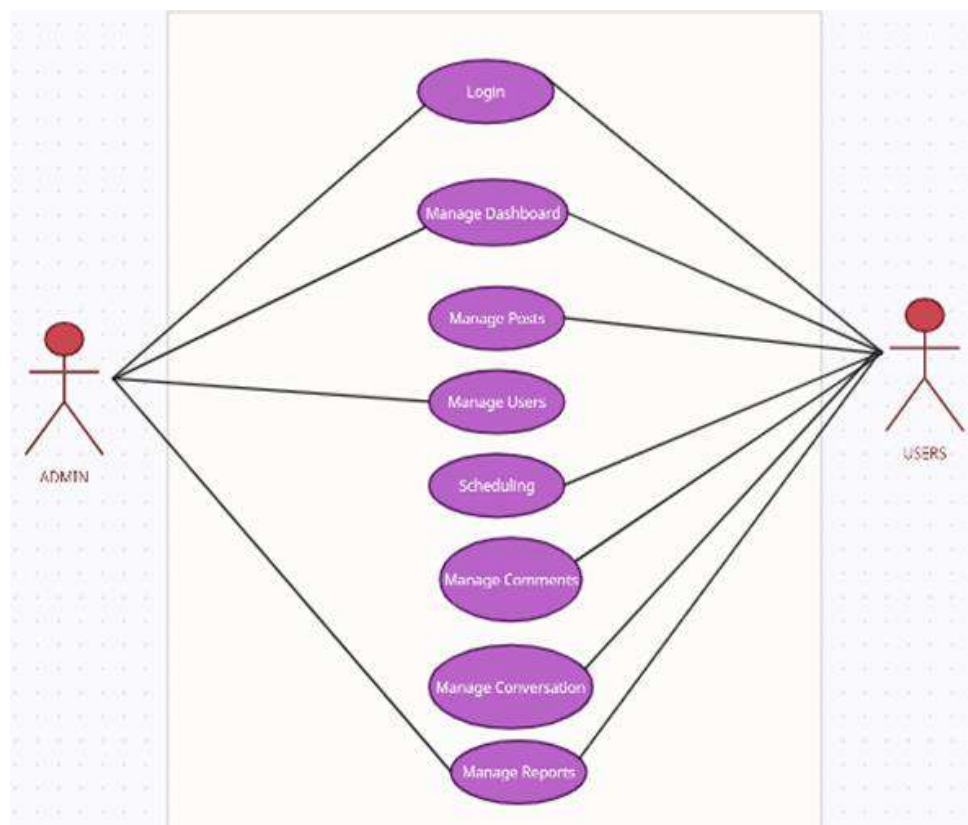

Figure 1: Use Case Diagram
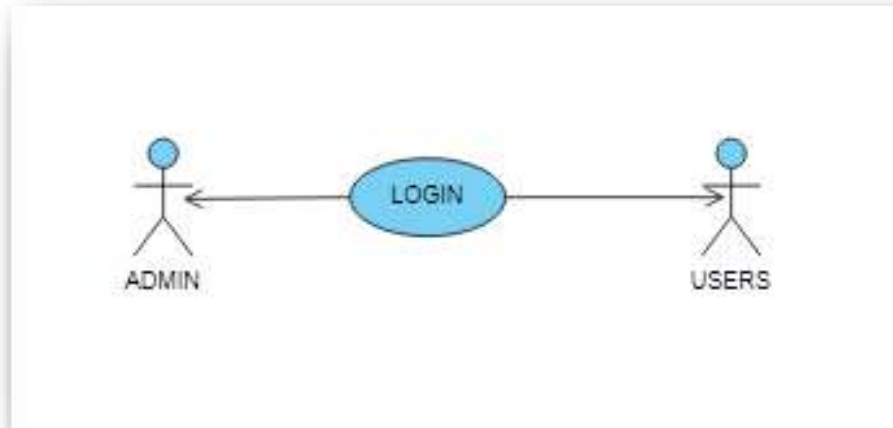
2.1.1 Use Cases

Login System

Figure 2: Login system for all roles in Sociallz

Table 1: Login System for all roles

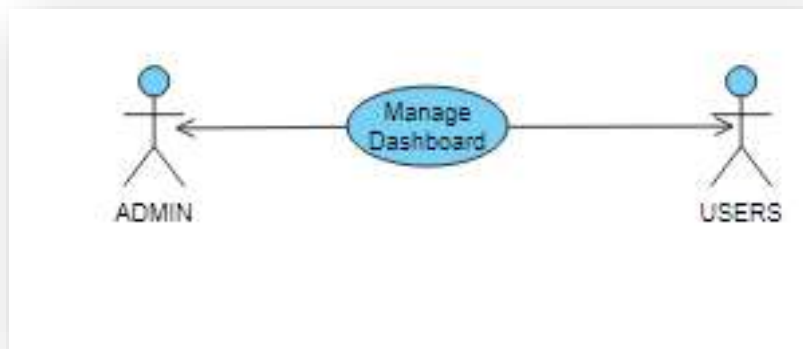| Use Case ID	UC-01
Use Case Name	Login
Actor	Admin, and Users
Purpose	The system mandates that both administrators and regular users complete a registration process. During registration, they are required to provide their email address and create a secure password. The system enforces an email confirmation step to verify the accuracy of the email address before granting access. This multi-step registration procedure ensures the security and authenticity of user accounts.
Overview	This use case describes that the Admin and Users will log in into the system.
Type	Primary
Pre-Conditions	The following actors should have username and password and they must enter the valid credentials in order to login.
Post-Conditions	The respective dashboard will be shown.

Use Case: Manage Dashboard

Figure 3: Manage Dashboard for Admin Role in Sociallz

Table 2: Manage Dashboard for Admin Role in Sociallz

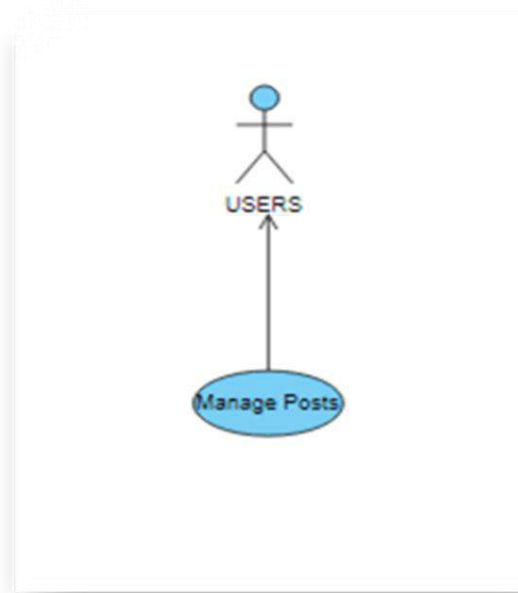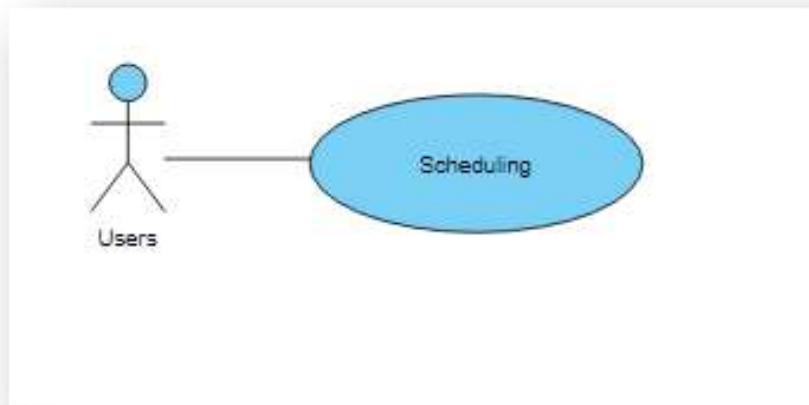| Use Case ID	UC-02
Use Case Name	Manage Dashboard
Actor	Admin and Users
Purpose	The dashboard serves as a central hub where both administrators and regular users can efficiently manage their social media profiles. This user-friendly interface provides a unified platform that simplifies the management of various social media accounts. From the dashboard, users can seamlessly access and control their different social media profiles, eliminating the need to navigate multiple interfaces
Overview	The dashboard should provide users with a comprehensive view of their social media activity and help them manage their profiles more efficiently.
Type	Primary
Pre-Conditions	The admin should be logged out after managing Dashboard.
Post-Conditions	Users perform activities after shown the dashboard.

Use Case: Manage Posts

Figure 4: Manage post for user Role in Sociallz

Table 3: Manage Posts for user in Sociallz

Use Case ID	UC-03
Use Case Name	Manage Posts
Actor	Users
Purpose	Users will manage the posts such as pictures, videos, ads and more.
Overview	This use case describes the users to manage their posts, including editing, deleting, and rescheduling posts.
Type	Primary
Pre-Conditions	The admin should be logged out after managing dashboard.
Post-Conditions	Next Users scheduling their posts.

Use Case: Scheduling

Figure 5: Manage Scheduling for user role in Sociallz

Table 4: Manage Scheduling for user in Sociallz

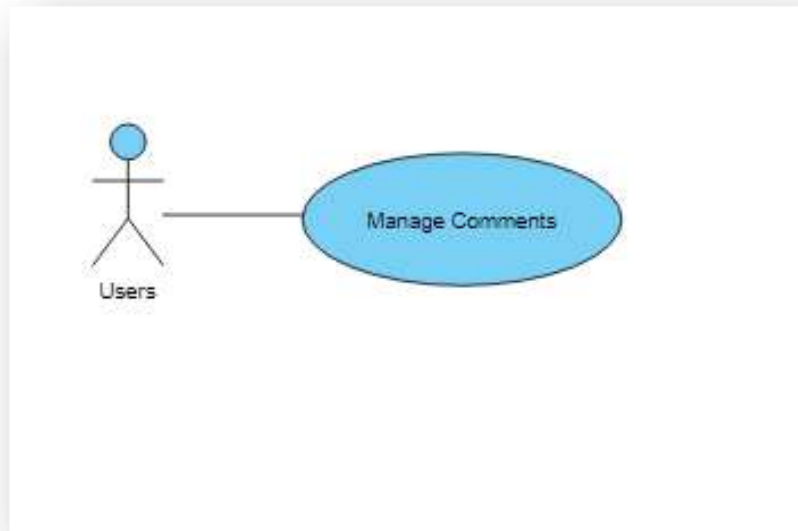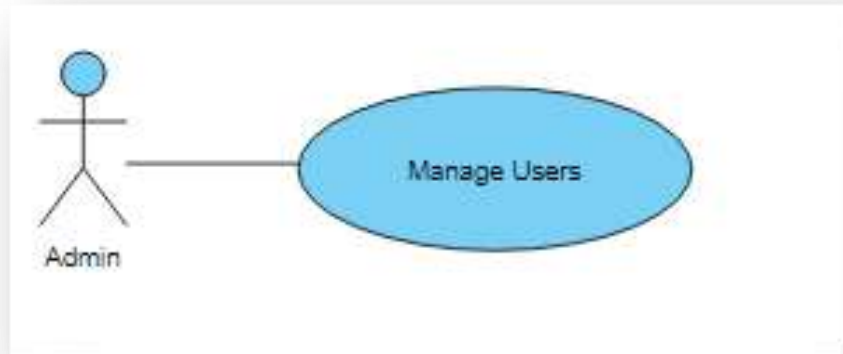| Use Case ID	UC-04
Use Case Name	Scheduling
Actor	Users
Purpose	Users will schedule post time.
Overview	This use case describes that the users can schedule post.
Type	Primary
Pre-Conditions	The users can manage and upload the posts at one single platform.
Post-Conditions	Users can manage the comments.

Use Case: Manage Comments

Figure 6: Manage Comments for user role in Sociallz

Table 5: Manage Comments for User in Sociallz

Use Case ID	UC-05
Use Case Name	Manage Comments
Actor	Users
Purpose	Users can manage comments on their posts.
Overview	This use case describes that the users can manage comments.
Type	Primary
Pre-Conditions	The users should be logged-in before managing posts.
Post-Conditions	Admin manage the users.

Use Case: Manage User

Figure 7: Manage User for Admin in Sociallz

Table 6: Manage User for Admin in Sociallz

Use Case ID	UC-06
Use Case Name	Manage Users
Actor	Admin
Purpose	Admin can manage the users such as view, add, update and delete.
Overview	This use case describes that the Admin can manage the users such as performing crud operations.
Type	Primary
Pre-Conditions	The admin should be logged in before managing users.
Post-Conditions	The user name should be unique.

Use Case: Manage Conversation
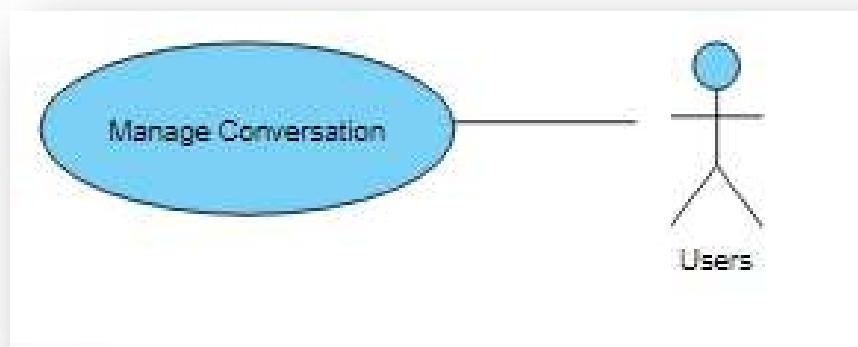
Figure 8: Manage Conversation for User in Sociallz

Table 7: Manage Conversation for User in Sociallz

Use Case ID	UC-07
Use Case Name	Manage Conversation
Actor	Users
Purpose	Users can manage the conversation.
Overview	This use case describes that the users can manage the conversation with their respective people they comments their posts.
Type	Primary
Pre-Conditions	The users should be logged in before managing comments.
Post-Conditions	Users and Admin manage the reports.

Use Case: Manage Reports

Figure 9: Manage Reports for User & Admin in Sociallz

Table 8: Manage Reports for User & Admin in Sociallz

Use Case ID	UC-08
Use Case Name	Manage Reports
Actor	Admin and Users
Purpose	Admin and user manage the reports and see their analytics and performance of the overall activities.
Overview	Admin and users manage the reports and admin allow the users to collect the data and see the insights of the social media accounts.
Type	Primary
Pre-Conditions	The Admin and user should be logged in before performing the above mentioned operations.
Post-Conditions	None

2.2   Functional Requirement

Manage Login Functionality:

Table 9: Manage Login Functionality

Identifier	FR1
Title	Login Functionality
Requirement	The users should be logged in into the system before performing operating on the basis of their accessibility. They should be assigned a username and password in order to login.
Source	Sociallz
Rationale	To make the system secure and give the role based access to the user.
Dependencies	None
Priority	High

Manage Posts:

Table 10: Manage Posts

Identifier	FR1.1
Title	Manage Posts
Requirement	Sociallz will allow users to publish, monitor and manage all their social media networks from one dashboard, save time and improve the effectiveness of your social campaigns.
Source	Sociallz
Rationale	It help to maintain consistency, aligns with branding, save time, and tracks managements.
Dependencies	FR1.1 → FR1
Priority	High

Manage Scheduling:

Table 11: Scheduling

Identifier	FR1.2
Title	**Scheduling**
Requirement	Sociallz will allow you to schedule social media posts ahead of time. This will make it much easier to visualize what you will be posting and align it with your goals.
Source	Sociallz
Rationale	Scheduling posts ahead of time can help you focus on engagement and creative content generation, instead of manual posting
Dependencies	FR1.2→FR1.1
Priority	High

Manage Reports:

Table 12: Manage Reports

Identifier	FR1.3
Title	Manage Reports
Requirement	Sociallz will low down your burden by providing insight reports.
Source	Sociallz
Rationale	It help to track performance.
Dependencies	FR1.3
Priority	High

Manage Membership Plan:

Table 13: Membership Plan

Identifier	FR1.4
Title	**Membership Plan**
Requirement	Sociallz will allow you to choose membership plan according to their choices. Like standard plan, premium plan and also use free trial.
Source	Sociallz
Rationale	Choose plan according to your desire.
Dependencies	NO
Priority	High

Manage AI Posts:

Table 14: Manage AI Posts in Sociallz

Identifier	FR1.5
Title	Manage AI Posts
Requirement	Sociallz will allow you to create AI message.
Source	Sociallz
Rationale	It help to generate AI captions.
Dependencies	FR1.1
Priority	High

2.3   Non-Functional Requirement

2.3.1   Security

NFRS-1: Using this application, the user will have to sign-in and login through email every time user will get OTP on email for authentication so that authorized users can access the application with username and password. The passwords will be encrypted.

2.3.2   Reliability

NFRR-1: The system will be reliable it will respond to the failure immediately by generating the error message and reverting back to the previous action.

NFRR-2: The data will be saved in the database, thus there will be no data loss.

2.3.3   Reliability

NFRA-1: The system will be available to users anytime and anywhere, just need a device (mobile or PC) with internet connection. Also the system will support multiple web browsers like (chrome, Mozilla, opera etc.).

2.3.4 Performance

NFRP-1: Reports, analyst and posting can be done efficiently and without any trouble.

2.3.5 User Friendly

NFRF-1: The system will have a friendly user interface which will be responsive to all the screen sizes and thus providing the easy navigation and interaction.

Chapter 3

3.1 Design and Architecture

3.1.1 Architectural Design

There are two roles in the system. Admin and user.
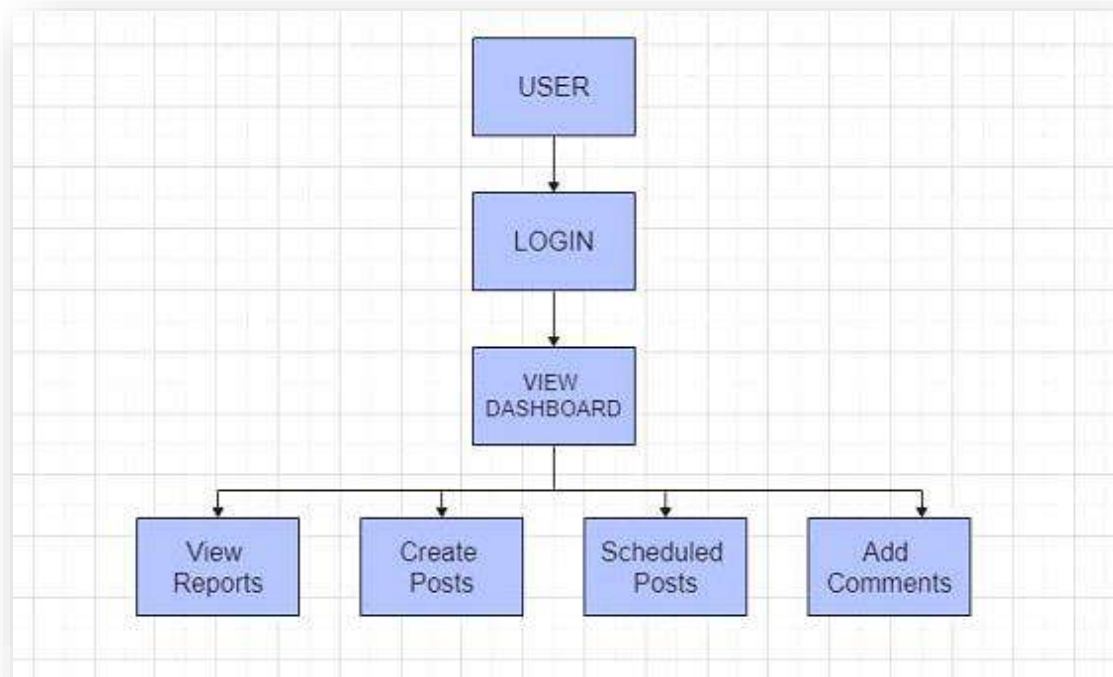

Figure 10: Architectural Design of User Module

The User role represents the general users or clients of the system who interact with the platform's features and functionalities. Users can perform actions specific to the system's purpose, such as creating, editing, or viewing content, accessing their profiles, and utilizing the core features of the application. They typically have limited administrative capabilities.
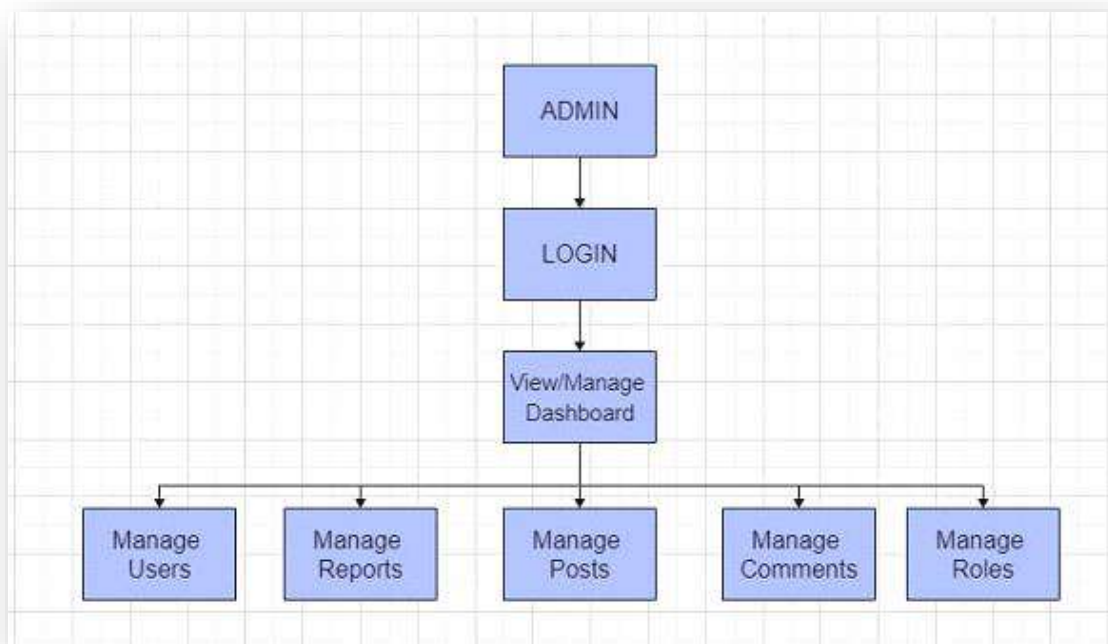
Figure 11: Architectural Design of Admin Module

The Admin role typically refers to system administrators or privileged users who have elevated permissions and control over the system. They can perform tasks such as managing user accounts, configuring system settings, and enforcing security measures. Admins are responsible for maintaining the system and ensuring it operates smoothly.

3.1.2 High Level Design

System Context:

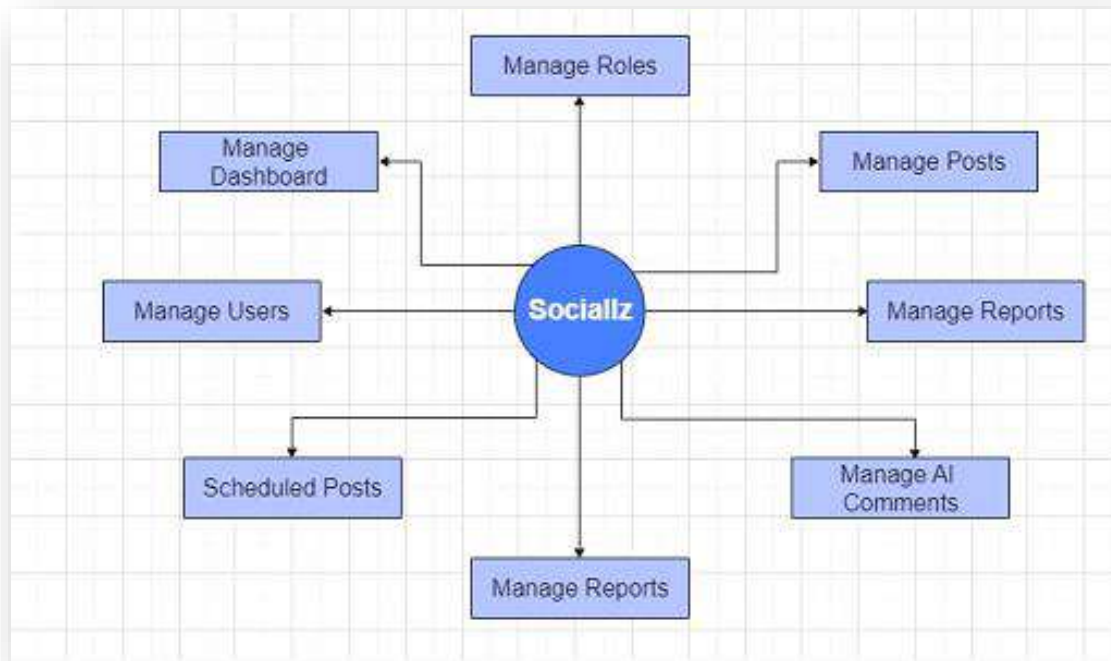This diagram shows the main system components, connectivity, and functionalities.

Figure 12: High Level Design

User Interaction:

This diagram shows a high-level view of both user interactions with the system and interaction between the Admin and user.
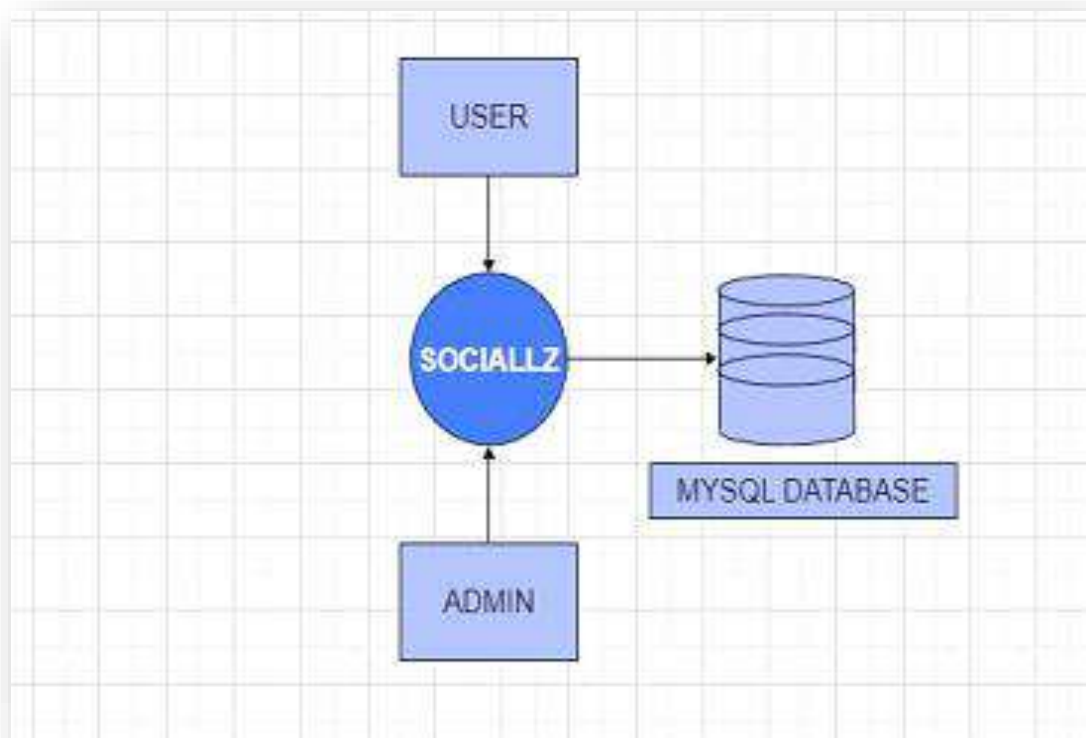
Figure 13: User Interaction

Chapter 4

4.1 Proposed Solution/Results & Discussion

Sociallz is a versatile web-based application designed to streamline and enhance your social media management. With its robust automation capabilities, Sociallz empowers users to effortlessly publish, monitor, and manage all their social media networks through a single, user-friendly dashboard. This not only saves valuable time but also significantly improves the efficiency of your social campaigns. Sociallz offers the convenience of scheduling posts in advance, whether for single posts or in bulk, allowing you to prioritize engagement and creative content creation over manual posting. It goes beyond this by retrieving, posting, and managing comments on your posts, thereby boosting engagement, expanding your reach, and helping you reach a wider audience. Additionally, Sociallz provides in-depth social media analytics and reporting, enabling you to keep a detailed record of your posts' history and assess your social media performance based on historical insights. This, in turn, empowers you to refine your strategies and stay competitive in the ever-evolving digital landscape. Furthermore, Sociallz offers a geographic visual representation of your followers, enabling precise targeting to specific areas and ensuring that your content remains relevant and valuable to your audience.

4.2 Software Requirements Traceability Matrix

Table 15: Traceability Matrix

Req. Number	Ref. Item	Design Component	Component Items
FR1.1		Membership	AddAllmemberships() EditAllMemberships()
FR1.2		Users	ViewAllUser() CreateUser() UpdateUser() DeleteUser()

FR1.3	 **fyp posts** post_id : int(11) user_id : int(11) body : longtext title : varchar(255) share_link : varchar(255) img : varchar(255) video : varchar(255) category : text sent_time : varchar(255) status : tinyint(4) created_date : datetime	Posts	AddPost() ViewPost() DeletePost()
FR1.4	**fyp postmeta** meta_id : int(11) post_id : int(11) meta_key : varchar(255) meta_value : longtext	Postmeta	AiPost() ScdedulePost()
FR1.5	**fyp user_settings** user_id : int(11) setting_name : varchar(255) setting_value : longtext autoload : varchar(255) setting_id : int(11)	User_settings	AddProfile() UpdateProfile()

4.3   User Interface

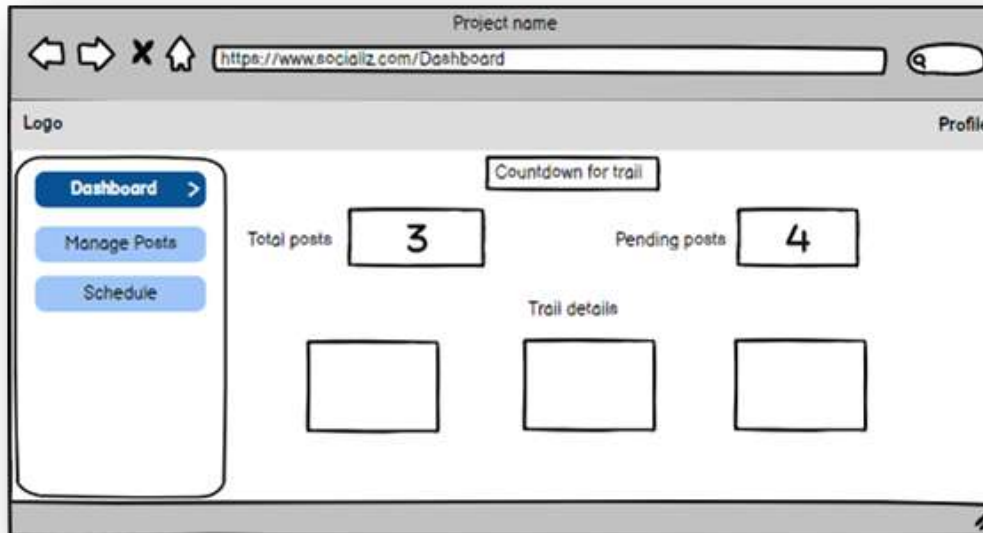**Dashboard Page:**

Figure 14: Dashboard page of user Interface in Sociallz

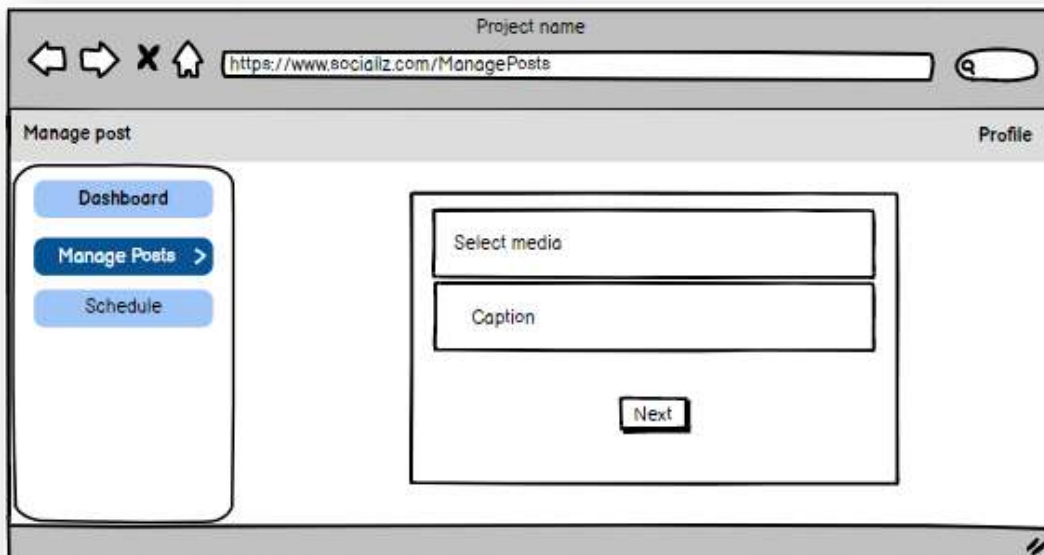## Manage Post Page-1:

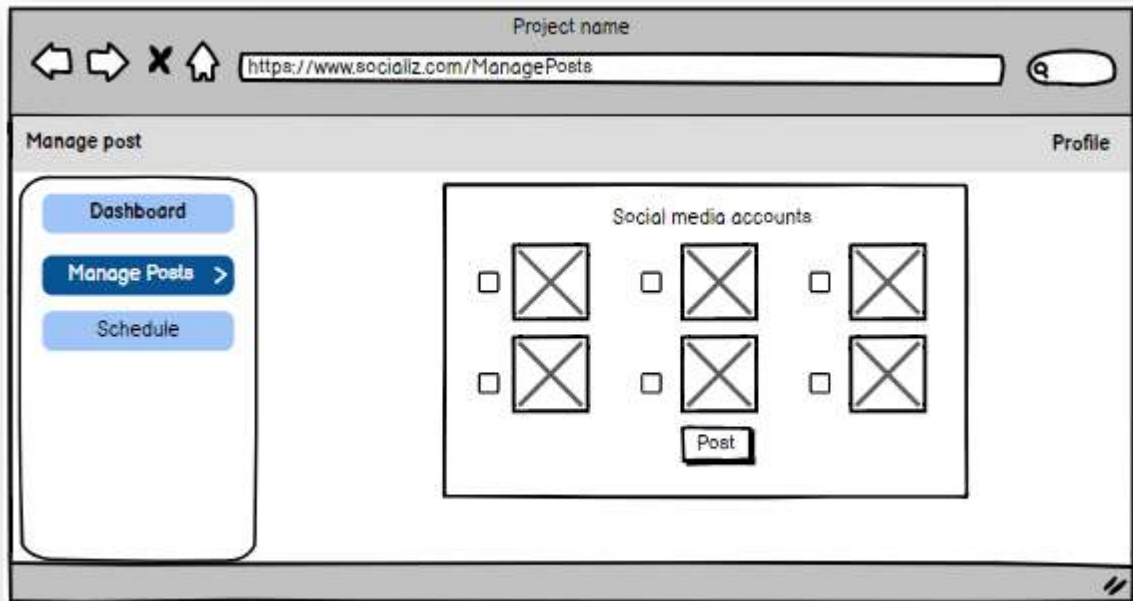**Figure 15:** Manage post page-1 of user Interface in Sociallz

Manage Post Page-2:

Figure 16: Manage Post page-2 for user Interface in Sociallz
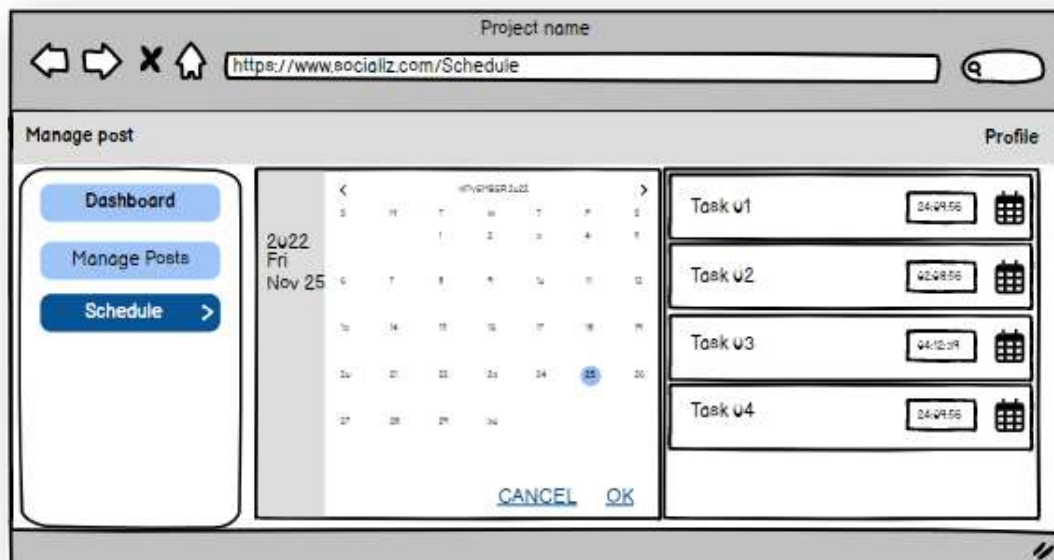
Schedule Page:

Figure 17: Schedule Page for User Interface in Sociallz

Chapter 5

5.1   Summary and Future work

Sociallz is a web-based application includes integration of different social media APIs (Facebook, Instagram, Twitter, LinkedIn, Tumblr, Pinterest, Reddit, Google My Business, Blogger) that allows users to post content in advance to various social media accounts from a single user interface using API endpoints. It automates posting and will allow marketing managers, small business owners and content creators to save time by scheduling social media posts in advance to multiple accounts, view top-level metrics and generate viable leads from social media.

Through the Sociallz users can efficiently manage their social media postings. It will make it easy for you to identify opportunities and to respond quickly. This tool is designed to help marketing managers, small business owners and content creators save time by planning posts in advance, view key metrics and generate leads from social media. Sociallz aim is to improve social engagement, making it easier for users to identify opportunities and respond promptly to their followers and potential customers.

Chapter 6

6.1   Conclusion & Recommendation

The challenges of managing multiple social media accounts, whether they belong to clients or your own business, are well-known in the world of social media marketing. Each platform serves different purposes, and juggling between them can be stressful and time-consuming. For instance, LinkedIn is often the go-to for recruitment, Instagram is the hub for social commerce, and Facebook aids in building brand awareness. This multiplicity of accounts can be overwhelming, especially when personal and professional profiles must be managed from the same device.

If you're in charge of handling social media for several clients, the complexities multiply. Using different apps for each platform adds to the inefficiency and time constraints. This is where a tool like Sociallz comes into play.

Sociallz aims to simplify the process by offering a one-step login solution, eliminating the need for manual content posting and management. With this platform, you can efficiently handle multiple social media accounts, bringing all your activities into a single, unified dashboard. The benefits are manifold. It saves a significant amount of time, streamlines your operations, and helps you stay focused and organized.

In summary, Sociallz is designed to alleviate the stress and workload associated with managing multiple social media accounts, making it a valuable tool for social media marketers and businesses looking to improve their online presence and outreach.

References

[1] Alexander S. Gillis. (2022, September Monday). *TechTarget*. Retrieved from Software Process Model (SDLC): https://www.techtarget.com/searchapparchitecture/definition/object-oriented-programming-OOP

[2] Appadurai, A 1996, *Modernity at large: cultural dimensions of globalization*, University of Minnesota Press, Minneapolis

[3] Bajarin, B 2011, 'Could What Happened to MySpace Happen to Facebook?', *Time Online*, viewed 20 September 2011, http://techland.time.com/2011/07/15/could-what-happened-to-myspace-happen-to-facebook/

[4] Breuer, A 2011, *Democracy promotion in the age of social media: risks and opportunities*, Briefing Paper, Department 'Governance, Statehood, Security', German Development Institute

[5] Castells, M 2009, *Communication Power*, Oxford University Press, Oxford.

[6] Jakubowicz, K 2007, *Rude awakening: social and media change in central and eastern Europe*, Hampton Press, Cresskill.

[7] Jenkins, H, Puroshotma, R, Clinton, K, Weigel, M & Robison, AJ 2005, *Confronting the challenges of participatory culture: Media education for the 21st Century*, viewed 20 September 2010, http://www.newmedialiteracies.org/files/working/NMLWhitePaper.pdf

[8] Khamis S 2011, 'The transformative Egyptian media landscape: changes, challenges and comparative perspectives', international Journal of Communication 5, pp. 1159–1177