Document ID

Version: 1.0

Standard Operating Procedure for Data Analytics & MIS

Date of creation: 2024 April 04

Farzana

PARTICULARS

Purpose

The purpose of this SOP is to **establish a systematic and standardized approach for the entire lifecycle of data analytics and MIS projects**, ensuring consistency, reliability, and effectiveness in leveraging data for business insights.

Scope

This SOP governs the **process of designing, developing, deploying, and maintaining data analytics and MIS solutions** within the organization, aimed at facilitating data-driven decision-making and improving operational efficiency.

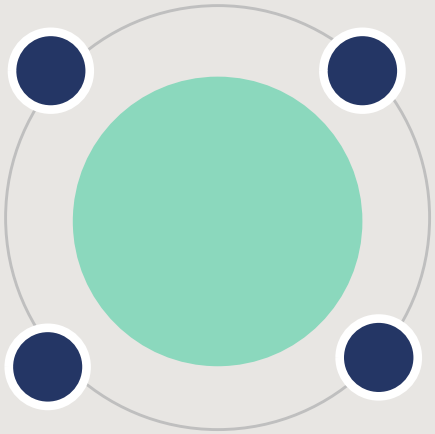
Responsibilities

Senior Management

Responsible for defining strategic goals, allocating resources, and approving project plans.

Data Analytics Team

Responsible for executing the data analytics projects, including data gathering, integration, analysis, and visualization.



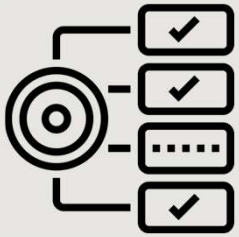
IT Infrastructure Team

Responsible for providing and managing the necessary hardware, software, and network infrastructure for data analytics..

End-Users

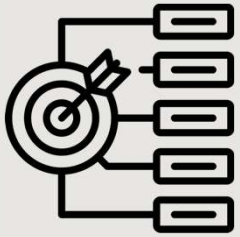
Responsible for providing feedback, utilizing the analytics solutions, and making informed decisions based on the generated insights.

Requirements

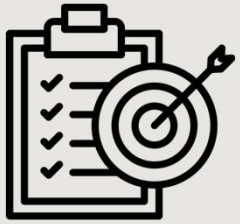


Proficiency in data analysis tools and techniques.

Understanding of business goals and KPIs



Strong communication and collaboration skills.



Knowledge of data governance and security principles.

Procedure for Data Analytics & MIS

1. Define Objectives and Requirement

- Identify **key business goals and KPIs** through stakeholder interviews and workshops.
- Determine **dashboard purpose** (monitoring, analytics, operations etc) and end-user persona (executive, manager, analyst).
- Define **specific metrics and dimensions** to track based on business needs.
- Specify **minimum viable functionality** and features (filters, drill-downs, derived metrics etc).
- Document **technical specifications** - data sources, update frequency, software platforms.
- Create user stories to capture detailed requirements from multiple perspectives.
- Obtain sign-off on requirements from all client stakeholders.

2. Data Gathering and Integration

- Catalogue all **potential data sources** (CRM, ERP, databases, APIs, spreadsheets etc).
- Assess **data quality** - accuracy, completeness, consistency. Cleanse and transform as needed.
- Model entity relationships to link datasets via common fields.
- **Build ETL processes** to automate data integration from diverse sources.
- **Standardize** date formats, naming conventions, schema etc across sources.
- Validate integrated data, check for errors, duplicates, missing values.
- **Optimize data model** - indexes, aggregation, compression - for fast query performance.
- Store integrated data in a dedicated database or data warehouse.

3. Design and Develop Dashboard

- Evaluate different **dashboarding platforms based on feature set, scalability, pricing, usability**.
- Create **wireframes and mockups** to capture initial design concepts.
- **Standardize** layouts, color schemes, font usage per client brand guidelines.
- Build **charts, tables, KPI visualizations** to present data insights effectively.
- Implement **custom interactive functionality** via scripts, plugins, APIs.
- Create dynamic filters, actions, parameters to customize view for each user.
- Implement alerting, notifications based on defined trigger conditions.
- Configure autosave, versioning, git integration for iterative development.
- Perform extensive unit testing throughout development process.

4. Testing and Validation

- Verify **calculation logic, data accuracy** across all metrics and visuals.
- **Check for errors** or unexpected behaviors in different use cases and with different parameter inputs.
- Review dashboard security, access controls, and permissions functionality.
- Load test dashboard with **simulated production-level data volumes**. Tuning as needed.
- **Solicit feedback** from all stakeholder groups through demos and review sessions.
- Address bugs, issues, change requests gathered during reviews and testing.
- Iterate on information design, layouts, and styles based on feedback.
- Gain official approval and sign-off for dashboard release from client sponsors.

5. Deployment and Access Control

- Provision and configure **server infrastructure for dashboard application.**
- **Implement robust security protocols** including SSL, VPN, SSH, Role-based Access Control lists.
- Create user roles and permission groups aligned to org structure.
- Develop **onboarding guides and usage instructions** for end-users.
- **Automate dashboard data** refreshes and job scheduling.
- Set up **monitoring for key performance metrics** - uptime, load, errors.
- Establish data recovery and backup procedures.
- Roll out communication plan to introduce dashboard to end-users.

6. Maintenance and Improvements

- **Monitor platform reliability and data accuracy** - address any issues.
- Develop a product roadmap based on new user requests and business needs.
- Continually refine and optimize performance based on usage data and feedback.
- Implement **new features and enhancements** in iterative development cycles.
- Maintain **comprehensive documentation and technical specifications**.
- Evaluate **new dashboarding technology for possible upgrade**.
- **Audit data sources regularly** for changes that may impact dashboard.
- **Budget time and resources** for ongoing dashboard operations and support.
- Gather user feedback to guide improvement priorities.

General Instructions

- ❑ Adhere to established project timelines and milestones.
- ❑ Ensure alignment of analytics solutions with business objectives.
- ❑ Maintain data integrity and confidentiality throughout the process.
- ❑ Regularly communicate progress and updates to stakeholders.
- ❑ Continuously seek opportunities for process improvement and innovation.

General Challenges

- ❑ Ensuring data quality and consistency across diverse sources.
- ❑ Addressing scalability and performance issues with increasing data volumes.
- ❑ Balancing the need for data accessibility with security and privacy concerns.
- ❑ Managing stakeholder expectations and priorities effectively.
- ❑ Keeping pace with technological advancements in data analytics tools and platforms

Process Implementation Checklist

Do's	Don'ts
Do conduct thorough requirements gathering and analysis.	**Don't** overlook the importance of data quality assurance and validation
Do prioritize data governance and security measures.	**Don't** neglect end-user training and support.
Do engage stakeholders throughout the project lifecycle	**Don't** neglect end-user training and support.
Do engage stakeholders throughout the project lifecycle	**Don't** ignore feedback from end-users and stakeholders during the development and deployment phases.

Inputs

Sustainable High Performance. Enabled.

Link to Sample

Flipcarbon
Sustainable High Performance. Enabled.

Revision History

Appendix

Archives

Flipcarbon
Sustainable High Performance. Enabled.

Flipcarbon
Sustainable High Performance. Enabled.

THANKYOU