## **Business Intelligence and Analytics Plan**

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الهيئة السعودية للتخصصات الصحية Saudi Commission for Health Specialties





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## Introduction



## Introduction

The Business Intelligence and Analytics Plan guides **SCFHS** in effectively using data to improve performance and make accurate decisions. It aims to unlock value from the organization's data, turning it into a strategic asset to achieve desired goals.

This plan aligns with the National Strategy for Data and Artificial Intelligence of Saudi Arabia and supports the Kingdom's Vision 2030 framework.

## **Current State**



# **Current State**

• Definition of Business Intelligence and Analytics :

The process of organizing, storing, and analyzing data to make informed business decisions.

• Importance of Current State Analysis:

Assessing the effectiveness and efficiency of the existing data management system in providing reliable, actionable data.

- Objectives of the Study:
  - $\circ$  Evaluate the effectiveness of the current data infrastructure.
  - ° Assess the BI tools and advanced analytics being used.
  - Identify challenges and opportunities for improving data management processes.
- Components of the Current Solutions:
  - Data Collection Systems: Tools and processes used for data acquisition.
  - Current Databases: (e.g., SQL, NoSQL, cloud-based).
  - Analytics Tools: Business Intelligence tools (Tableau) and advanced analytics platforms (Metabases).
- Challenges and Opportunities:
  - Challenges: Data quality, system integration issues, handling big data.
  - **Opportunities**: Improved decision-making, business growth, increased operational efficiency.



## Strategy & Roadmap



### **Strategy Pyramid**



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### **Data Strategy Tree**

Promote data culture and develop BI & analytics capabilities	Enhance credibility by accessibili	y increasing the qual ity to SCFHS DW	Lead SCFHS innovation, and competitiveness by supporting data-driven decision making								
GKPI01 BI & analytics awareness index GKPI02 BI & analytics capability building index	GKPI03 data assetization index	GKPI04 data quality	index	Gk % Develop pro	(PI05 ment of data iducts	Da	GKPI6 ta value realiza	tion index			
O01.01O01.02O01.03Increase the awareness about data management, BI & analytics domainsO1.02O01.03Increase BI & targeted employees on using analytical toolsIncrease BI & analytics teams' capabilities	O02.02 Develop data Build architectur e and modelling	O02.03 d and activate data quality framework	O02.05 Ensure data availability	Design data products based on business needs and requirement	O03.02 Enhance data analytics framework	O03.03 Implement self-service analytics strategy	O03.04 Build and sustain data use cases portfolio	O03.05 Maximize the return of value from data			
OKPI01 % Completion of BI & % Completion analytics awareness plans OKPI02 # of delivered capability building programs	OKPI05 % completion of data architecture and modelling	OKPI06 OKPI09 % data % data ompleteness consistency	OKPI13 The efficiency ratio of data storage operations and data availability	OKPI14 % completion of data products	OKPI16 % completion of development data analytics framework	OKPI17 % completion of self-service analytics strategy	OKPI18 % completion of developed data use cases	OKPI20 # monetized data products			
		OKPI07 OKPI10 % data % data accuracy validity									
		OKPI08 OKPI11 % data % data uniqueness timeliness						$\wedge$			

### Strategic KPI Card: BI & Analytics Awareness Index

KPI ID		GKP	101	KPI descrip	tion	Measuring the progress of raising awareness about data & analytics, its significance, and methods to utilize it, by targeting all SCFHS's divisions and employees with awareness and training workshops and campaigns on data, BI, and ethical use of them.									
Asso	ciated goal ID	G0	1	Associated goa											
the	The polarity of (+/-)	e polarity of the KPI (+/-)		+ Meas fre		surement quency	Annually	Measurement unit	Percentage						
ment of the KPI and t data source	Aggregation type (Cumulative)		CL	umulative	KPI weight		5%	KPI status	Not activated						
	KPI formula			% Completion of data management & Analytics awareness workshops											
	Data source						Data availability date								
asure	Baseline value			0%			Initial measurement date	Q4 202	.5						
Ae	KPI owner						Supporting entities								
ets	Measurement frequency			2024			2025	2026	2027						
larg(	Target			50%			80%	90%	95%						
F	Achieved va	Achieved value 50													
				Targ	get Achieved	<b>T</b> arg	et Partially Achieved 🛛 🛑 Target Not Ac	hieved	$\wedge$						

### **BI&A** Initiatives

#	BI&A Initiatives		2024 2025					20	26		2027			
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Data Culture and Capability building													
2	Building BI & Analytics hup													
5	Building a data quality framework and data cleansing													
7	Building data & AI strategy													
9	Expanding and improving Analytics infrastructure performance and unify system of Insights													

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## Reports & Dashboards Implementation

#	Advances analytic Execution		2025												
		W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12		
1	Business Requirements Collection														
2	Data collection and quality Check														
3	Data pipeline and DB development														
4	Dashboard Development														
5	UAT User Acceptance Test														
6	Test Knowledge transfer and Documentation														

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## Advances analytic-Modelling Execution

#	Advances analytic Execution		2025												
		M1 M2 M3 M4 M5 M6 M7	M8	M9	M10	M11	M12								
1	Identifying and assessing data sources														
2	Data Exploration Analysis (EDA)														
3	Data Preparation														
4	Model experimentation & identification of best model														
5	Model training														
6	Testing & Deploy														
7	Support & Maintenance														



# Methodology



Define the objectives and priorities you want to achieve using Business Intelligence (BI) and Analytics



Identify all business requirements for BI and Analytics



Develop a roadmap



Determine the resources





 Provide the source and the only reference for truth to improve and support decision making by enabling real-time data and advanced analytics and exploiting the latest technologies to provide the required data on time with the best quality.

### Business Intelligence and Analytics Team



### Business Intelligence and Analytics Team



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### General Department for Business Intelligence and Analytics

- Define detailed data profile rules, detailed business rules, and detailed data quality rules(i.e. data cleansing rules) for all business domain data.
- Create and apply data standards, core business metadata, and core technical metadata (e.g. business terms, valid data values, databases, data warehouses, physical tables, etc.).
- Collect, store, and manage data from internal and external sources.
- Develop and produce accurate, timely, and actionable insights into data usage for decision making.
- Manage master data and data cataloging.
- Build data pipelines, semantic layer, ETL/ELT, datasets, and automate recursive reporting.
- Design the reference data architecture and perform data modeling for the data warehouse and semantic layer
- Manage analytics software and tools including their performance and user support.
- Develop data products for the SCFHS.
- Identify and resolve data problems and departmental requests including ideation, data preparation, experimentation, analytical modeling, visualization, communication, and recommendations
- Support the business by identifying patterns and relationships in large, complex data using Data mining, machine learning, and deep learning.



### Data Architecture Department

- Linking with different data systems from internal and external sources and collecting data such as database operations, operating systems, external data, etc. in one place.
- Processing data and converting it into appropriate formats and preparing it to facilitate its correct collection and easy use for analysis and reporting.
- Create and monitor basic technical metadata (such as data values, databases, data storage, data tables, database properties, etc.).
- Manage all requirements and design various functional database specifications to improve database performance during the reading and analysis process.
- Design reference data and perform data modeling for the data warehouse.
- Catalog and manage Master Data Management (MDM) and its branches.
- Identify and select data sources to provide a comprehensive view of the master data.
- Develop rules and foundations to accurately match and integrate data tables.
- Create an approach to distribute reliable data to systems in the organization.
- Build data workflows, and specialized subsets of data.
- Build and design workflows.
- Work on improving data by adding additional information from external sources such as demographic or geographic information and linking data to other relevant data sources.
- Coordinate with the data solutions team to determine future needs and requirements.
- Identify and Documenting all requirements for developing a data lake environment.
- Monitoring and controlling data loading and technical commands.
- Developing and preparing a schedule for the data warehouse and sub-groups.
- Evaluating and ensuring the quality of all data warehouse results.



#### **Data Solutions Department**

- Support the strategic preparation of product, service and data development to capitalize on business opportunities in emerging technologies.
- Provide detailed analytics, helping users uncover hidden relationships and patterns in their data.
- Visualize data and prepare reports such as visual reports, maps, charts and graphs.
- Develop and produce accurate and actionable insights within a short period of time to help use data for decision-making.
- Enable data comparisons under different conditions and situations.
- Create and store reports using different data sources based on the requests of the SCFHS's departments.
- Conduct exploratory data analysis from complex and disparate data sources to identify patterns and identify opportunities for performance improvement.
- Use statistical tools to identify, analyze and interpret patterns and trends in complex data sets to benefit from them in analysis and forecasting.
- Produce predictive analysis, manage and deploy statistical models and algorithms in production environments and ensure their integration with existing systems.
- Design, implement and measure data pipelines that deliver data with measurable quality.
- Develop a scalable infrastructure to manage, deploy and monitor machine learning models.
- Create and deploy machine learning models through the pipeline.
- Maintain and monitor machine learning models to ensure accuracy and efficiency.
- Collaborate with IT team to integrate and deploy machine learning models into production environments.
- Develop data products and dashboards for the organization.
- Identify and solve data problems and departmental needs including ideation, data preparation, experimentation, modeling, analysis, visualization, communication and recommendations.



# Budget



• The budget, estimated at approximately 1,596,000 SAR, is dedicated to external resources tasked with executing the planned use cases.

# Procedures

Stages of implementing business intelligence and analytics use cases





Business intelligence and analytics tools include a set of software and technologies that help collect, store, analyze, and present data in a way that enables an organization to make informed decisions. These tools vary in their functionality and serve different purposes, and the following



**Data Warehousing Tools:** Microsoft SQL Server Enterprise Edition





### Advanced Analytics Tools:

Programming languages such as (Python, R)

# **BI Architecture**



## **BI Architecture**



# THANK YOU.

