KPMG

पर्यटन मंत्रालय
MINISTRY OF
TOURISM
सत्यमेव जयते

Data Governance Quality Index (DGQI 2.0)

2023

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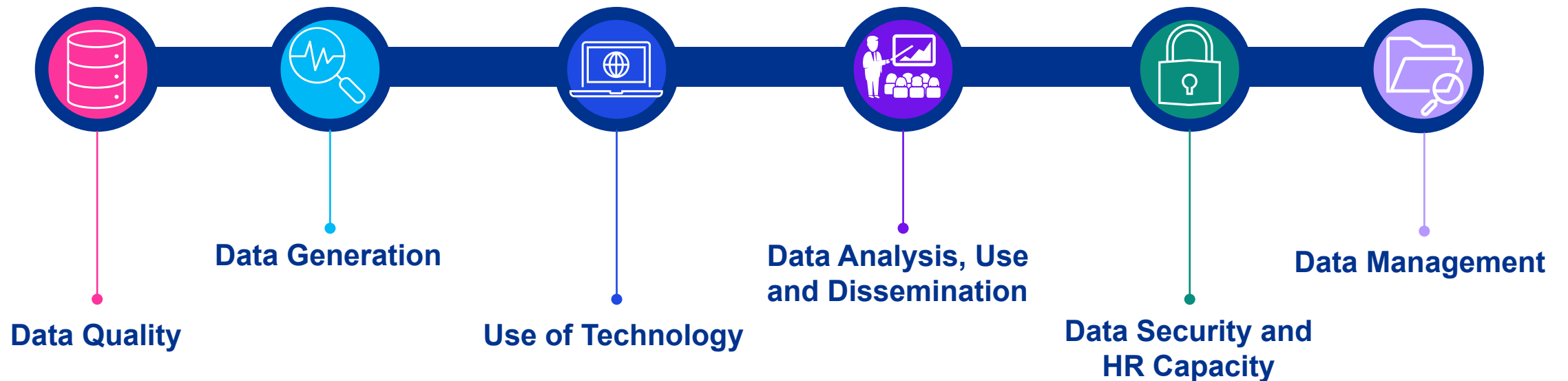
What is DGQI

Self-assessment-based review of data preparedness levels across Ministries / Departments to produce a DGQI score card.

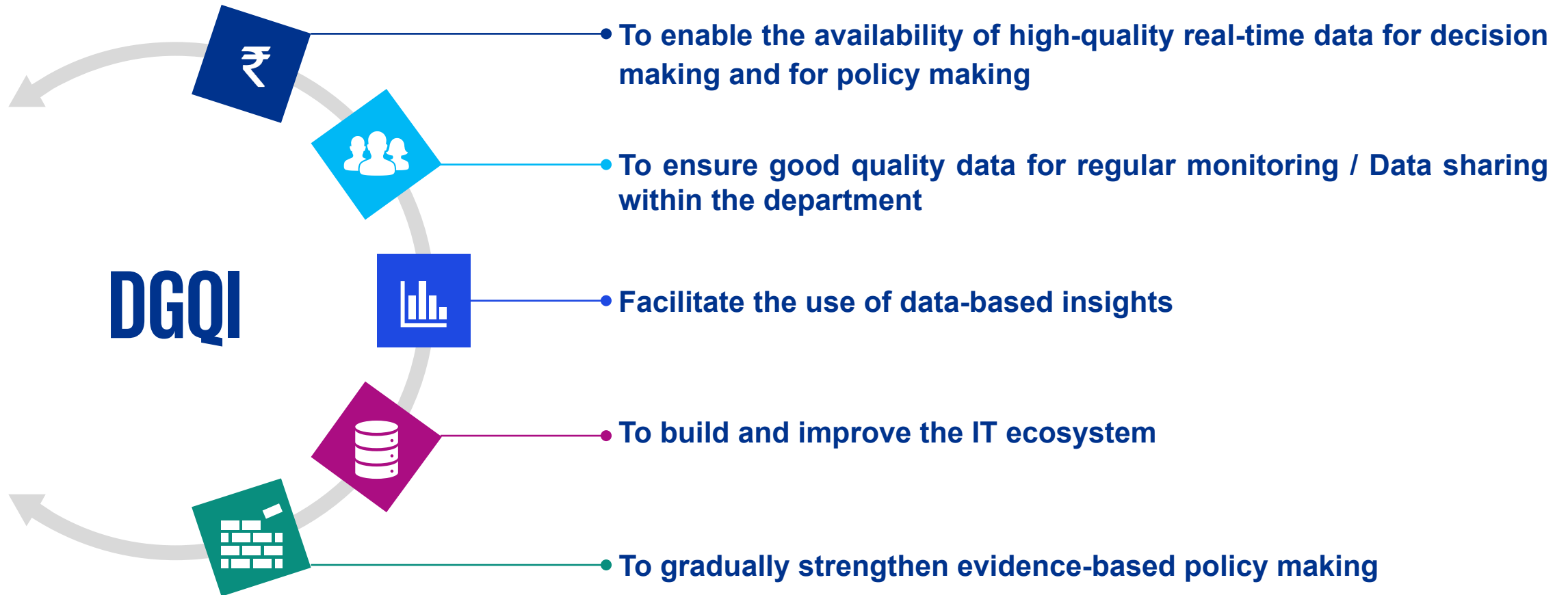The objective is to assessing data preparedness of Ministries / Departments on a standardized framework to drive healthy competition among them and promote cooperative peer learning from best practices.

An online questionnaire was prepared under six major themes of DGQI:

Data Quality

Data Generation

Use of Technology

Data Analysis, Use and Dissemination

Data Security and HR Capacity

Data Management

Purpose of DGQI ?

The intent of the DGQI is to enable Ministries/ Departments and state departments to assess themselves at various levels of data maturity on the basis of a standardized framework, which in turn would facilitate deepening of digitization in the Government of India.

DGQI

- To enable the availability of high-quality real-time data for decision making and for policy making

- To ensure good quality data for regular monitoring / Data sharing within the department

- Facilitate the use of data-based insights

- To build and improve the IT ecosystem

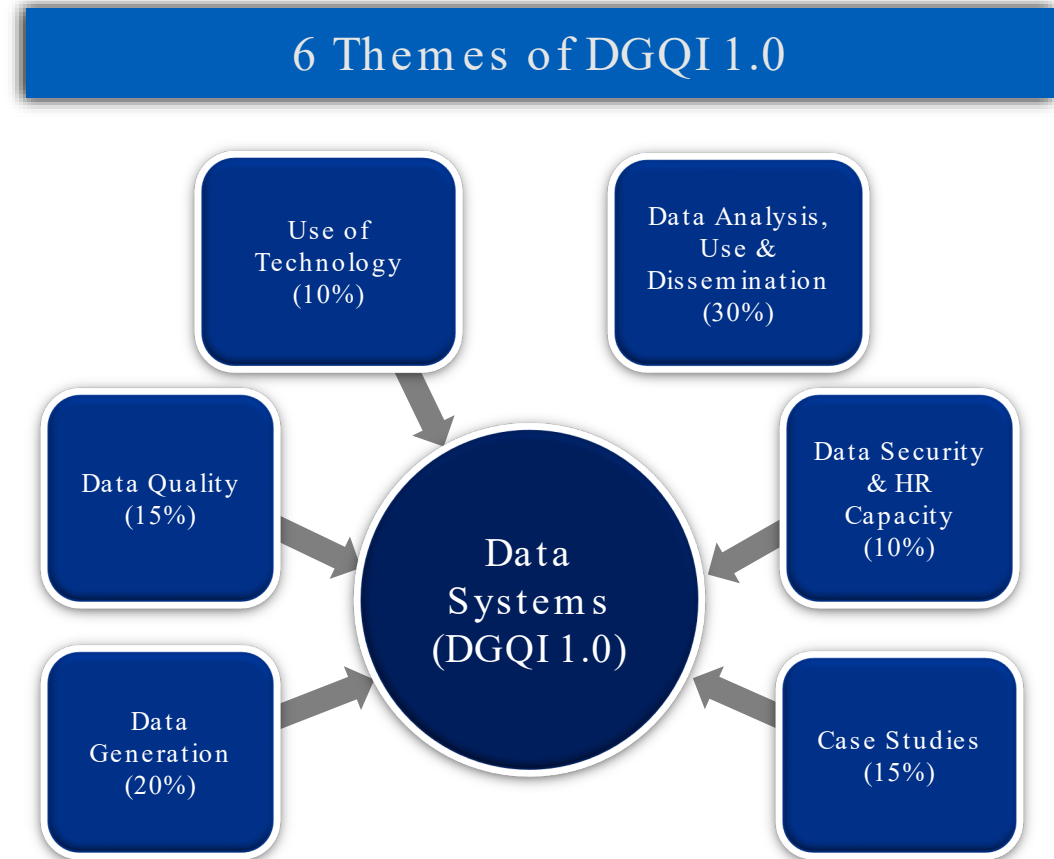- To gradually strengthen evidence-based policy making

DGQI 1.0 Recap

DGQI 1.0 was a framework developed by NITI Aayog to assess the quality of data governance practices in various sectors and institutions in India.

Includes six pillars for assessing data governance practices

Across these six pillars, there were 56 indicators that covered different aspects of data governance practices

The framework provided guidelines for assessing each indicator, including the data sources and methods for collecting and analyzing data.

6 Themes of DGQI 1.0

- Use of Technology (10%)
- Data Analysis, Use & Dissemination (30%)
- Data Quality (15%)
- Data Security & HR Capacity (10%)
- Data Generation (20%)
- Case Studies (15%)

Data Systems (DGQI 1.0)

Introduction and Objective of DGQI 2.0

What is Data Governance Quality Index?

5.0 point index based on standardized self-assessment framework to assess and improve data maturity of Ministry/Departments (M/Ds) for sustainable data driven decision making in programmatic interventions

Objectives

To **review** and **assess** the **data preparedness** of the data/ MIS systems

To prepare a **self assessment** Diagnostic tool – Trigger **contemplation** on **improvements**

To prepare a Data Governance Quality Index to attain frontier 5.0 scores by 2022

To document & disseminate **best practices**

Competitive

Cooperative

DGQI 1.0 Vs DGQI 2.0

DGQI 2.0, is a more comprehensive and detailed framework than its predecessor, DGQI 1.0.

DGQI 2.0 is envisaged as a regular exercise with quarterly reviews

Under DGQI 1.0, M/Ds provided information on data systems for few CS/CSS schemes. Under DGQI 2.0, M/Ds must include all their CS/CSS schemes under DGQI.

DGQI 1.0 Vs DGQI 2.0
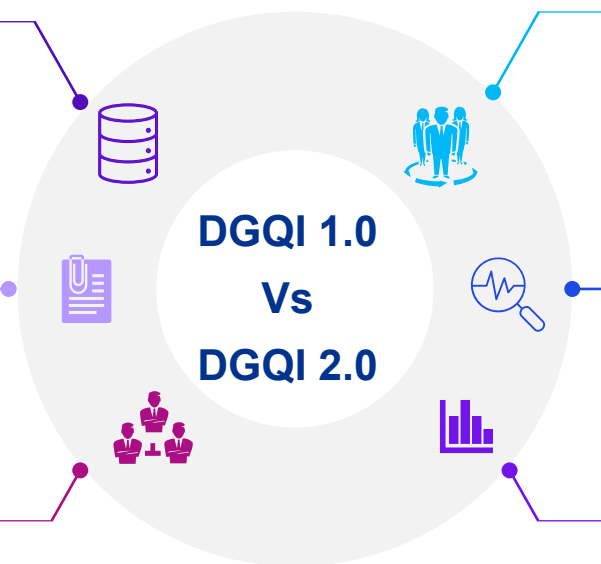
DGQI 1.0 focused only on Data Systems Pillar, while DGQI 2.0 will focus on Data Strategy and Data driven outcomes also.

DGQI 2.0 includes 70 indicators, compared to DGQI 1.0's 56.

DGQI 2.0 scores would also be integrated with Prayas dashboard

DGQI 2.0 Overview
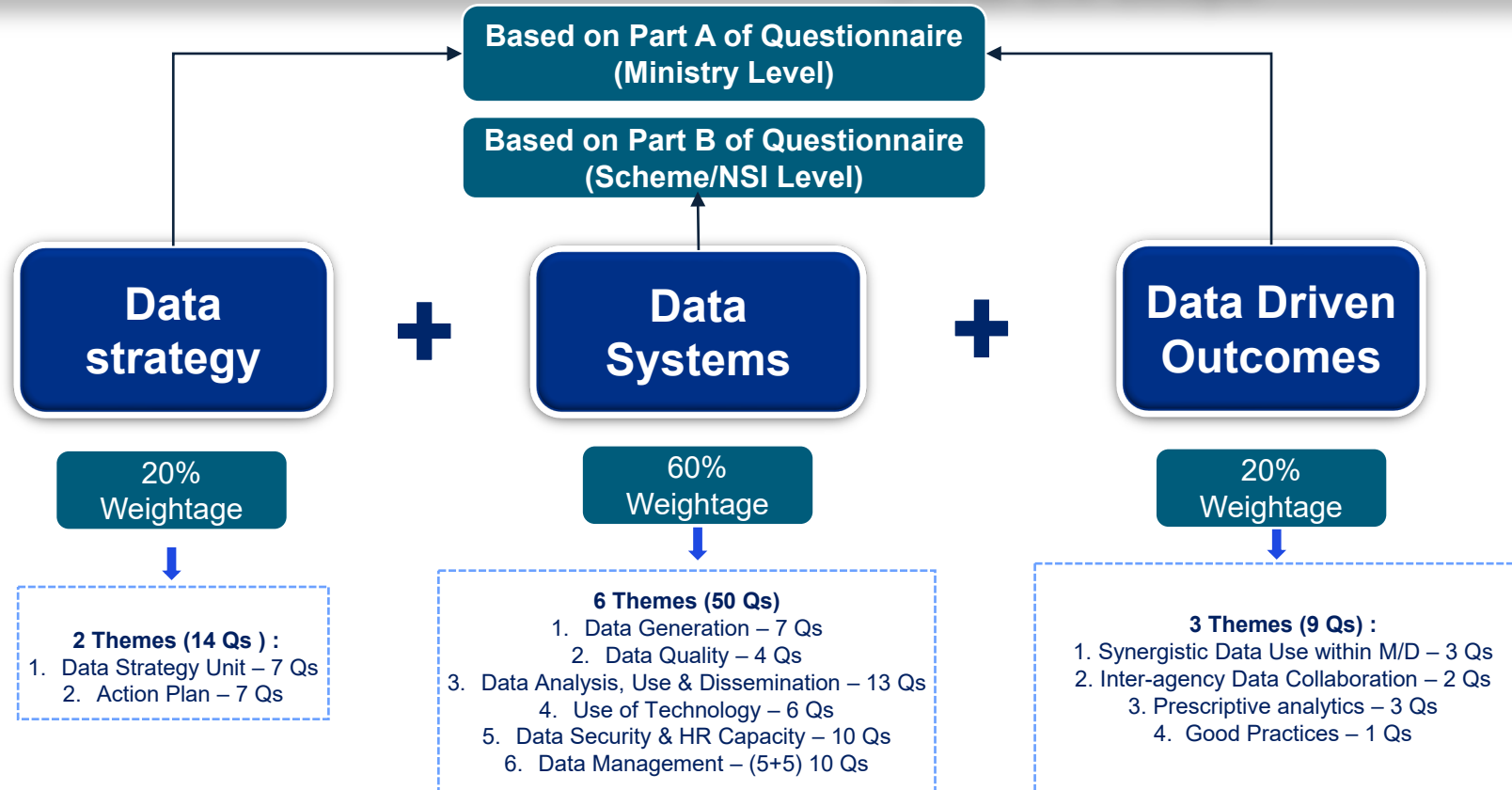
DGQI 2.0 Scope

Based on Part A of Questionnaire (Ministry Level)

Based on Part B of Questionnaire (Scheme/NSI Level)

Scoring Overview

Data strategy + **Data Systems** + **Data Driven Outcomes** = **DGQI 2.0 Score**

20% Weightage

60% Weightage

20% Weightage

Overall DGQI 2.0 Score= 20% * (Data Strategy score) + 60% (Data Systems score) + 20%* (Data Driven Outcomes score)

2 Themes (14 Qs) :
1. Data Strategy Unit – 7 Qs
2. Action Plan – 7 Qs

6 Themes (50 Qs)
1. Data Generation – 7 Qs
2. Data Quality – 4 Qs
3. Data Analysis, Use & Dissemination – 13 Qs
4. Use of Technology – 6 Qs
5. Data Security & HR Capacity – 10 Qs
6. Data Management – (5+5) 10 Qs

3 Themes (9 Qs) :
1. Synergistic Data Use within M/D – 3 Qs
2. Inter-agency Data Collaboration – 2 Qs
3. Prescriptive analytics – 3 Qs
4. Good Practices – 1 Qs

Theme wise weightages – Data Strategy Pillar

Data Strategy + **Data Systems** + **Data Driven Outcomes** = **DGQI score**
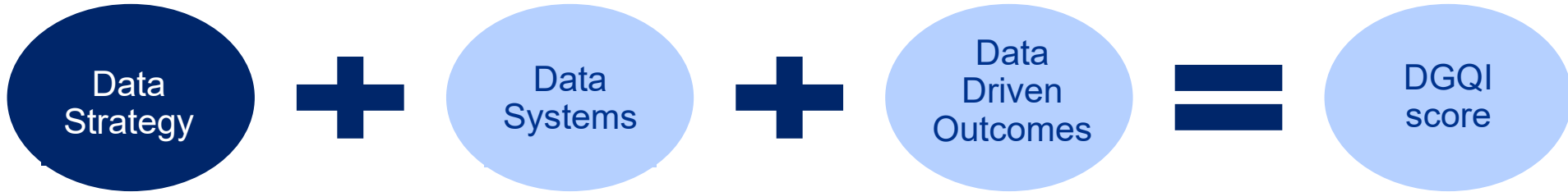
Theme	Theme weightage within data strategy pillar
Data & Strategy Unit	50%
Action Plan	50%

Data strategy score = 50% * (Data & Strategy Unit score) + 50% * (Action plan score)

Theme wise weightages – Data Systems Pillar

Data Strategy **+** Data Systems **+** Data Driven Outcomes **=** DGQI score
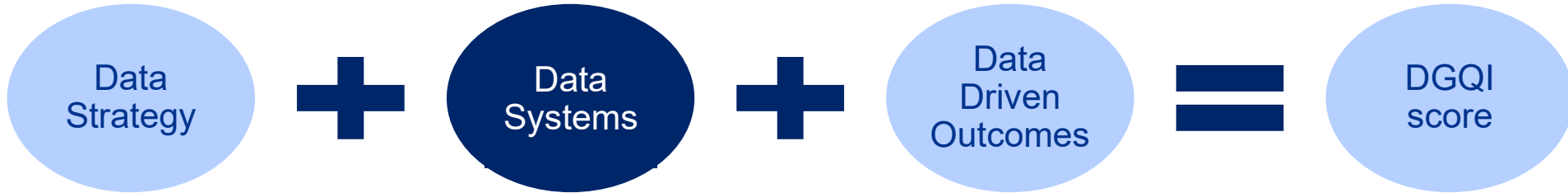
Theme	Theme weightage within data systems pillar
Data Generation	18%
Data Quality	18%
Data analysis, use & dissemination	18%
Use of technology	10%
Data Security & HR capacity data	18%
Data management	18%

Data systems score for each scheme/NSI = 18% * (Data gen score) + 18% *(Data qual) + 18% * (Data analysis) + 10% * (Use of tech) + 18% *(Data sec& HR capacity) + 18% * (Data management)
Simple average of all scheme-level/NSI data systems scores to arrive at aggregated data systems score

Theme wise weightages – Data Driven Outcomes Pillar

Data Strategy **+** Data Systems **+** Data Driven Outcomes **=** DGQI score
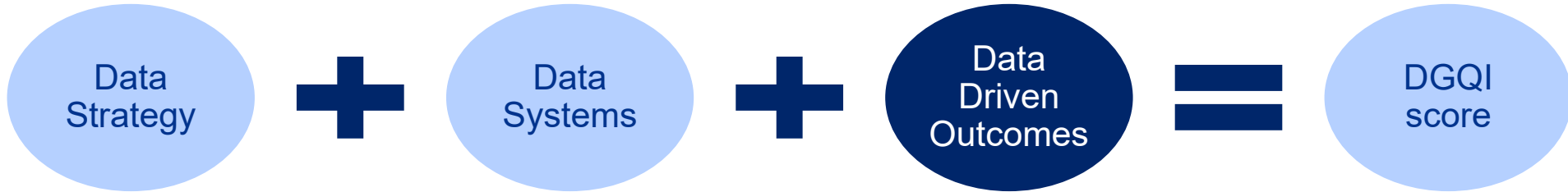
	Theme	Theme weightage within data driven outcomes pillar
	Synergistic data use within M/D	30%
	Inter-agency data collaboration	30%
	Prescriptive Analytics	10%
	Good practices	30%

Data outcomes score = 30% * (Synergistic data use score) + 30% * (Inter-agency data collab score) + 10% * (Prescriptive analytics score) + 30% * (Good practices score)

Overall DGQI Scoring

Data Strategy $+$ Data Systems $+$ Data Driven Outcomes $=$ DGQI score
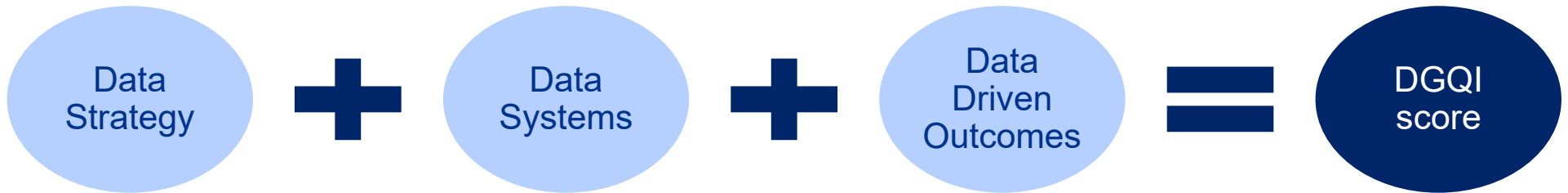
| Pillar Weight in DGQI	Theme	Theme weight within pillar	Overall theme weight in DGQI
Data Strategy (20%)	DSU Action Plan	50% 50%	10% 10%
Data systems (60%)	Data Generation Data Quality Data analysis, use & dissemination Use of technology Data security & HR capacity Data management	18% 18% 18% 10% 18% 18%	11% 11% 11% 6% 11% 11%
Data driven outcomes (20%)	Synergistic data use within M/D Inter-agency data collaboration Prescriptive Analytics Good practices	30% 30% 10% 30%	6% 6% 2% 6%

Score of Ministry of Tourism in DGQI 2.0

Q4 - (2021-2022) score – 0.62
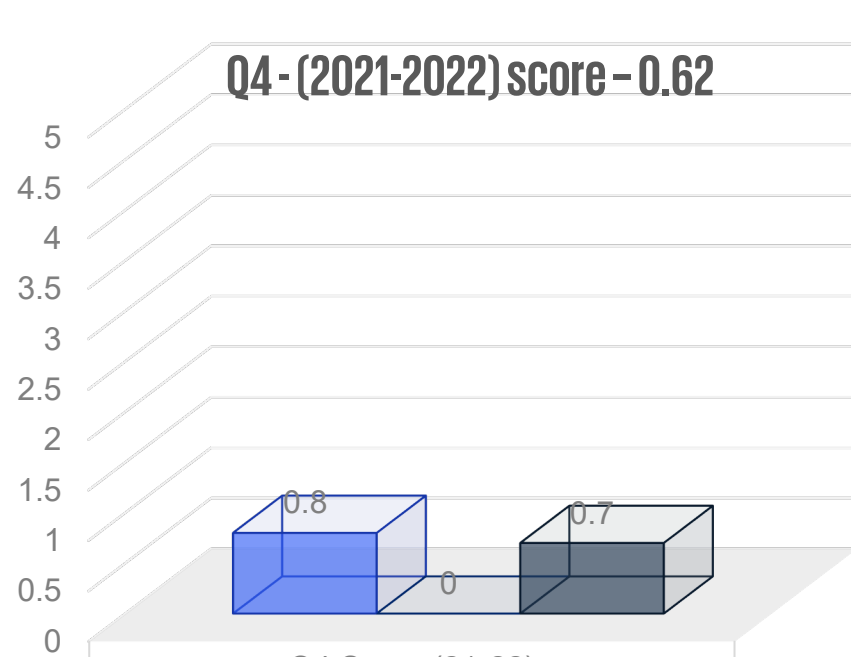
	Q4 Score (21-22)
■ Data System	0.8
■ Data Driven Outcomes	0
■ Data Strategy	0.7

Q3 - (2022-2023) score – 2.76
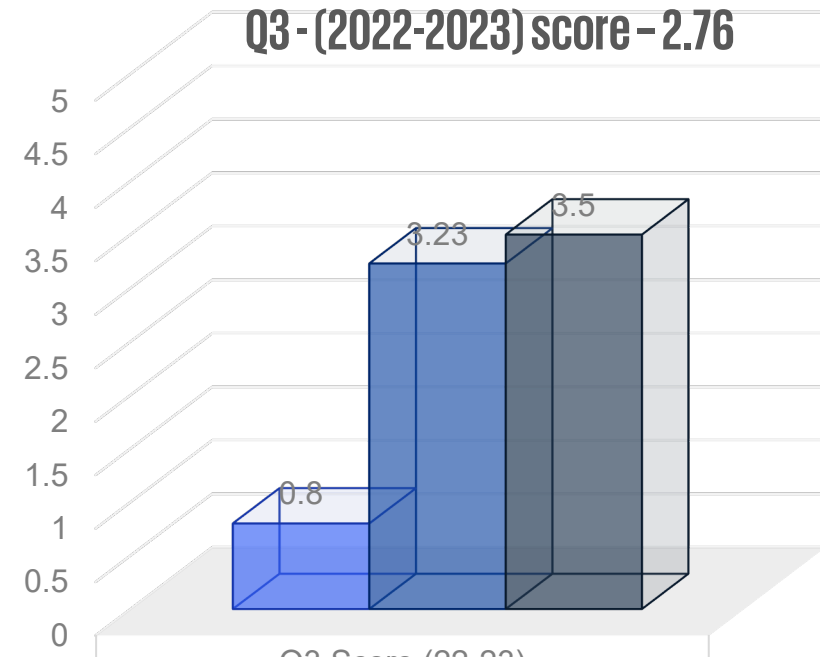
	Q3 Score (22-23)
■ Data System	0.8
■ Data Driven Outcomes	3.23
■ Data Strategy	3.5

Assistance from DGQI Project Management Unit

Assistance in Improving Data Collection and Monitoring; Digitization, integration of data systems

Assistance in understanding requirement of High-quality transactional data with minimal human interface

Assistance in Deriving synergies through convergence of initiatives

Assistance in stakeholder coordination & monitoring through technology adoption

Assistance in Data analytics & visualization

Strategic action plan for achieving high ranking and score in Global Indices and DGQI

CS/CSS

Data & Insights Unit at MoT

Non-Schematic Interventions

IMPACT

Ministry of Tourism among the Top 10 M/D

Increased DGQI scores

- Improved data systems & preparedness
- Real-time data monitoring across schemes
- Data driven policy making
- Increased capacities
- Improved budget utilization & on-ground impact
- Incorporation of best practices

Approach

Envisaged Key Thematic Interventions (1/3) – Scheme Wise

Data Strategy
- Define/document detailed ToR for all DSU verticals/sub-units i.e., Monitoring Unit, Statistics Unit, Technology Unit, Analytics Unit), including mechanisms for regularized progress reviews at DSU Head/Secretary level

Action Plan
- Development of an Action Plan basis the data strategy. Creating objective monitoring frameworks to measure data preparedness for all CS/CSS schemes of the M/D with clearly defined timelines & responsibilities

Data Management
- Establish guidelines/ SoPs for data design, data collection, data sourcing, data processing, storage, exchange, archiving, retention and removal
- Define data ownership norms
- Develop Governance Framework, and Risk & Value assessment framework for collected data

Synergistic Data Use
- Data gap analysis at inter-M/D level w.r.t decision making /policy planning, and development of implementation plan to resolve identified data gaps
- Integration of schematic data systems for seamless data sharing across scheme divisions

Envisaged Key Thematic Interventions (2/3) - Scheme Wise

Inter Agency Data Collaboration

- Facilitate/Strengthen collaborations with other agencies– other M/Ds, private agencies, research organizations etc.– for improvement of data systems; seamless data sharing through APIs integration; and use of non-conventional data sources/emerging technologies etc.

Prescriptive Analytics

- Increased focus on cross-functional prescriptive analytics with institutionalized mechanisms for regular prescriptive data analysis reporting and policy review meetings with schematic divisions

Good Practices

- Identification and dissemination of best practices for strengthening data-driven decision-making (non-schematic or scheme level) within M/D to enable cross learning and accelerated progress

Data Generation

- Identification and documentation of schematic data requirements
- Strengthen mechanisms for data collection and digital reporting for all identified input, output and outcome indicators in accordance with required frequency of data reporting and granularity of data

Envisaged Key Thematic Interventions (3/3) - Scheme Wise

Data Quality
- Develop documented mechanisms and detailed methodology for data quality assessment including protocols for data cleansing, data deduplication, data integrity and data quality control(e.g., data verifications and feedback measures etc.)

Data Analysis, Use & Dissemination
- Undertake data analysis on collected data, including cross schematic/sectoral data–Descriptive; Exploratory; Inferential; Predictive; Causal; and Mechanistic Analysis etc.
- Develop/Augment management dashboard used by officials for visualizing KPIs/KRAs at granular levels, map info, key trends and issues

Use of Technology
- Identify and develop use cases/application of emerging technologies e.g., AI/ML/Blockchain/IoT/Big Data/Drones in scheme implementation
- Monitor integration/linkages of scheme MIS with PFMS/Aadhaar/Mobile no/Bank accounts/GSTN/Udyog Aadhaar etc.

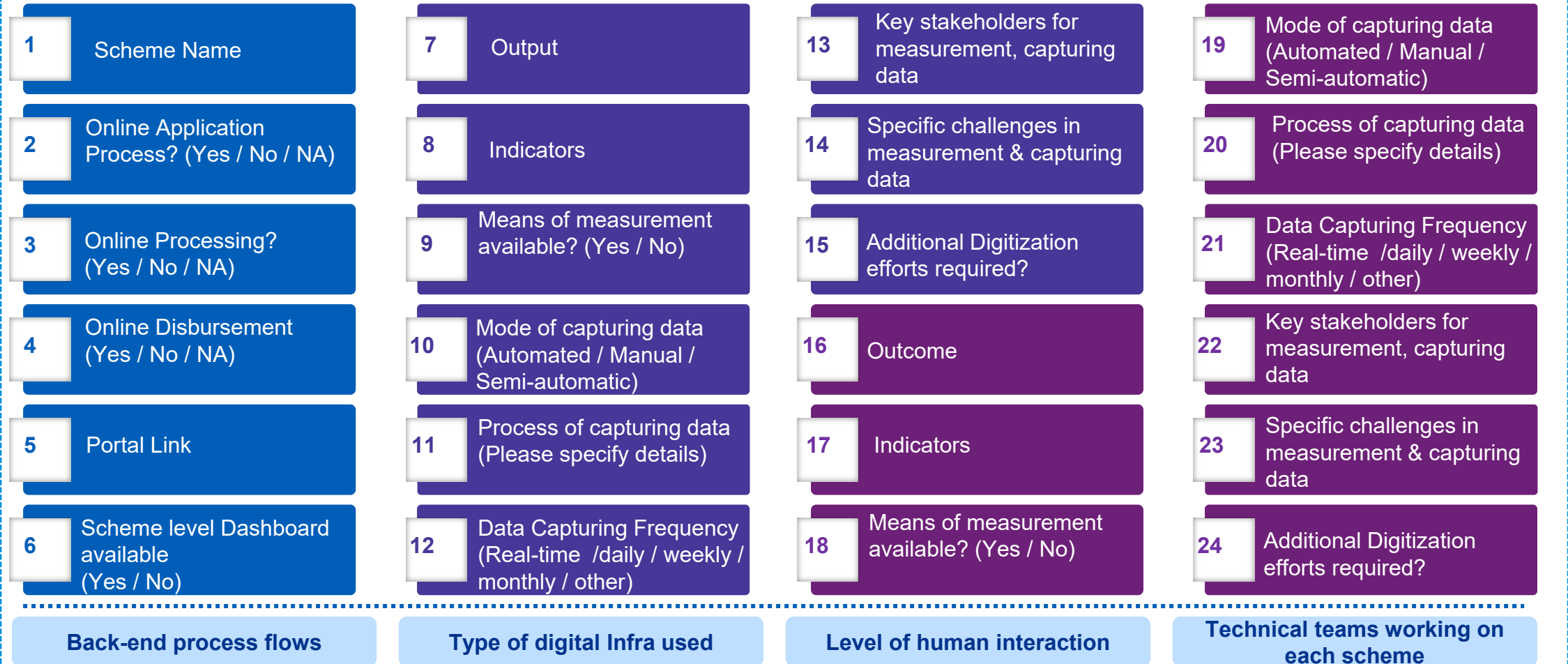**Data Security & HR Capacity**
- Establish and monitor regularized security measures i.e., third-party audits, use of SSL certificates and firewalls, security of sensitive/personal info(i.e., SFA/ MFA/Access control/Data encryption/Data anonymization/User Authorization etc.), and encrypted channels for external communication/ 3rd party integration/ API integration etc.
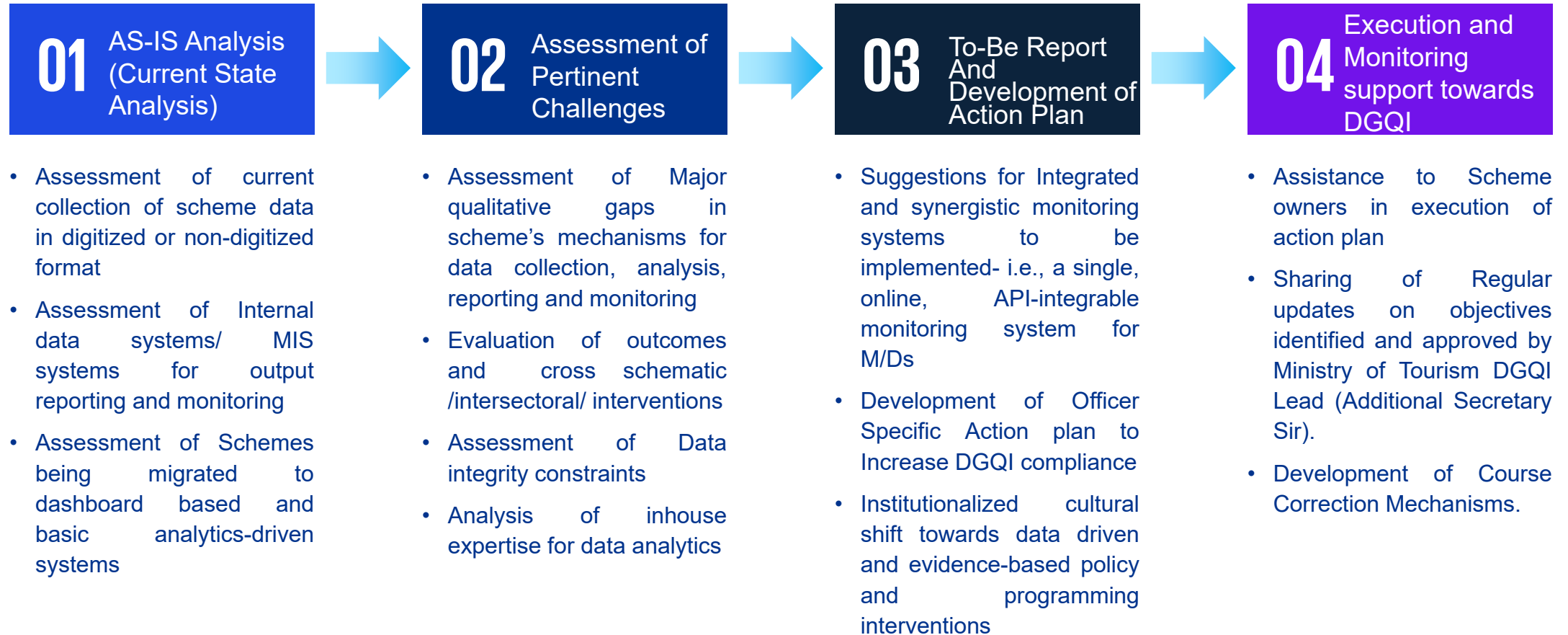
Illustrative Scheme Assessment framework

Scheme Level Data Preparedness

Creating a comprehensive data mapping table for each scheme, with parameters such as :

#		#		#		#	
1	Scheme Name	7	Output	13	Key stakeholders for measurement, capturing data	19	Mode of capturing data (Automated / Manual / Semi-automatic)
2	Online Application Process? (Yes / No / NA)	8	Indicators	14	Specific challenges in measurement & capturing data	20	Process of capturing data (Please specify details)
3	Online Processing? (Yes / No / NA)	9	Means of measurement available? (Yes / No)	15	Additional Digitization efforts required?	21	Data Capturing Frequency (Real-time /daily / weekly / monthly / other)
4	Online Disbursement (Yes / No / NA)	10	Mode of capturing data (Automated / Manual / Semi-automatic)	16	Outcome	22	Key stakeholders for measurement, capturing data
5	Portal Link	11	Process of capturing data (Please specify details)	17	Indicators	23	Specific challenges in measurement & capturing data
6	Scheme level Dashboard available (Yes / No)	12	Data Capturing Frequency (Real-time /daily / weekly / monthly / other)	18	Means of measurement available? (Yes / No)	24	Additional Digitization efforts required?

Back-end process flows	Type of digital Infra used	Level of human interaction	Technical teams working on each scheme

Our Approach

01 AS-IS Analysis (Current State Analysis)

02 Assessment of Pertinent Challenges

03 To-Be Report And Development of Action Plan

04 Execution and Monitoring support towards DGQI

01 — AS-IS Analysis (Current State Analysis)
- Assessment of current collection of scheme data in digitized or non-digitized format
- Assessment of Internal data systems/ MIS systems for output reporting and monitoring
- Assessment of Schemes being migrated to dashboard based and basic analytics-driven systems

02 — Assessment of Pertinent Challenges
- Assessment of Major qualitative gaps in scheme's mechanisms for data collection, analysis, reporting and monitoring
- Evaluation of outcomes and cross schematic /intersectoral/ interventions
- Assessment of Data integrity constraints
- Analysis of inhouse expertise for data analytics

03 — To-Be Report And Development of Action Plan
- Suggestions for Integrated and synergistic monitoring systems to be implemented- i.e., a single, online, API-integrable monitoring system for M/Ds
- Development of Officer Specific Action plan to Increase DGQI compliance
- Institutionalized cultural shift towards data driven and evidence-based policy and programming interventions

04 — Execution and Monitoring support towards DGQI
- Assistance to Scheme owners in execution of action plan
- Sharing of Regular updates on objectives identified and approved by Ministry of Tourism DGQI Lead (Additional Secretary Sir).
- Development of Course Correction Mechanisms.

Incremental shift in DGQI Score

There is an incremental shift in the DGQI score since DGQI team stepped in

0.62	**2.76**	**+2.14**
Previous Score Q4 (2021-22)	**Current Actual Score Q3 (2022-23)**	**Score improvement**
74	**53**	**+21**
Previous Rank Q4 (2021-22)	**Current actual rank Q3 (2022-23)**	**Rank Improvement**

Thank you!

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