Smarten
Augmented Analytics

Feature List

Document Version: 1.0
Product Version: 5.5

www.Smarten.com

Document Information	
Document ID	Smarten-V5.5-Feature-List
Document Version	1.0
Product Version	5.5
Date	28-Sep-2025
Recipient	NA
Author	EMTPL

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Disclaimer

This document is intended to support administrators, technology managers or developers using and implementing Smarten. The business needs of each organization will vary and this document is expected to provide guidelines and not rules for making any decisions related to Smarten. The overall performance of Smarten depends on many factors, including but not limited to hardware configuration and network throughput.

Smarten V 5.5 – Features List

#	Features	Features Availability	Remarks
1	**Applications**		
1.1	**Business Intelligence**		
1.1.1	Crosstab	Yes	Crosstab View Analysis / Report
1.1.2	Tabular	Yes	Tabular View Analysis / Report
1.1.3	Graphs	Yes	
1.1.4	GeoMap	Yes	
1.1.5	Key Performance Indicators (KPI)	Yes	
1.1.6	Dashboards	Yes	
1.1.7	Reports	Yes	Create pixel prefect custom reports
1.1.8	Exception Reporting and Alerts	Yes	Exception using spotlighters in Crosstab and Tabular
1.1.9	What-If Analysis	Yes	For all modules – Crosstab, Tabular, KPI, Graphs, GeoMap and Dashboards
1.1.10	Publishing & Delivery Agent	Yes	(with exported files embedded within email body)
1.1.11	Social BI	Yes	TeamUp—Option to create conversations and perform social BI-related activities within Smarten, including threaded conversations and ratings
1.1.12	Data Extraction and Transformation& Management	Yes	
1.1.13	Administration	Yes	Users, Roles, Access Rights, Authentication, System parameters, Object auto refresh frequency parameters and other application administration
1.1.14	Responsive User Interface	Yes	100% browser based interface that renders itself intelligently based on target device to provide seamless user experience in desktop, tablet and smart phones
1.2	**Augmented Analytics**		
1.2.1	Self-Serve data preparation	Yes	Data preparation for business users
1.2.2	SmartenView	Yes	Smart visualization
1.2.3	SmartenInsight	Yes	Assisted predictive analytics for business users
1.2.4	Clickless analytics (*)	Yes	LLM based AI powered NLP search.
1.2.5	Sentiment analysis	Yes	Categorise text data as positive, negative or neutral sentiments.
1.2.6	SnapShot	Yes	Monitoring and alerts – reveal trends, anomalies and answers
1.2.7	Autoinsights	Yes	Point your dataset and generate best fit and most-accurate predictive models

#	Features	Features Availability	Remarks
			automatically
1.2.8	Data insights	Yes	Review and improve quality of data with data quality index with in-depth statistics
1.2.9	Import PMML	Yes	Import predictive models created and trained in other predictive platforms such as R and Python through PMML files
1.2.10	Quick insights - Narrations (*)	Yes	AI powered quick insights (Narrations) in reports, dashboards, visualizations and NLP.
1.3	**Native mobile app**	Yes	For IOS and Android
1.4	**AI server**	Yes	Add-on AI server service to enable AI powered features such as Clickless analytics (NLP) and Quick insights (Narrations)
1.5	**On-premise database gateway**	Yes	For accessing on-premise databases data from Smarten deployed on cloud
2	**Technology**		
2.1	**Supported Data Sources**		
2.1.1	**For Cubes**		
	ODBC Supported Databases	Yes	
	JDBC Supported Databases	Yes	
	Text/CSV Files	Yes	From AWS S3, Desktop, Folder on server
	XLS/XLSX Files	Yes	From AWS S3, Desktop, Folder on server
	SAP connector	Yes	
	R script	Yes	
	XML / JSON files	Yes	From AWS S3, Desktop, Folder on server
2.1.2	**For Datasets**		
	ODBC Supported Databases	Yes	
	JDBC Supported Databases	Yes	
	Text/CSV Files	Yes	From AWS S3, Desktop, Folder on server
	XLS/XLSX Files	Yes	From AWS S3, Desktop, Folder on server
	SAP connector	Yes	
	R script	Yes	
	XML / JSON files	Yes	From AWS S3, Desktop, Folder on server
	Google Analytics	Yes	
	SmartenInsight models	Yes	SmartenInsight models as data source
	AWS Athena	Yes	
	Google BigQuery	Yes	
	Hive	Yes	
	HDFS		
	Google sheets	Yes	
	Snowflake	Yes	

#	Features	Features Availability	Remarks
	Smarten BI objects	Yes	Smarten BI objects such as Report and Crosstab as data source
	Custom script	Yes	Write complex logic or ETL process through custom script (JavaScript) support. You can also use this script as a data source
	Impala	Yes	
	On-premise databases	Yes	Provides on-premise gateway utility to connect on-premise databases from Smarten deployed on cloud
	Creatio	Yes	
	Jira	Yes	
	Microsoft Fabric data warehouse	Yes	
2.2	**Supported Operating System**		
2.2.1	Microsoft Windows	Yes	
2.2.2	Linux	Yes	
2.2.3	Unix	Yes	
2.3	**Architecture**		
2.3.1	100% browser-based User Interface	Yes	
2.3.2	100% browser-based Administration Interface	Yes	
2.3.3	BI Object Developer Tools / Programmer Modules	NA	No separate Developer tools required to create BI objects
2.3.4	Platform Independent	Yes	Can run on any platform
2.3.5	UI compatibility with Smart phones and Tablets	Yes	Responsive & Adaptive 'Design once, Use anywhere' UI through supported browsers
2.3.6	Managed Memory Computing	Yes	Managed Memory Computing delivers best response time and high performance by effectively utilizing the unique hybrid technology developed to deliver performance based on your infrastructure and usage
2.4	**Administration**		
2.4.1	Directory Authentication	Yes	AD and LDAP
2.4.2	Internal (Proprietary) Authentication	Yes	
2.4.3	Metadata Exchange across the Suite	Yes	
2.4.4	Usage Monitoring and Audit logs analytics	Yes	Audit logs analytics, Usage logs and active users list
2.4.5	Re-usable Objects / Components	Yes	
2.4.6	Import / Export User	Yes	

#	Features	Features Availability	Remarks
	Access Rights at fine-grain level		
2.4.7	Administration reports	Yes	Administrative reports such as User wise object permissions, User wise object delivery and publishing details, Cube/Dataset rebuild details and others.
2.4.8	Email digest for scheduler tasks execution status summary	Yes	
2.5	**Security**		
2.5.1	By Company	Yes	
2.5.2	By Department/Division	Yes	
2.5.3	By Menu	Yes	
2.5.4	By Function (View, Add, Change, Delete, Publish)	Yes	
2.5.5	By Dimension	Yes	
2.5.6	By Dimension Value	Yes	
2.5.7	By Measure	Yes	
2.6	**Internationalization / Language Support**	Yes	
3	**Data Extraction and Transformation**		
3.1	**Cube Definition & Management**		
3.1.1	Metadata	Yes	
3.1.2	Incremental Extraction	Yes	
3.1.3	Scheduler based Data Refresh	Yes	
3.1.4	Linked Cubes	Yes	JOIN and UNION Linked Cubes
3.1.5	Wizard based Data Extraction	Yes	
3.1.6	Automatic Time Series Generation with Hierarchy from year up to seconds level	Yes	
3.1.7	Financial and Calendar Year in Time Series	Yes	
3.1.8	Cache cube	Yes	With and without aggregation
3.1.10	Real-Time cubes	Yes	
3.1.11	Import / Export cube	Yes	
3.1.12	Access rights and permissions	Yes	
3.1.13	Refresh Cube Data	Yes	
3.2	**Dataset definitions &**		

#	Features	Features Availability	Remarks
	Management		
3.2.1	Metadata	Yes	
3.2.2	Wizard based Data Extraction	Yes	
3.2.3	Scheduler based Data Refresh	Yes	
3.2.4	Cache datasets	Yes	
3.2.5	Real-Time datasets	Yes	
3.2.6	Import / Export Datasets	Yes	
3.2.7	Access rights and permissions	Yes	
3.2.8	Publish and refresh dataset	Yes	
3.2.9	Incremental extraction	Yes	
3.2.10	Publish and ingest data	Yes	Publish and ingest dataset data to other data source
3.2.11	Update dataset data through API	Yes	Update dataset data through API from third party applications
3.3	**Self serve data preparation (SSDP)**		
3.3.1	Explore Data		
3.3.1.1	Highlight data	Yes	- Highlight Missing Values - Highlight Spaces - Highlight Inconsistent Values - Highlight Duplicate columns / rows - Highlight Duplicate column values - Highlight Rows or columns with all null / zeros
3.3.1.2	Unique values	Yes	
3.3.1.3	Filter data	Yes	
3.3.1.4	Statistics	Yes	
3.3.2	Clean Data		
3.3.2.1	Cluster & Edit	Yes	
3.3.2.2	Find & Replace	Yes	
3.3.2.3	Remove data	Yes	- Remove column / Row - Remove Row with this column value - Remove Duplicate columns / Rows - Remove Rows with all null / zeros
3.3.2.4	Outliers	Yes	Remove / replace outlier values
3.3.2.5	Fill data	Yes	Fill values in null or empty cells using various options like previous row data, mean value, min/max value, median value etc.
3.3.3	Transform data		

#	Features	Features Availability	Remarks
3.3.3.1	Various data transformation options based on column data type	Yes	
3.3.3.2	Change data type	Yes	
3.3.3.3	Aggregate data	Yes	
3.3.4	Shape data		
3.3.4.1	Split column / row	Yes	
3.3.4.2	Merge columns	Yes	
3.3.4.3	Copy column / row	Yes	
3.3.4.4	Edit row	Yes	
3.3.4.5	Add column	Yes	Add column based on expression, data operations and custom script
3.3.4.6	Mark column as Time dimension, GeoMap column, Dimension, Measure	Yes	
3.3.5	Blend data		
3.3.5.1	Join dataset	Yes	Join types like inner, Left, right, Outer Joins
3.3.5.2	Append dataset	Yes	
3.3.6	Sampling	Yes	Random sampling, Stratified sampling, Systematic sampling
3.3.7	Action editor	Yes	
3.3.8	Lineage diagram	Yes	Dataset lineage and Column lineage
3.3.9	Auto suggestions and recommendations	Yes	
3.3.10	Split dataset	Yes	
3.3.11	Data partitioning	Yes	Helps improve performance for large size datasets
3.3.12	Data insights	Yes	Improve data quality using data quality index
3.3.13	SQL query	Yes	SQL query as an action on dataset for transforming, combining and achieving complex business requirements on dataset data
3.3.14	Pivot data	Yes	
3.3.15	Unpivot data	Yes	
3.3.16	Custom script	Yes	Custom script as an action on dataset for achieving complex business requirements on dataset data
4	**Analytical Functionality**		
4.1	**Crosstab**		
4.1.1	Dynamic Crosstab Building and Modification with Drag & Drop	Yes	With option to create an object with limited data while creating new object

#	Features	Features Availability	Remarks
4.1.2	Slice & Dice	Yes	
4.1.3	Drill Down	Yes	Organic and Inorganic
4.1.4	Drill Through	Yes	
4.1.5	Data Operations	Yes	Sum, Avg, Effective Avg, Count, Effective Count, Maximum, Minimum, First, Last, Row Percentage, Row Group Percentage, Column Percentage, Column Group Percentage, Total Percentage, Relative Row Difference, Relative Row Difference Percentage, Relative Row Group Difference, Relative Row Group Difference Percentage, Relative Column Difference, Relative Column Difference Percentage, Relative Column Group Difference, Relative Column Group Difference Percentage, Row Cumulative Sum, Column Cumulative Sum, Row Group Cumulative Sum, Column Group Cumulative Sum, Distinct Count, Distinct Sum, Distinct Average, Least Recent, Most Recent
4.1.6	Summary Operations	Yes	Default, Sum, Avg, Effective Avg, Count, Effective Count, Maximum, Minimum, Group Sum, Group Avg, Group Count, Group Maximum, First, Last, Group Minimum, Row Percentage, Row Group Percentage, Column Percentage, Column Group Percentage, Total Percentage, Relative Row Difference, Relative Row Difference Percentage, Relative Row Group Difference, Relative Row Group Difference Percentage, Relative Column Difference, Relative Column Difference Percentage, Relative Column Group Difference, Relative Column Group Difference Percentage, Row Cumulative Sum, Column Cumulative Sum, Row Group Cumulative Sum, Column Group Cumulative Sum
4.1.7	Filters	Yes	Cube/Dataset data Filter, Object data Filter, Advanced Filter, Time Series Filter, Show / Hide, Retrieval Parameters, Page Filter (With interdependence on other page filter values)
4.1.8	Suppress Zeros	Yes	
4.1.9	Sorting	Yes	Advance sorting, Custom sorting (for Custom Order Sequence)
4.1.10	Ranking	Yes	
4.1.11	Pack / Unpack	Yes	
4.1.12	Data Value Display Value Mapping	Yes	
4.1.13	Spot Lighter	Yes	
4.1.14	Notes	Yes	

#	Features	Features Availability	Remarks
4.1.15	Formatting Dimension and Measure Values	Yes	
4.1.16	Absolute Time Series	Yes	
4.1.17	Relative Time Series	Yes	
4.1.18	Range Time Series	Yes	
4.1.19	User Defined Dimensions	Yes	
4.1.20	User Defined Measures	Yes	With option of cell reference
4.1.21	Global Variables	Yes	
4.1.22	Retrieval Parameters	Yes	
4.1.23	What-If Analysis	Yes	
4.1.24	SubView	Yes	Associate one analysis with another based on Join
4.1.25	On-the-fly conversion to Graph	Yes	
4.1.26	Export	Yes	pdf, csv, xml, html, xls, xlsx
4.1.27	Publish	Yes	By email (with exported files embedded within email body) or publishing to a folder
4.1.28	Object information	Yes	
4.1.29	Column lineage diagram	Yes	Column lineage from report column up to data source level
4.1.30	Quick insights (*)	Yes	AI powered quick insights (Narrations) of object data
4.2	**Tabular**		
4.2.1	Dynamic Tabular Building and Modification with Drag & Drop	Yes	With option to create an object with limited data while creating new object
4.2.2	Page navigation	Yes	
4.2.3	Drill Down	Yes	Organic and Inorganic
4.2.4	Drill Through	Yes	
4.2.5	Data Operations	Yes	Sum, Avg, Effective Avg, Count, Effective Count, Maximum, Minimum, First, Last, Row Percentage, Row Group Percentage, Relative Row Difference, Relative Row Difference Percentage, Relative Row Group Difference, Relative Row Group Difference Percentage, Row Cumulative Sum, Row Group Cumulative Sum, Distinct Count, Distinct Sum, Distinct Average, Least Recent, Most Recent
4.2.6	Summary Operations	Yes	Default, Sum, Avg, Effective Avg, Count, Effective Count, Maximum, Minimum, Group Sum, Group Avg, Group Count, Group Maximum, First, Last, Group Minimum, Row Percentage, Row Group Percentage, Relative Row Difference, Relative Row Difference

#	Features	Features Availability	Remarks
			Percentage, Relative Row Group Difference, Relative Row Group Difference Percentage, Row Cumulative Sum, Row Group Cumulative Sum
4.2.7	Filters	Yes	Cube/Dataset data Filter, Object data Filter, Advanced Filter, Time Series Filter, Show / Hide, Retrieval Parameters, Page Filter (With interdependence on other page filter values)
4.2.8	Suppress Zeros	Yes	
4.2.9	Sorting	Yes	Advance sorting, Custom sorting (for Custom Order Sequence)
4.2.10	Ranking	Yes	
4.2.11	Master-Detail view	Yes	
4.2.12	Data Value Display Value Mapping	Yes	
4.2.13	Spot Lighter	Yes	
4.2.14	Notes	Yes	Only on Measure values
4.2.15	Formatting Dimension and Measure Values	Yes	
4.2.16	Absolute Time Series	Yes	
4.2.17	Relative Time Series	Yes	
4.2.18	Range Time Series		
4.2.19	User Defined Dimensions	Yes	
4.2.20	User Defined Measures	Yes	With option of cell reference
4.2.21	Global Variables	Yes	
4.2.22	Retrieval Parameters	Yes	
4.2.23	What-If Analysis	Yes	
4.2.24	SubView	Yes	Associate one analysis with another based on Join
4.2.25	On-the-fly conversion to Graph	Yes	
4.2.26	Export	Yes	pdf, csv, xml, html , xls, xlsx
4.2.27	Publish	Yes	By email (with exported files embedded within email body) or publishing to a folder
4.2.28	Object information	Yes	
4.2.29	Column lineage diagram	Yes	Column lineage from report column up to data source level
4.2.30	Quick insights (*)	Yes	AI powered quick insights (Narrations) of object data
4.3	**Graphs**		
4.3.1	Dynamic Graph Generation and Modification with Drag	Yes	With option to create an object with limited data while creating new object

#	Features	Features Availability	Remarks
	& Drop		
4.3.2	Chart Types	Yes	Vertical Bar, Horizontal Bar, Stacked Vertical Bar, Stacked, Horizontal Bar, Percentage Vertical Bar, Percentage Horizontal Bar, Line, Stacked Line, Percentage Line, Area, Stacked Area, Percentage Area, Pie, Radar, Stacked Radar, Combined, XY Chart, Histogram, Candle Stick, High Low Open Close, Heatmap
4.3.3	Gauges Types	Yes	Dial Gauge
4.3.4	On-the-fly conversion from one graph type to another	Yes	
4.3.5	Configuration of Graph Properties	Yes	
4.3.6	Reference Lines	Yes	
4.3.7	Trend Lines	Yes	Linear, Logarithmic, Polynomial, Power, Exponential, Moving Average
4.3.8	Color Schemes / Themes for Graphs	Yes	
4.3.9	Graph Data Values Display	Yes	
4.3.10	Drill Down	Yes	Organic and Inorganic
4.3.11	Zoom In/ Out	Yes	
4.3.12	Data Operations	Yes	Sum, Avg, Effective Avg, Count, Effective Count, Maximum, Minimum, First, Last, Row Percentage, Row Group Percentage, Column Percentage, Column Group Percentage, Total Percentage, Relative Row Difference, Relative Row Difference Percentage, Relative Row Group Difference, Relative Row Group Difference Percentage, Relative Column Difference, Relative Column Difference Percentage, Relative Column Group Difference, Relative Column Group Difference Percentage, Row Cumulative Sum, Column Cumulative Sum, Row Group Cumulative Sum, Column Group Cumulative Sum, Distinct Count, Distinct Sum, Distinct Average, Least Recent, Most Recent
4.3.13	Filters	Yes	Cube/Dataset data Filter, Object data Filter, Advanced Filter, Time Series Filter, Retrieval Parameters, Page Filter (With interdependence on other page filter values)
4.3.14	Sorting	Yes	Advance Sorting, Custom Sorting (for Custom Order Sequence)
4.3.15	Ranking	Yes	
4.3.16	Pack / Unpack	Yes	
4.3.17	Data Display Value Mapping	Yes	

#	Features	Features Availability	Remarks
4.3.18	Absolute Time Series	Yes	
4.3.19	Relative Time Series	Yes	
4.3.20	Range Time Series		
4.3.21	User Defined Dimensions	Yes	
4.3.22	User Defined Measures	Yes	
4.3.23	Global Variables	Yes	
4.3.24	Retrieval Parameters	Yes	
4.3.25	What-If Analysis	Yes	
4.3.26	Object information	Yes	
4.3.27	Export	Yes	jpg, pdf, png
4.3.28	Publish	Yes	By email (with exported files embedded within email body) or by specified file folder path
4.3.29	Column lineage diagram	Yes	Column lineage from report column up to data source level
4.3.30	Quick insights (*)	Yes	AI powered quick insights (Narrations) of object data
4.4	**GeoMap**		
4.4.1	Dynamic Map Generation and Modification with Drag & Drop	Yes	With option to create an object with limited data while creating new object
4.4.2	Map Types	Yes	Inbuilt map, Google map
4.4.3	On-the-fly conversion from one map type to another	Yes	
4.4.4	Configuration of GeoMap Properties	Yes	
4.4.5	Color Schemes / Themes for GeoMap	Yes	
4.4.6	GeoMap Data Values Display	Yes	
4.4.7	Drill Down	Yes	Organic and Inorganic
4.4.8	Zoom In / Out	Yes	
4.4.9	Data Operations	Yes	Sum, Avg, Effective Avg, Count, Effective Count, Maximum, Minimum, First, Last, Row Percentage, Row Group Percentage, Column Percentage, Column Group Percentage, Total Percentage, Relative Row Difference, Relative Row Difference Percentage, Relative Row Group Difference, Relative Row Group Difference Percentage, Relative Column Difference, Relative Column Difference Percentage, Relative Column Group Difference, Relative Column Group Difference Percentage, Row Cumulative Sum, Column Cumulative Sum, Row Group Cumulative Sum,

#	Features	Features Availability	Remarks
			Column Group Cumulative Sum, Distinct Count, Distinct Sum, Distinct Average, Least Recent, Most Recent
4.4.10	Filters	Yes	Cube/Dataset data Filter, Object data Filter, Advanced Filter, Time Series Filter, Retrieval Parameters, Page Filter (With interdependence on other page filter values)
4.4.11	Data Display Value Mapping	Yes	
4.4.12	Spot Lighter	Yes	
4.4.13	Absolute Time Series	Yes	
4.4.14	Relative Time Series	Yes	
4.4.15	Range Time Series		
4.4.16	User Defined Measures	Yes	
4.4.17	Global Variables	Yes	
4.4.18	Retrieval Parameters	Yes	
4.4.19	What-If Analysis	Yes	
4.4.20	Object information	Yes	
4.4.21	Export	Yes	jpg, pdf, png
4.4.22	Publish	Yes	By email (with exported files embedded within email body) or by specified file folder path
4.4.23	Multi layers support	Yes	Multi layers support to show multiple Geo locations with different data
4.4.24	Column lineage diagram	Yes	Column lineage from report column up to data source level
4.4.25	Quick insights (*)	Yes	AI powered quick insights (Narrations) of object data
4.5	**Key Performance Indicators**		With option to create an object with limited data while creating new object
4.5.1	Dynamic KPI Creation and Modification	Yes	Wizard based interface for KPI Expression, Target, Warning, Alert, Maximum and Minimum values, Time Dimension and Polarity
4.5.2	KPI Types	Yes	Individual KPIs and KPI Sets
4.5.3	KPI Views	Yes	Monitor - KPI value zones (Warning, Alert, Target, Maximum and Minimum) using Gauge Display
			Trend - KPI over a time period with Alert, Warning, Target, Maximum and Minimum plotting using Line Chart
			Detailed View
			Performance - Displays period over period KPI performance with performance indicator and performance trends, and also a Spark line

#	Features	Features Availability	Remarks
			chart for a snapshot of performance trend
			Comparison - Displays the comparative view of various KPIs within a KPI Set or comparison of individual KPIs across different Dimension Values
			Text Only - Displays performance of a KPI in simple Text view
			Grid- Displays period wise KPI data in tabular view
4.5.4	KPI Breakdown	Yes	KPI Breakdown to drill down performance of a KPI on selected Dimension Values
4.5.5	Configuration of KPIs and KPI View Properties	Yes	
4.5.6	On-the-fly Conversion from one view to another	Yes	
4.5.7	Filters	Yes	Time Series Filter, Retrieval Parameters, Page Filter (With interdependence on other page filter values)
4.5.8	Link Object	Yes	
4.5.9	Formatting KPI Values	Yes	
4.5.10	Trend Lines	Yes	Linear, Logarithmic, Polynomial, Power, Exponential, Moving Average
4.5.11	Global Variables	Yes	
4.5.12	Retrieval Parameters	Yes	
4.5.13	What-If Analysis	Yes	
4.5.14	Export	Yes	Individual KPIs - pdf, xml, csv, xls, xlsx
			KPI set - pdf, csv, xml, xls, xlsx
4.5.15	Publish	Yes	By email (with exported files embedded within email body) or by specified file folder path
4.5.16	Drill through	Yes	Only In default view
4.5.17	Object information	Yes	
4.5.18	Column lineage diagram	Yes	Column lineage from report column up to data source level
4.6	**Dashboards**		Responsive and Fixed size dashboards
4.6.1	Create new from existing Dashboard	Yes	Responsive and Fixed size dashboards
4.6.2	Create new from scratch with Responsive	Yes	Freehand Dashboard Design without scripting to create or edit dashboards, using intuitive dashboard designer with Drag & Drop, Resize, Alignment, property configuration, etc.
4.6.3	Create new from scratch with Fixed-size	Yes	Fixed size Dashboard Design, using intuitive dashboard designer with Drag & Drop, Resize, Alignment, property configuration, etc.

#	Features	Features Availability	Remarks
4.6.4	Multiple Dashboards in one page	Yes	Through Tabs
4.6.5	Supported Dashboard Objects	Yes	Crosstab, Tabular, Graph, GeoMap, KPI, KPI Group, Absolute Time Series, Relative Time Series, Image, Text, Current Selections, Single Column Filter, Multi Column Filter, Ranking
4.6.6	Use of existing BI Objects within Dashboard	Yes	
4.6.7	Global Filters	Yes	
4.6.8	Operations within individual Dashboard Objects	Yes	Drill down, Drill up, Edit
4.6.9	Filter	Yes	Context Filter (with highlight effect for selected value), Filter on Dimension, Time Series Filter, Retrieval Parameters, Single column and Multi column Filter (With interdependence on other page filter values), Page filter Associate Filters with All or Specific object(s) in Dashboard Common Filter for objects from multiple cubes
4.6.10	Rank	Yes	Ranking control can be associated with all or selected object(s) in the dashboard.
4.6.11	Global variable and Retrieval parameters settings	Yes	
4.6.12	What-If Analysis	Yes	
4.6.13	Operations on Dashboard Objects	Yes	Edit Object, Link to any other BI Object with option to filter linked object based on filters in section object, Link to any URL
4.6.14	Edit Text Objects	Yes	User can add / edit text in the Text component of dashboard at runtime
4.6.15	Export	Yes	Jpg, png, pdf, xls, xlsx
4.6.16	Publish	Yes	By email (with exported files embedded within email body) or by specified file folder path
4.6.17	Object information	Yes	
4.6.18	Quick insights (*)	Yes	AI powered quick insights (Narrations) for each dashboard section
4.7	**SmartenView**		
4.7.1	Intuitive smart data visualization based on nature of data	Yes	
4.7.2	Visualization Types	Yes	Vertical Bar, Horizontal Bar, Stacked Vertical Bar, Stacked, Horizontal Bar, Percentage

#	Features	Features Availability	Remarks
			Vertical Bar, Percentage Horizontal Bar, Line, Stacked Line, Percentage Line, Area, Stacked Area, Percentage Area, Pie, Radar, Stacked Radar, Combined, XY Chart, Histogram, Candle Stick, High Low Open Close, Heatmap , Treemap, Hierachy tree, Bubble, Chord, Sunburst, Dial Gauge, Table, Geomaps
4.7.3	On-the-fly conversion from one graph type to another	Yes	
4.7.4	Configuration of Graph Properties	Yes	
4.7.5	Reference Lines	Yes	
4.7.6	Trend Lines	Yes	Linear, Logarithmic, Polynomial, Power, Exponential, Moving Average
4.7.7	Color Schemes / Themes for Graphs	Yes	
4.7.8	Graph Data Values Display	Yes	
4.7.9	Drill Down	Yes	Organic
4.7.10	Zoom In/ Out	Yes	
4.7.11	Data Operations	Yes	Sum, Avg, Effective Avg, Count, Effective Count, Maximum, Minimum, First, Last, Row Percentage, Row Group Percentage, Column Percentage, Column Group Percentage, Total Percentage, Relative Row Difference, Relative Row Difference Percentage, Relative Row Group Difference, Relative Row Group Difference Percentage, Relative Column Difference, Relative Column Difference Percentage, Relative Column Group Difference, Relative Column Group Difference Percentage, Row Cumulative Sum, Column Cumulative Sum, Row Group Cumulative Sum, Column Group Cumulative Sum, Distinct Count, Distinct Sum, Distinct Average, Least Recent, Most Recent
4.7.12	Filters	Yes	Cube / Dataset data Filter, Object data Filter, Advanced Filter, Time Series Filter, Retrieval Parameters, Page Filter (With interdependence on other page filter values)
4.7.13	Sorting	Yes	Advance Sorting, Custom Sorting (for Custom Order Sequence)
4.7.14	Ranking	Yes	
4.7.15	Pack / Unpack	Yes	
4.7.16	Data Display Value Mapping	Yes	
4.7.17	Absolute Time Series	Yes	
4.7.18	Relative Time Series	Yes	

#	Features	Features Availability	Remarks
4.7.19	Range Time Series		
4.7.20	User Defined Dimensions	Yes	
4.7.21	User Defined Measures	Yes	
4.7.22	Global Variables	Yes	
4.7.23	Retrieval Parameters	Yes	
4.7.24	Object information	Yes	
4.7.25	Export	Yes	jpg, pdf, png
4.7.26	Publish	Yes	By email (with exported files embedded within email body) or by specified file folder path
4.7.27	Sampling	Yes	
4.7.28	Snapshot view for large data	Yes	
4.7.29	Column lineage diagram	Yes	Column lineage from report column up to data source level
4.7.30	Quick insights (*)	Yes	AI powered quick insights (Narrations) of object data
4.8	**SmartenInsight**		
4.8.1	Assisted predictive modelling	Yes	
4.8.2	Predictive algorithm techniques	Yes	Association, Correlation, Classification, Clustering, Forecasting, Regression, Hypothesis testing, Descriptive statistics
4.8.3	Supported Algorithms	Yes	Decision tree, K-Nearest Neighbour Classification, Binary Logistic Regression, Multinomial Logistic Regression, Support Vector Machine, Naive Bayes Classification, K-means Clustering, Hierarchical Clustering, Apriori, Pearson Correlation, Spearman Correlation, Holt Winters Forecasting, ARIMA, Multiple ARIMA, ARIMAX, Multiple ARIMAX, Simple Linear Regression, Multiple Linear Regression, Independent t-test, Paired t-test, Chi-squared test, ANOVA test, Multilayer perception classification, Random forest classification, Gradient boosting regression, Random forest regression, Isotonic regression, Gaussian regression
4.8.4	Model parameters	Yes	
4.8.5	Fine tune parameters and properties	Yes	
4.8.6	Model summary	Yes	
4.8.7	Interpretation	Yes	
4.8.8	Apply the model (single instance)	Yes	

#	Features	Features Availability	Remarks
4.8.9	Mass Apply	Yes	Get predicted vales for multiple records
4.8.10	Simulation	Yes	Predict value interactively
4.8.11	Auto recommend target and predictors	Yes	
4.8.12	Export	Yes	
4.8.13	Sampling	Yes	
4.8.14	Object Information	Yes	
4.8.15	Key influencer analysis	Yes	
4.8.16	Model rebuild scheduler	Yes	
4.8.17	Sentiment analysis	Yes	
4.9	**Reports**		
4.9.1	Template based dynamic report generation engine	Yes	
4.9.2	Filters	Yes	Page filter / Retrieval parameters
4.9.3	Object information	Yes	
4.9.4	Export	Yes	pdf
4.9.5	Publish	Yes	By email or by specified file folder path
4.10	**Clickless analytics**		
4.10.1	NLP based query engine	Yes	
4.10.2	Intuitive search query bar with suggestions	Yes	
4.10.3	Intuitive smart data visualization based on nature of data	Yes	
4.10.4	Visualization Types	Yes	Vertical Bar, Horizontal Bar, Stacked Vertical Bar, Stacked, Horizontal Bar, Percentage Vertical Bar, Percentage Horizontal Bar, Line, Stacked Line, Percentage Line, Area, Stacked Area, Percentage Area, Pie, Radar, Stacked Radar, Combined, XY Chart, Histogram, Candle Stick, High Low Open Close, Heatmap , Treemap, Hierachy tree, Bubble, Chord, Sunburst, Dial Gauge, Table, Geomaps and Crosstab
4.10.5	On-the-fly conversion from one visualization type to another	Yes	
4.10.6	Interactive Explainer	Yes	Explainer provides explanation of the query and how natural query tokens are interpreted by the system
4.10.7	Breakdown columns	Yes	
4.10.8	Ranks	Yes	
4.10.9	Dataset columns	Yes	

#	Features	Features Availability	Remarks
	information		
4.10.10	Explore result in details	Yes	Allow to open result in respective Smarten object detailed view
4.11	**SnapShot**		
4.11.1	Dynamic SnapShot Creation and Modification	Yes	Wizard based interface for SnapShot creation with parameters such as Target KPI, Time dimension, Polarity, Frequency, Aggregation and context variables
4.11.2	SnapShot Types	Yes	SnapShot with breakdown and SnapShot without breakdown
4.11.3	SnapShot analysis and interpretation	Yes	Anomaly detection and trend analysis, Context variable wise Comparison view, Context variable wise contribution analysis, Volatility index
4.11.4	Alerts management	Yes	Configure anomaly alerts based on good or bad anomaly with desired threshold, notification delivery method (email and in-portal) and notification recipients.
4.11.5	Anomaly Notifications	Yes	Based on alert configuration, user receives In-app or Email notification for anomaly on Target KPI
4.11.6	Export	Yes	pdf
4.11.7	SnapShot refresh scheduler settings	Yes	
4.11.8	Object information	Yes	
5	**Information Delivery**		
5.1	Time-based Schedulers	Yes	
5.2	BI Object Delivery	Yes	
5.3	Delivery Method - Email	Yes	SSL Support
5.4	Delivery Method - File System	Yes	
6	**Integration with other applications**		
6.1	Embed Smarten objects using RESTful Web Services & JavaScript API	Yes	Can embed Smarten objects with other applications except SmartenInsight objects
6.2	Embed Smarten objects creation interface using RESTful Web Services & JavaScript API	Yes	Can embed BI object (Dashboard, crosstab, tabular, graph, geomap, KPI, SmartenView) creation flow with other applications
6.3	Single Sign On (SSO) integration	Yes	SAML standard based Single Sign On (SSO) integration with other applications through API
6.4	Web services API for	Yes	Web services API for administration, user

#	Features	Features Availability	Remarks
	administration		access rights and configuration management
6.5	API for SmartenInsight models	Yes	API for getting prediction from model and other model insights
6.6	API for Clickless analytics	Yes	API for integrating Clickless analytics search bar and result pane
6.7	API to ingest data into Smarten dataset	Yes	API for ingesting data into Smarten datasets from third party applications

Note
(*) indicated features need access to Smarten AI server.

Product and Support Information

Find more information about Smarten and its features at www.smarten.com
Support: support@smarten.com
Sales: sales@smarten.com
Feedback & Suggestions: support@smarten.com
Support & Knowledgebase Portal: support.smarten.com