

Microsoft Power BI

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Abstract: With the changeable business circumstances, the significance of Business Intelligence has gained lots of deliberation. Business Intelligence tools can provide the standardization with a fast and persuasive decision making process based on the multiple data sources, which might be able to affect the survival of the organization on the market. And because of the changes in the extrinsic business environment and the profession needs, a new access of BI solution, Self-service BI solution, is introduced and during the last few years, the number of the market players using the approach has increased expeditiously. The objective of this paper was to build a BI solution according to one of Self-service BI solutions: Power BI presents by Microsoft, one of the leading professionals in the area of MSBI. This research contains two parts. The first part is the theory package which covers the BI and Self-service BI approaches in order to provide the readers with an overall understanding of these concepts. It also sets up the understructure for the empirical part of this research paper project. The research paper started with analyzing BI and Self-service BI and the relationship between them. After this, the Microsoft BI solution was introduced before moving to the back-ground facts about Power BI. The second part of this research represents how to use Power BI to build a best BI solution based on the business scenario. During this testing process, the compulsory steps for building a BI solution were popularized also covering the main range of capabilities in the tool package. The consequence of this research paper was a BI solution built using Power BI and it met the requirements set for it. The observational case presented in this study can be used as a supportive user guide for all those who are concerned about Microsoft Power BI.

Keywords: Auto-Scheduling; analytics; exploring; Integration; impactful; Intelligence; Visualization

I. INTRODUCTION

This document introduces the main capabilities of Power BI, Microsoft's cloud-based analytics service for visualizing, exploring, and extracting insights from data. The objective of this document help you comprehend what Power BI offers and how it can support your organization's business. The concept of business intelligence has been around in various forms for more than a century and a half. At its core, BI is about understanding the facts - and the relationship between facts - in a way that guides decision-making and action. From a technology standpoint, BI is a set of approaches and tools for transforming raw (meaningless) data into meaningful business insights.

IT professionals have consistently played a key role in unlocking value from data by creating and maintaining data warehouses, building and exposing complex data models, or report creation. At the same time, end users have been relying largely on the support from IT to meet their BI needs, including the development of reports.

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Microsoft Excel paved the way for self-service BI, as it was the first step in giving business analysts the ability to extract insights from data. Microsoft made self-service BI a reality with Power Pivot, extending capabilities to Excel that were previously found only in databases.

Today, BI continues to evolve and Microsoft is leading the way by bringing a new generation of BI to organizations, with solutions that will extend and build on, rather than replace, existing analytics platforms and tools. With Power BI, a business analytics service for visualizing and analyzing all of your data in one place, Microsoft's goal is to bring business intelligence to everyone.

With Power BI, the IT professional can

- Focus on what they love – Data, and provide quality and authoritative data sets to end users, business analysts and data scientists
- Meet the growing business need for consumable data
- Spend less time on infrastructure maintenance or report development
- Focus on increasing demand for real-time and streaming data sources.

The BI analyst is able to

- connect to authoritative data with ease and confidence
- visually explore data
- navigate through data quickly, optimized for performance
- pull data together from different sources, create data models and impactful, interactive reports
- easily share data models and reports with end users

The end user is empowered to

- get started and see results quickly
- monitor in real-time what matters most, in one place
- share reports and dashboards with others
- stay connected from anywhere

With Power BI, Microsoft is expanding the reach of analytics to more users than ever before.

II. RESEARCH METHODOLOGY

The research news will be introduced in this chapter are as follows: the opportunity and objective of the research, the research queries and finally the research procedure.

A. Research Scope

The research opportunity of this research evolves the theory of BI and Self-service BI, the foundation of the Microsoft BI solution and the provisional research on Power BI. During the practical research process, a test case was carried out to aids in figuring out the main functionalities of Power BI.

In addition, it helps to comprehend how to define and build a BI solution by using Microsoft Power BI.

B. Research Purposes and Queries

In this research paper, the consecutive research questions will be answered:

- What are BI and Self-service BI?
- What are the structures (frameworks) of Microsoft BI and Microsoft Power BI?
- How to give description and build a BI solution with Microsoft Power BI?

There are two intentions for this research. The first one is to know what the framework of Microsoft Power BI is. And the second purpose is to figure out how to create the determinate and report by using Power BI from end user's prospective. In order to achieve the goals, will first set up the theory foundation on Business Intelligence, Self-service Business Intelligence and Microsoft Power BI. Then, the factual research will be done on the framework to figure out how to form the solution by using Power BI.

C. Research Methodology

The abstract part in this research paper covers the familiar information about BI, Self-service BI, the framework of Microsoft BI and the countenance of Power BI. And in the empirical part, how to operate Power BI to define and build the solution is demonstrated by the test case.

III. THEORETICAL CIRCUMSTANCES

In order to figure out how to build BI solution with Power BI, there is an imperative need of comprehending what BI is and its related terminologies and frameworks. Therefore, this chapter will start with the concept Deliberation of Business Intelligence, which includes the history, the explanation and the architecture. As Power BI is defined as Self-service BI, the concept of Self-service BI will be intricate. This chapter will end with the minutiae's of Power BI.

A. Business Intelligence

Business intelligence (BI) is described as "the set of techniques and tools for the renewal of meaningless (raw) data into meaningful and meaningful information for business analysis purposes". The phrase "data surfacing" is also more often correlated with BI functionality. BI technologies are capable of managing large amounts of unorganized data to help identify, promote and otherwise create new crucial business opportunities. The goal of BI is to allow for the easy perceptions of these large volumes of data.

History

The term "Business Intelligence" was originally composed by Richard Millar Devens in the Cyclopædia of Commercial and Business Anecdotes' from 1865. In a 1958 article, IBM researcher Hans Peter Luhn used the term business intelligence. He worked the Webster's dictionary definition of intelligence: "the ability to apprehend the interrelationships of presented facts in such a way as to guide action on the way to a desired goal.

Business intelligence as it is understood today is said to have evolved from the decision support systems (DSS) that

began in the 1960s and developed during the whole of the mid-1980s. DSS originated in the computer-aided models created to assist with decision making and planning

In 1988, an Italian-Dutch-French-English monopoly organized an international meeting on the Multiway Data Analysis in Rome. The eventual goal is to reduce the multiple dimensions down to one or two (by detecting the patterns within the data) that can then be presented to human decision-makers.

In 1989, Howard Dresner (later a Gartner Group analyst) proposed "business intelligence" as an umbrella term to describe "concepts and methods to improve business decision making by using fact-based support systems." It was not until the late 1990s that this usage was extensive.

B. Self-service Business Intelligence

Distinguished with Business Intelligence, Self-service Business Intelligence is a new-born BI motif. Self-service business intelligence (SSBI) is a way to data analytics that facilitate business users to access and work with allied data even though they do not have a background in mathematical analysis, business intelligence (BI) or data mining. Allowing end users to make decisions based on their own queries and analyses frees up the organization's business intelligence and information technology (IT) teams from creating the plurality of reports and allows those teams to focus on other tasks that will help the management reach its goals.

1) Definition of Self-service Business Intelligence

The interpretation of Self-service Business Intelligence was projected by Claudia Imhoff and Colin White. The ease within the BI environment that enable BI users to become more self-reliant and less reliant on the IT organization. These ease focus on four main objectives: easier approach to source data for reporting and analysis, easier and improved support for data analysis features, faster deployment options such as appliances and cloud computing, and simpler, customizable, and cooperative end-user interfaces.

2) Self-service BI vs Traditional BI

Self-service BI has lots of advantages that traditional BI does not have, Self-service BI is not a replacement of traditional BI solution. In fact, Self-service BI and traditional BI support each other in many areas. In addition, the target users for these two types of BI solution are distinctive. Self-service BI focuses on business users who have slight experience with IT or related information while traditional BI has both business users and IT professionals involved in the solutions.

Self-service BI accentuate on providing an easier tool to use with less IT involvement and usually it is a pre-defined package. The Self-service BI let business users have the direct access to data source, which facilitate a better and faster access than conventional way. In addition, Self-service BI allows end users to create personalized reports and analyses. IT professionals are no longer one of the key users in Self-service BI, IT becomes an auxiliary role. On the other hand, traditional BI is carried out according to the organization's own needs consistently managed by IT professionals or a BI center.

In traditional BI, IT division is not only a supportive role to help business users to understand what kind of data is feasible, but also one of the key roles in all tasks related to data from eliciting to loading. It is very hard to say which one is the better option for an organization. If the organization has more advanced and customized business needs, traditional BI is still the primary option. If the organization is looking for a more self-reliant and less IT-dependency solution, then Self-service BI will be a better option. It is also possible for an organization to have both solutions working at the same time. In this case, the organization really has to target on how to balance both solutions.

C. Microsoft Self-service BI

Power Pivot is Microsoft's first stride in Self-service BI field. Within these years' growth, Microsoft now gives Power BI for Office 365 and Self-service BI features in Excel. In this chapter, Power BI and its related features will be given. To create multileveled equations, it may be essential to treat the equation as a graphic and put it into the text after your paper is styled.

Number equations successively. Equation numbers, within parentheses, are to position flush right, as in (1), using a right tab stop. To make your equations more condensed, you may use the solidus (/), the exp function, or suitable exponents. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use a long dash relatively than a hyphen for a minus sign. Punctuate equations with commas or periods when they are part of a sentence, as in

$$a + b = \gamma \quad (1)$$

Note that the equation is centered using a center tab stop. Be assured that the symbols in your equation have been defined before or instantly following the equation. Use "(1)," not "Eq. (1)" or "equation (1)," except at the beginning of a sentence: "Equation (1) is ..."

1) Overview of Power BI

Power BI is Microsoft's most recent Self-service BI offering. Microsoft Power BI solution gives business user oriented data analysis and visualization capabilities to upgrade decision-making process and the business visions. Power BI is a cloud-based Self-service BI solution, which means you can build and deploy solution immediately with data from cloud and on-premises data sources, systems and function. All these are introduced in Microsoft's trust enterprise cloud.

Power BI consists of three main features and services. The first feature is the Self-service BI features in Excel. There are four features: Power Query, Power Pivot, Power View and Power Map; all these features are used to give data analysis efficiencies for business users. The second feature is Power BI for Office 365, which proposes the platform where users can share reports, datasets even queries online and embellish the ability to access data and reports. And you can even find answer to your queries with the most recent Q&A features in Power BI for Office 365. The third feature is the IT infrastructure for Power BI, which builds a simple way for administration and data management between on-premises and in cloud data.

Mostly, every Excel consumer can be the point of Power BI if they have a need for Self-service BI capabilities. Microsoft defines the target users of Power BI into three categories: report creators such as the data analysts or consultants, data steward such as data scientists, administrators or IT professionals and report customers. Report creators will advantage from the analytical capabilities, sharing and searching features. The data steward can use Power BI to manage data connection and structure. IT professionals act as management to ensure Power BI working properly and control the security issues. Power BI provides a trustworthy platform to share reports and analyses for a better decision, which build up the association inside the organization. And every-one can be a report user by using Power BI.

2) License and Cost

	Power BI	Power BI	Power BI
	Add-on for EXCEL Subscribers	Standalone	Standalone + Office 365 ProPlus
Price	\$20* user/month	\$40 user/month	\$52 user/month
	(billed annually \$240/year)	(billed annually \$480/year)	(billed annually \$624/year)
	Buy Now Free Trial	Buy Now Free Trial	Buy Now Free Trial

3) Features and Services

The Power BI service, or powerbi.com, offers a simple, intuitive experience for interacting with data. From creating and sharing dashboards to exploring and enhancing reports, Power BI makes it easy to engage with data from heterogeneous sources, fueling faster, more insightful business decisions. With Power BI, you get a rich, consolidated view of key information, no matter where all of the underlying data is stored.

a) Live dashboards

A Microsoft Power BI dashboard is a set of data visualizations, or charts, from one or more underlying reports, presented in an engaging way that makes it easy to glean insights - no analytics expertise needed. An advantage of Power BI is that dashboards are live. For example, when a visualization in a dashboard is connected to a real-time data source, the visualization updates continuously, enabling faster insights.

A dashboard may contain visualizations from multiple reports. Dashboards are highly customizable - you may add, or "pin", any chart from any report to any dashboard.

b) Interactive reports

With a user-friendly interface, Power BI enables anyone to create rich, interactive reports. A report is a set of charts, also known as visualizations, based on the same underlying dataset*. You may construct a report from scratch, select a pre-authored report (such as a report generated in Power BI Desktop), or apply a default report for a given dataset. Reports can be customized - for example, by modifying visualizations in an existing report, or adding new visualizations.

If there is a need to highlight different aspects of operations using the same data, generate as many reports as needed from a single dataset. Reports are the foundation for dashboards. Once a report contains the desired visualizations, pin the report, or a subset of its contents, to a dashboard for ease of viewing. Reports can also be shared with other individuals in an organization, and consumed on both desktop computers and mobile devices.

c) Data visualizations

Dashboards and reports are built using visualizations, or charts. Power BI offers a variety of visualization options, enabling you to present data in a compelling and visually appealing manner. There are a growing number of visualizations available that can be applied to any dataset. These include: comparison charts (bar, line, basic area and waterfall charts), composition charts (tree maps, donut and pie charts), mixed comparison etc.

d) Natural Language Query

Natural language query - also known as Q&A - is a unique characteristic of Power BI that lets you ask questions of your data phrased in plain English, and produces answers in the form of new visualizations, or charts. Ask anything of your data - Q&A then intelligently filters, sorts, aggregates, groups, and displays data based on key words in the question asked. Even the least quantitatively-inclined can quickly find answers by asking questions the same way they would ask another person.

e) Mobile applications

Power BI supports live, secure dashboard access on any device through native, interactive apps for Windows, IOS, and Android. To enhance the viewing experience, the dashboard user interface is optimized for smaller displays. Setting favorites makes it easier to access specific visualization tiles.

The apps include several mobile-specific features. You can zoom in and out of visualizations to look at data more closely. To stay on top of changes, set up alerts, and receive a notification when data exceeds or drops below certain thresholds. Take a snapshot of a report or visualization.

f) Data Scheduling

Reports that have been saved to the cloud can now connect back to on-premises data sources to replenish the data and stay up to date.

Whenever users replenish data in a dataset, whether by using Refresh Now or by setting up a refresh schedule, Power BI uses knowledge in the dataset to connect to the data sources defined for it, query for amended data, and then loads the updated data into the dataset. Any visualizations in your reports or dashboards based on the data are updated certainly. Data can be refresh by two ways:

Automatic refresh - This measures no user configuration is essential in order for the dataset to be refreshed on a regular basis. Data refresh context are configured for you by Power BI. For online service providers, amended usually happens once-a-day. For files loaded from One Drive, automatic refresh happens about every hour for data that does not come from an extrinsic data source. While you can configure different schedule refresh settings and manually refresh, you apparently don't need to.

User configured manual or scheduled refresh – This means you can manually refresh a dataset by using Refresh Now or setup a refresh itinerary by using Schedule Refresh in a dataset's contexts. This type of refresh is necessary for Power BI Desktop files and Excel workbooks that connect to external online and on-premises data origin.

4) Self-service BI Features in Excel

Self-service business intelligence (BI) features in Microsoft Excel 2013 spreadsheet software make analyzing and visualizing data easily. These tools, which include Power Query, Power Pivot, Power View, and Power Map, work seamlessly composed to extend BI functionality and help you make data into meaningful information.

However users can upload the same excel report into power Bi site with using SharePoint and can also be auto refresh data using Power Bi Data Management gateway.

Below are the excel plugins required to create reports.

- Power Query – connect to extrinsic data
- Power Pivot – create data models
- Power View – create reports
- Power Map – analyze and navigate geospatial data

Once the reports is prepared in excel then users can upload it to Power Bi Site, few components are required.

Power Bi Admin

The Power BI for Office 365, with the portal Admin Center allows IT administrators to register on-premises data sources, enable O Data feed for the data sources and prefer tables/views to be contained in the feed, and/or allow Excel workbooks stored in SharePoint Online to be refreshed with input from on-premises data sources.

SharePoint Admin

The SharePoint Online Administrator creates and supervises site collections, and facilitate the features that work across site collections such as the term store, and InfoPath Forms Services.

Gateway

The Data Management Gateway is a client agent that gives access to data sources used by the organization. Needs to have at least one gateway installed in the allied environment and register it with the Power BI for Office 365 Admin Center portal before developing data sources in the portal.

The Power BI Admin Center lets organization to create multiple gateways, and download and install gateways on multiple on-premises computers. For example, organization may choose to have one gateway per each department and assign all the data sources in a department to the gateway dedicated to that department. The gateway(s) installed within the organization must be connected to the Data.

Management Gateway assistance in the cloud for the clients to access on-premises data sources registered with the Admin Center.

Data Gateway Management client

It is an agent that is installed within organizations on premise infrastructure to shuttle data from on premise environment to Power BI running on Office 365.

5) Power BI for Office 365

Microsoft Power BI for Office 365 is a group of new features and assistances that,

together, enable you to visualize data. Power BI for Office 365 is Microsoft's cloud-based business intelligence (BI) solution that works from within Excel and Office 365 to analyse and visualize data in a self-service way. The BI solution is outlined to help business users advance visions from their data.

Power BI integrates with Office 365 to better provide self-service analytics in the cloud, better collaboration capabilities as users can now share reports they have created with other folks in the organization with the help of Office 365 online services and use Mobile BI to view reports on any mobile devices supporting. With Power BI users would be able to dominate reports created in Excel through browser or mobile apps and to use cloud-based features such as natural language Q&A, data exhilarate etc.

Office 365

It is cloud based Software as a Service offering built on an extensible, feasible, trusted platform and offers access to differing services and software built around the Microsoft Office.

6) IT Infrastructure Services for Power BI

There are three elements under the IT infrastructure services. Firstly, it is Power BI provision, which means organizations need first to get licenses for using Power BI. Second, Power BI admin center gives a tool for IT administrator to maintain the organization's Power BI infrastructure in a site. At last, the data gateway management enables the secure connection among in cloud and on-premises data.

D. Implementation Process

Users can implement power Bi from below three ways.

1) PowerBI.com

The first ways is PowerBI.com, In PowerBI.com portal lots of data Source available, users can easily get data from any online data cloud or online storage and prepare the reports, If user has some data which is stored in some cloud or any online application like Microsoft Dynamic CRM Online, MDM, Azure SQL etc. then this is the very easiest way, only user needs to select the data Source and provide the required credentials then pull out all the data over PowerBI.com further they can create the report and analyze the data.

Navigation URL for PowerBi.com: www.powerbi.com.

Below are the some data Source which is available in Power BI.com.

2) Power BI Desktop Version

The Microsoft Power BI Desktop is a new accomplice application for Power BI. It is a standalone Windows Desktop application that can be downloaded from the Power BI section. Enables consumers to easily quest and access public data and their organization's data, all inside Excel, here consumers do more operation like mathematical calculation, group by function count and many more.

a) Turn data into valuable business information

Power BI Desktop - a desktop companion application to the Power BI service - is a visual data exploration and reporting tool geared toward BI analysts. The Power BI Desktop centralizes, make easiest, and streamlines what can alternatively be a dispersed, disconnected, and exhausting

process of designing and creating business intelligence depositories and reports.

b) Prepare your data: connect to your data source

While Power BI connects to a wide variety of data sources, Power BI Desktop connects to an even broader range of data sources through advanced Query functionality. Retrieving data is as simple as finding and selecting your data source from four primary categories - namely **File** (such as Excel and CSV files), **Database** (such as Oracle and SQL Server databases), **Azure** (a variety of Azure services), and **other** (sources such as Facebook, Google Analytics, and the Web). Quickly locate the data source you need with an intuitive search function.

A major benefit of Power BI Desktop is its ability to manage big data - such as datasets from big-data analytics tools like Azure HD Insight.

c) Prepare data: query and shape your data

Datasets are not always in the right format, and may need adjustment before they are ready for analysis and reporting. Once you hook up to your data, Power BI Desktop enables you to mutate, or form, data to meet your needs. With Power BI Desktop, shaping data involves defining and refining queries using an Excel Power Query-like interface. Every table imported into Power BI Desktop is a query that can be modified. There are numerous ways to shape data. As an example, you can select a subset of data for inclusion in a report, and modify data types to support specific calculation requirements. Additionally, execute data cleansing functions, such as removing invalid rows. The intuitive Query view enables you to precisely tune queries without having to alter the underlying data. Power BI Desktop simply adjusts your view of the data.

Power BI Desktop captures the sequence of data-transformation activities in an Applied Steps list within the Query view. You can remove rows or columns, change data types, modify table names, and perform a variety of other steps to precisely tune how the data is shaped. Applied Steps records and displays each query step, and lets you re-order, add, edit or remove steps as needed.

d) Prepare data: build relationships and use calculations

In Power BI Desktop, you can model and analyze data with similar features to those available in Excel. Power BI Desktop provides advanced analytics capabilities that help you structure complex data, create relationships, define a variety of calculations, find correlations, highlight exceptions, forecast business outcomes and more.

When data is imported to Power BI Desktop, a data model is automatically created. Power BI Desktop detects relationships automatically, categorizes data and applies default summarization to jumpstart modeling.

Specifically, Power BI Desktop's AutoDetect feature identifies relationships across all of your datasets - including between cloud and on-premises data sources - to accelerate analysis. Of course, you can also refine the model as needed - for example, by manually creating relationships, or adjusting the type of relationship. Power BI Desktop supports one-to-one, one-to-many, many-to-one, and many-to-many relationships.

You can also apply single-direction or bidirectional filters to cross-filter data for additional views.

e) *Explore data*

Explore your data in a variety of ways and across multiple visualizations, select data elements and sort data.

You can filter data and use cross-filter capabilities, drill into and across datasets, pivot and slice data and change visualization types. Select, transform and mash-up data via a freeform, drag-and-drop canvas.

f) *Author reports*

Along with rich data modeling and analytics features, Power BI Desktop provides an intuitive report-authoring experience. Once you have loaded data, Power BI Desktop's freeform, drag-and-drop canvas makes it easy to select, transform and mash-up data, and create reports. You may jump right into report-authoring after connecting to a data source - data preparation and analysis are optional steps.

Similar to the Power BI aid, Power BI Desktop offers a range of interactive visualization features and options, enabling you to create reports that tell visually compelling stories. Going a step beyond the service, Power BI Desktop permits you to use data from as many different sources as you want in a single report. There are a variety of ways to explore data within a report—for example, you can sort and filter data, cross-filter data across multiple visualizations, drill into and across datasets, and pivot and slice data. Authors can continuously edit reports, visualizing the data in new ways to provide dynamic perspectives. You can work and re-work queries and models during the authoring phase to make sure the insights you're looking for are displayed in your report.

g) *Publish to Power BI*

When a report is ready for use, the Power BI Desktop file (in PBIX format) may be saved and uploaded to the Power BI aid with a single click.

By publishing Microsoft Power BI Desktop files to Power BI, you can enable end users to reap the benefits of advanced modeling and analysis, giving them access to reports that are richer than what they could produce on their own. For example, users can pin visualizations from the report directly to their dashboards. All of the elements of the data model, such as measures and relationships between tables, are loaded, so users can create visualizations that mix data from any table in the dataset.

3) *Power BI for On-Premise Data*

The integration of On Premise Data with Power BI is possible with the two ways, It can be possible with Power BI Site using SharePoint and Gateways or another ways is using cloud like Azure.

When you create an Excel workbook with a Power Pivot model that uses data from an on-premises data source and stores it in SharePoint Online, you will not be able to refresh the workbook unless an IT Administrator enables the on-premises data source to be accessible from cloud by using the Power BI for Office 365 Admin Center. An information worker sends an IT Administrator a link to the Excel workbook in SharePoint Online or a copy of the Excel workbook via email, or the connection string for the connection used in the Excel workbook. An IT

Administrator performs the following steps to enable the cloud access for the data source:

1. Install and configure Data Management Gateway if it is not already installed. The Data Management Gateway is a client agent that gives approach to on-premises data origins in your organization. To register an on-premises data source with the Admin Center, an administrator must create a gateway in the Admin Center.
2. Extract the connection string from the Excel workbook if needed and use the connection string to register the on-premises data source with the Admin Center, enable cloud access for the data source, grant users/groups who can refresh the workbook on the SharePoint Online.

Register a data source in the Admin Center by using the connection string that either received directly from the information worker or extracted from the Excel workbook. Then provide the data Source credential in the Power BI admin and test the gateway connection, once the gateway tested successfully then navigate to SharePoint Admin Portal and create a Site for Power BI then upload the created excel sheet, Once the sheet would be uploaded then all the reports and charts available on BI site and for refreshing the data, users navigate to scheduling refresh option there the created gateway with data source would be appearing, turn on the gateway and set the scheduling time.

E. **Next Research on Power BI**

Lots of changes on power Bi is still going on, every quarter some updates are coming with the new features, next research on power BI is to hook up on premise data with Power BI sites, in existing version users cannot hook up on premise data by using power query under Power BI Admin Center and also won't be able to use authentication, if user wants to connect on premise data then instead of power query under Power BI Admin Center needs to opt SQL Server or Oracle data Source, So In next Research would be on to connect on premise data to Power BI with more efficient way.

F. **Integration with Microsoft Dynamics CRM**

As Microsoft Dynamics CRM is going to be very popular in the market and very effective and more reliable to engage customer interaction, with the help of Power BI, customers easily create the necessary CRM reports in Power via integration with lots of Customization in charts.

Microsoft Dynamics CRM is online and on premise both are available and for Power BI integration is different in both type. With help of Power BI CRM user can see the reports, charts on Mobile devices, Tablets with lots of interaction, can auto schedule the CRM data into Power BI.

IV. CONCLUSION

Power BI offers your organization enormous potential by expanding access to business intelligence and supporting a culture of data-driven decision making. IT professionals and developers benefit from fast deployment, a secure, hybrid configuration,

And easy integration with existing IT systems. Business analysts can leverage powerful analysis capabilities for easy data discovery, exploration, and report creation. And business users no longer need to rely solely on BI from others - they can view and analyse all of their data in one place with live dashboards and reports. By adding Power BI to your organization's portfolio, you can make BI available to the people who need it when the need it.

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