Creating a Power BI Desktop Solution

Andy Li

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Innovation at work – real IoT use cases
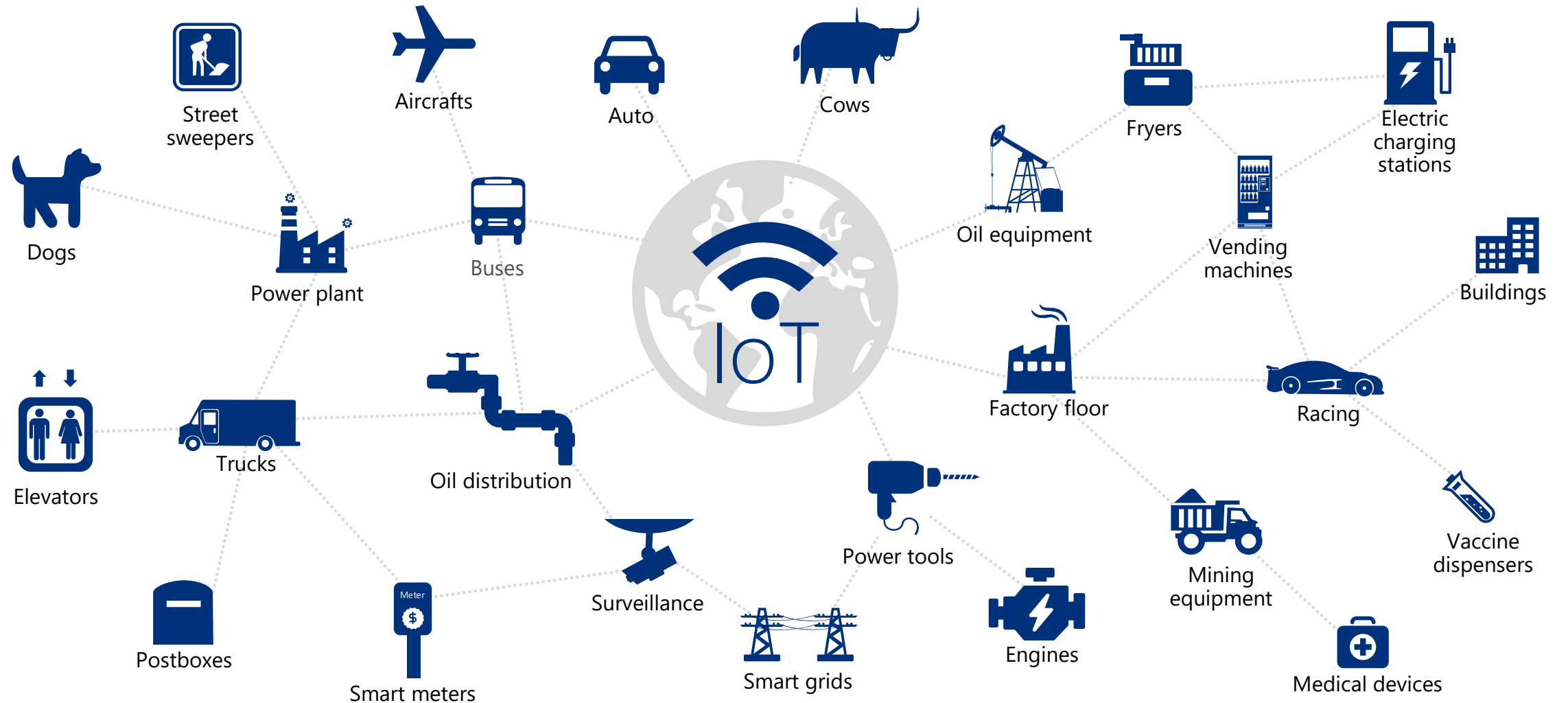
Reporting has evolved

Queries that support the data visual respond to user requests and yield contextual insights
— **Free-flow exploration**

Pre-set parameters enable users to see different views of their data
— **On-demand reporting**

Underlying data can be exported and analyzed offline
— **Data exports**

Static images and graphs offer one slice of data in time
— **Pictures**

Today, BI extends to everyone

3rd wave
End user BI

Everyone

2nd wave
Self-service BI

Analyst to end user

1st wave
Technical BI

IT to end user

Turning data into BI is challenging

Common BI challenges include...

👁	**End-to-end view**	Data often resides in disparate locations, making it difficult to see a complete picture of your business
🏢	**Multiple data sources**	Data residing in cloud solutions and on-premise locations is difficult to access and refresh securely
➡	**Right data for the right users at the right time**	Different roles have different needs and business users need the latest operational data

What is Power BI

Transforms your company's data into rich visuals for you to collect and organize so you can focus on what matters to you.

Power BI Overview

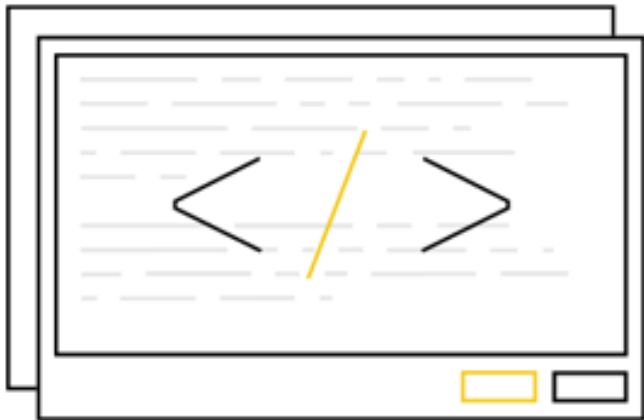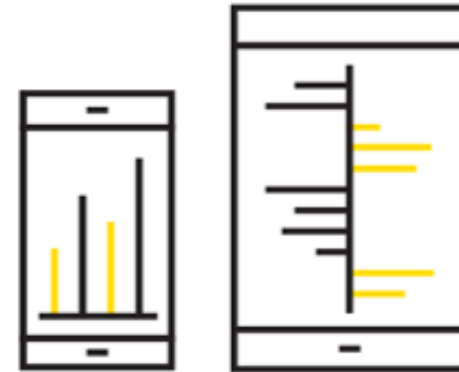Experience your data. Any data, any way, anywhere

Power BI Overview
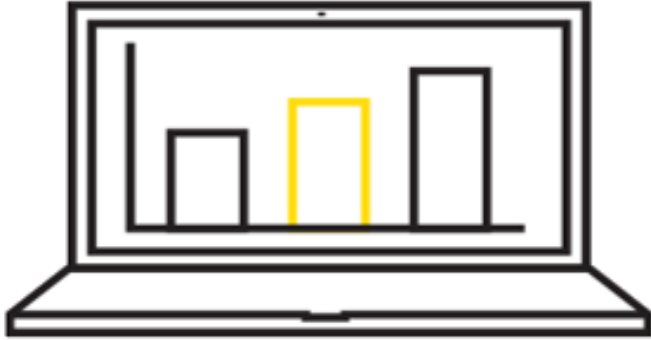
Power BI Desktop

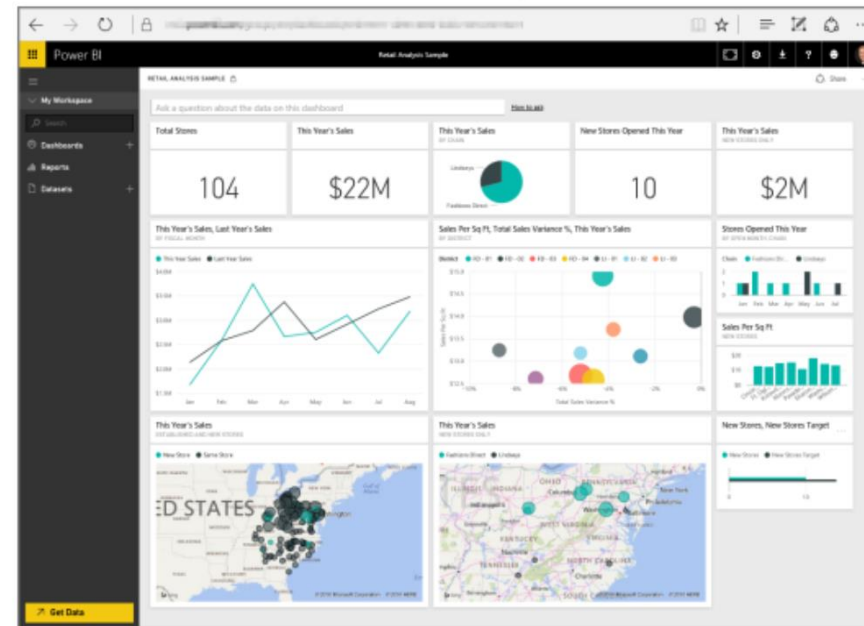Power BI service

Power BI Embedded

Power BI Mobile
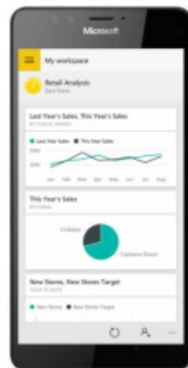
1. Bring data into Power BI Desktop, and create a report.

2. Publish to the Power BI service, where you create new visualizations or build dashboards

Power BI Desktop

Power BI service

Power BI Mobile

3. Share your dashboards with others, especially people who are on the go

4. View and interact with shared dashboards and reports in Power BI Mobile apps

Power BI online service

- The Power BI online service offers a simple, intuitive experience for interacting with data

- The service and features have been designed to:
  - Simplify engaging with data from heterogeneous sources
  - Fuel faster, more insightful business decisions
  - Deliver a rich, consolidated view of key information, no matter where the underlying data is stored
  - Share data insights

Live dashboards & reports

Make

Pin

Make

Pin

Make

Pin

487

$2bn

$461M

Dataset

Report

Dashboard

Power BI mobile applications

- Install native mobile applications to access dashboards, available for:
  - Windows
  - iOS (iPhone and iPad)
  - Android
- Supported capabilities:
  - Set favorites for important visualizations
  - Zoom in and out of visualizations
  - Annotate visualizations and share snapshots with others
  - Configure alerts to receive notifications of critical business KPIs
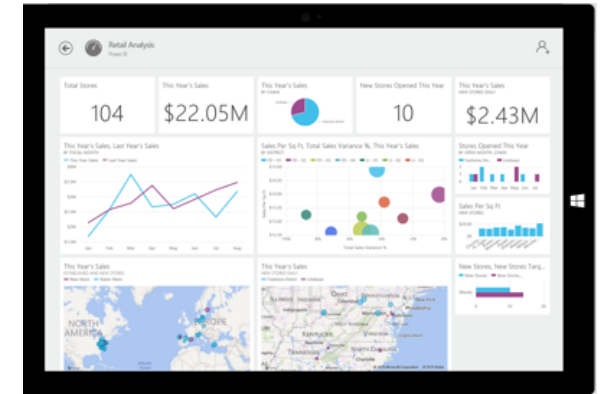
Power BI Desktop

- Power BI Desktop is a visual data exploration and reporting tool
  - A freely downloadable 32- or 64-bit desktop application optimized for use with the Power BI service
  - Integrates proven Microsoft technologies
    - Excel add-ins: Power Query, Power Pivot and Power View
  - Enables multiple ways to transform schema and data
  - Updated (at least) on a monthly basis

Get started by free version

Go to PowerBI.com

- **Go to PowerBI.com**
- Enter your organizational email address
- Start using Power BI for free, no credit card needed

Let us help you bring your data to life

Power BI transforms your company's data into rich visuals for you to collect and organize so you can focus on what matters to you. Stay in the know, spot trends as they happen, and push your business further.

Enter your work email address   Use it free

Download Power BI Desktop version

- **Download for free**
- **Easily get started today**
- Acquire and prepare data with extensive query capabilities
- Explore data in new ways through a freeform, drag-and-drop canvas

Connect to your data

- Access **cloud, on-premises and hybrid** data sources using the Power BI service and Power BI Desktop
- Get to your data in as few as four clicks

Get instant insight from cloud services

Use pre-built dashboards and reports for:
- Azure SQL Database and Data Warehouse, SQL Server
- Zendesk
- GitHub
- Troux
- More added regularly

GitHub
zendesk

Leverage the SCCM solution template to:
- Stand up a scalable and extensible SCCM analytics dashboard in hours
- Monitor real-time capacity, availability and compliance

HOL 6 – Creating a Power BI Desktop Solution

Development methodology

- In contrast to the simple and quick "get then visualize" approach, more complex schemas may follow this methodology:

1. Create queries and use the **Query Editor** to filter, cleanse and reshape data
2. Configure/refine relationships to establish the foundations of a model
3. Enrich the model with calculation logic and formatting
4. Design interactive reports with a broad range of modern data visualizations
5. Publish solutions directly to the Power BI service
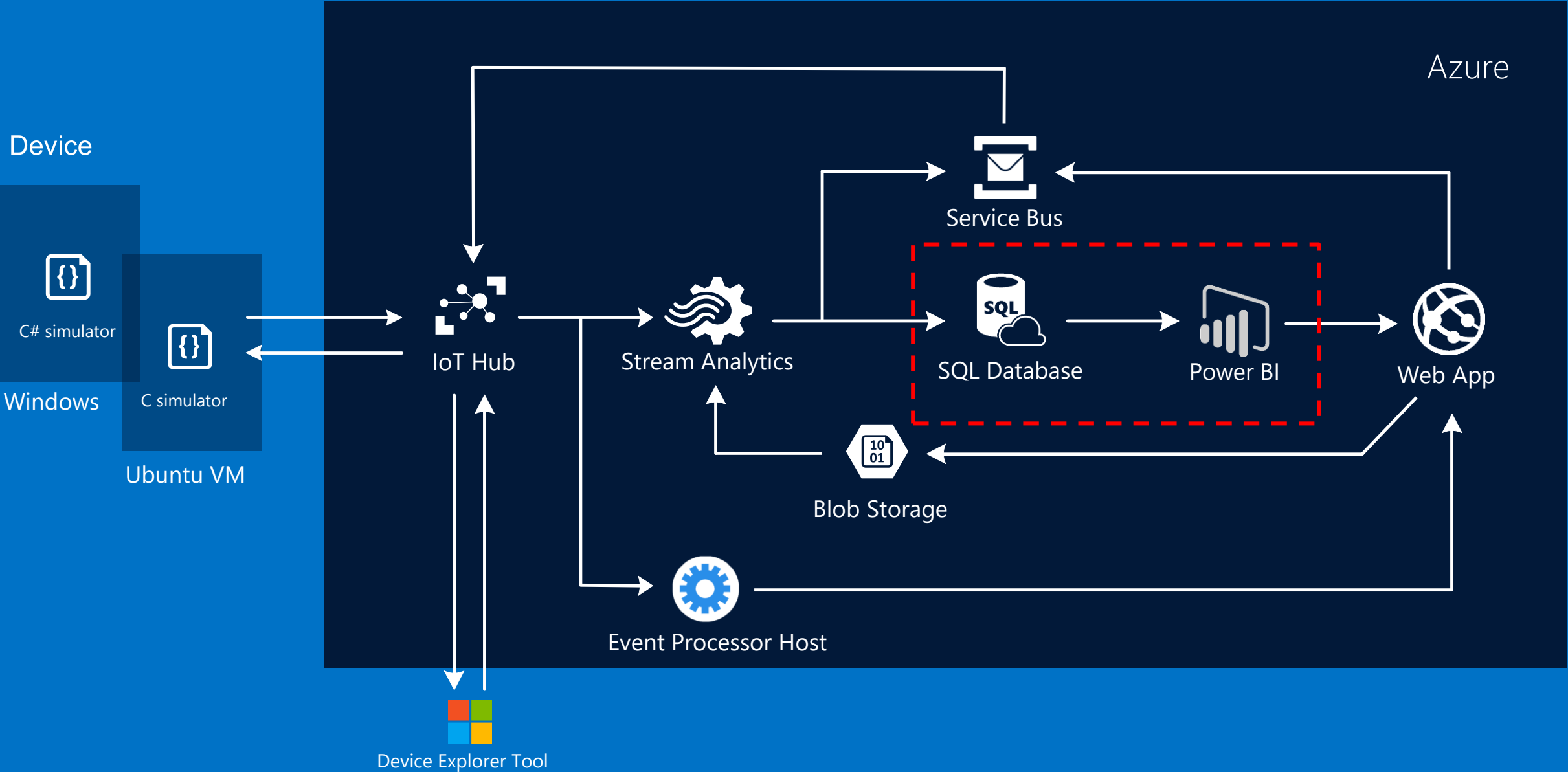
Create queries	Configure relationships	Enhance the model	Design reports	Publish to Power BI

HOL 6 – Creating a Power BI Desktop Solution

Wind Generator Analysis

| 2016

2M
Power

Id	Employee Name	Fan Radius	Height
IOSTurbine	Walker	2.20	13
LinuxTurbine	Andy	2.20	13
WinTurbine	Walker	1.30	11

Power by WindGeneratorId
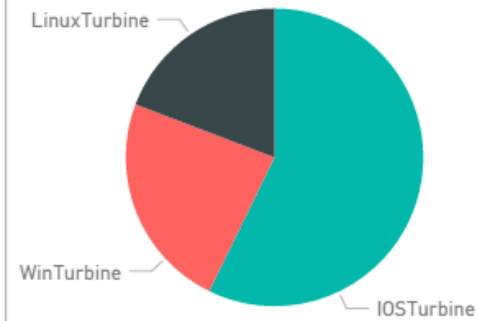
LinuxTurbine

WinTurbine
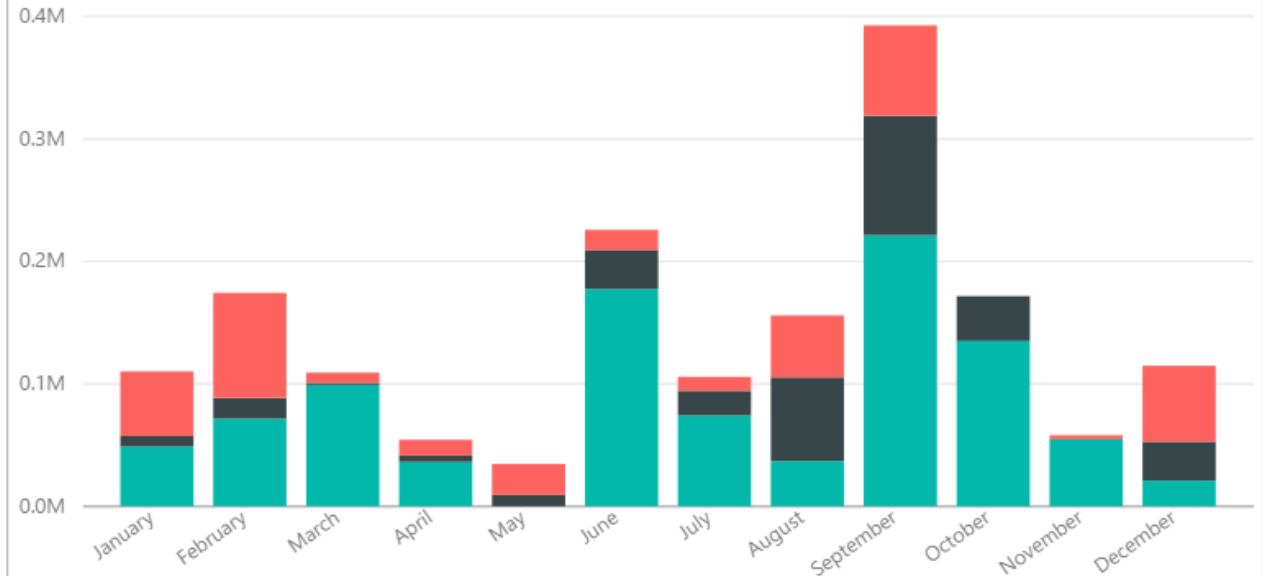
IOSTurbine

Fan Radius by Id

● IOSTurbine ● LinuxTurbine ● WinTurbine

Taiwan Strait
New Taipei City — T'aipei
Hsinchu — T'aoyüan
Chunan
Taroko N.P.
Hualien
Changhua — T'aichung — Lalu Island
Kuang-fu
Chiai
Yushan N.P.
TAIWAN
T'ainan
P'ingtung — T'ai-tung
Kaohsiung
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▷ bing

Power by Month and WindGeneratorId

WindGeneratorId ● IOSTurbine ● LinuxTurbine ● WinTurbine

0.4M
0.3M
0.2M
0.1M
0.0M

January, February, March, April, May, June, July, August, September, October, November, December

Average of Cp by Month and WindGeneratorId

WindGeneratorId ● IOSTurbine ● LinuxTurbine ● WinTurbine

40
20
0

January, February, March, April, May, June, July, August, September, October, November, December
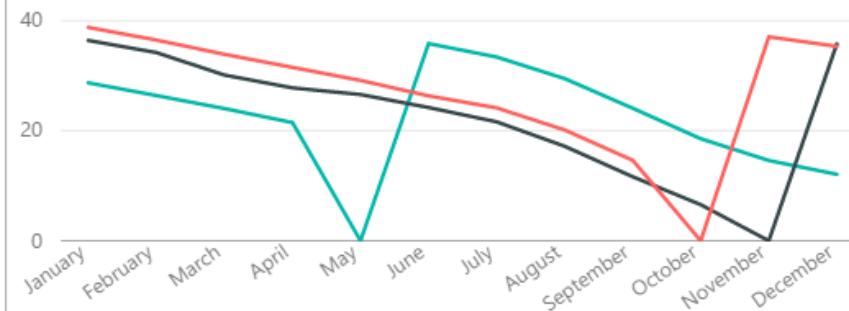
WinTurbine_Power, WinTurbine_WindSpeed and WinTurbine_Cp by Month

● WinTurbine_Power ● WinTurbine_WindSpeed ● WinTurbine_Cp

100K
50K
0K

January, February, March, April, May, June, July, August, September, October, November, December
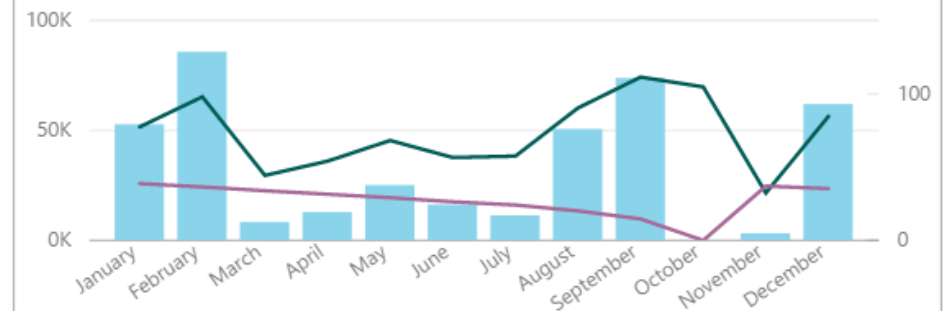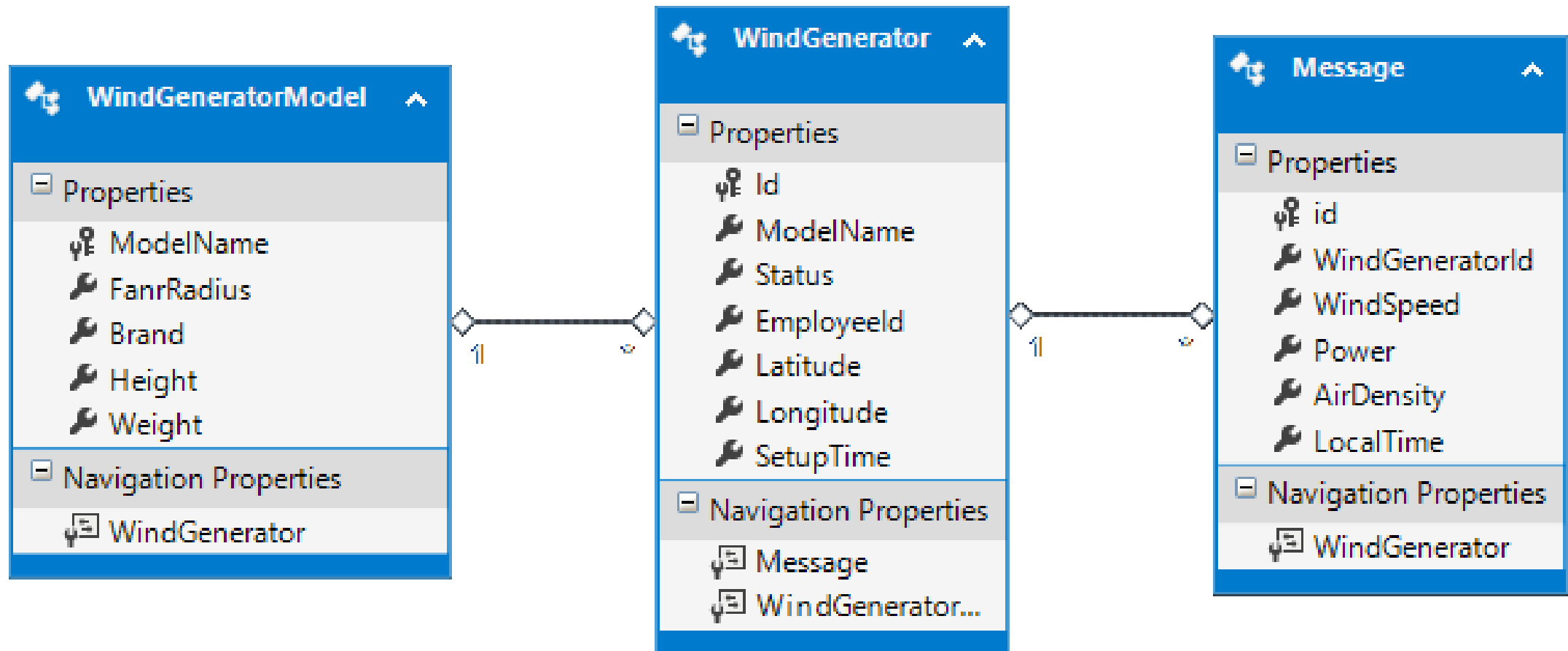
Table Schema

Let's Go

You will learn how to

- Create a Power BI Desktop solution
- Create queries based on a variety of data sources
- Prepare a model for reporting
- Create an interactive report layout consisting of several data visualizations
- Publish Power BI Desktop solution to Power BI Service

https://technet.microsoft.com/en-us/virtuallabs

Formula

$$P = \tfrac{1}{2}A * V^3 * Cp * D * \eta$$

$$A = \tfrac{1}{2}\pi * R^2$$

Visual Gallery

Synoptic Panel by OKViz

* And the list is growing!

Reference

Power BI Document

- https://powerbi.microsoft.com/zh-tw/guided-learning/

Power BI Visuals Gallery

- https://app.powerbi.com/visuals

Extend Power BI with Custom Visuals

- https://store.office.com/zh-tw/appshome.aspx?productgroup=PowerBI&ui=en-US&rs=zh-TW&ad=TW
- https://github.com/microsoft/powerbi-visuals

Virtual Labs

- https://technet.microsoft.com/en-us/virtuallabs