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Andrea Martorana Tusa
Sharing and collaborating in Power BI: How to fulfill your audience
Speaker Info

- **First name**: Andrea. **Last name**: Martorana Tusa.
- Italian, working by **Widex** a danish company which manufactures hearing aids, as BI Specialist. Previously worked for 15 years as BI developer in an italian bank. Focused on database development, datawarehousing, cube development, reporting, data analysis, etc.
- Speaker at SQL Saturdays, and other community-driven events in Europe, (MS Cloud Summit, SQL Konferenz, SQL Nexus, SQL Days, Dataminds Connect ...). Speaker in webinars for PASS Italian VC, DW/BI VC.
- Author for sqlservercentral.com, sqlshack.com, UGISS (User Group Italiano SQL Server).
Agenda

• Introduction
• Sharing
• Workspace and App
• Organizational content packs
• Sharepoint
• Embedding Power BI
  • Publish To Web
  • REST APIs
    • Power BI Embedded
• Interaction with MS Office
• Data analysis, print, export, QR Code
Why this session?

How many times have you been asked:

“Can you share this report/dashboard, with me?”;

“Can we distribute our work to other users?”; “Shall we pay for it? How can we get licenses?”.

“How can we deal with Security and Compliance rules inside our organization”?

To make things worse, the licensing and delivering model has changed evolving, bringing more confusion to end-users.

So today I want to give you a clear and complete overview of all the sharing methods in Power BI, helping you to choose the solution that best fits your needs.
Sharing dashboards, reports, tiles

**Sharing** is the faster and easier collaborative method. You can share a dashboard and reports with colleagues in and out of your company.

Sharing is a Pro feature.

When you share:
- Everyone you share with can see your dashboard and interact with your reports, but can’t edit.
- Changes you make are visible to everyone (after you save those changes).
- Dashboards and reports are read-only. No-one can save its own local copy.
- No-one can see or download the dataset.
Sharing dashboards, reports, tiles

To share a dashboard in Power BI Service simply click on the Share icon.

Fill in the address of the recipient and he will receive an e-mail with an invitation.

Andrea Martorana Tusa has shared Power BI Dashboard 'SQLNexus' with you

Microsoft Power BI <no-reply@powerbi.com>

Hi,
I'd like to share this dashboard to you

Open SQLNexus

Microsoft Corporation
One Microsoft Way, Redmond, WA, 98052
Privacy policy | Terms and conditions
Sharing dashboards, reports, tiles

All the shared contents are accessible through the “Shared with me” menu.
Sharing dashboards, reports, tiles

Sharing with colleagues
Colleagues who have the same email domain as you, and colleagues whose domain is different but registered within the same tenant in Office 365, can reshare the dashboard.

If you use Office 365 for email, you can share at once with members of a distribution group by entering the email address associated with the distribution group. The group limit for sharing is 500 members.

You can even send a direct link to a dashboard, just by copying the URL. For example:
https://powerbi.com/dashboards/g12466b5-a452-4e55-8634-xxxxxxxxxxxxx
Sharing dashboards, reports, tiles

**Sharing with people outside your organization**
When you share with people outside your organization, they even get an email with a link to the shared dashboard.

When they try to access the link, they see the shared dashboard in its own browser window **without the left navigation pane**, not in their usual Power BI portal.

They can't edit any content in this dashboard or report. They can interact with the tiles in the dashboard or report but cannot modify.

Only your direct recipients can see the shared dashboard. No-one else can see that dashboard, even if they have the link.

People outside your organization can see data according to the role or row-level security you implemented.
Sharing dashboards, reports, tiles

Resharing
Resharing allows your colleagues to forward the email invitation to others in your organization.

They can also reshare through the Power BI service and mobile apps.

As the owner of the dashboard, you can turn off resharing and you can also revoke resharing on an individual basis.

People outside your organization can't reshare.
Sharing dashboards, reports, tiles

Sharing from the mobile app
• You can share a dashboard, or a single tile from the Power BI mobile apps.
• Sharing a dashboard from the app works in the same way as from Power BI Service
• When you share a tile, actually you're sending a snapshot of the tile.
• You can send snapshots of tiles to anyone by e-mail. You're not limited to recipients in your domain.
Demo

- Share a dashboard *inside* your organization
  - pbiserviceadmin@amtproweb.info > My Workspace > Customer Profitability Dashboard > elena.napoli@amtproweb.info

- Share a dashboard *outside* your organization
  - pbiserviceadmin@amtproweb.info > My Workspace > Customer Profitability Dashboard > antu@widex.com

- Remove/Edit access and manage permissions
App Workspace

Create and share dashboards or reports in a workspace
A workspace is the staging area designed for collaboration in Power BI. Inside a workspace you can collaborate with other colleagues and work together on dashboards, reports and datasets. Everyone in the workspace can view, interact with, and edit the dashboard and its reports. You can set people in the group as simple member or admin.

App Workspace is a Pro feature ...

... unless your app resides in a PBI Premium capacity plan. In this case, users are free to connect to the app.
App Workspace

Workspaces are the evolution of groups in Power BI, hence they are based on Office 365 groups and offer group services such as OneDrive for business, conversations, calendars, tasks, ...
App Workspace

Once your workspace is ready you can publish it as an **App**. An App is the way to distribute content to end-users in production. It is possible to not publish all the reports and dashboards into a workspace, but only the ones that are ready.

Business users can therefore connect to the published App and consume the contents you prepared for them.
App Workspaces

Workspaces settings
Workspaces are managed both in Power BI and Office 365.

In Power BI you manage the workspace’s settings: create, delete, edit, members, grants,…

In Office 365 you manage the group’s settings: name, image, description, e-mail, …
App Workspaces

Workspaces settings

- **Private**: Only group members can see the group’s contents.

- **Public**: People in your organization can make themselves members of the group, without needing permission from an admin.

- **Edit rights**: all members of the group can modify the group's content.

- **View only permissions**: only admin of the group can modify content. Members can only read it.

Create an app workspace

Name your workspace

- Private - Only approved members can see what's inside
- Members can edit Power BI content

Add workspace members

Enter email addresses

Add

Advanced
App Workspaces

Consume the app

There are different ways to expose an app for business users:

• Unattended installation in the user’s Power BI account
• Sending a direct link to the app
• Searching in the AppSource repository
App Workspaces

External Sharing
Apps can furthermore be distributed to guest users outside of your organization’s tenant.

Recipients are able to securely sign into the service using their own organization’s security credentials or personal email address.

This is a feature made possible through the integration of Power BI integration with Azure Active Directory (AD) business-to-business (B2B) collaboration.
Demo

App Workspaces

• Create a workspace. Add members
  • IntelligentCloud; sara.massa@amtproweb.info; andrea.martoranatusa@amtproweb.info

• Edit workspace’s properties, change member rights

• Publish/Update app. Change settings, permissions, etc.
  • Add user elena.napoli@amtproweb.info

• Consume app as a user (elena.napoli@amtproweb.info)
  • Get app > My Organization

• Set workspace features (image, featured dashboard, ...)

Content packs

What are content packs?
Content packs are “containers” that allow developers to keep together and share all the objects inside Power BI.

You can create a dashboard with its reports and datasets, and then publish them all as a content pack for your coworkers. When your colleagues go to the Content Pack Library for your organization, they can see your content pack and browse it.

Content pack is a Pro feature
Content Packs

There are two types of content packs:

- **Service content packs**, precompiled sets of reports and dashboards to provide users insights about common online services such as Salesforce, Microsoft Dynamics, Google Analytics and so on.

- **Organizational content pack**, packages created and owned by single developers for users inside their company.
Content Packs

Note that Content Pack is an endangered technology. Microsoft is pushing strongly to using App Workspaces rather than Content Pack. Don’t know how much it will survive.

Note

Have you heard about the new apps yet? Apps are the new way to distribute content to large audiences in Power BI. You create apps in app workspaces, which replace groups and group workspaces. We recommend using apps instead of organizational content packs or read-only workspaces. Learn more about apps.
Demo

Organizational Content Packs

• Create a Content Pack

• Manage Content Packs:
  • Republish, set and change refresh
  • Modify user access to the content pack
  • Delete

• Find and open a Content Pack

• Create a personalized copy of a Content Pack
Sharing and delivering contents

**Subscription**

Subscription is the feature for receiving reports/dashboards directly into your mailbox. Subscription is personal. You cannot subscribe for someone else.

By subscribing you can only receive a snapshot of report pages you are interested in. You can subscribe to one report page at time. The frequency depends on the location of the dataset upon which the report is based (DirectQuery, Live connection, imported to Power BI, or Excel file in OneDrive or SharePoint Online) and on the subscription options available and selected (daily, weekly, or none).

This first version presents many limitations that hopefully can be overcome with next releases.

**Subscriptions is a Pro feature**
Subscriptions

- Open a report > Subscribe, then go to the e-mail to get the message
Power BI reports can be embedded in **SharePoint Online**. No coding is required.

Embedding is easy and secure; the reports inherits all the security features from the hosting portal.

This method applies only to reports, not to dashboards.
SharePoint Integration

The Power BI web part for SharePoint Online require **Modern Pages**.

- From the report in PBI Service, select **Embed in SharePoint Online**.
- Copy the URL from dialog box
SharePoint Integration

Edit a page in SharePoint Online

Select Power BI

Add report

Paste the URL and then click Publish
SharePoint Integration

Granting access to reports
Permissions are managed in two ways:

• Through Office 365 Groups. In this case the user must be added as a member to the app workspace behind the group.
• Creating a dashboard based on the embedded report and then sharing the dashboard with user(s).

As you are sharing/collaborating in Power BI Service, this feature requires a Pro license. And users need a PBI account.
Publish to Web

Publish to Web is the easiest way to spread and deliver contents. Just simply select the menu and your report will be available on a public web address.

Only a free license is needed for using Publish to Web. The consumers of your report (the readers, viewers) do not need to be Power BI users.

When you use Publish to web, the report or visual you publish can be viewed by anyone on the Internet. There is no authentication used when viewing these reports. Only use Publish to Web with reports and data that anyone on the Internet (unauthenticated members of the public) should be able to see.
Publish to Web

How it works
On a report in your workspace in Power BI service, select **File > Publish to web**.

Power BI generates a link that can be sent in email, embedded in code (such as an iFrame), or pasted into a web page or blog.
Demo

Publish To Web

[QR Code Image]
Demo

Publish To Web: Data Stories Gallery

Embedding with Power BI

Embedding with Power BI means including dashboards and reports into a custom web application.

Embedding applies to two main scenarios:
1. Embedding for users in your organization
2. Embedding for external users or third-party applications (Power BI Embedded)
Embedding with Power BI

One API to access all content

Whatever the case for embedding, you use the same set of APIs delivered ad hoc.

- REST API
- JavaScript API
Power BI Embedded

Embedding for external users or third-party applications

**Power BI Embedded**, allows developers to embed reports, dashboards and tiles into custom applications.

The target audience is third-parties software companies developing their own application (ISV, independent software vendors).

Power BI Embedded represents the easiest way to expose Power BI reports to external users outside your organization.

End users do not need to have a PBI account. But at least a Pro license is requested for embed applications.
Power BI Embedded

How Power BI Embedded is different

*Power BI Embedded* differs from *Power BI service.*

<table>
<thead>
<tr>
<th>Power BI Service</th>
<th>Power BI Embedded</th>
</tr>
</thead>
<tbody>
<tr>
<td>For internal users</td>
<td>For developers</td>
</tr>
<tr>
<td>Azure AD tenant</td>
<td>Azure AD tenant</td>
</tr>
<tr>
<td>Power BI account required</td>
<td>Power BI Embedded master user account</td>
</tr>
<tr>
<td>Fully featured</td>
<td>Limitations on available features</td>
</tr>
<tr>
<td>Licenses per user or capacity</td>
<td>Billing system based on renders or capacity</td>
</tr>
</tbody>
</table>
Power BI Embedded

Set up your Power BI embedding environment

With this quick, 5-step process, you can set up everything you need to start embedding analytics in your application.

What do you need:
• Azure AD tenant
• Power BI Account

STEP 1
Sign in to Power BI

To set up a production-ready embedding environment, you’ll need an Azure Active Directory (AAD) tenant and a Power BI Embedded master user account.
Learn how to create a master user

If you are creating a test environment, you can sign in with a regular Power BI account.

STEP 2
Register your application

STEP 3
Create an app workspace

STEP 4
Import content

STEP 5
Grant permissions
Power BI Embedded

Licensing and billing
Power BI Embedded and the Power BI service are separate offerings.

Power BI Embedded is based on the capacity-based model. Consumption is calculated in terms of renders.

A render is “a click” every time you open a page with a PBI report/dashboard. And every time you interact with an object inside the page, this is counted as render.

<table>
<thead>
<tr>
<th>NODE TYPE</th>
<th>VIRTUAL CORES</th>
<th>MEMORY</th>
<th>FRONTEND / BACKEND CORES</th>
<th>PEAK RENDERS PER HOUR</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
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<td>4,801 - 9,600</td>
<td>$32.26/hour</td>
</tr>
</tbody>
</table>

Demo

Power BI Embedded

- [JavaScript embed sample](#)
- [Power BI Embed setup environment](#)
Interaction with MS Office

There are several ways for Power BI users to interact to MS Office suite. Starting from simply download data and analyze it in Excel, to more complex interactions.

Few add-ins and tools are available. Some are developed directly from Microsoft, others are third-party tools.
Interaction with MS Office

Export data
Data can be exported from visuals on a dashboard and in reports. In any visual in edit mode, select ... > *Export data*.

The data is exported to a .xlsx or .csv file that you can open and analyze.
Interaction with MS Office

Analyze in Excel

With **Analyze in Excel**, you can view and interact with a dataset you have access to in Power BI.

When you select **Analyze in Excel** from the ellipses menu (the ...) associated with a dataset or report in **Power BI**, Power BI creates an .ODC file and downloads it from the browser to your computer.

When you open the file in Excel, an empty **PivotTable** and **Fields** list appears with the tables, fields, and measures from the Power BI dataset. This is a live connection. Data is updated every time you refresh the Excel file.
Interaction with MS Office

Export to PowerPoint

Another top requested feature is currently in preview: **Export Power BI report to PowerPoint**.

Export features:

- Each report page is converted into a PowerPoint slide
- Each Power BI visualization in the report is converted in an image in PowerPoint
- Textboxes are exported as (editable) textboxes
- There is a link to the live report in Power BI
Interaction with MS Office

Export to PowerPoint
**Interaction with MS Office**

**Excel Publish to Power BI**
From Excel 2016 you can publish your workbook directly to Power BI Service.

Two options:
- Upload your workbook to Power BI
- Export workbook data to Power BI

The workbook appears as in Excel Online. You can pin elements to dashboards and edit it (in Excel Online).

Data is exported as new dataset to Power BI and the original workbook is synchronized with dataset.
Interaction with MS Office

**Power BI Publisher for Excel.** It is an add-in to catch snapshots of Excel and pin to dashboards in Power BI, or to connect to data.

Pin range of cells, PivotTables, charts, etc. from Excel ...  
<table>
<thead>
<tr>
<th>![Excel Icon]</th>
<th>![Power BI Icon]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>... to Power BI</td>
</tr>
</tbody>
</table>

Connect data from Power BI ...  
<table>
<thead>
<tr>
<th>![Power BI Icon]</th>
<th>![Excel Icon]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>... to Excel</td>
</tr>
</tbody>
</table>
Interaction with MS Office

Other plug-ins are available from DevScope, an independent vendor:


- **Power BI for SharePoint**. Export dashboard tiles to SharePoint.

- **Send to Power BI**. Excel add-in to send and sync Excel data to Power BI.

- **Power BI Tiles Pro**. Client app to embed up-to-date Power BI visuals into your Power Point documents. Grants full interaction. **The most powerful. Licensed.**

www.devscope.net/Products.aspx
Demo

- Analyze with Excel
- Export to Power Point
- Power BI Excel Publisher
QR Code

You can create a **QR code** in the **Power BI service for any report**. Then use the QR code to share it. For example, you could paste it in an email, or print it out and paste it in a visible location.

People you've shared the report with can scan the QR code for access to the report, right from their phone. There's even a QR code scanner located directly in the Power BI app.

People must have the right to access the report you shared.
Print and export dashboards, reports

In Power BI Service you can print dashboards and reports. Just click the ellipses (three dots) in the top-right side of the service, and select **Print dashboard**.

You can also print or export directly from a report. When viewing a report in the Power BI service, select **File > Print** to open the print dialog.

Both visualizations can be printed as a PDF file.
Demo

• Print dashboards or reports
• Export to PDF
• Creating a QR Code and reading it with the mobile app

Report: Customer Profitability Sample (edit report > ellipses > Generate QR Code)
Q&A
Event Sponsors

Expo Sponsors

Advectas
Excellence in your decisions

Expo Light Sponsors

Cloudexn