A Deep Dive Into Microsoft CoPilot
A Whitepaper Written For KAMIND IT, Inc.

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Contents

Introduction

Well, the wait is now officially over. Microsoft has finally released its latest flagship called "CoPilot". Essentially, this is a tool that is driven by AI and has been specifically designed to help increase your productivity when using your M365 subscription. For example, some of the most common uses of it are Word (composing content), PowerPoint (for jazzing up sales presentations), and Excel (for examining complex datasets).

In this whitepaper, we do a deeper dive into the more technical aspects of what CoPilot is really about.
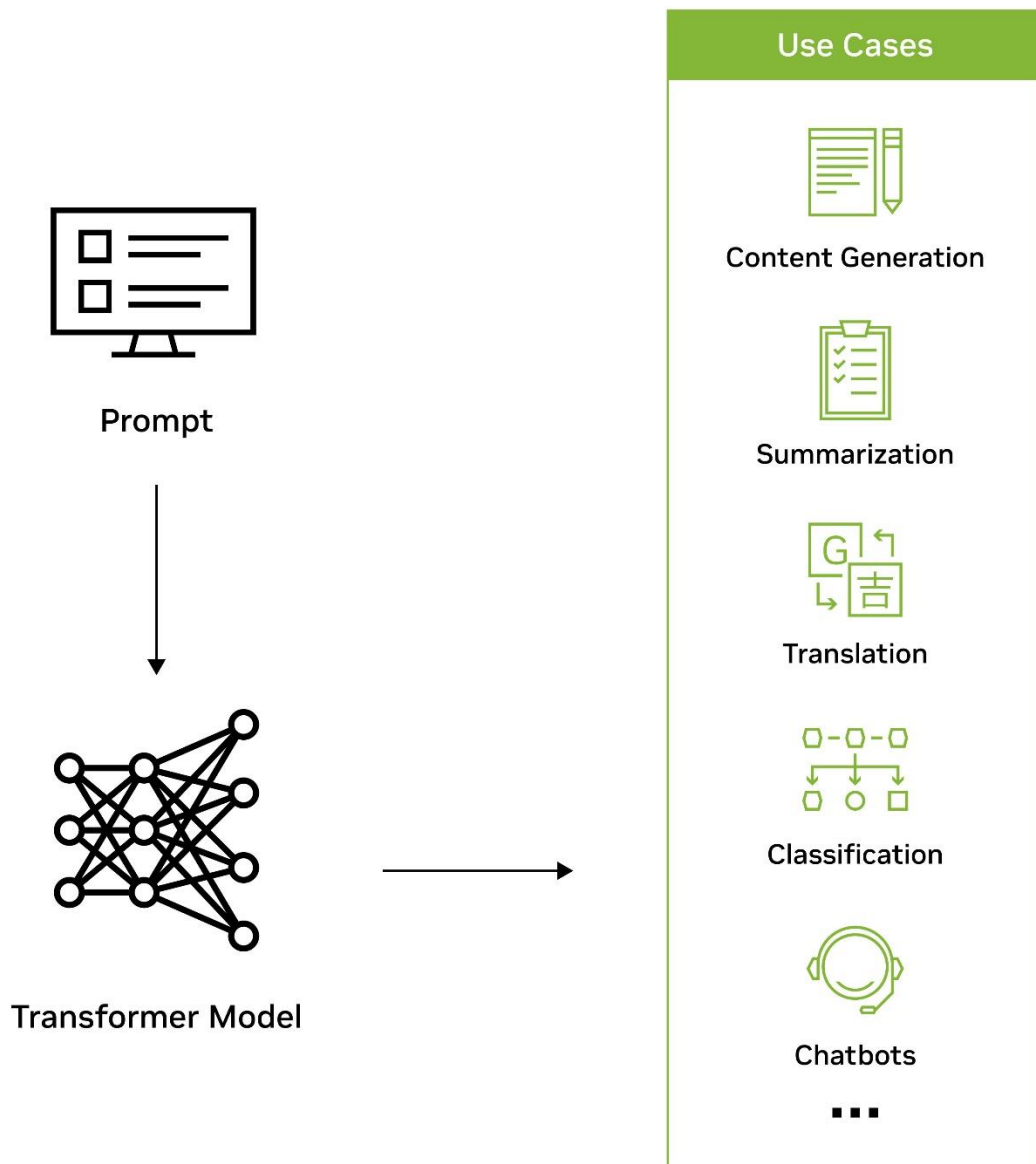
The Structure Of CoPilot

Large Language Models

The driving force behind CoPilot are what are known as "Large Language Models", or "LLMs" for short, and they are actually a part of AI as well. LLMs can be technically defined as follows:

"Large language models largely represent a class of deep learning architectures called transformer networks. A transformer model is a neural network that learns context and meaning by tracking relationships in sequential data, like the words in this sentence."

(SOURCE: https://www.nvidia.com/en-us/glossary/large-language-models/)

Put in simpler terms, it is an AI system that can take human language (written and/or spoken), and understand it, and respond in the appropriate way. For example, as it relates to CoPilot, if you ask it to proofread the content in your Word document, it will understand what you say, and respond accordingly. The illustration below is a good example of an LLM:

Prompt → Transformer Model → Use Cases

Use Cases:
- Content Generation
- Summarization
- Translation
- Classification
- Chatbots

(SOURCE: 1).

Other use cases for LLMs include the following:

- ➢ Copywriting
- ➢ Knowledge base answering
- ➢ Text classification (determining the meanings and sentiments of words and sentences)
- ➢ Source code generation
- ➢ Text/Content creation

The Microsoft Graph

An integral component fo CoPilot is what is known as "Microsoft Graphs". It is technically defined as follows:

"Microsoft Graph is the gateway to data and intelligence in Microsoft 365. It provides a unified programmability model that you can use to access the tremendous amount of data in Microsoft 365, Windows, and Enterprise Mobility + Security. Use the wealth of data accessible through Microsoft Graph to build apps for organizations and consumers that interact with millions of users".

(SOURCE: 2).

With Microsoft Graph, you will be able to gain access to the following:

1) <u>M365 Core Offerings</u>:

   These include the following:

   - ➢ Bookings
   - ➢ Calendar
   - ➢ Delve
   - ➢ Excel
   - ➢ Microsoft 365 compliance eDiscovery
   - ➢ Microsoft Search
   - ➢ OneDrive
   - ➢ OneNote
   - ➢ Outlook/Exchange
   - ➢ Outlook contacts
   - ➢ Planner
   - ➢ SharePoint
   - ➢ Teams
   - ➢ To Do
   - ➢ Viva Insights

2) <u>Enterprise Mobility + Security services:</u>

   These include the following:

   - ➢ Advanced Threat Analytics
   - ➢ Advanced Threat Protection
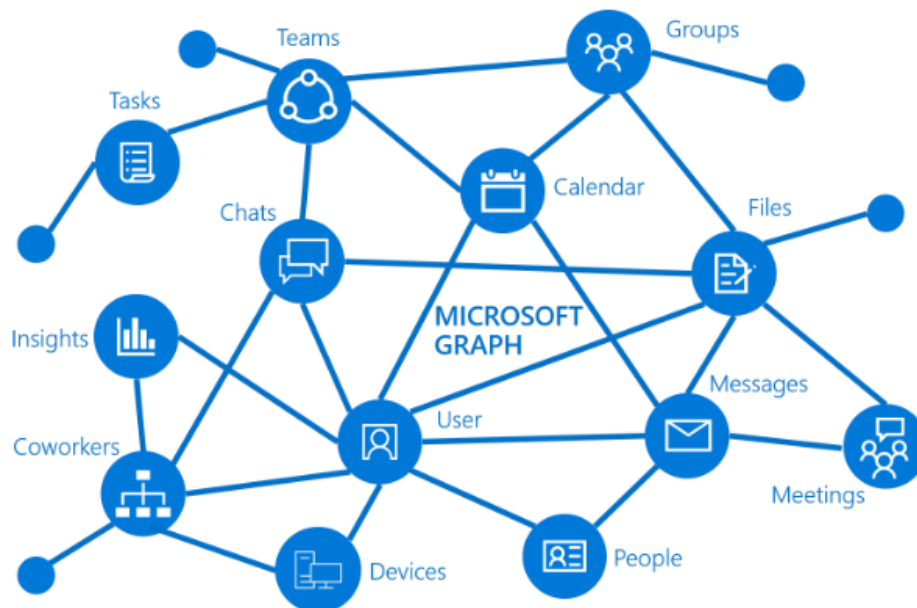   - ➢ Microsoft Entra ID
   - ➢ Identity Manager
   - ➢ Intune

3) <u>The Windows Services</u>:

   These include the following:

> ➢ Activities
> ➢ Devices
> ➢ Notifications
> ➢ Universal Print

4) Services as they are related to Microsoft Dynamics 365 Business Central

The above is illustrated in the diagram below:

(SOURCE: 2).

As it relates to CoPilot, Microsoft Graphs serves two distinct functions:

1) Chat:

With this, you can bring in any content that has been extracted from any of the services just described into CoPilot's chat functionalities. For example, if you missed a meeting that was hosted on Teams, you can ask CoPilot to pull any content from it through Graphs. You can ask for a detailed, word by word transcript, or just ask for a high-level summary of the major points and action items that are associated with them.

2) Relationships:

Data is the lifeblood of any business today. But this does not mean that all of it is quantitative in nature. There are also qualitative ones as well, which are equally, if not more important. This even includes any content that has been generated from emails, video conference meetings (when Teams is used), and even chat sessions. CoPilot can provide valuable insights into the relationships between them. This can be used to not only provide better customer service, but even gain intelligence in your competition, and show how you can stay ahead of it. But in order to do all of this, you will need to get the required API, and customize it to your own requirements.

More detailed information about Microsoft Graphs can be found at the link below:

https://learn.microsoft.com/en-us/graph/overview-major-services

For information about how to get and customize the APIs, and how to connect to CoPilot can be seen at the link below:

https://learn.microsoft.com/en-us/microsoft-365-copilot/extensibility/overview-graph-connector

The Sematic Index

Another key facet of CoPilot is called the "Sematic Index". It can be technically defined as follows:

"The semantic index . . . which interprets user queries to produce contextually relevant responses that help you to be more productive. It allows organizations to search through billions of vectors (mathematical representations of features or attributes) and return related results."

(SOURCE: https://learn.microsoft.com/en-us/microsoftsearch/semantic-index-for-copilot)

Put in simpler terms, this functionality allows you to you search through the context and meanings of thousands of words (which are represented by the vectors) and from there, provides the best results possible so that you can have a meaningful and powerful dialogue, for example with a sales prospect. An example of this filtering process is seen in the illustration below:
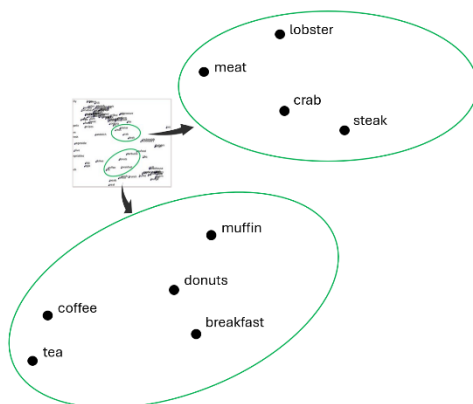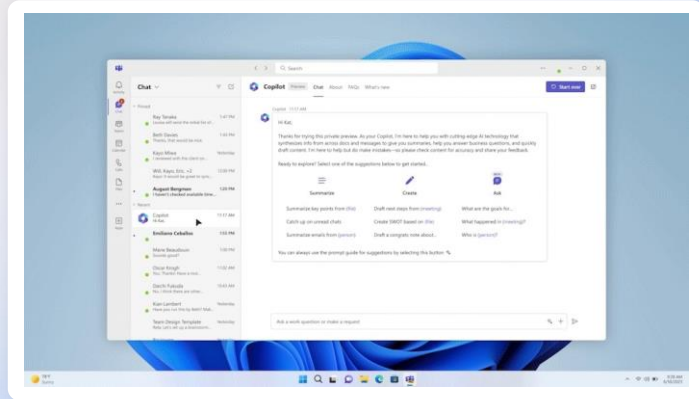

(SOURCE: 3).

In this example, any words associated with food related items are at the bottom, and the most relevant ones that are most relevant to a conversation is on the top.

More details about the Semantic Index can be seen in the illustration below:

Semantic Index forCopilot for Microsoft365

To help every customer get AI-ready, we're rolling out Semantic Index for Copilot:

- The Semantic Index for Copilot creates a sophisticated map of your and your organizational data– identifying relationships and making important connections.

- It uses that conceptual understanding to determine your intent and help you find what you need

- The Semantic Index for Copilot enables Copilot for Microsoft 365 to deliver relevant, actionable responses to prompts– and do so in a secure, compliant, privacy-preserving way.

(SOURCE: KAMIND IT)

More detailed information about the Semantic Index can be seen at the link below:

https://learn.microsoft.com/en-us/microsoft-365-copilot/microsoft-365-copilot-overview

How CoPilot Works In M365

It should be noted that CoPilot is tightly integrated with and unique to your own M365 subscription. Here is an overview of how the entire process works:

- ➢ CoPilot receives any kind of input, such as a prompt that is used in a query.
- ➢ Through a process called "Grounding", the input is then preprocessed. This gives you the most relevant answers to your query, or provide action items that you need to take, for example, when trying to close a potential sales deal. It is the LLMs that are the main engine for the Grounding process.
- ➢ Once the last step has been accomplished, the post processing phase then occurs. This is where the information and data that has been found to answer a query is further refined.
- ➢ After this, the final answers are then presented to the end user.

These steps can be seen in the diagram below:

Microsoft Copilot for Microsoft 365 architecture
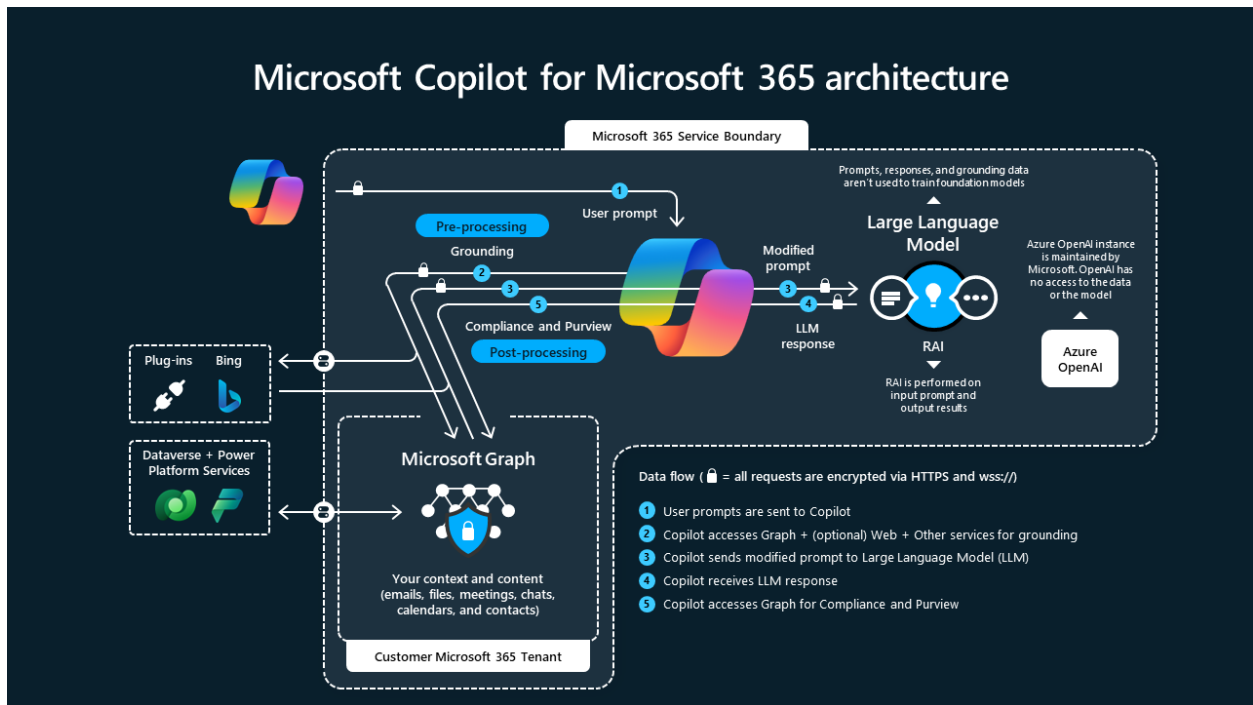
(SOURCE: 4).

Working With CoPilot

Prompt Engineering

As it has been described so far in this whitepaper, the heart of CoPilot is when you a submit a query to it, and it comes with an appropriate response. This methodology is like when using Google. You submit a search term(s) into it, and it produces a plethora of resources that you can find the answer to. But what is different about CoPilot is that it does simply give you a list of resources, it attempts to give you a the most direct, correct, and accurate answer that is possible.

But the kind of answer you get will largely depend upon the kind of query that you construct. Obviously, the more refined and specific that it is, the better the output you will receive from CoPilot. In fact, this has given birth to an entire new field within AI, and it is called "Prompt Engineering". It can be technically defined as follows:

"Prompt engineering is the practice of designing and refining prompts—questions or instructions—to elicit specific responses from AI models. Think of it as the interface between human intent and machine output."
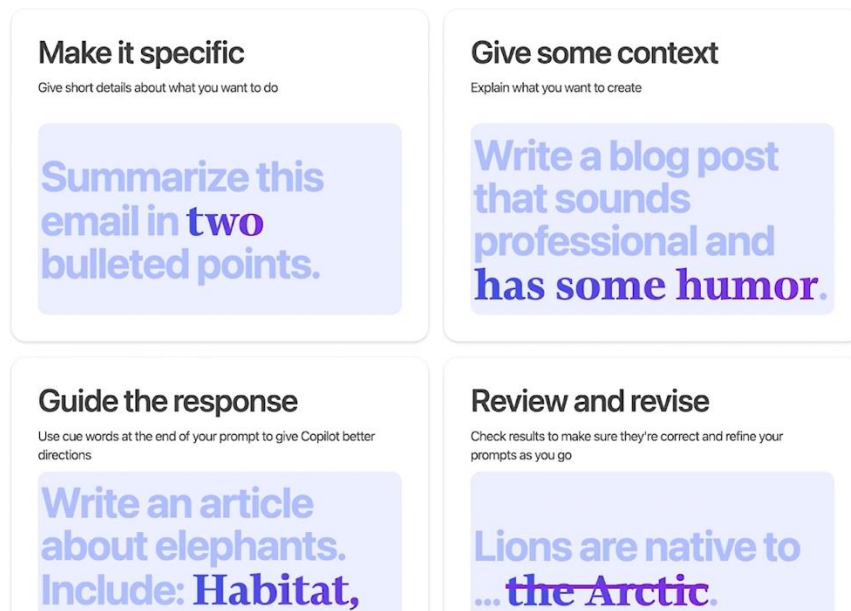
(SOURCE: 5).

For example, a prompt would be: "CoPilot, give me the cheapest airline tickets to Hawaii".

With this kind of query, you will get all sorts of outputs which may not satisfy your end goal. Rather, the more specific the query is, the more focused the output will be. A better prompt would be: "CoPilot, give me the cheapest tickets on this date of departure and arrival. I will be flying out of ORD, and would like to have an early morning departure, and a late evening arrival".

This is the art of Prompt Engineering, select the most specific inputs that are most relevant to you query. In fact, one of our blogs examines in much more detail how to create an effective prompt.

The illustration below is a quick reference guide in creating effective prompts in CoPilot:

Quick tips for better prompts

Make it specific
Give short details about what you want to do

Summarize this email in **two** bulleted points.

Give some context
Explain what you want to create

Write a blog post that sounds professional and **has some humor**.

Guide the response
Use cue words at the end of your prompt to give Copilot better directions

Write an article about elephants. Include: **Habitat,**

Review and revise
Check results to make sure they're correct and refine your prompts as you go

Lions are native to ... **the Arctic**.

(SOURCE: 6).

More detailed tips can be seen in the illustration below:

The art and science of prompts

Get the most out of Copilot and avoid common pitfalls by learning what to do and what not to do when writing prompts.

Do's

Be clear and specific. Provide specific instructions to Copilot, such as topic, purpose, tone, and required length.

Keep it conversational. Give feedback to Copilot based on the quality of its responses to help the AI learn and match your preferences.

Give examples. Use clear and specific keywords or phrases when asking Copilot to write a piece of text for you. This helps it generate more relevant and creative copy.

Ask for feedback. Requesting feedback from Copilot helps it to understand your needs and preferences, and to provide you with more relevant, helpful responses.

Check for accuracy. Occasionally, Copilot may make mistakes. Always check Copilot's responses for accuracy, grammar, and style, and watch out for irrelevant or inappropriate content.

Provide details. Provide Copilot with contextual details to help it generate more accurate, consistent responses. For example, the genre, characters, and plot to a story.

Don'ts

Give conflicting instructions. Prompting Copilot to perform a task that includes multiple or conflicting pieces of information in the same request can confuse the AI and result in lower quality responses.

Check for accuracy. This could disrupt Copilot's writing process. Always close or finish a task before starting a new one. When starting a new task, write "New task."

Be vague. When prompting Copilot, avoid using vague language, and be as clear as possible to receive better-quality responses.

Use slang, jargon, or informal language. This may cause Copilot to give low-quality, inappropriate or unprofessional responses.

(SOURCE: KAMIND IT)

CoPilot Labs

You don't need to have a formal education in order to learn Prompt Engineering. Rather, it is best learned by experimenting over and over again, in an iterative fashion. This is where the role of CoPilot Labs comes into play. It is a central repository and it is designed to be collaborative in nature. At this place, you can view all of the other prompts that other users have CoPilot have created, and from there, you can learn how to build your own.

You can also work with other end users on a real time basis. An example of CoPilot is illustrated below:

More prompts to try

(SOURCE: 6).

As an added benefit, this tool is also bundled with your CoPilot subscription. It is also available on GitHub, and can be accessed at this link:

https://github.com/features/copilot/

To view a demo on CoPilot Labs, click on the link below:

https://www.youtube.com/watch?v=1k2h8b9_U1g

The CoPilot Studio

This is a newer facet to CoPilot, and is made available in your M365 subscription. It is fully intended to give you complete control over your experiences with CoPilot, by having the ability to customize them further. For example, there are over 1,000+ built in connectors that allow you to connect your CoPilot subscription to other various third-party applications, such as Workday, SAP, Salesforce, etc.

It also integrates with the following:

➢ Azure OpenAI Studio
➢ Azure Bot Services
➢ Azure Cognitive Services

It should be noted that the CoPilot Studio does not come as a "one size fits all" platform. Rather, there are different versions of it so that it will be most compatible with the M365 tools that you use the most.

For example, Microsoft Teams will come with its own version of it, in order to give you the most optimal results from your meeting.

You can get a free, 60-day trial version of CoPilot Studios, and more details about it can be found at the link below:

https://www.microsoft.com/en-us/microsoft-copilot/microsoft-copilot-studio#tabs-pill-bar-ocb9d4_tab3

With it, you can create your own, fully customized Generative AI based plugins by simply using drag and drop features (in fact, CoPilot is also known as a "low code builder", which means you don't have to any programming experience). Other features of this include:

➢ Further customization of your overall CoPilot experiences, which is largely based upon how you make use of it.
➢ Yuu can create lower grade versions of CoPilot, and build them out for the different departments of your business. For example, you can create CoPilot bots for IT Support, Sales and Marketing, etc. More information on how to do this can be seen at the link below:

https://learn.microsoft.com/en-us/microsoft-copilot-studio/fundamentals-get-started?tabs=web

➢ By using the Centralized Management functionality, you can even deploy the CoPilot bots to all of the other departments of your business, your customers, prospects, contractors, third party suppliers, etc. It even comes with a holistic dashboard so you can get a bird's eye view into how all of your bots are doing. Recommendations are also provided as to how you can further refine them as well.
➢ Business automation: Create other CoPilots to help automate any repetitive tasks, in which you currently have employees do the work.
➢ Market segmentation: CoPilot Studio can help you organize and divide up accordingly all of the data that you have in your CRM. It will help make this more effective for future campaign launches.
➢ Targeted messaging: You can create a CoPilot to create specific language for a very targeted email campaign.
➢ Depending upon how much data your business has, you can develop a specific CoPilot to mine through all of them, and find unhidden trends which will give you a competitive advantage with both prospects and customers.

There is also a full documentation repository on how to deploy and use CoPilot studios, it can be found at this link:

https://learn.microsoft.com/en-us/microsoft-copilot-studio/

The technical architecture of CoPilot Studio is illustrated below:

Copilot Studio architecture
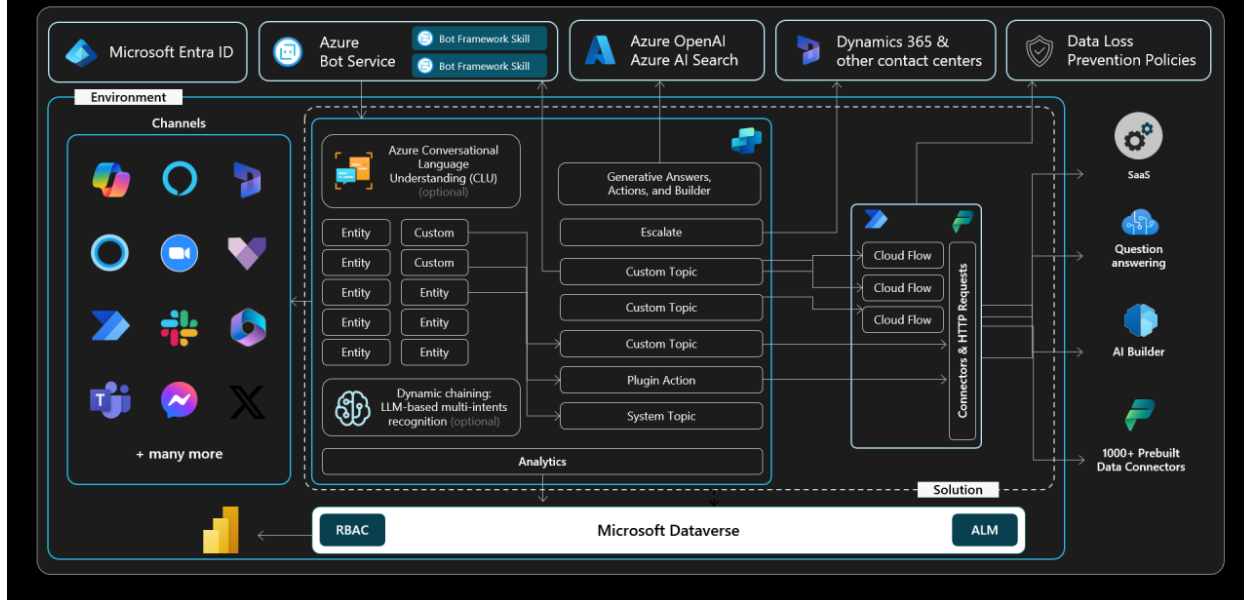
(SOURCE: 7).

CoPilot In Microsoft Dynamics

Microsoft Dynamics is a large and very robust CRM system that you can use for your business. It can be technically defined as follows:

"Dynamics 365 is a portfolio of intelligent business applications that delivers superior operational efficiency and breakthrough customer experiences enabling businesses to become more agile and reduce complexity without increasing costs."

(SOURCE: 8).

But depending upon how large your business is, trying to manage all of the prospects, customers, and the entire sales pipeline can be an entirely daunting task. But with the integration of CoPilot, you can achieve the following:

➢ Create a chat interface for the highlights of sales opportunities and leads.
➢ Prepare for meetings.
➢ Get the latest news and updates for all of the accounts that you have in Microsoft Dynamics.
➢ Use it with Outlook to create compelling email messages, especially with prospects with whom you are trying to close that deal.

The Different Flavors Of CoPilot For Microsoft Dynamics

Just like there are different versions of CoPilot for an M365 subscription, the same is true for Microsoft Dynamics. Here is what you can get, depending upon your requirements:

CoPilot For Microsoft Dynamics Business Central

- ➢ Bring newer products online faster: If your business is heavily dependent upon the use of online stores, you can use CoPilot to create the product and/or service descriptions in a way that will attract the attention of prospects quickly.
- ➢ CoPilot can also be your financial assistant. For example, if you upload invoices, receipts, bank statements, etc., it can automatically reconcile any differences, and update the associated customer account. If there are any discrepancies that need your attention, it will also alert you to that fact.

More information can be found at the link below:

https://cloudblogs.microsoft.com/dynamics365/bdm/2023/11/30/transform-the-way-work-gets-done-with-microsoft-copilot-in-dynamics-365-business-central/

CoPilot For Microsoft Dynamics Customer Service

If you have a call center, there is no doubt that you customer agents are inundated with both phone calls and emails. With CoPilot, you can easily create a Virtual Assistant, which can help greatly reduce the wait times that your customers might be experiencing. The end result here is that with faster service, your customers will feel much more satisfied, thus wanting to buy more products and/or services from your online store. These Virtual Assistants pull information and data from the Azure OpenAI Service and Bing to provide the best answers to queries.

CoPilot For Microsoft Dynamics Service

When CoPilot is used in this kind of environment, your customer service team can do the following:

- ➢ Connect to any other portals that you may have which contain information/data about your customers.
- ➢ Immediately pull up email threads from previous conversations, and based on that, quickly draft up a new email message in response to newer questions posed by your customer and prospects.
- ➢ Your team can get updates on the customer accounts, and the latest meetings which were held.

More information can be found at the link below:

https://learn.microsoft.com/en-us/dynamics365/customer-service/use/use-copilot-features

CoPilot For Microsoft Dynamics Customer Insights/Journeys

With the LLM component that is built into CoPilot, you can literally create an insightful "journey" with the interactions you have had with both customers and prospects. The idea here is not to create just another recap or summary, but rather to add context, feelings, and emotions to the content. That way, if your account gets transferred to another sales representative, they will know how to act accordingly in any future conversations. In other words, think of this as creating a detailed case study, from the beginning to the end.

In this regard, you can even ask CoPilot for suggestions as to how you can improve an existing engagement by having it provide different interactive scenarios. For example, it can make recommendations based on key topics, existing marketing emails, and from a variety of other resources based on the Internet. This helps to increase the relevance and quality of generated ideas.

CoPilot For Microsoft Dynamics Field Service

This tool is primarily designed for assistance in the post sales process. With this, you can do the following:

➢ Understand the progress of a sales order, and the next steps that have to be completed.
➢ A summary of the previous activities that have transpired in the sales order.
➢ Any remaining components that have yet to be delivered, and their associated delivery times.

More information can be found at the link below:

https://learn.microsoft.com/en-us/dynamics365/field-service/work-order-recap

CoPilot For Microsoft Dynamics Projects Operations

As its name suggests, this version of CoPilot is primarily designed for the Project Manager. With this version, they can do the following:

➢ Create new project plans instantaneously.

- ➢ Describe the details of the projects using LLMs.
- ➢ Create project status reports, which include the following: Analysis of the financial data, providing insights into the progress of a project on a granular detail, and how well the Project Management team is adhering to delivery deadlines.
- ➢ It can aid in identifying and risks that could pose a serious bottleneck to the final completion of a project.

More information can be found at the link below:

https://learn.microsoft.com/en-us/dynamics365/project-operations/project-management/copilot-features

CoPilot For Microsoft Dynamics Finance

The CoPilot here is meant to assist both the Accounting and Finance Departments address the financial issues with a customer. You can do the following with this:

- ➢ Send out invoices to customers.
- ➢ Create quotes for prospects.
- ➢ Keep track of the progress of invoice payments.
- ➢ Send out alerts and messages to customers who still have outstanding bills that need to be paid up.

CoPilot can be a huge advantage here, because it can do all of the number crunching for you in just a matter of a few minutes.

More information can be found at the link below:

https://learn.microsoft.com/en-us/dynamics365/finance/accounts-receivable/collectionscoordinatorsummary

CoPilot For Microsoft Dynamics Supply Chain Management
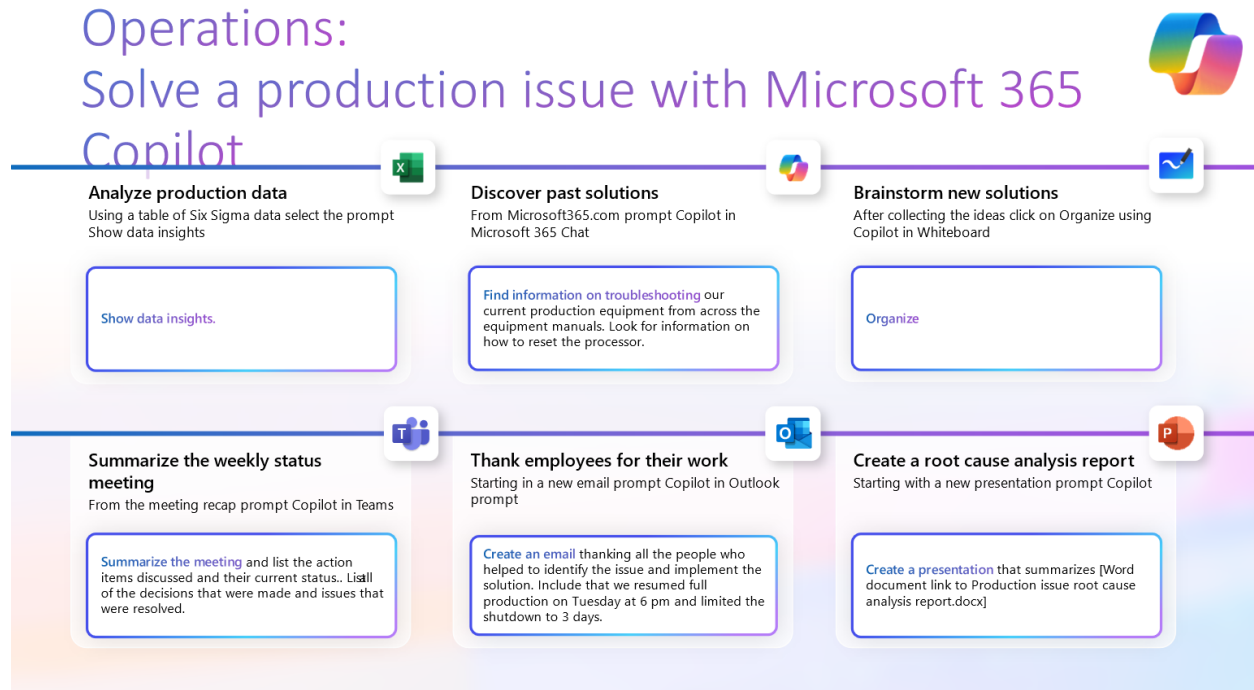
When CoPilot is used here, it can help you out greatly with any inventory/deliver issues and queries. For example, it can do the following:

- ➢ Use the LLM functionality to ask directly about any stock levels you have questions about.
- ➢ Source parts or products through other suppliers if they are needed immediately. CoPilot can even integrate quite easily with other supply chain apps.
- ➢ Manage your procurement process by determining how long a part will take to be delivered, or even if it is available at all. It can even provide recommendations for other alternatives, if needed.

More information can be found at the link below:

https://learn.microsoft.com/en-us/dynamics365/supply-chain/procurement/purchase-order-changes-after-confirmation

An illustration of this use case is below:

(SOURCE: KAMIND IT)

CoPilot For Microsoft Dynamics Sales

Using this brand of CoPilot, you can greatly fortify the sales process by being able to do the following:

- ➤ Obtain AI generated lead and future opportunity summaries.
- ➤ Create meeting preparation documents before you actually engage in a face-to-face conversation with a prospect and/or customer.
- ➤ Get insights as to why a customer/prospect would talk about a competitors product and/or solution.
- ➤ Create very targeted emails based on information and data from previous threads and Microsoft Dynamics.

More information can be found at the link below:

https://learn.microsoft.com/en-us/dynamics365/sales/copilot-overview

Adding External Data Sources To CoPilot

Another great feature of CoPilot is that you can also feed into it information and data from external sources, which are not native to your M365 subscription. There are two ways that this can be done:

1) Using predefined or even creating customized "Plugins":

   By using this technique, you can:

   ➤ Access the latest updates on a real time basis.
   ➤ Access relational data sets.
   ➤ Conduct certain actions across a multitude of different apps that you may have.

   For more information about how to use or create a Plugin, see the link below:

   https://learn.microsoft.com/en-us/microsoft-365-copilot/extensibility/plugin-guidelines

2) Using Graph:

   This was discussed earlier in the whitepaper, and you can hook external data sources to CoPilot by making use of the Connectors that are available in Graph. There are three ways that this can be achieved:

   ➤ Add an existing Connector, or customize it further.
   ➤ Register the relevant database schema.
   ➤ Manually ingest any new information and data into Graph.

Both of these methods are illustrated in the diagram below:
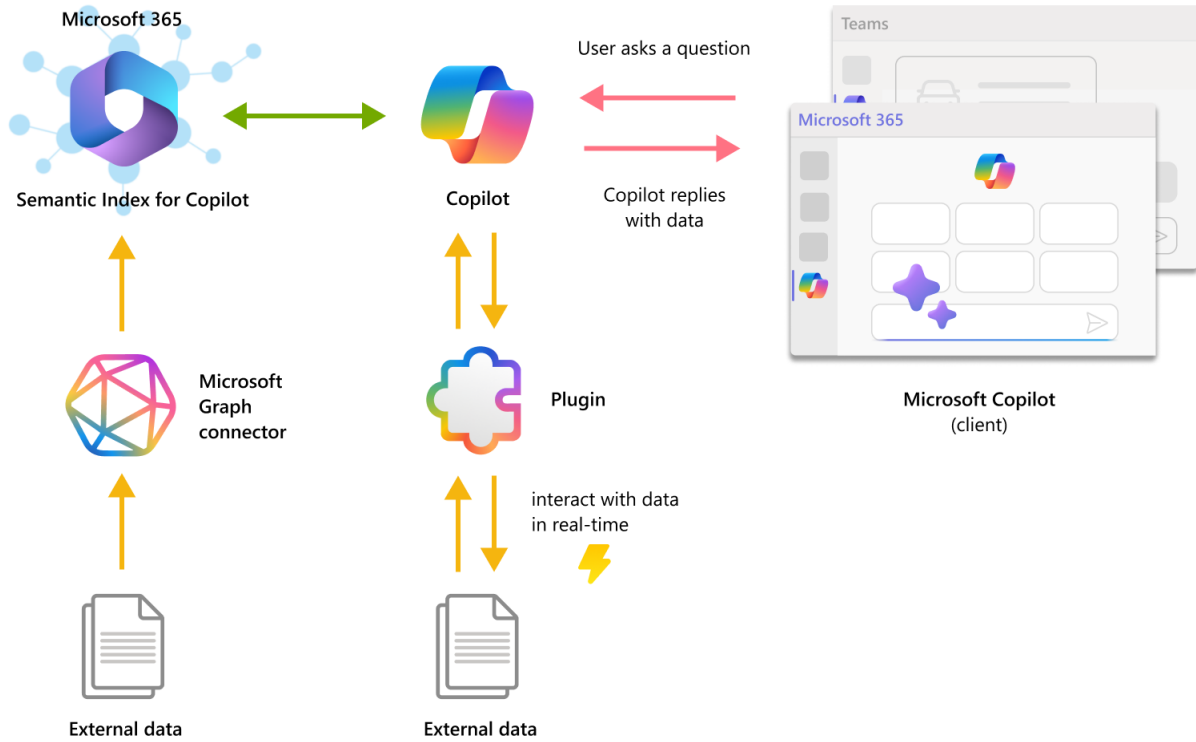
(SOURCE: 9).
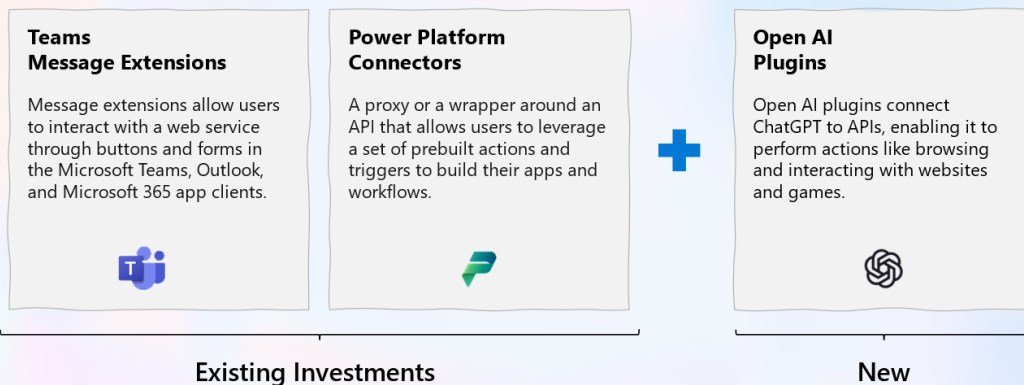
More details about the plugins that you can use and/or create is illustrated below:

Plugin types
Use existing integrations or build new ones to extend your organization's AI-powered skills.

Teams Message Extensions

Message extensions allow users to interact with a web service through buttons and forms in the Microsoft Teams, Outlook, and Microsoft 365 app clients.

Power Platform Connectors

A proxy or a wrapper around an API that allows users to leverage a set of prebuilt actions and triggers to build their apps and workflows.

Open AI Plugins

Open AI plugins connect ChatGPT to APIs, enabling it to perform actions like browsing and interacting with websites and games.

Existing Investments

New

(SOURCE: KAMIND IT)

For more information on how to deploy CoPilot for Microsoft Dynamics and licensing requirements, click on the link below:

https://learn.microsoft.com/en-us/dynamics365/sales/enable-setup-copilot

It is also important to note that CoPilot can seamlessly integrate with the Salesforce Sales Cloud as well.

Conclusions

Overall, this whitepaper has done a technical, deep dive into what Microsoft CoPilot is all about, and how you can use it to the fullest advantage in your business. If you have any questions on the content, or need help in procuring and deploying CoPilot, contact us today.

Finally, the different features of CoPilot can be seen below:

Copilot feature comparison	For Individuals		For Organizations	
	Copilot (Free)	Copilot Pro ($20)	Copilot (Free)	Copilot for Microsoft 365 ($30)
Foundational Capabilities	●	●	●	●
Web Grounding	●	●	●	●
Commercial Data Protection	●	●	●	●
Priority Model Access		●		●
Copilot in Outlook, Word, Excel, PowerPoint, and OneNote		●		●
Copilot in Teams				●
Microsoft Graph Grounding				●
Enterprise-Grade Data Protection				●
Customization		Copilot GPT Builder		Copilot Studio

Commercial Data Protection applies when users are signed into their work account using their organization's Entra ID.

(SOURCE: KAMIND IT)

Sources

1) https://www.nvidia.com/en-us/glossary/large-language-models/
2) https://learn.microsoft.com/en-us/graph/overview
3) https://learn.microsoft.com/en-us/microsoftsearch/semantic-index-for-copilot
4) https://learn.microsoft.com/en-us/microsoft-365-copilot/microsoft-365-copilot-overview
5) https://www.datacamp.com/blog/what-is-prompt-engineering-the-future-of-ai-communication
6) https://www.linkedin.com/pulse/what-heck-microsoft-copilot-lab-velakuconsulting-pxmce
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9) https://learn.microsoft.com/en-us/microsoft-365-copilot/extensibility/