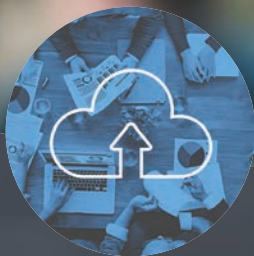




# 2023 WICPA ACCOUNTING TECHNOLOGY CONFERENCE

YOUR SOURCE FOR KEY UPDATES & INSIGHTS ON TIMELY ISSUES

## HIGHLIGHTED TOPICS:



### CLOUD ACCOUNTING & ERP SOFTWARE UPDATE

Learn about the landscape for cloud-based accounting and ERP software and find out what to consider when developing your accounting and ERP solution strategy



### CPA TECHNOLOGY TRENDS UPDATE

Gain valuable insights into how the latest technological advancements and trends are transforming the CPA profession, increasing efficiency and improving client services



### CHATGPT: A POWER TOOL FOR CPAS

Discover the fundamentals of generative AI technology in business, including how to use ChatGPT and its practical applications for accounting, finance and tax

THURSDAY, DEC. 7 | WICPA OFFICE & WICPA CPE LIVESTREAM

## CONFERENCE AT A GLANCE

**THURSDAY, DEC. 7**

WICPA Office & WICPA CPE Livestream

**7 – 8 a.m.**

Registration & Networking  
Lower Level Foyer

**8 – 8:15 a.m.**

Welcome & Opening Remarks  
Lower Level Conference Center

**8:15 – 9:30 a.m.**

GENERAL SESSION  
ChatGPT: A Power Tool for CPAs  
Lower Level Conference Center

**9:30 – 9:45 a.m.**

Networking Break  
Lower Level Foyer

**9:45 – 10:45 a.m.**

BREAKOUT SESSIONS  
Cloud Accounting & ERP  
Software Update  
WICPA Training Center

Excel Tips & Tricks in 60 Minutes  
Lower Level Conference Center

**10:45 – 11 a.m.**

Networking Break  
Lower Level Foyer

**11 a.m. – 12:05 p.m.**

BREAKOUT SESSIONS  
Introduction to Power BI  
Dashboards  
WICPA Training Center

Master SharePoint & OneDrive:  
Your Cloud Storage Solution  
Lower Level Conference Center

**12:05 – 12:55 p.m.**

Networking Lunch  
Lower Level Foyer

**12:55 – 2 p.m.**

BREAKOUT SESSIONS  
Getting the Most Out of  
Windows 11  
WICPA Training Center

Tips to Harness the Full Potential  
of Microsoft 365  
Lower Level Conference Center

**2 – 2:15 p.m.**

Networking Break  
Lower Level Foyer

**2:15 – 3:15 p.m.**

BREAKOUT SESSIONS  
Cryptocurrency Technology  
& Market Update  
WICPA Training Center

Practical Security Tips for CPAs  
Lower Level Conference Center

**3:15 – 3:30 p.m.**

Networking Break  
Lower Level Foyer

**3:30 – 4:45 p.m.**

GENERAL SESSION  
CPA Technology Trends Update  
Lower Level Conference Center

**4:45 p.m.**

Closing Remarks & Prize Drawings  
Lower Level Conference Center





## A Technology Performance Company

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*“CTaccess is an extension of our company. They keep our company on track, prepared for the future and up & running.”*

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- **Cyber Security: Managed Security Service Provider**
- **IT Consulting & Project Support**
- **Cloud UCaaS (Phone Systems)**
- **Mac Support**

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To find an agency near you, visit [thesilverlining.com](http://thesilverlining.com).



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# CONNECT



## A GREAT WAY FOR WICPA MEMBERS TO COLLABORATE

**WICPA Connect** is your exclusive members-only networking and knowledge base designed to connect you with WICPA members and resources.

- **Network with peers** and grow your contact list using the member directory of more than 7,000 members.
- **Post questions** to find out from fellow members who have the expertise or may have been in the same situation.
- **Personalize your profile** by adding your interests, education, experience, honors and even your photo.
- **Contribute and download resources** such as documents, whitepapers, articles, reports, guides and more.
- **Share your knowledge and expertise** by answering questions and offering your insights and ideas to fellow members.
- **Customize your experience** with controls for profile visibility, discussion signatures, notifications and more.

**As a WICPA member, you already have a profile on WICPA Connect.**

Simply go to [wicpa.org/connect](http://wicpa.org/connect) and sign in using your existing website login information.

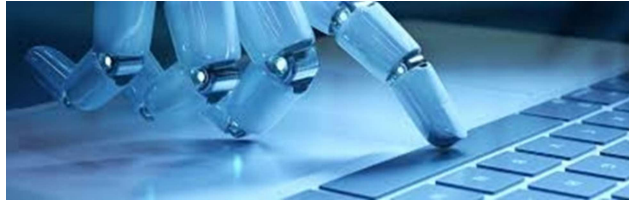
8:15 – 9:30 a.m.

# ChatGPT: A Power Tool for CPAs

**John Higgins, CPA, CITP**, *Strategic Technology Advisor,*  
*Higgins Advisory, LLC*



# ChatGPT: A Power Tool for CPAs



Presented By  
John H. Higgins, CPA.CITP  
Rochester, Michigan



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## Learning Goals



- Understand the origins of generative AI
- Learn how to use the power of ChatGPT
- Recognize practical ChatGPT applications for CPAs



# John H. Higgins, CPA.CITP

## Strategic Technology Advisor



john@higginsadvisoryllc.com

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Past Chair of the Michigan Association of CPAs

Passionate advocate for the CPA profession!

2

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## Presentation Outline

- [Overview of Artificial Intelligence Today](#)
- [History of ChatGPT](#)
- [Orientation to the ChatGPT App](#)
- [Let's Chat – Practical Applications for CPAs](#)
- [A Word of Caution](#)
- [Wrap-Up](#)
- [Fundamentals of Generative AI Technology](#)



3

# OVERVIEW OF ARTIFICIAL INTELLIGENCE IN BUSINESS TODAY

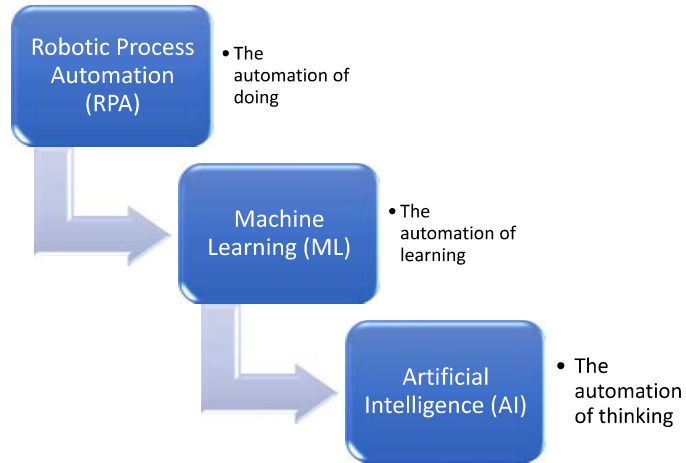


“Artificial intelligence is like electricity; it has  
application everywhere”

Andrew Ng  
Co-founder Google Brain



## Key Trends in Automation



## Key Trends in AI Technology

- Rapid and widespread adoption
- Mega amounts of capital flowing into this space
- Ethical concerns – biases and usage
- Workforce impact
- Regulatory issues

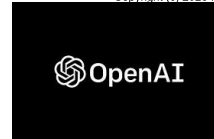
# HISTORY OF CHATGPT



## What is ChatGPT?

- ChatGPT (Generative Pre-trained Transformer)
- Fastest growing app in history
  - Launched November 30, 2022
  - 100 million users within two months
- An AI chatbot
- Developed by OpenAI

## History of OpenAI



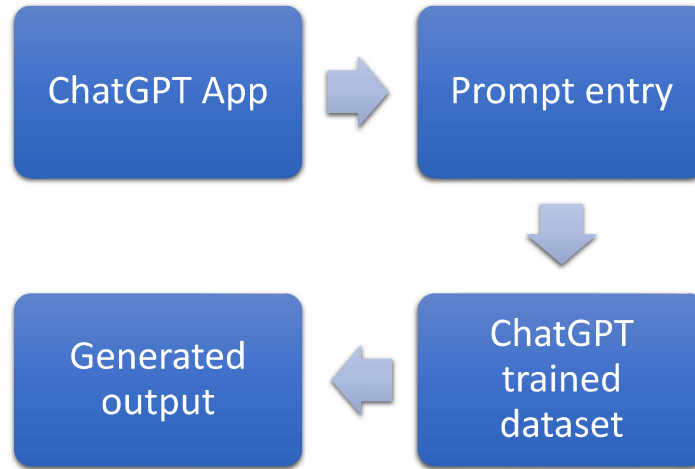
- Research organization founded in 2015 by Elon Musk, Sam Altman and others
- Sam Altman fired by the Board of Directors on 11/17/23
- Elon Musk resigned in 2018 due to a conflict of interest with Tesla & SpaceX
- Microsoft announces \$10 billion investment in Jan 2023 (49% ownership)

## ORIENTATION TO THE CHATGPT APP





# ChatGPT Model



The screenshot shows the ChatGPT interface with several annotations:

- Chat History:** A yellow callout points to the left sidebar showing a list of previous chats.
- Account Information:** A yellow callout points to the user's name 'John Higgins' at the bottom of the sidebar.
- Prompt:** A yellow callout points to the input text: 'Write an engaging introduction to a business plan to offer a curriculum of webinars and on demand educational courses for CPA and CFO professional based on personal productivity digital tools such as Microsoft 365, Password management, e-signature, generative AI, Adobe Acrobat and more. These will be sold as an "all you can take" bundle for a flat fee.'
- Generated text output:** A yellow callout points to the AI-generated response titled 'Business Plan Introduction'.
- Prompt entry:** A yellow callout points to the 'Send a message' input field at the bottom.

Red circles highlight specific UI elements: the 'GPT-4' model selector, a share icon, a feedback icon, and a help icon.

## LET'S CHAT



## Practical ChatGPT applications for CPAs

- Communicating financial information
- Financial data analysis
- Accounting research
- Practice management support

## ChatGPT Prompt Example

Explain FASB 13 lease accounting standard in a bulleted list at the college freshman level



[View results in ChatGPT](#)

## ChatGPT Prompt Example

Explain the differences between an LLP, LLC and C corporation form of entity in a bulleted list, with pros and cons of each, for a small business entrepreneur



[View results in ChatGPT](#)

## ChatGPT Prompt Example

Create an Excel formula to calculate the monthly payment on a 30-year mortgage for \$400,000 at a 7% interest rate

Generate a payment amortization schedule in tabular format



View results in ChatGPT

## ChatGPT Prompt Example

Create an excel macro to print the amortization schedule through the requested payment date



View results in ChatGPT

## ChatGPT Prompt Example

Analyze Microsoft financial statements and  
calculate financial ratios



View results in ChatGPT

## ChatGPT Prompt Example

Where is this?



Image uploaded  
to ChatGPT for  
analysis

## ChatGPT Prompt Example

Create an image of two people discussing business at a conference table. One is a professionally dressed female providing advice to casually dressed male rock musician





## OpenAI Chat ChatGPT Products / Plans

- GPT-3.5
  - Free
  - Web and mobile
- ChatGPT-4.5
  - \$20 per user / per month
  - Create images
  - Chat with voice
  - Analyze data
- API (Application Program Interface)

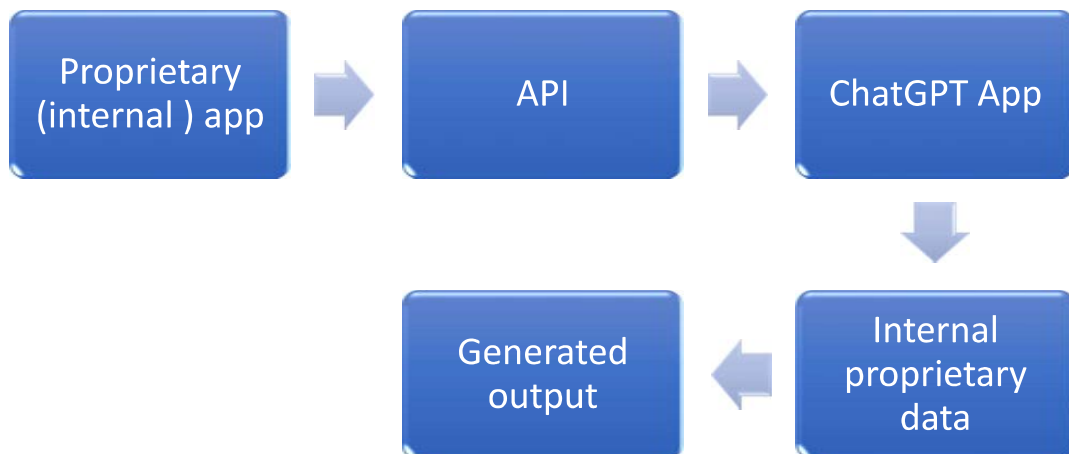
## GPT-4 Turbo Released November 2023

- ✓ 128k context window (cumulative chat prompt memory)
- ✓ Analyze uploaded files, including images
- ✓ Text-to-speech (Whisper)
- ✓ Image creation (DALL-E 3)
- ✓ LLM data trained through April

## ChatGPT API

- Licensed access to ChatGPT technology by private entities
- **Does not** provide access to ChatGPT dataset
- Uses your **proprietary** information as dataset
- API can be embedded in third party software such as financial and ERP systems

## ChatGPT Model With API



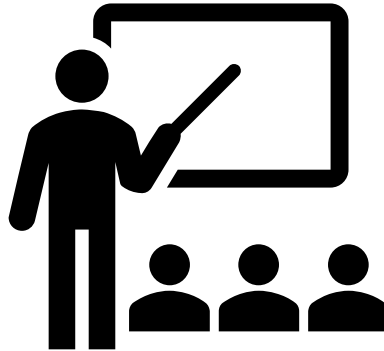
## A WORD OF CAUTION



## Issues to Beware of With ChatGPT

- Hallucination – generated output that does not correspond to real-world input, resulting in misleading results
- Privacy – Anonymize your prompt input. No PII or confidential information
- Bias – subjective, stereotypes, assumptions, etc.

## WRAP-UP



## In Summary

- We are at the infancy of this technology
- No one knows how this will evolve
- We should be concerned if the experts are concerned!
- Stay tuned to Microsoft Copilot AI for 365
- Try it!

## Questions ?



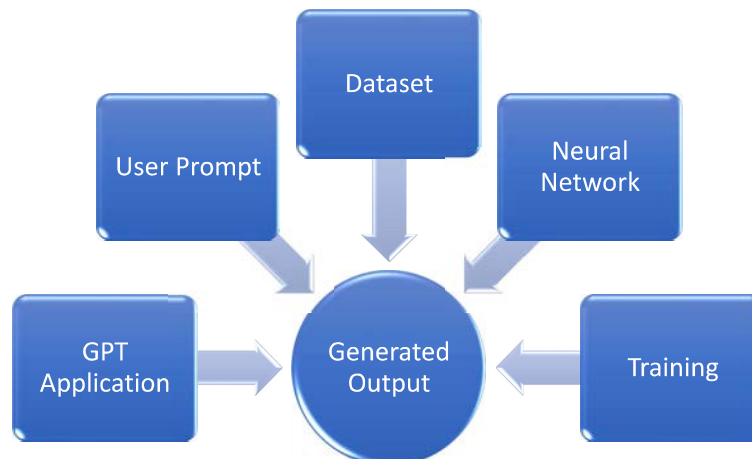
Want to develop your CPA digital skills further?

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# Thank you!!!

## FUNDAMENTALS OF GENERATIVE AI TECHNOLOGY



## AI – Artificial Intelligence

The development of “intelligent” machines that can perform tasks that typically require human intelligence, such as perception, reasoning, learning, and natural language processing.

## Machine Learning

Use of algorithms that enables machines to learn from data and make predictions or decisions based on what it has learned.



## NLP - Natural Language Processor

A field of AI that deals with the interaction between computers and human language, enabling machines to understand, interpret, and generate human language output.

## LLM – Large Language Model

- An artificial intelligence (AI) model that is designed to generate human-like text.
- Trained on massive amounts of data, such as text from books, articles, and websites, and use complex algorithms to learn patterns in the data and generate text that is like human writing.

## GPT - Generative Pre-trained Transformer

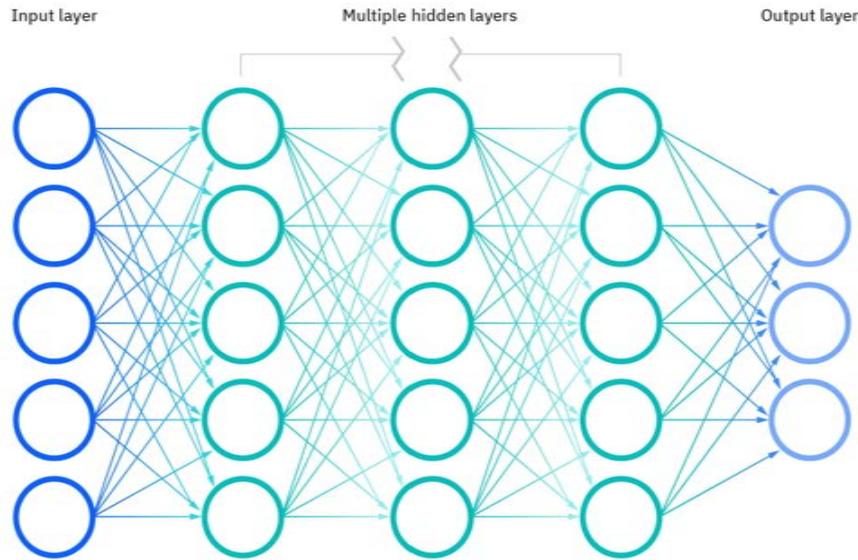
- A type of language model that uses deep learning techniques to generate human-like text
- After reading all this data, the GPT tries to predict the next word in a sentence, using a neural network.
- Achieves greater accuracy over time

## Neural Network

Program that helps a computer learn from data and make decisions

## Deep neural network

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## Chatbot

- A program designed to simulate conversation with human users.
- Answers questions, provides information
- Can be text, audio or video based
- Examples:
  - Siri / Alexa / Cortana
  - ChatGPT / Google Bard

9:45 – 10:45 a.m.

# Cloud Accounting & ERP Software Update

**John Higgins, CPA, CITP**, *Strategic Technology Advisor,*  
*Higgins Advisory, LLC*

# Cloud Accounting & ERP Software Update



Presented By  
John H. Higgins, CPA.CITP  
Rochester, Michigan



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## Learning Goals



- Understand the value proposition of the cloud computing model
- Identify the current trends in cloud based financial, ERP, workflow and personal productivity software



# John H. Higgins, CPA.CITP

## Strategic Technology Advisor



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## Presentation Outline

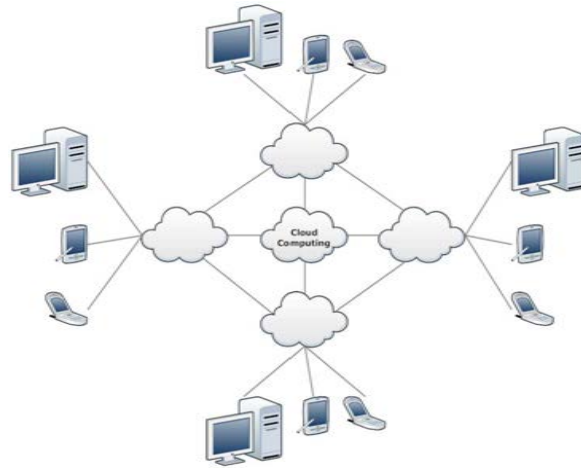
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- [Cloud Computing Model](#)
- [Financial, ERP & Workflow Software Update](#)
- [Personal Productivity Software Update](#)
- [Wrap-up](#)

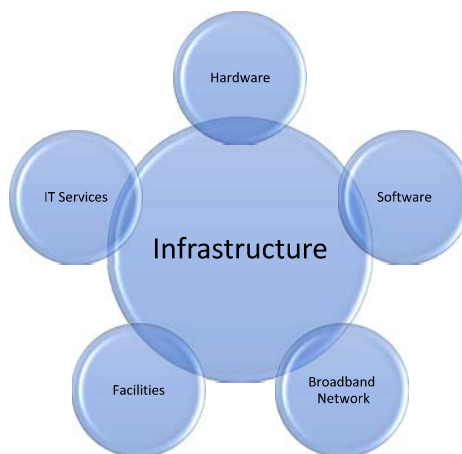


3

# CLOUD COMPUTING MODEL



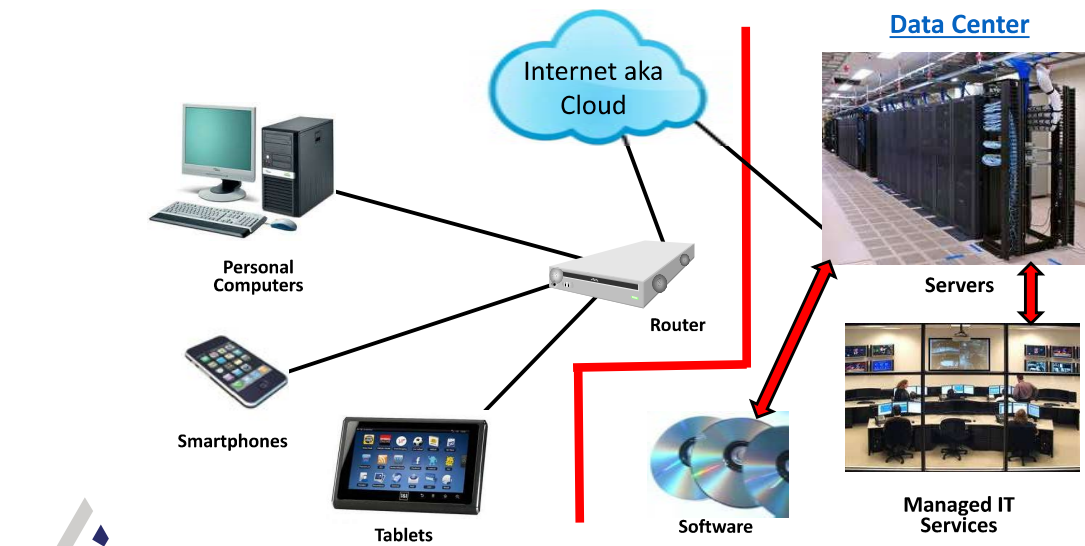
## Cloud Computing Infrastructure Defined





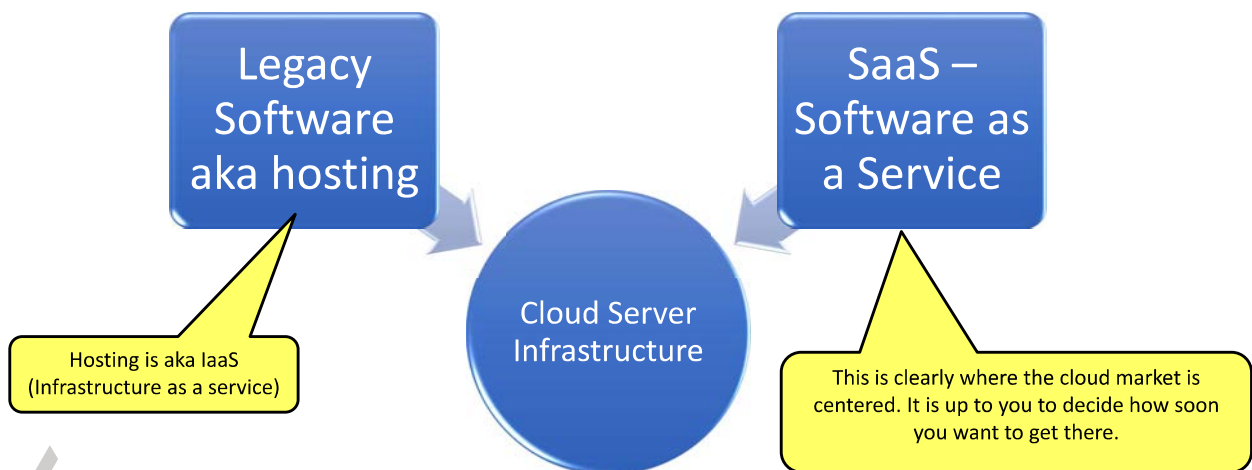
# The Cloud Computing Model

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## Alternative Cloud Based Software Strategies

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## Benefits of the Cloud Software Model

- State of the art software technology
- Simplifies software integrations with APIs
- Outsource software upgrades
- Outsource server infrastructure administration
- Enhance data security
- Enables work from anywhere
- Eliminates capital expenditures for servers and software

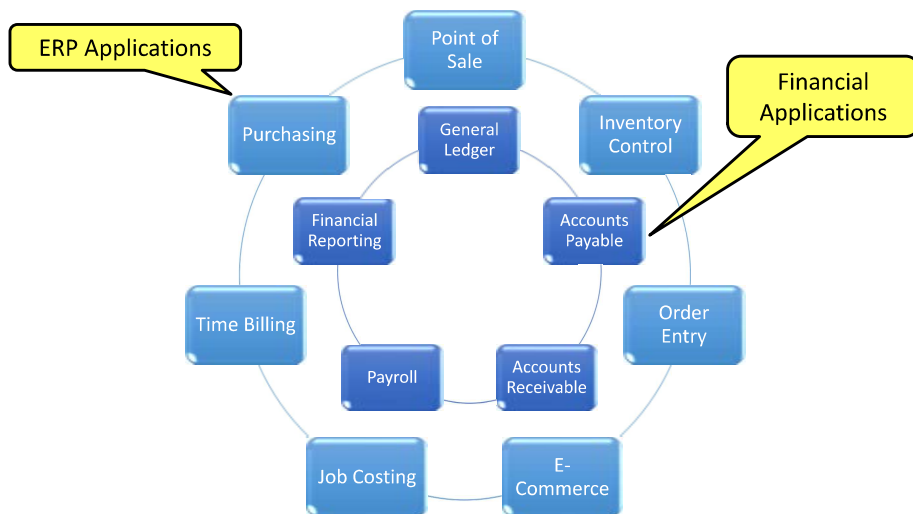
## FINANCIAL, ERP & WORKFLOW SOFTWARE



## Trends In Financial Software



## Financial & ERP Applications



# Top Selling SaaS Financial Solutions

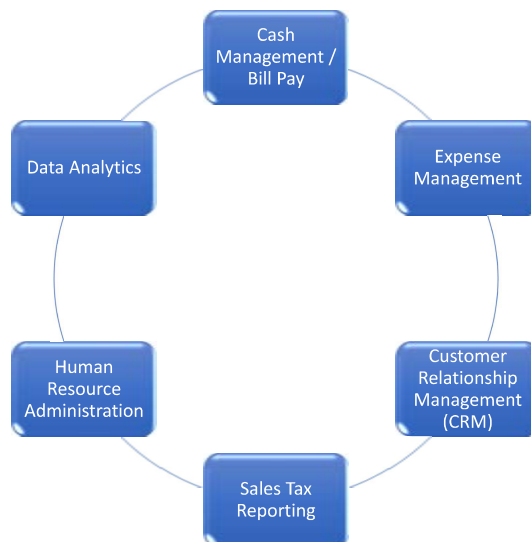
## **Small Business**

- [QuickBooks Online \(QBO\) - Intuit](#)
- [Xero](#)
- [Freshbooks](#)
- [ZOHIO](#)
- [Patriot Software](#)

## **Enterprise**

- [Accumatica](#)
- [Intacct - Sage](#)
- [NetSuite – Oracle](#)
- [SAP](#)

# Niche **Workflow** Applications





# Top Selling SaaS Workflow Solutions

## Cash Management

- [Bill.com](#)
- [Corpay](#)

## Expense Management

- [Expensify](#)
- [Concur](#)

## Sales Tax Automation

- [Avalara](#)
- [Vertex](#)

## Human Resource

- [ADP](#)
- [Paychex](#)

# PERSONAL PRODUCTIVITY SOFTWARE



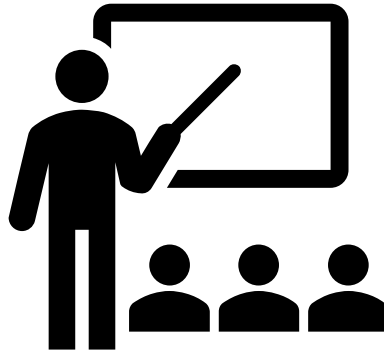
## Personal Productivity Applications



## The Suite Life

- [Microsoft Office 365](#)
- [Google Workspace Business](#)
- [ZoHo](#)

## WRAP-UP



## In Summary

- Cloud computing is the de facto IT model of our times
- You don't have to give up legacy software to move to the cloud
- Take time to define your strategy

## Questions ?



# Thank you!!!

9:45 – 10:45 a.m.

# Excel Tips & Tricks in 60 Minutes

**Bryan Smith, CPA, CITP, CISA,** *Owner, DataSmith Pro, LLC*



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Wisconsin Institute of  
Certified Public Accountants

# 2023 Accounting Technology Conference

Developed by Bryan L. Smith, CPA.CITP, CISA

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## Excel Tips & Tricks in 60 Minutes

2023 Accounting Technology Conference



## Bryan L. Smith, CPA.CITP, CISA Owner, DataSmith Pro, LLC

- Co-founder of CPA Crossings, LLC
- Strategic technology advisor to CPAs w/ 40+ years of experience
- Nationally recognized author and presenter on CPA technology
- Extensive knowledge and experience in proper Excel design techniques as well as helping CPAs build spreadsheets that are accurate
- As a Certified Information Systems Auditor (CISA), spent a considerable amount of time auditing and validating thousands of Excel spreadsheets
- Developed various data analysis and Microsoft Power BI courses and has worked with multiple organizations to train and coach staff on proper data analysis techniques
- Masters of Science in Information Assurance (MSIA)

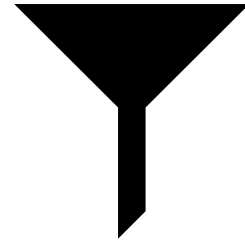


## Presentation Outline

- [Leveraging the Fill Function](#)
- [Leveraging Excel Tables](#)
- [Leveraging Array Formulas](#)
- [Leveraging XLOOKUP](#)
- [Leveraging ChatGPT with Excel](#)
- [Wrap-Up](#)



# Leveraging the Fill Function



## Using the Fill Handle

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Fill Handle

Place cursor over Fill Handle and it turns to a "+"

Fill Options

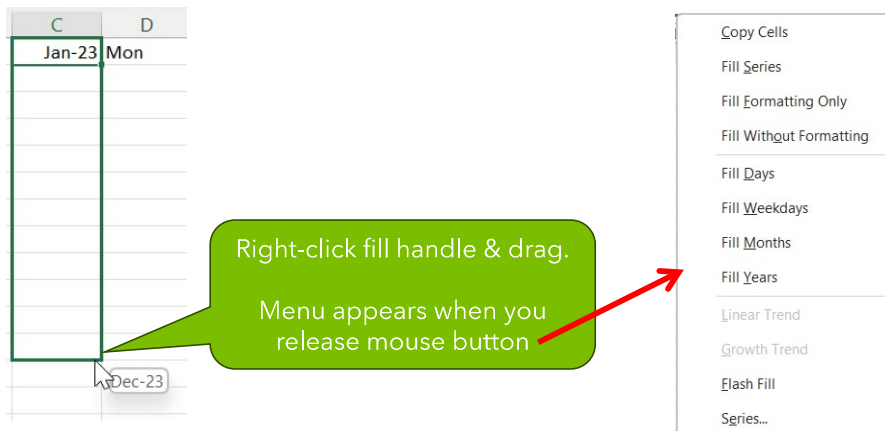
- ☐ Copy Cells
- ☒ Fill Series
- ☐ Fill Formatting Only
- ☐ Fill Without Formatting
- ☐ Fill Months
- ☐ Flash Fill

## Fill Examples

- ✓ Dates, Months, Days, Time
- ✓ Numbers
- ✓ Alpha
- ✓ Custom Lists

	A	B	C	D	E	F	G	H	I	J
1	Jan	January	Jan-23	Mon	Monday	1	1	A1	Detroit	a
2	Feb	February	Feb-23	Tue	Tuesday	1	2	A2	Grand Rapids	b
3	Mar	March	Mar-23	Wed	Wednesday	1	3	A3	Saginaw	a
4	Apr	April	Apr-23	Thu	Thursday	1	4	A4	Rochester	b
5	May	May	May-23	Fri	Friday	1	5	A5	Lansing	a
6	Jun	June	Jun-23	Sat	Saturday	1	6	A6	Traverse City	b
7	Jul	July	Jul-23	Sun	Sunday	1	7	A7		a
8	Aug	August	Aug-23			1	8	A8		b
9	Sep	September	Sep-23			1	9	A9		a
10	Oct	October	Oct-23			1	10	A10		b
11	Nov	November	Nov-23				11	A11		a
12	Dec	December	Dec-23				12	A12		b
13										

## Right Click & Drag Fill Handle



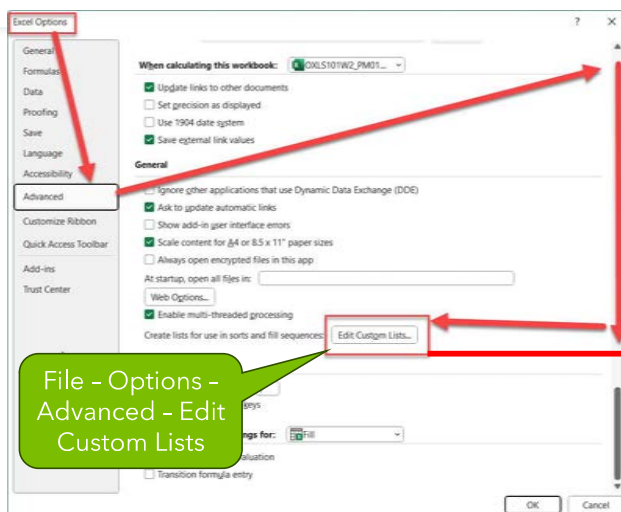
# Double-Click Fill Handle

	A	B
1	Jan	January
2	Feb	
3	Mar	
4	Apr	
5	May	
6	Jun	
7	Jul	
8	Aug	
9	Sep	
10	Oct	
11	Nov	
12	Dec	
13		
14		

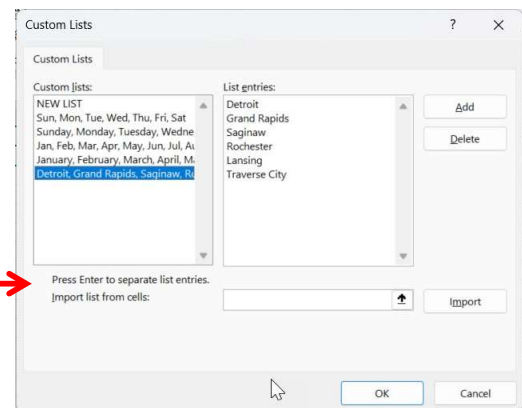
Automatically fills based on surrounding data.

Here, down to Row 12

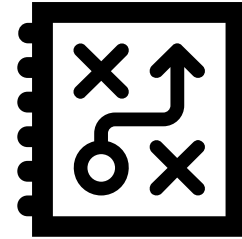
# Autofill Custom Lists



File - Options -  
Advanced - Edit  
Custom Lists



# Leveraging Excel Tables



## Excel Tables - Defined

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A feature added in Excel 2007 - "Format as Table"

Should not be confused with What-If Analysis "Data Tables"

Structured range of data

Typically contains related data in a series of Rows / Columns

A way to organize and analyze data

## Excel Tables - Features

Easily change  
Table formatting

Navigate directly  
to Tables

Auto filters  
headers that stay  
visible

Easily reorder  
rows and  
columns

Auto expands  
with new data  
and maintains  
cell formatting

Calculated  
columns keeps  
formulas  
consistent

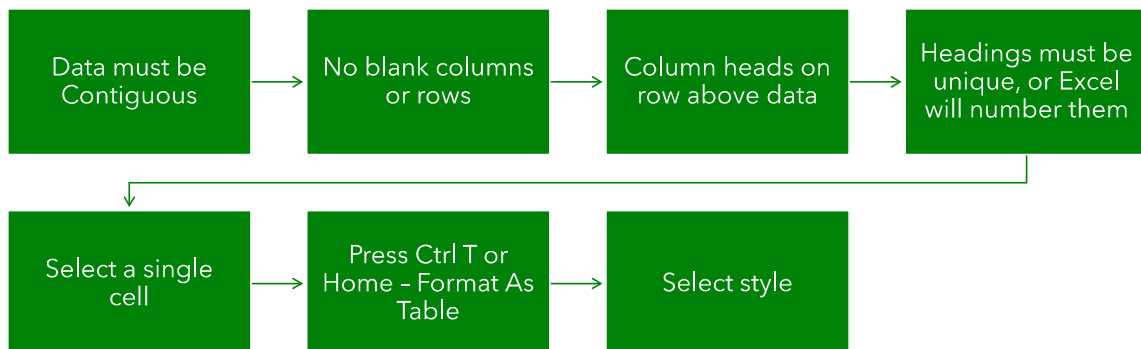
Total row with  
drop down list  
for quick  
calculations

Structured  
references in  
formulas

Use a Table with  
a PivotTable

Use Slicers with a  
Table

## Format As Table - "Ctrl T"



## Auto Expands with New Data

9	Travel	103,209	0	7,775	7,956	8,142	8,332	8,527	8,723	8,790	8,255	8,924	8,993	9,062	9,129
10	Advertising	103,094	0	7,025	7,174	7,326	7,482	7,643	7,809	9,468	9,588	9,709	9,832	9,956	10,082
11	Commissions	206,149	0	25,496	26,091	13,349	13,659	13,978	14,305	16,031	16,233	16,438	16,646	16,855	17,068
12	Depreciation	54,160	0	4,855	4,855	4,855	4,855	4,855	4,855	4,855	4,855	4,855	5,155	5,155	5,155
13	Income Tax	354,095	0	25,179	25,575	29,119	29,441	30,178	30,643	29,831	30,399	30,989	31,187	30,466	31,088
14	Interest Expense	12,958	0	1,125	1,125	1,125	1,125	1,125	1,125	1,061	1,050	1,040	1,029	1,019	1,009
15	Interest Income	(3,823)	0	(228)	(229)	(230)	(231)	(233)	(234)	(235)	(436)	(438)	(440)	(444)	(445)
16	Advertising	103,094	0	7,025	7,174	7,326	7,482	7,643	7,809	9,468	9,588	9,709	9,832	9,956	10,082
17	Commissions	206,149	0	25,496	26,091	13,349	13,659	13,978	14,305	16,031	16,233	16,438	16,646	16,855	17,068
18	Depreciation	54,160	0	4,855	4,855	4,855	4,855	4,855	4,855	4,855	4,855	4,855	5,155	5,155	5,155
19	Income Tax	354,095	0	25,179	25,575	29,119	29,441	30,178	30,643	29,831	30,399	30,989	31,187	30,466	31,088
20	Interest Expense	12,958	0	1,125	1,125	1,125	1,125	1,125	1,125	1,061	1,050	1,040	1,029	1,019	1,009
21	Interest Income	(3,823)	0	(228)	(229)	(230)	(231)	(233)	(234)	(235)	(436)	(438)	(440)	(444)	(445)

Copy & Paste Values auto expands the Table range

Can also paste over Table Total row

20	Interest Expense	12,958	0	1,125	1,125
21	Interest Income	(3,823)	0	(228)	(229)
22	Investment Income				

Also expands if you type new data on the row right under the Table

## Auto Expands and Maintains Cell Formatting

### Maintains Cell Formatting

- Font, alignment and number
- Cell Styles
- Data Validation
- Conditional Formatting (with some issues)
- Column formulas

## Auto Expands with New Data and Maintains Cell Formatting

21	Interest Income	(3,823)	0	(228)	(229)	(230)	(231) (233)
22	Investment Income	0					
23	Rent	(20)	1	2	(3)	10	(30)
24							

Data Validation

DV does not run rules until value is entered

Format

Conditional Formatting

Watch as it may get confused if you insert Rows & Columns

## Calculated Columns Keeps Formulas Consistent - New Formula

O	P
Per.12	
(1,106,068)	
9,370	
31,229	=[@Per.YTD]]*1.1
778,698	
107,986	
6,336	
10,766	
9,129	
10,082	
17,068	
5,155	
31,088	

Enter formula in a single cell in a column, it copies to the other cells in the column

O	P	Q
Per.12	Per.	
(1,106,068)	(13,581,640)	
9,370	110,318	
31,229	367,699	
778,698	9,549,123	
107,986	1,339,600	
6,336	78,998	
10,766	132,865	
9,129	112,869	
10,082	113,403	
17,068	226,764	
5,155	65,076	
31,088	389,505	

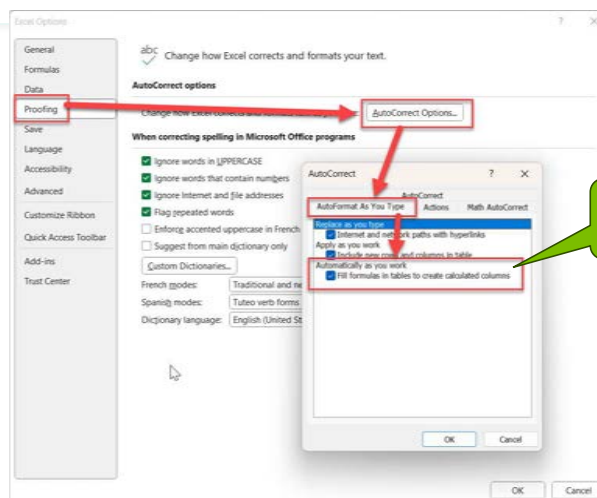
Note: Conditional Formatting doesn't copy to auto column

## Calculated Columns Keeps Formulas Consistent - Auto Correct Options

M	N	O	P	Q
Per.10	Per.11	Per.12	Per.	
095,751	(1,095,153)	(1,106,068)	(13,581,640)	
8,987	9,177	9,370	110,318	
29,958	30,587	31,229	367,699	
772,374	770,746	778,698	9,549,123	
106,26				
6,24				
10,60				
8,99				
9,832	9,956	10,082	113,403	

Option to turn OFF  
Calculated Columns  
(not recommended)

## Calculated Columns Keeps Formulas Consistent - Manage Auto Correct Options



Manage in  
File - Options



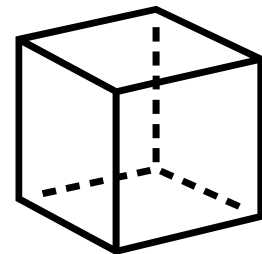
## Calculated Columns Keeps Formulas Consistent - Change Formula

O	P
Per.12	Per.
(1,106,068)	(13,581,640)
9,370	110,318
31,229	=[@[Per.YTD]]*1.15
778,698	9,549,123
107,986	1,339,600
6,336	78,998
10,766	132,865
9,129	112,869
10,082	113,403
17,068	226,764
5,155	65,076
31,088	389,505

Change formula in a single cell in a column, it changes all formulas in the column

O	P	Q
Per.12	Per.	
(1,106,068)	(14,198,987)	
9,370	115,332	
31,229	384,413	
778,698	9,983,174	
107,986	1,400,491	
6,336	82,588	
10,766	138,904	
9,129	117,999	
10,082	118,558	
17,068	237,071	
5,155	68,034	
31,088	407,209	

## Leveraging Array Formulas



# What is an Array Formula?

Think	You can think of an array as a combination of rows and columns of values
Perform	An array formula can perform multiple calculations on one or more items in an array
Return	Array formulas can return either multiple results, or a single result



## Important Note About Array Formulas

- Microsoft 365 Excel versions you can press Enter for array formulas
- ALL other Excel versions require legacy array formulas entry, which requires you to press Ctrl+Shift+Enter
- Due to the difficulty of building training material for ALL versions, I will only be covering Microsoft 365 Excel versions
- If you have other versions, please use the links in the upper right for details on legacy array formulas

## Example of a Single-Cell Array Formula

Cust#	Customer Name	Product Name	Qty	Unit Price	Total
33930	Justin A Robinson	ML Mountain Tire	77	\$29.99	\$2,309.23
50470	Tamara Zhu	Patch Kit/8 Patches	238	\$2.29	\$545.02
43580	Nicole White	Road Tire Tube	15	\$3.99	\$59.85
42860	Nancy L Sanchez	Road-250 Red, 48	5	\$2,443.35	\$12,216.75
45800	Reginald Navarro	Sport-100 Helmet, Blue	50	\$34.99	\$1,749.50
14170	Autumn Zhu	Touring Tire	150	\$28.99	\$4,348.50
43580	Nicole White	LL Road Tire	110	\$21.49	\$2,363.90
21840	Denise Mehta	Mountain-200 Black, 42	18	\$2,049.09	\$36,883.62
50470	Tamara Zhu	Mountain-200 Silver, 42	13	\$2,319.99	\$30,159.87
14170	Autumn Zhu	Touring Tire Tube	23	\$4.99	\$114.77
45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$2,384.07	\$28,608.84
Grand Total			711		\$119,359.85 =SUM(F2:F12)
					Non-Array Formula
					\$119,359.85 =SUM(D2:D12*E2:E12)
					Array Formula

Non-Array formula, to calculate Grand Total, need to have a calculation for each row that is Qty \* Unit Price

An Array formula is a calculation in a single cell that performs Qty \* Unit Price row by row without the need for a Total column

## Example of a Multi-Cell Array Formula

Cust#	Customer Name	Product Name	Qty	Unit Price	Total	Array Spill
33930	Justin A Robinson	ML Mountain Tire	77	\$29.99	\$2,309.23 =D2*E2	\$2,309.23 =D2:D12*E2:E12
50470	Tamara Zhu	Patch Kit/8 Patches	238	\$2.29	\$545.02 =D3*E3	\$545.02
43580	Nicole White	Road Tire Tube	15	\$3.99	\$59.85 =D4*E4	\$59.85
42860	Nancy L Sanchez	Road-250 Red, 48	5	\$2,443.35	\$12,216.75 =D5*E5	\$12,216.75
45800	Reginald Navarro	Sport-100 Helmet, Blue	50	\$34.99	\$1,749.50 =D6*E6	\$1,749.50
14170	Autumn Zhu	Touring Tire	150	\$28.99	\$4,348.50 =D7*E7	\$4,348.50
43580	Nicole White	LL Road Tire	110	\$21.49	\$2,363.90 =D8*E8	\$2,363.90
21840	Denise Mehta	Mountain-200 Black, 42	18	\$2,049.09	\$36,883.62 =D9*E9	\$36,883.62
50470	Tamara Zhu	Mountain-200 Silver, 42	13	\$2,319.99	\$30,159.87 =D10*E10	\$30,159.87
14170	Autumn Zhu	Touring Tire Tube	23	\$4.99	\$114.77 =D11*E11	\$114.77
45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$2,384.07	\$28,608.84 =D12*E12	\$28,608.84
Grand Total			711		\$119,359.85 =SUM(F2:F12)	
					Non-Array Formula	
					\$119,359.85 =SUM(D2:D12*E2:E12)	
					Array Formula	

Enter a formula in a single cell but refer to a Range and it will SPILL to remaining cells

If there is an entry in one of these cells, you will get a #SPILL! error

# Using Array Formula SPILL Range

Cust#	Customer Name	Product Name	Qty	Unit Price	Total	Array Spill	Tax		Total	
33930	Justin A Robinson	ML Mountain Tire	77	\$29.99	\$2,309.23	\$2,309.23	\$138.55	=H2#*0.06	\$2,447.78	=H2#+J2#
50470	Tamara Zhu	Patch Kit/8 Patches	238	\$2.29	\$545.02	\$545.02	\$32.70		\$577.72	
43580	Nicole White	Road Tire Tube	15	\$3.99	\$59.85	\$59.85	\$3.59		\$63.44	
42860	Nancy L Sanchez	Road-250 Red, 48	5	\$2,443.35	\$12,216.75	\$12,216.75	\$733.01		\$12,949.76	
45800	Reginald Navarro	Sport-100 Helmet, Blue	50	\$34.99	\$1,749.50	\$1,749.50	\$104.97		\$1,854.47	
14170	Autumn Zhu	Touring Tire	150	\$28.99	\$4,348.50	\$4,348.50	\$260.91		\$4,609.41	
43580	Nicole White	LL Road Tire	110	\$21.49	\$2,363.90	\$2,363.90	\$141.83		\$2,505.73	
21840	Denise Mehta	Mountain-200 Black, 42	18	\$2,049.09	\$36,883.62	\$36,883.62	\$2,213.02		\$39,096.64	
50470	Tamara Zhu	Mountain-200 Silver, 42	13	\$2,319.99	\$30,159.87	\$30,159.87	\$1,809.59		\$31,969.46	
14170	Autumn Zhu	Touring Tire Tube	23	\$4.99	\$114.77	\$114.77	\$6.89		\$121.66	
45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$2,384.07	\$28,608.84	\$28,608.84	\$1,716.53		\$30,325.37	
Grand Total			711		\$119,359.85					
					Non-Array Formula					
					\$119,359.85	=SUM(D2:D12*E2:E12)				
					Array Formula					

Use # to refer to the Spill Range in another calculation & that formula will also Spill

# New Dynamic Array Formulas

N2	▼	:	✕	✓	<i>f<sub>x</sub></i>	=SORT(A2:F12,1)
	N	O	P	Q	R	S
1	SORT Function					
2	14170	Autumn Z	Touring Tir	150	28.99	4348.5
3	14170	Autumn Z	Touring Tir	23	4.99	114.77
4	21840	Denise M	Mountain-	18	2049.09	36883.62
5	33930	Justin A R	ML Mount	77	29.99	2309.23
6	42860	Nancy L S	Road-250 I	5	2443.35	12216.75
7	43580	Nicole W	h Road Tire	15	3.99	59.85
8	43580	Nicole W	h LL Road Tir	110	21.49	2363.9
9	45800	Reginald	M Sport-100	50	34.99	1749.5
10	45800	Reginald	M Touring-10	12	2384.07	28608.84
11	50470	Tamara Z	Patch Kit/8	238	2.29	545.02
12	50470	Tamara Z	P Mountain-	13	2319.99	30159.87

Dynamic Array Formulas automatically SPILL the entire range!!

# Leveraging XLOOKUP



## Issue #1 with VLOOKUP / HLOOKUP

R33    X   ✓   fx

OrderNo	CustNo	Date	Total	SalesPNo	CustName	CustID	Name	Territory	Group
43659	676	7/1/2023	4079.99	279	Better Bike Shop	117	Pedals Warehouse	Southeast	North America
43659	676	7/1/2023	80.75	279	Better Bike Shop	146	Latest Sports Equipment	Northwest	North America
43659	676	7/1/2023	2039.99	279	Better Bike Shop	227	Health Spa, Limited	Canada	North America
43660	150	7/1/2023	419.46	279	#N/A	397	Capable Sales and Service	Northwest	North America
43661	442	7/1/2023	20.75	282	Original Bicycle Supply Co.	442	Original Bicycle Supply Co.	Canada	North America
43661	442	7/1/2023	1637.4	282	Original Bicycle Supply Co.	5			North America
43661	442	7/1/2023	4079.99	282	Original Bicycle Supply Co.	6			North America
43661	442	7/1/2023	40.27	282	Original Bicycle Supply Co.	676	Better Bike Shop	Southeast	North America
43662									
43662									
43662									

**VLOOKUP(lookup\_value, table\_array, col\_index\_num, [range\_lookup])**

**col\_index\_num**

If Exact match & lookup\_value is missing, you get #N/A error

Must wrap formula in IFERROR function

## Issue #2 with VLOOKUP & HLOOKUP

Excel screenshot showing a VLOOKUP formula in cell F4: `=VLOOKUP([@CustNo],TblCus,2,0)`. The formula bar shows the full syntax: `VLOOKUP(lookup_value, table_array, col_index_num, [range_lookup])`.

The table array is a table with columns: OrderNo, CustNo, Date, Total, SalesPNo, CustName, CustID, Column1, Name, Territory, Group. The formula is looking for the value in column 2 (CustNo) of the table array.

Annotations:

- Red arrow pointing to the column index number 2 in the formula bar.
- Green arrow pointing to the column index number 3 in the formula bar, with the text: "Now, col\_index\_num = 3".
- Green callout box: "If you add column to table\_array, you may have to adjust formula".

## Issue #3 with VLOOKUP & HLOOKUP

Table array showing columns: Name, CustID, Territory, Group.

Annotations:

- Green callout box: "Lookup\_value must be in the first column/row of table\_array".
- Green callout box: "Otherwise, must use the more complicated INDEX and MATCH functions".

# XLOOKUP to the Rescue

XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found], [match_mode], [search_mode])	
Argument	Description
lookup_value	The lookup value
lookup_array	The array or range to search
return_array	The array or range to return
[if_not_found]	Where a valid match is not found, return the [if_not_found] text you supply If a valid match is not found, and [if_not_found] is missing, #N/A will be returned
[match_mode]	Specify the match type: 0 - Exact match. If none found, return #N/A. (default) -1 - Exact match. If none found, return the next smaller item 1 - Exact match. If none found, return the next larger item 2 - A wildcard match where *, ?, and ~ have special meaning
[search_mode]	Specify the search mode to use: 1 - First to last (default) -1 - Last to first 2 - Binary search, first to last (relies on lookup_array being sorted in ascending order) (faster search mode) -2 - Binary search, last to first (relies on lookup_array being sorted in descending order) (faster search mode)

Look\_array and return\_array, so lookup\_value doesn't have to be 1<sup>st</sup> column/row

Ability to handle no match

Defaults to Exact match

# Main Benefits of XLOOKUP

Has all the speed improvements released to VLOOKUP in 2018

No longer relies on col\_index\_num

- Can select any column (left or right of lookup\_array), eliminate most uses of INDEX/MATCH
- Won't break if someone inserts or deletes columns in lookup\_array

Performance improvements because only need to specify 2 columns instead of the whole table\_array

Defaults to an exact match

Provides array capabilities...it returns a range instead of a value

Search\_mode option to last match

Can allow wildcard matches in search

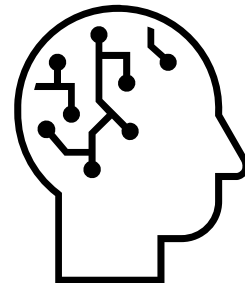


# XLOOKUP Example

F4    =XLOOKUP([@CustNo],TblCustX[CustID],TblCustX[Name],"MISSING")

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found], [match_mode], [search_mode])												
2													
3	OrderNo	CustNo	Date	Total	SalesPNo	CustName	CustName TblCust2X		CustID	Name	Territory	Group	
4	43659	676	7/1/2023	4079.99	279	Better Bike Shop	Better Bike Shop		117	Pedals Warehouse	Southeast	North America	
5	43659	676	7/1/2023	80.75	279	Better Bike Shop	Better Bike Shop		146	Latest Sports Equipment	Northwest	North America	
6	43659	676	7/1/2023	2039.99	279	Better Bike Shop	Better Bike Shop		227	Health Spa, Limited	Canada	North America	
7	43660	150	7/1/2023	419.46	279	MISSING	MISSING		397	Capable Sales and Service	Northwest	North America	
8	43661	442	7/1/2023	20.75	282	Original Bicycle Supply Co.	Original Bicycle Supply Co.		442	Original Bicycle Supply Co.	Canada	North America	
9	43661	442	7/1/2023	1637.4	282	Original Bicycle Supply Co.	Original Bicycle Supply Co.		511	Wheel Gallery	Southwest	North America	
10	43661	442	7/1/2023	4079.99	282	Original Bicycle Supply Co.	Original Bicycle Supply Co.		646	Yellow Bicycle Company	Central	North America	
11	43661	442	7/1/2023	40.37	282	Original Bicycle Supply Co.	Original Bicycle Supply Co.		676	Better Bike Shop	Southeast	North America	
12	43662	227	7/1/2023	1258.38	282	Health Spa, Limited	Health Spa, Limited						
13	43662	227	7/1/2023	367.88	282	Health Spa, Limited	Health Spa, Limited						

## Leveraging ChatGPT with Excel





Go to  
<https://openai.com/chatgpt>  
and setup a free account



## What is ChatGPT?

Stands for Chat Generative Pre-trained Transformer

Developed by OpenAI

ChatGPT isn't the only AI (Artificial Intelligence) application

Natural language processing AI

Think of it as a web search engine that provides a narrative response



## How ChatGPT Works

You use a chat to ask the AI a question

The AI inputs the question into its pre-trained dataset

The AI formulates an answer based upon the dataset

The AI generates a response in natural human language

You ask clarification questions and the conversation continues

# Things to Know About ChatGPT

## ALL Generative AI (ChatBots) are evolving quickly

- New ChatBots are developed everyday
- We use ChatGPT as an example, you can use something different

## The dataset only knows what it is "fed"

- If current events are not in the dataset, it won't respond with those events
- If dataset includes biases, responses may include biases
- Free ChatGPT has an older dataset than the paid ChatGPT Pro version

## Apps available to detect the use of Generative AI content

# What Can You Do With ChatGPT?

The list is infinite, these are just examples

Summarize simple or complex ideas

Use ChatGPT with Formulas

Use ChatGPT to Learn Excel

Use ChatGPT to Automate Repetitive Tasks

# Using ChatGPT

Need an account

Go to <https://openai.com/chatgpt>

Setup a free account

- You can later upgrade to the Plus version

Log into your account

Type a question

ALWAYS test the results, sometimes the AI gets it wrong

# Using ChatGPT with Excel

Open ChatGPT and your spreadsheet

Be VERY specific when asking your question

Copy and paste response into Excel

NEVER trust the response

- Use it for training
- Be prepared to edit the response
- Validate EVERY response to confirm it is correct
- If response isn't correct continue clarifying chats

# Simple Example

	A	B	C	D	E	F	G
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							

	A	B	C	D	E	F	G
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							

Create Total Formula

Copy the  
Formula downCreate Grand Total  
Formula

## Create Total Formula - Non-Specific Question

OP write an excel formula that multiplies qty by unit price

Non-Specific Question



In Microsoft Excel, you can create a formula to multiply the quantity (qty) by the unit price to calculate the total cost. Assuming that the quantity is in cell A1 and the unit price is in cell B1, you can use the following formula in another cell (e.g., C1) to calculate the total cost:

`=A1 * B1`

Here's how this formula works:

- `'A1'` refers to the cell containing the quantity.
- `'*'` is the multiplication operator.
- `'B1'` refers to the cell containing the unit price.

Simply enter this formula into a cell, and it will multiply the quantity by the unit price, giving you the total cost in the cell where you entered the formula (in this case, cell C1). You can copy this formula down to calculate the total cost for multiple items if needed.

Leads to Non-Specific  
AnswerProvides additional  
instruction

# Create Total Formula - More-Specific Question

OP

what if qty is in column D and unit price is in column E

More-Specific Question



If the quantity (qty) is in column D, and the unit price is in column E, you can use the following Excel formula to calculate the total cost in a cell adjacent to each row of data. For example, if you want to calculate the total cost for a specific row, you can use the formula in column F:

```
'=D1 * E1'
```

Here's how this formula works:

- \* `'D1'` refers to the cell in column D containing the quantity for the first row of data.
- \* `'*'` is the multiplication operator.
- \* `'E1'` refers to the cell in column E containing the unit price for the first row of data.

To calculate the total cost for each row, place this formula in the cell in column F of the same row, and Excel will perform the multiplication for you. If you have multiple rows of data and want to calculate the total cost for each row, you can copy the formula down in column F to apply it to all the rows. Excel will automatically adjust the cell references for each row, so it calculates the total cost correctly for each line item.

Leads to More-Specific Answer

Provides additional instruction

# Create Total Formula - Specific Question

OP

what if qty is in D4 and unit price is in E4

Specific Question



If the quantity (qty) is in cell D4, and the unit price is in cell E4, you can calculate the total cost in a different cell using the following formula:

```
'=D4 * E4'
```

Here's how this formula works:

- \* `'D4'` refers to the cell containing the quantity.
- \* `'*'` is the multiplication operator.
- \* `'E4'` refers to the cell containing the unit price.

Place this formula in any cell you want to calculate the total cost, and it will multiply the quantity in D4 by the unit price in E4, giving you the result in the cell where you entered the formula.

Leads to a Specific Answer

Copy & Paste to your spreadsheet  
(Paste into the formula bar so you don't get formatting)

# Paste Formula into Excel

F4     =D4 \* E4

Paste into the formula bar so you don't get formatting

	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Put cursor on lower right square and drag down to other cells

# Create Total Formula - EVEN More-Specific Question

what if qty is in cells d4 through d14 and unit price is in corresponding cells e4 through e14

More-Specific Question

If you have quantities in cells D4 through D14 and corresponding unit prices in cells E4 through E14, and you want to calculate the total cost for each row, you can use an Excel formula in an adjacent column (for example, column F) to perform the calculations. Here's how you can do it:

Leads to More-Specific Answer

- In cell F4 (or any cell in column F where you want to start calculating the total cost), enter the following formula:

```
=D4 * E4
```

Provides additional instruction

- Press Enter. This will calculate the total cost for the first row (D4 \* E4).
- Now, select cell F4, and hover your cursor over the small square in the bottom-right corner of the selected cell (this is called the fill handle). Your cursor will turn into a small black cross.
- Click and drag the fill handle down to fill the formula for the remaining rows (F5 through F14). Excel will automatically adjust the cell references, so it calculates the total cost for each corresponding row (D5 \* E5, D6 \* E6, and so on).

Now, column F will contain the total cost for each row based on the quantities in column D and unit prices in column E.

# Create Total Formula - One More Question

CP can we use an array formula

Expanded Question

Yes, you can use an array formula to calculate the total cost for each row when the quantities are in cells D4 through D14 and the unit prices are in corresponding cells E4 through E14. You can use Excel's array formula feature to do this. Here's how:

1. In an empty column, for example, column F, select the cell where you want the results to appear. Let's say you want the results to start in cell F4.
2. Enter the following array formula:

```
=SUM(D4:D14 * E4:E14)
```

1. Instead of pressing Enter, press Ctrl + Shift + Enter. This tells Excel that you are entering an array formula. If done correctly, Excel will automatically place curly braces "{}" around your formula, indicating that it's an array formula.

The array formula will calculate the product of each corresponding quantity and unit price in the specified ranges and then sum up these products to give you the total cost. The result will be displayed in cell F4. You can drag this formula down to fill the results for the entire range of rows (F5 through F14). Remember to use Ctrl + Shift + Enter for each cell when entering or editing this array formula.

Provides an explanation but it relates to older version of Excel

This does not work in Microsoft 365, where you just need to press Enter. Older version you press Ctrl+Shift+Enter

Using ChatGPT with Excel

49

# Create Total Formula - Clarifying Question

CP how do you use this formula in microsoft 365

Clarifying Question

In Microsoft 365 (which includes Excel), you can use array formulas similarly to previous versions of Excel. Here's how to enter an array formula in Microsoft 365:

1. Select the cell where you want the array formula result to appear. Let's assume you want the results to start in cell F4.
2. Enter the following array formula in the formula bar (the bar located below the ribbon where you enter formulas):

```
=SUM(D4:D14 * E4:E14)
```

1. Instead of pressing Enter alone, you need to press Ctrl + Shift + Enter simultaneously. If you entered it correctly, Excel will automatically place curly braces "{}" around your formula in the formula bar, indicating that it's an array formula.

The array formula will calculate the product of each corresponding quantity and unit price in the specified ranges and then sum up these products to give you the total cost. The result will be displayed in cell F4. You can then drag this formula down to fill the results for the entire range of rows (F5 through F14). Remember to use Ctrl + Shift + Enter for each cell when entering or editing this array formula.

In Microsoft 365, array formulas work similarly to how they did in previous Excel versions, and the Ctrl + Shift + Enter combination is used to indicate that you're entering an array formula.

Still provides the same incorrect answer, which is why **all formulas should be validated!!**

Using ChatGPT with Excel

50

## Continue Asking Questions

- How do you use this formula in Excel 2019
- Can we use an array formula to calculate total in F4 through F14
- Can we use an array formula calculate total for each row
- This is not correct, try again
- I want the total for each cell in F4 through F14
- Can I use a dynamic array formula in Office 365

## Finally!! The BEST Solution

	A	B	C	D	E	F
1	Monthly Sales 20xx					
3	Cust#	Customer Name	Product Name	Qty	Unit Price	Total
4	33930	Justin A Robinson	ML Mountain Tire	77	\$29.99	\$2,309.23
5	50470	Tamara Zhu	Patch Kit/8 Patches	238	\$2.29	\$545.02
6	43580	Nicole White	Road Tire Tube	15	\$3.99	\$59.85
7	42860	Nancy L Sanchez	Road-250 Red, 48	5	\$2,443.35	\$12,216.75
8	45800	Reginald Navarro	Sport-100 Helmet, Blue	50	\$34.99	\$1,749.50
9	14170	Autumn Zhu	Touring Tire	150	\$28.99	\$4,348.50
10	43580	Nicole White	LL Road Tire	110	\$21.49	\$2,363.90
11	21840	Denise Mehta	Mountain-200 Black, 42	18	\$2,049.09	\$36,883.62
12	50470	Tamara Zhu	Mountain-200 Silver, 42	13	\$2,319.99	\$30,159.87
13	14170	Autumn Zhu	Touring Tire Tube	23	\$4.99	\$114.77
14	45800	Reginald Navarro	Touring-1000 Blue, 46	12	\$2,384.07	\$28,608.84
15	Grand Total					

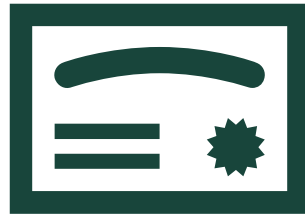


## Wrap-Up



## Questions?





Thank You!!



Bryan L. Smith, CPA, CITP, CISA



[bsmith@datasmithpro.com](mailto:bsmith@datasmithpro.com)



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ONE FINAL NOTE

11 a.m. – 12:05 p.m.

# Introduction to Power BI Dashboards

**Bryan Smith, CPA, CITP, CISA, Owner, DataSmith Pro, LLC**



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Wisconsin Institute of  
Certified Public Accountants

# 2023 Accounting Technology Conference

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## Introduction to Power BI Dashboards

2023 Accounting Technology Conference



## Bryan L. Smith, CPA.CITP, CISA Owner, DataSmith Pro, LLC

- Co-founder of CPA Crossings, LLC
- Strategic technology advisor to CPAs w/ 40+ years of experience
- Nationally recognized author and presenter on CPA technology
- Extensive knowledge and experience in proper Excel design techniques as well as helping CPAs build spreadsheets that are accurate
- As a Certified Information Systems Auditor (CISA), spent a considerable amount of time auditing and validating thousands of Excel spreadsheets
- Developed various data analysis and Microsoft Power BI courses and has worked with multiple organizations to train and coach staff on proper data analysis techniques
- Masters of Science in Information Assurance (MSIA)



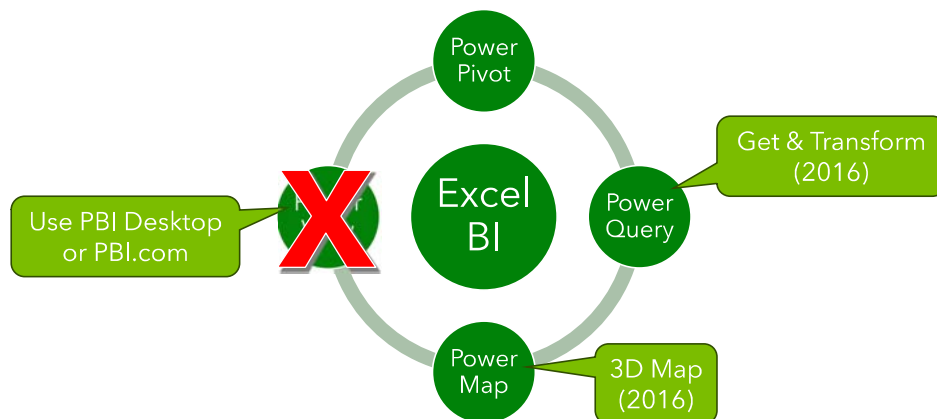
## Presentation Outline

- [The Various Microsoft Power BI Tools](#)
- [Using Power BI to Build Meaningful Interactive Dashboards](#)
- [Using Power BI to Share Your Dashboards with Others](#)
- [Wrap-Up](#)

# The Various Microsoft Power BI Tools



## Family of Excel BI Products





# Power Pivot

## A data modeling tool

- Import data from multiple sources
- Relate tables / data

Eliminates complexity of getting data into Excel

Designed for users with no SQL experience

Uses PivotTables to analyze data

Adv calcs with Data Analysis eXpressions (DAX)

Hierarchy and KPI feature

# Power Pivot Features

Data Modeling

Calculations

Power Pivot

Hierarchies

KPI's

(Key Performance Indicators)



# Power Query

Power Query solves 2 BIG problems

- Messy data
- Integrating data from multiple sources is tedious

Connect to multiple different data sources

- CSV, Excel, Text, DB, etc.

Automation of data imports

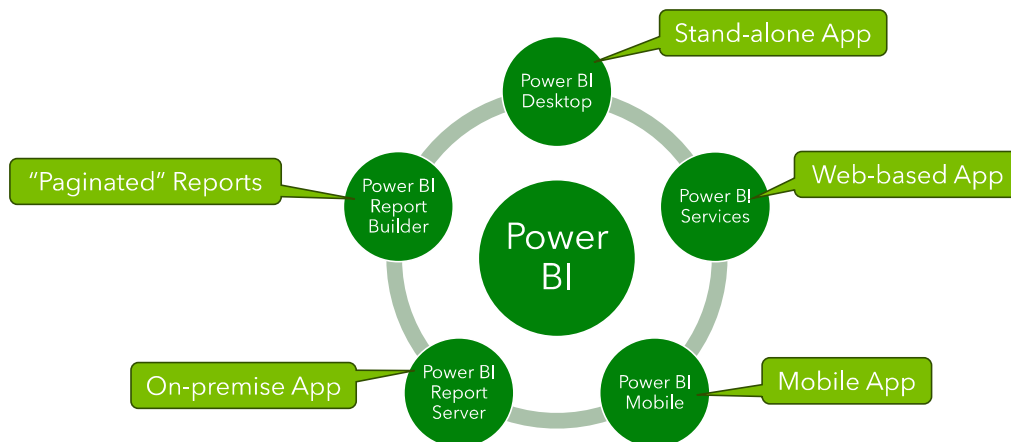
Combine and extract data

"Unpivot" a table

Custom calculations with M formula language [Click Here](#)



# Family of Power BI Products







# Power **BI Desktop**

Data analysis for Excel & non-Excel users

Data modeling tool (*Power Pivot*)

Data Querying tool (*Power Query*)

Interactive visualizations (*Power View*)

Same data “engine” as Power Pivot

Import from Power Pivot

Connect to PowerBI.com

Monthly updates with new features



# Power **BI.com**

Cloud-based business analytics service

Robust data connector but not a data modeling tool

Use Power BI Desktop or Power Pivot to create data model

Create interactive visuals reports

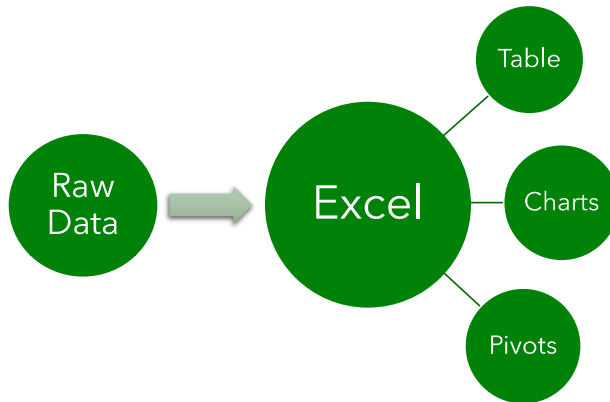
Create dashboards

Mobile App to allow interactivity on mobile devices

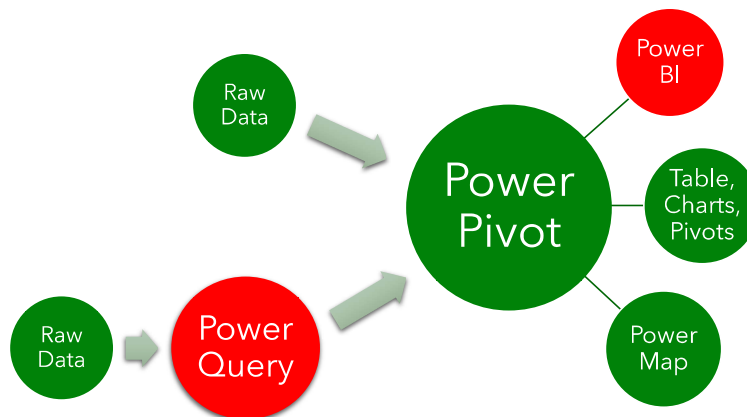
Power BI Embedded to connect to custom applications

Share visuals inside and outside your organization

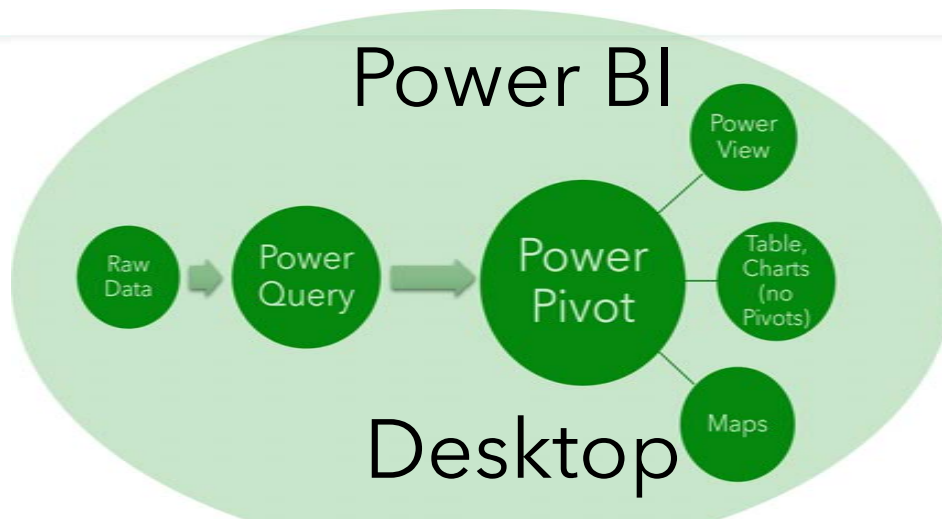
## Traditional Data Analysis



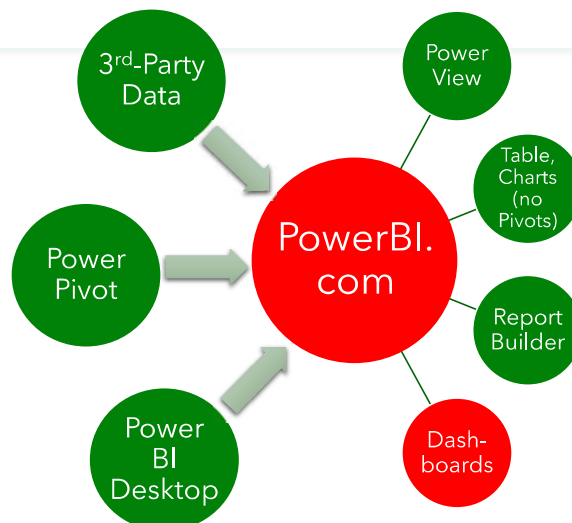
## The New Excel Data Analysis Paradigm



## Power BI Desktop Analysis



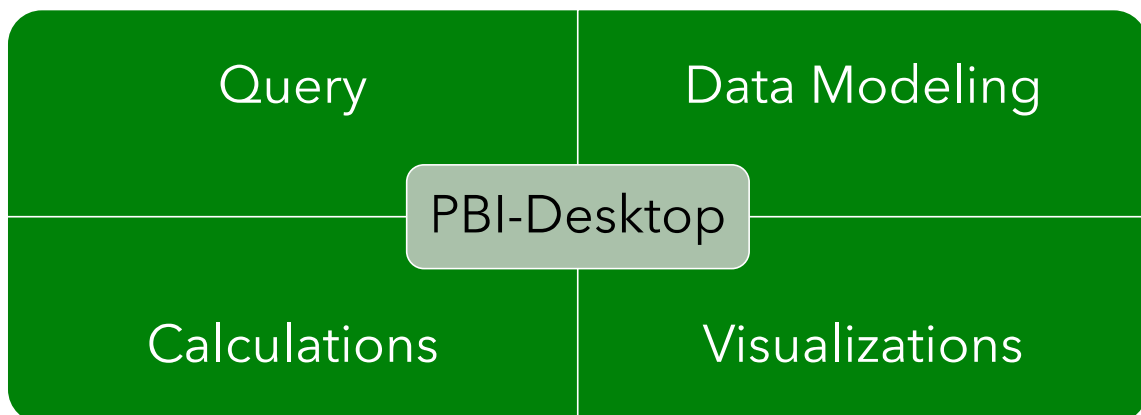
## Web-Based Analysis



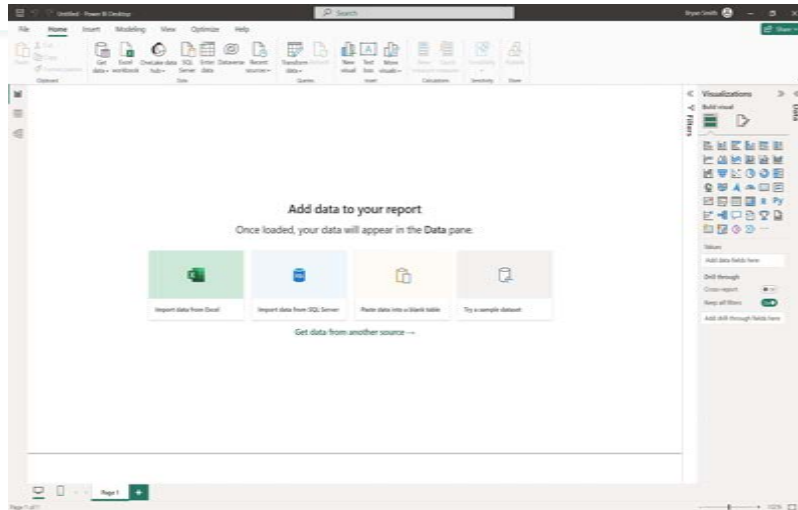
# Using Power BI to Build Meaningful Interactive Dashboards



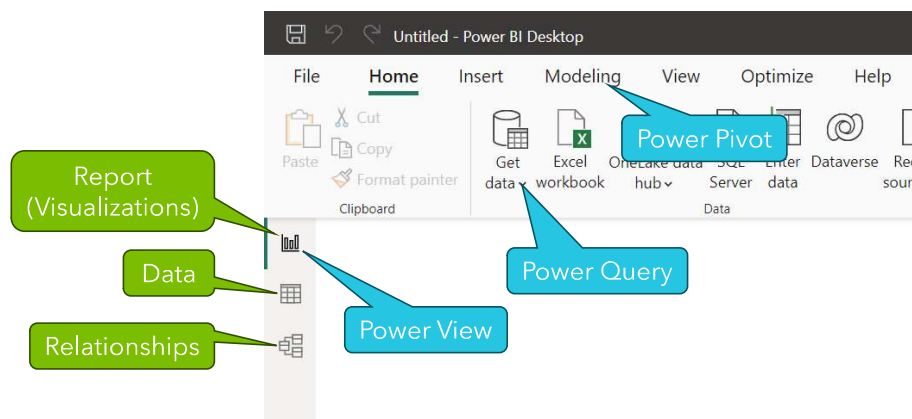
## Power BI Desktop Features



# Power BI Desktop Interface



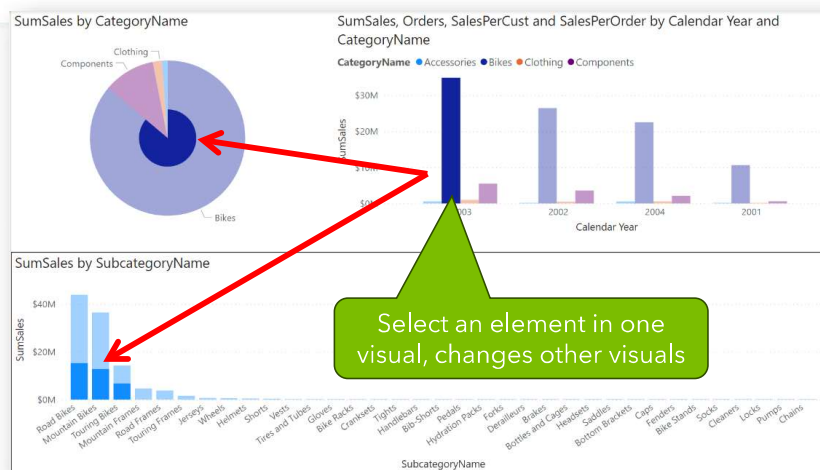
## 3 Main Sections



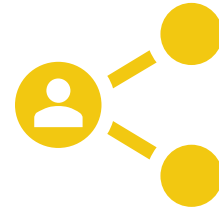
# Power BI Desktop Visualizations



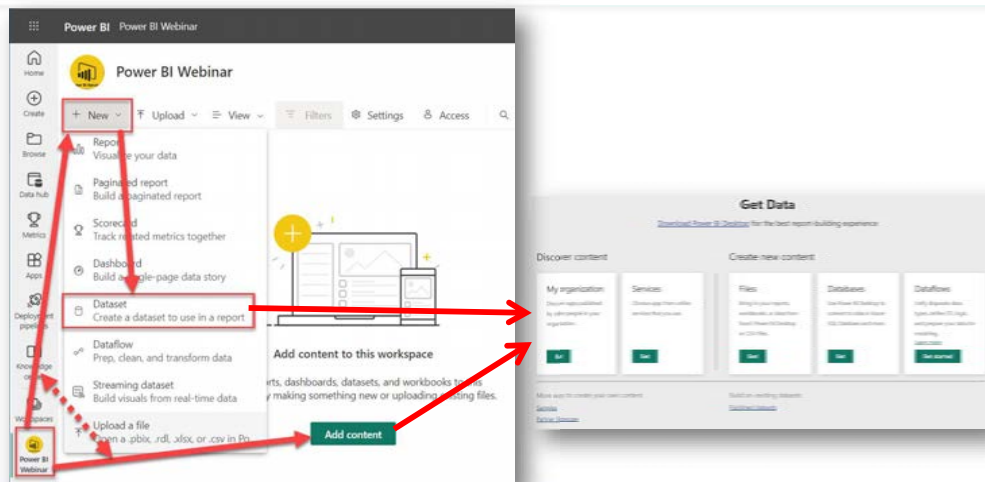
# Interactive Visualizations



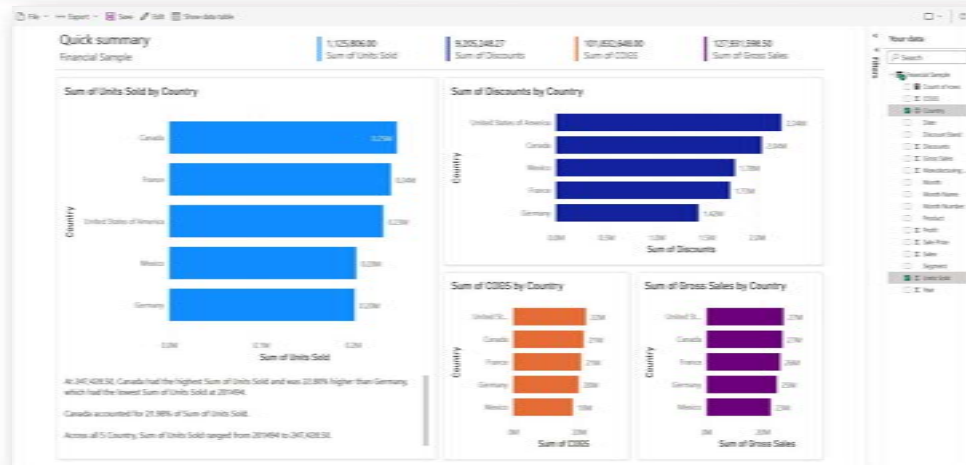
# Using Power BI to Share Your Dashboards with Others



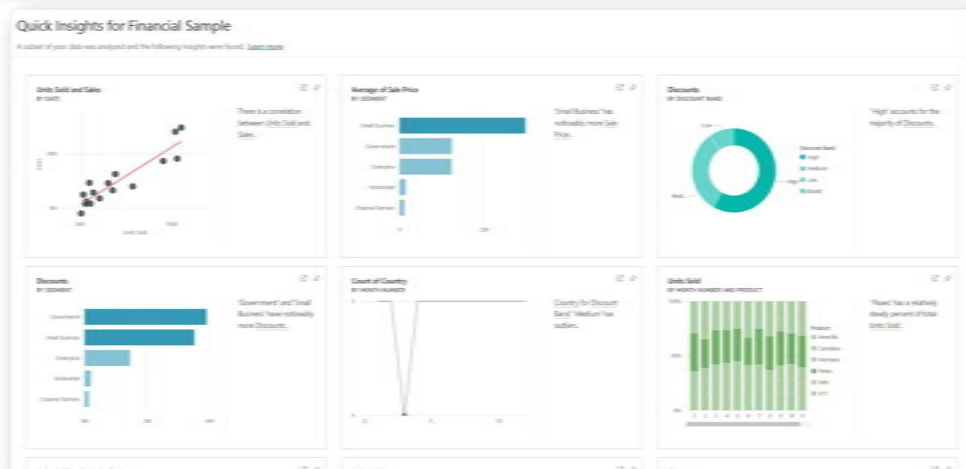
## Get Data into PowerBI.com



# Auto-Create Report

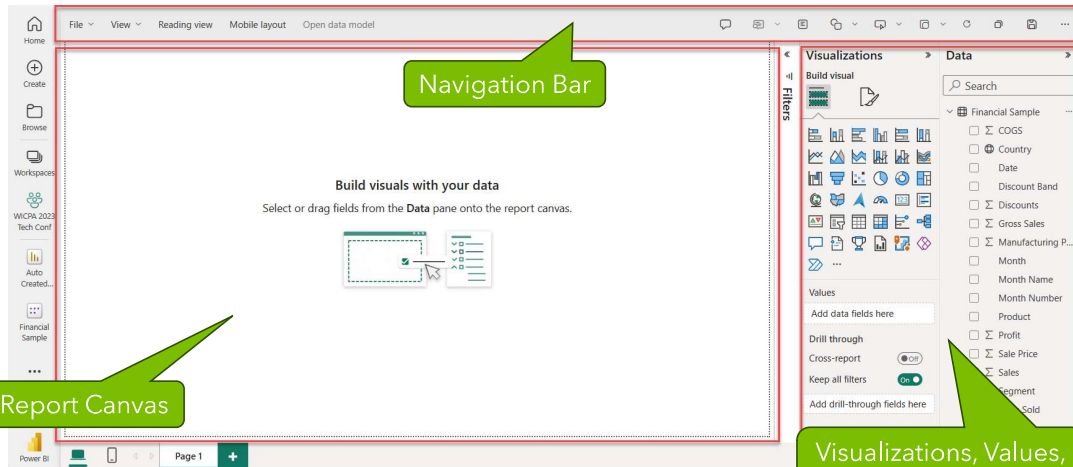


# Quick Insights

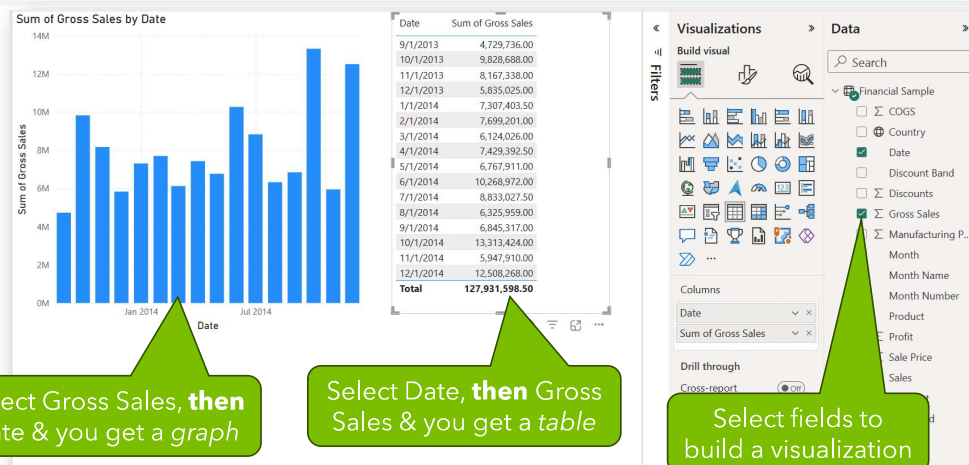




# Create a Report - Power BI Report Editor



# Create a Report



Select Gross Sales, **then**  
Date & you get a *graph*

Select Date, **then** Gross  
Sales & you get a *table*

Select fields to  
build a visualization

# Create a Dashboard

Sum of Gross Sales by Date

Pin to dashboard

Select an existing dashboard or create a new one.

Where would you like to pin to?

☒ Existing dashboard

☐ New dashboard

Dashboard name

Dashboard Demo

Pin Cancel

Ask a question about your data

Sum of Gross Sales by Date

Type a question, see next slide

# Using Q & A

Exit Q&A

what segment had the most revenue?

what segment had the most profit?

Government

11,388,173.18

Profit

Exit Q&A

what is the gross sales by segment?

Government

Small Business

Enterprise

Midmarket

Channel Partners

Gross Sales

Pin visual

If you like the visual, you can pin to your dashboard

Type a question

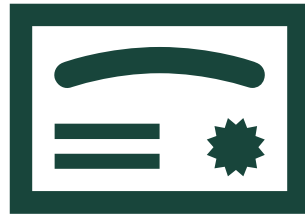
Get an answer or visual from your question

## Wrap-Up



## Questions?





Thank You!!



Bryan L. Smith, CPA, CITP, CISA



[bsmith@datasmithpro.com](mailto:bsmith@datasmithpro.com)



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ONE FINAL NOTE

11 a.m. – 12:05 p.m.

# Master SharePoint & OneDrive: Your Cloud Storage Solution

**John Higgins, CPA, CITP, Strategic Technology Advisor**  
*CPA Crossings LLC*

# Master SharePoint & OneDrive Your Cloud Storage Solution



Presented By  
John H. Higgins, CPA.CITP  
Rochester, Michigan



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## Learning Goals



- ✓ Recognize the opportunity to use OneDrive & SharePoint as a comprehensive cloud storage solution
- ✓ Identify the key features of these two apps to get the most out of your investment



# John H. Higgins, CPA.CITP

## Strategic Technology Advisor



john@higginsadvisoryllc.com



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Nationally recognized thought leader, advisor, author and speaker on CPA technology

Strategic technology advisor to the profession w/ 35+ years of experience

Founded and sold two CPA technology advisory startups

Former National Mid-market Technology Partner - BDO

CPA Practice advisor Top 25 Thought Leader for the CPA profession

AICPA Business & Industry Hall of Fame Inductee

Past Chair of the Michigan Association of CPAs

Passionate advocate for the CPA profession!

2

## Presentation Outline

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- [Cloud Storage Value Proposition](#)
- [Orientation to OneDrive & SharePoint](#)
- [File Management Features Review](#)
- [Using SharePoint and OneDrive with Office Apps](#)
- [The Teams / SharePoint Relationship](#)
- [Introduction to the OneDrive Sync App](#)
- [Wrap-up](#)

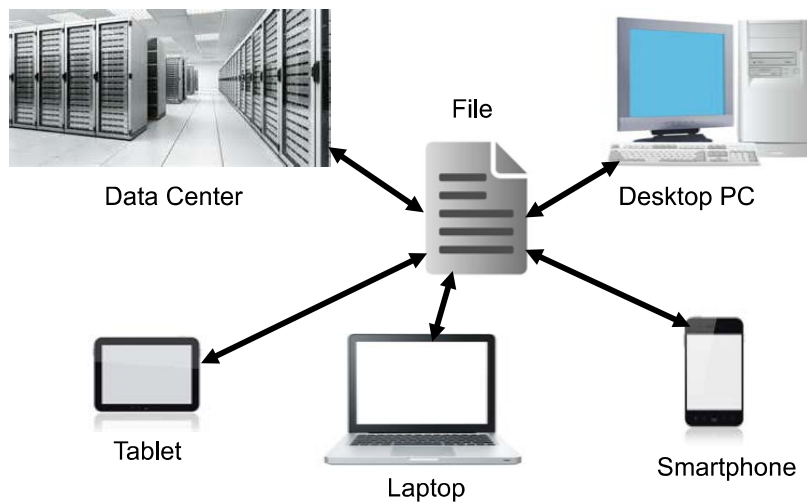


3

# THE CLOUD STORAGE VALUE PROPOSITION



## The Cloud Storage Model





# Things to Know About Cloud Storage

- Access files anytime, anywhere, any device
- Option to synchronize to local PC
- Outsourced storage infrastructure & administration
- World class data security and disaster recovery protection
- Scalable

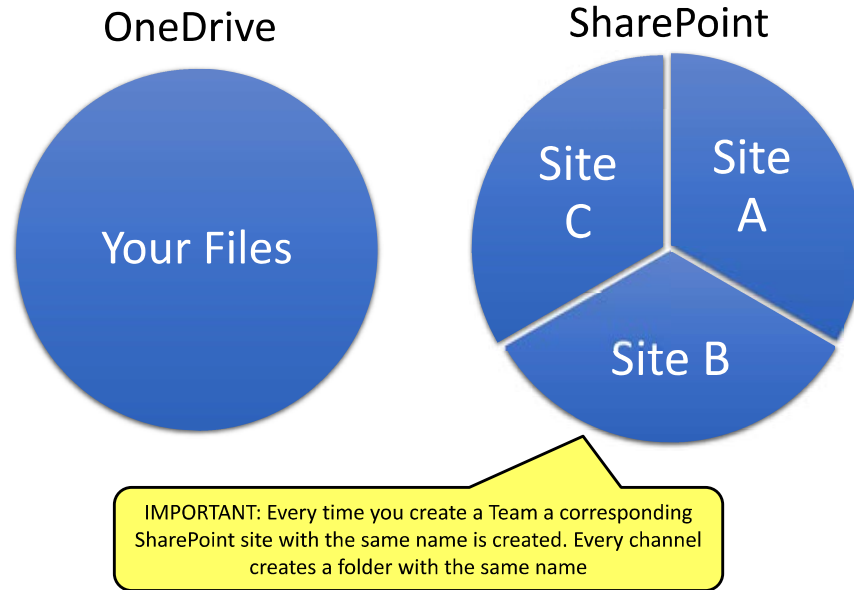
# ORIENTATION TO ONEDRIVE & SHAREPOINT



OneDrive

SharePoint

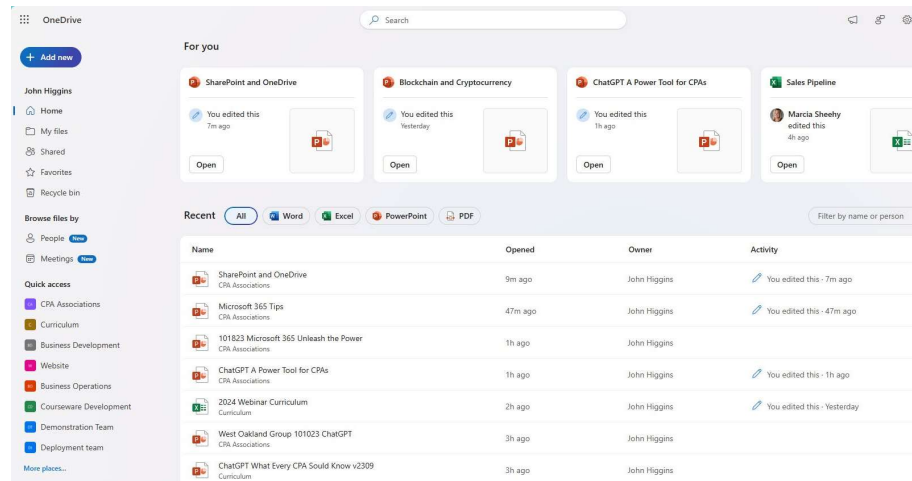




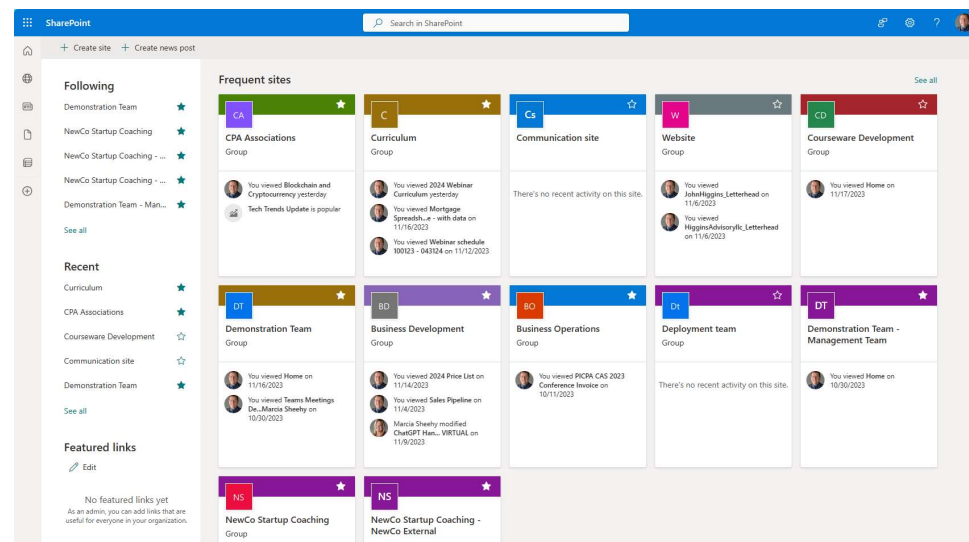
## Things To Know About OneDrive & SharePoint

- OneDrive = your personal (business) files
- SharePoint = shared file sites
- Share files internally & externally
- Simultaneous Office file editing
- Eliminate email file attachments
- Synchronize with local PC
- Maintain file version history
- Set custom alerts

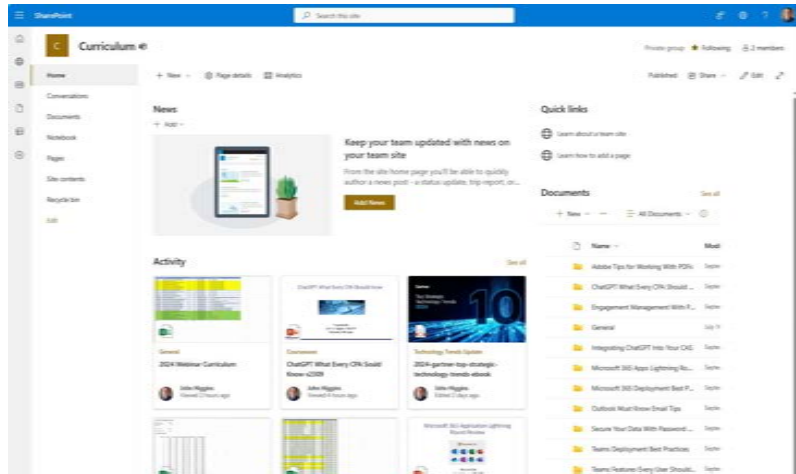
# OneDrive Interface



# SharePoint Interface



# SharePoint Site Interface



# FILE MANAGEMENT FEATURES REVIEW



SharePoint Search this library

Curriculum

Private group Following 2 members

+ New Edit in grid view Open Share Copy link Delete Pin to top Download 1 selected All Documents\*

Documents > Adobe Tips for Working With PDFs > Courseware

Name	Modified	Modified By
Example Files	October 11	John Higgins
HAJHAAT2 Adobe Acrobat Tips v1023.pdf	October 15	John Higgins
HAJHAAT2 Adobe Acrobat Tips v1023.pptx		John Higgins
HAJHAAT2 Adobe Tips PS v1023.xlsx		John Higgins

Open Preview Share Copy link Manage access Delete Automate Download Rename Pin to top Move to Copy to Version history Alert me More Adobe Document Cloud Details

## File Sharing

Documents > Adobe Tips for Working With PDFs > Courseware

HAJHAAT2 Adobe Acrobat Tips v1023.pptx

Sharing settings

Share the link with

- Anyone
- People in Higgins Advisory, LLC (Share with people in Higgins Advisory, LLC, organization account required)
- People with existing access
- People you choose

More settings

Can view

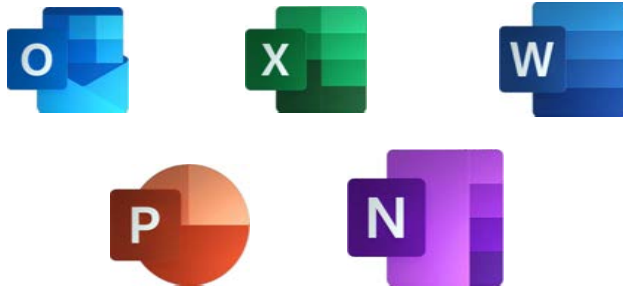
Block download Off

Apply Cancel

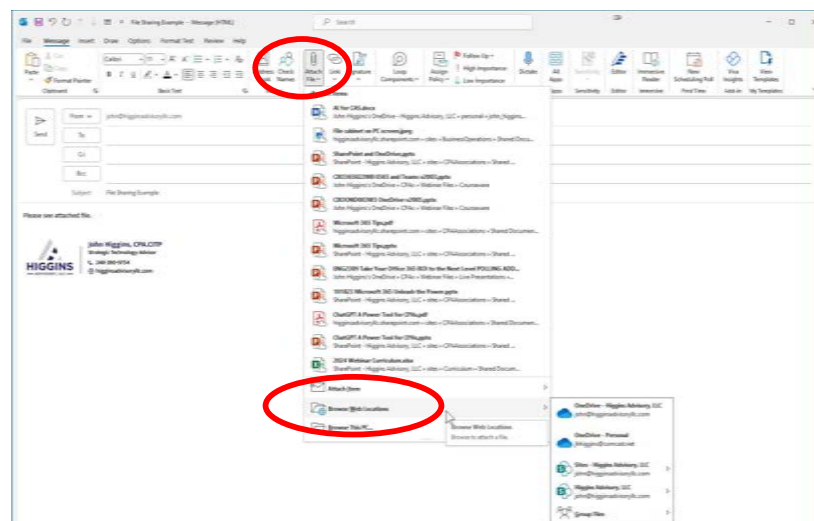


Required reading

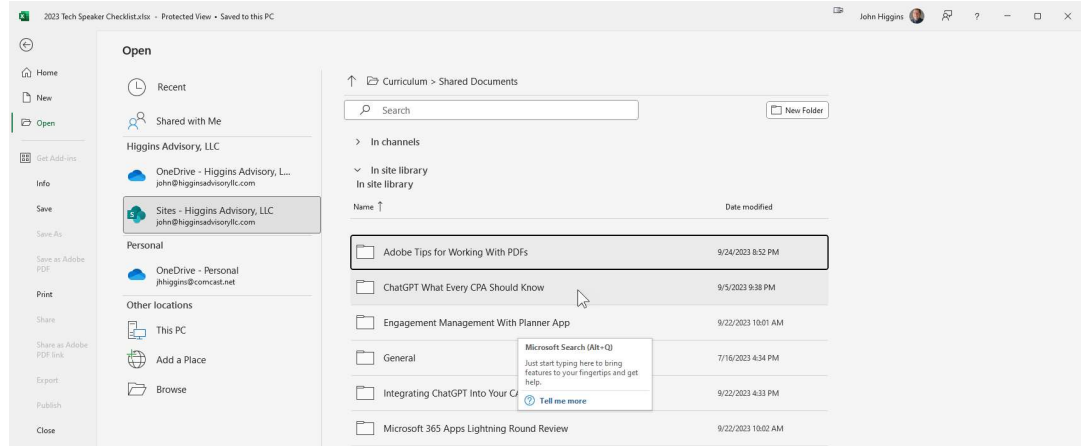
# USING SHAREPOINT AND ONEDRIVE WITH OFFICE APPS



## Share Files via Outlook

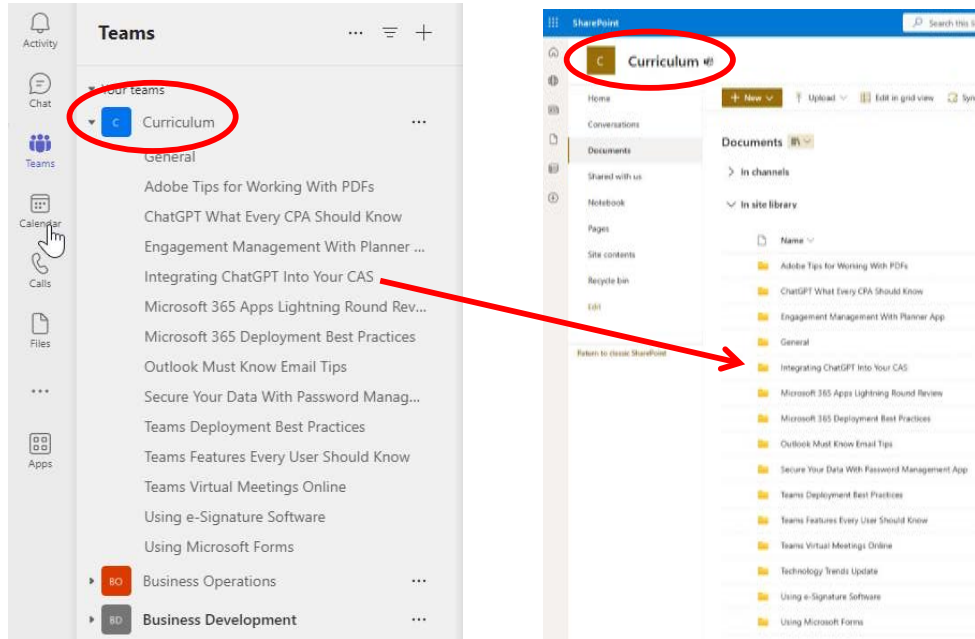


# Store / Retrieve Files From OneDrive / SharePoint

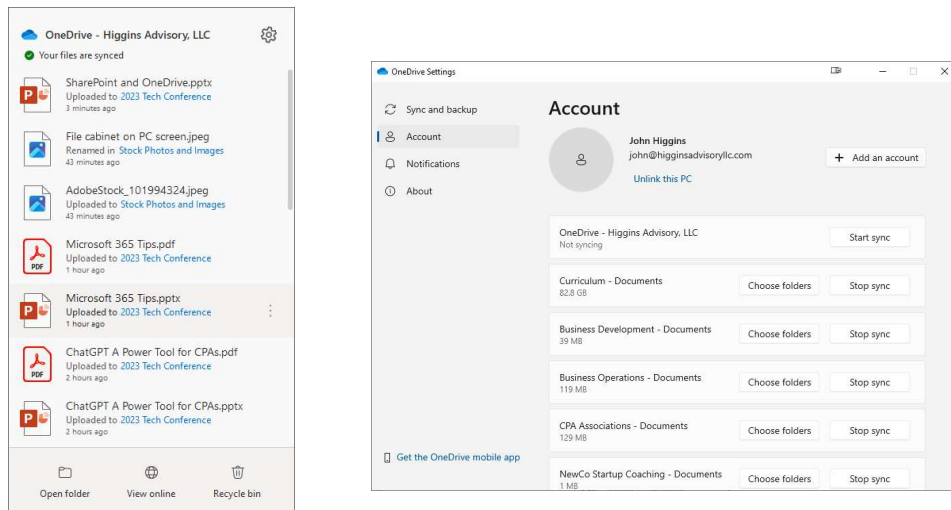


# THE TEAMS / SHAREPOINT RELATIONSHIP



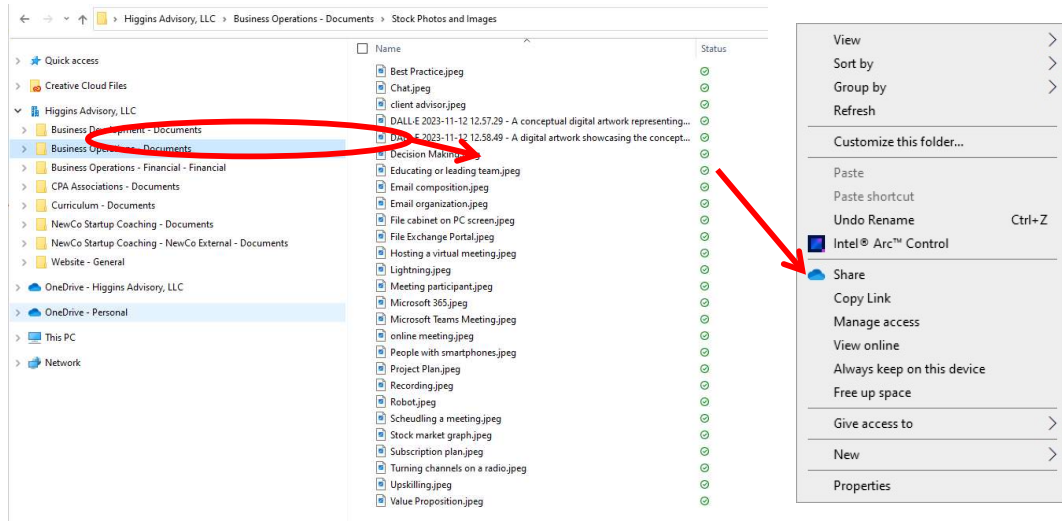


## INTRODUCTION TO THE ONEDRIVE SYNC APP

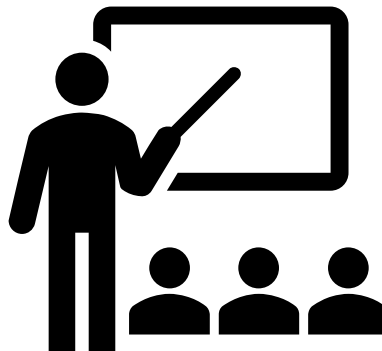




# INTRODUCTION TO THE ONEDRIVE SYNC APP



# WRAP-UP



## In Summary

- ✓ OneDrive / SharePoint provide advanced file management capabilities
- ✓ Increase security of sharing files
- ✓ Create SharePoint sites via team names in Teams
- ✓ Use OneDrive Synch app for local PC access
- ✓ Maximize your Microsoft 365 ROI

## Questions ?



# Thank you!!!

12:55 – 2 p.m.

# Getting the Most Out of Windows 11

**Bryan Smith, CPA, CITP, CISA, Owner, DataSmith Pro, LLC**



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# 2023 Accounting Technology Conference

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## Getting the Most Out of Windows 11

2023 Accounting Technology Conference



## Bryan L. Smith, CPA.CITP, CISA Owner, DataSmith Pro, LLC

- Co-founder of CPA Crossings, LLC
- Strategic technology advisor to CPAs w/ 40+ years of experience
- Nationally recognized author and presenter on CPA technology
- Extensive knowledge and experience in proper Excel design techniques as well as helping CPAs build spreadsheets that are accurate
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- Developed various data analysis and Microsoft Power BI courses and has worked with multiple organizations to train and coach staff on proper data analysis techniques
- Masters of Science in Information Assurance (MSIA)



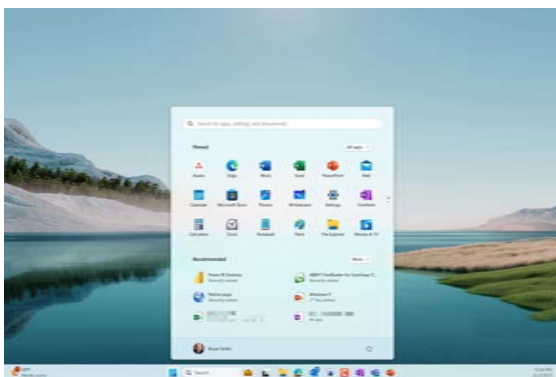
## Presentation Outline

- [The Modern Windows 11 Interface](#)
- [The Redesigned Start Menu and Taskbar](#)
- [Customize Desktop and System Settings](#)
- [New Multitasking Features](#)
- [Security and Privacy Settings](#)
- [Wrap-Up](#)
- [Appendix - Windows Version History](#)

# The Modern Windows 11 Interface



## Windows 11



- October 2021
- Free upgrade if your device meets the system requirements
- Redesigned Start menu that replaces live tiles with "pinned" application shortcuts
- Live tiles on a separate "Widgets" panel
- Start menu defaults to the middle of the taskbar and cannot be moved
- Improved visual design, window management and stronger focus on security
- 7 versions: Home, Pro, Education, Enterprise, Pro Education, Pro for Workstations, Mixed Reality
- As of 10/2023, it has 24% of Windows PC market worldwide



# What's New in Windows 11

## Redesign focused on simplicity, ease of use and flexibility

- Start Menu
- Task Bar
- Notification Center
- File Explorer
- Widgets

## Improved Input

- Touch Improvements
- Voice Typing
- Pen Menu
- Input Switcher

## New multitasking interface

## Updated "bundled" software

# What's Been Removed in Windows 11

Internet Explorer

Wallet

Tablet Mode

Timeline

Moving the taskbar

Cortana

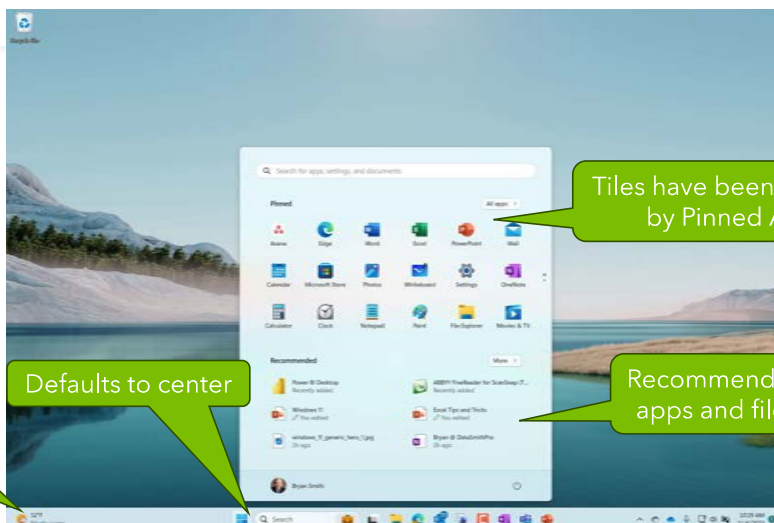
Live Tiles



# The Redesigned Start Menu and Taskbar



## Redesigned Start Menu



# Move Start Button to the Left

Only 2 options, no longer displays classic menu



Right-click on the blank area to the right or left, then select Taskbar settings

ONLY choice is to align left. No longer can it be moved left, right, top, bottom. Also, cannot change the size of the Taskbar.

## Personalization > Taskbar

Taskbar items

Show or hide buttons that appear on the taskbar

System tray icons

Choose which icons can appear in the system tray

Other system tray icons

Show or hide additional system tray icons

Taskbar behaviors

Taskbar alignment, badging, automatically hide, and multiple displays

Taskbar alignment

Center

Open Taskbar behaviors - Taskbar alignment

Optimize taskbar for touch interactions when this device is used as a tablet

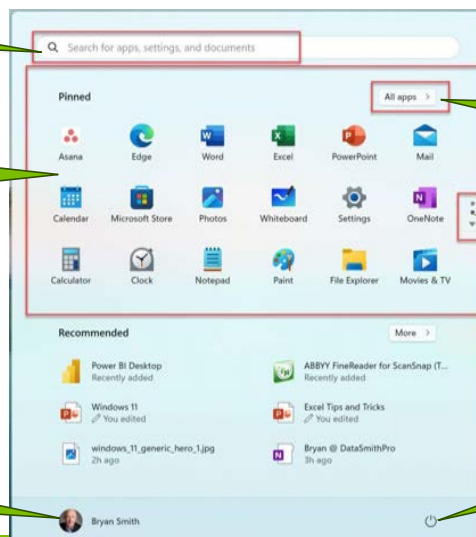
When automatically hide the taskbar is also selected, touch-optimized taskbar will show instead

# Start Menu

Search bar

Pinned Apps can be rearranged

Account menu

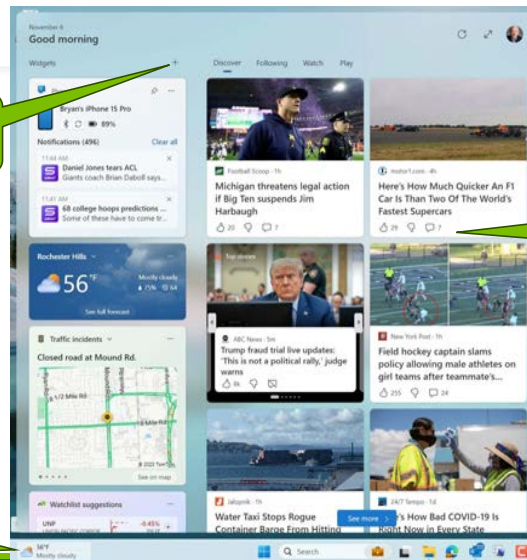


View alpha list of all apps installed on computer

Multiple pages of Pinned Apps

Power menu

# Widgets

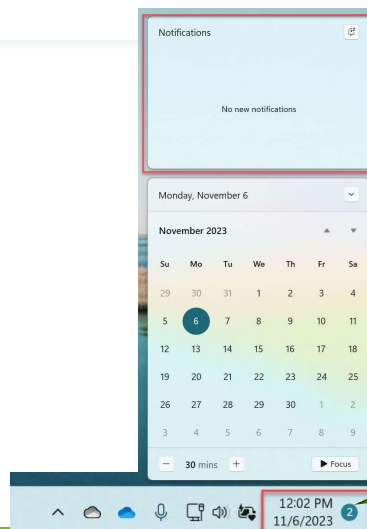


Select + to add other widgets

Current news stories from Bing

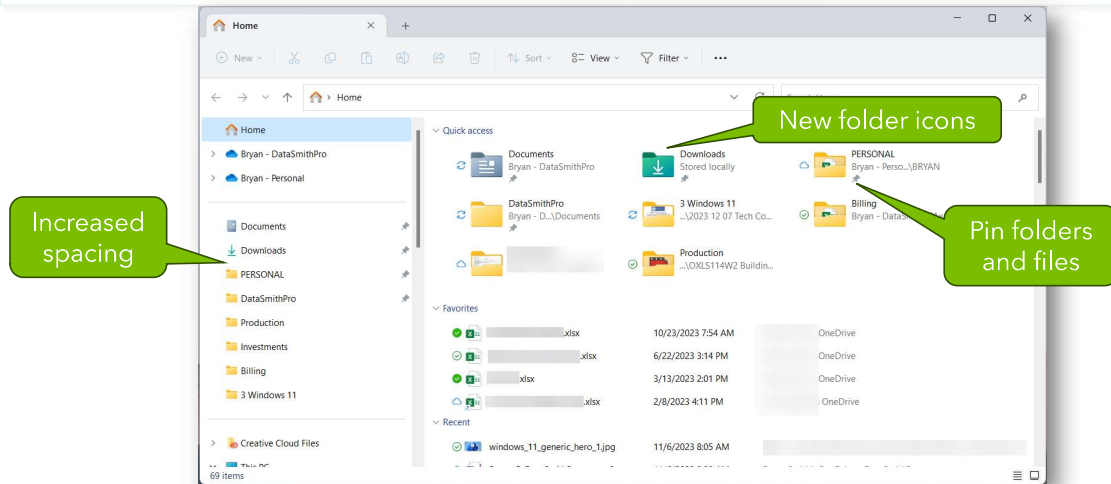
Hover over Widget control

# Notification Center



Notification Center is now part of Time/Date

# File Explorer

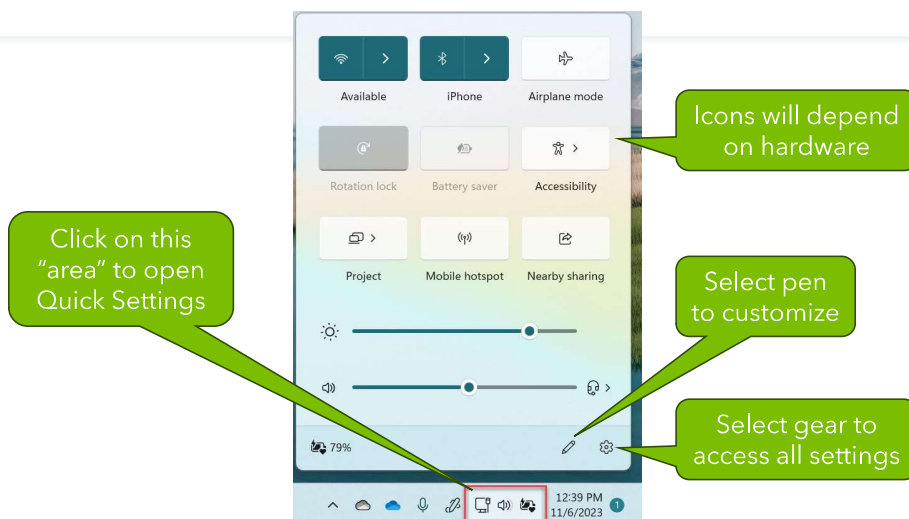


# Improved Input

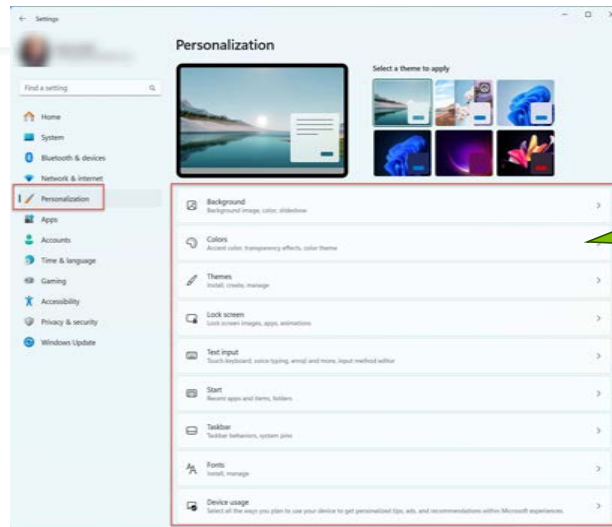
- Touch Improvements
  - Automatically adapt when touch is needed
  - Resize keyboard
- Voice Typing
  - Use voice to type in a selected field
- Pen Menu
  - New pen menu where you can add up to 4 drawing/writing apps
- Input Switcher
  - Easily switch between languages & keyboard layouts

# Customize Desktop and System Settings

## Quick Settings



# Customize Desktop



Lots of options to  
Personalize your  
experience

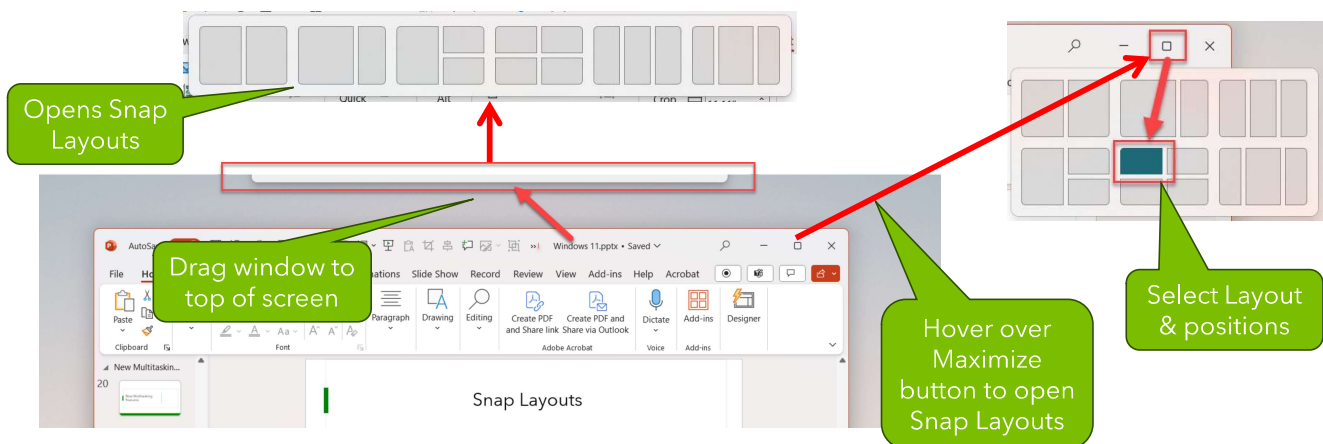
# New Multitasking Features



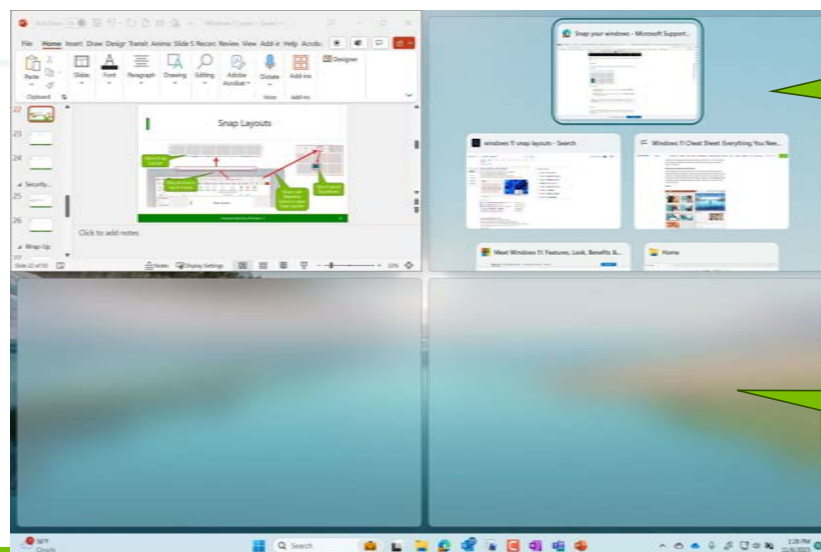
## New Features

- Snap Layouts
  - Depends on monitor size and resolution
  - More than anchoring to right and left
- Snap Assist
  - Displays open windows to place in layout
- Snap Groups
  - A Snap Layout that is filled with windows
  - Opens the entire layout when selecting 1 app in the group

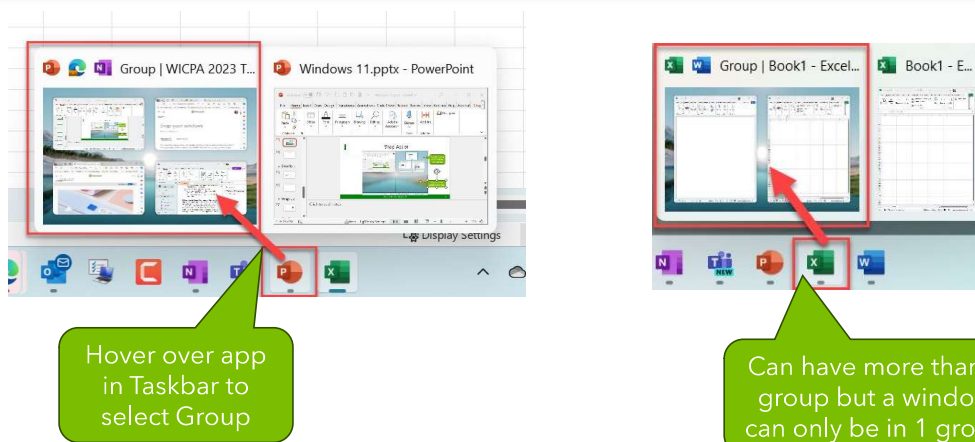
# Snap Layouts



# Snap Assist

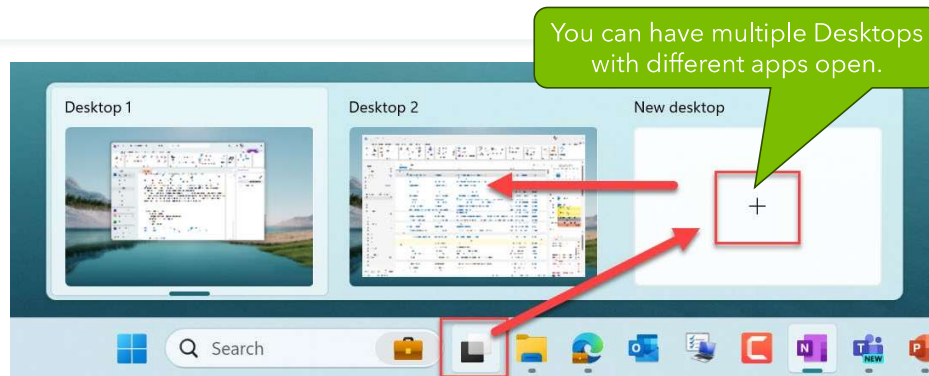


# Snap Groups





## New Desktop



Works great when going into a meeting or presentation and don't want to close all windows

## Security and Privacy Settings



# Windows 11 Security Features

Microsoft Defender Antivirus

Microsoft Defender SmartScreen

- Warns of website, application or download in potentially malicious

Windows Firewall

Windows Security Center

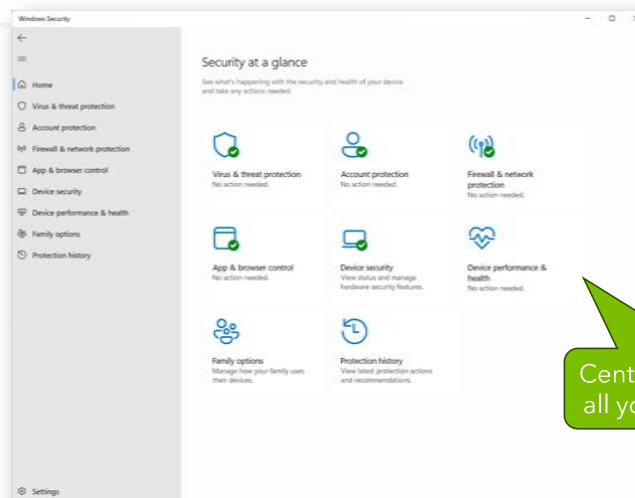
Login with PIN, fingerprint or facial recognition

Lock on leave and wake on approach

Find My Device

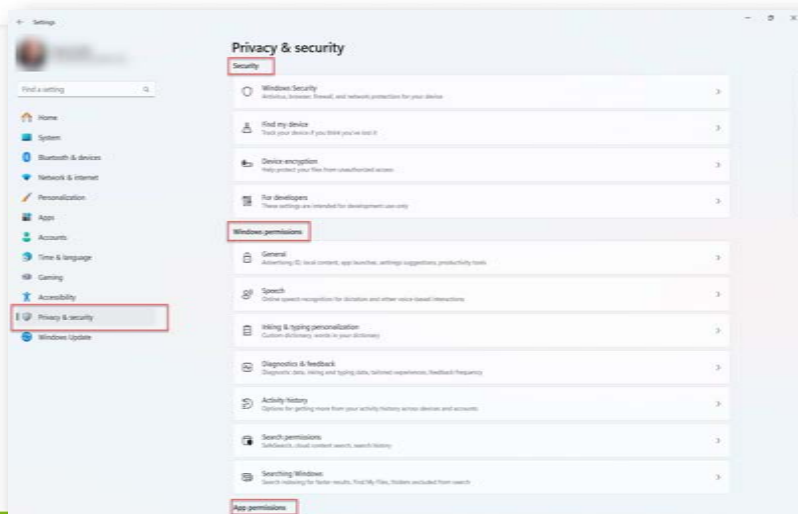
Privacy Dashboard

# Windows Security Center



Central place to manage all your security settings

# Privacy Settings



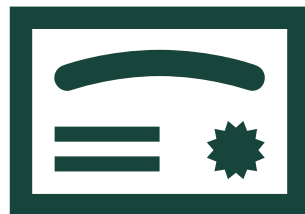
Getting the Most Out of Windows 11

29

## Wrap-Up



# Questions?



## Thank You!!



Bryan L. Smith, CPA.CITP, CISA



[bsmith@datasmithpro.com](mailto:bsmith@datasmithpro.com)

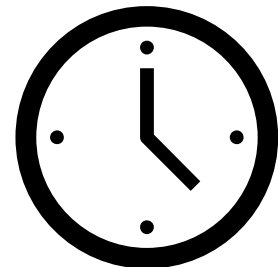


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#### ONE FINAL NOTE

## Appendix - Windows Version History



## Windows 1.0

November 1985

First Graphical User Interface (GUI) for PC's

Ran on top of MS-DOS

Looked like Apple's GUI

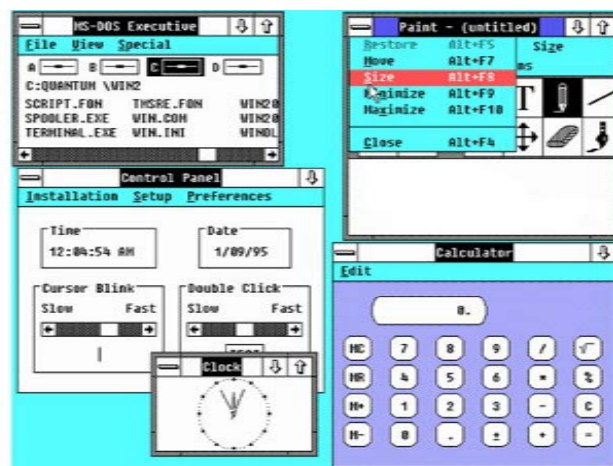


## Windows 2.0

December 1987

Allows windows to overlap & minimize/maximize

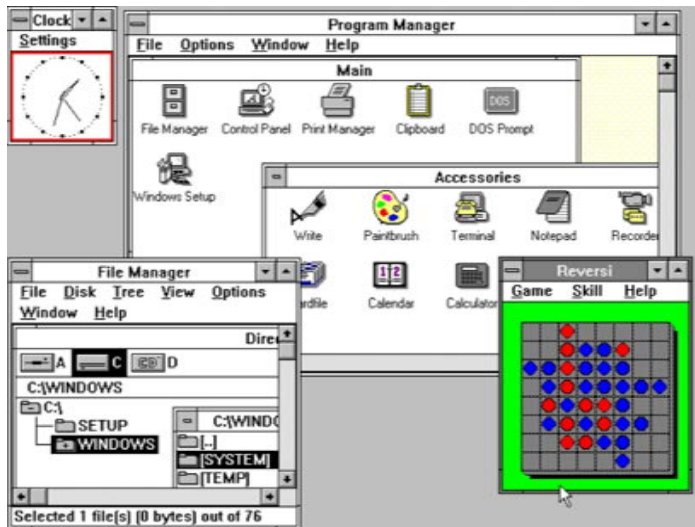
First release of Word & Excel



## Windows 3.0

May 1990

Multitasking, colorful interface but still primarily white background



## Windows 3.1

April 1992

First generally accepted Windows version

Distributed on CD-ROM and on most major PC's

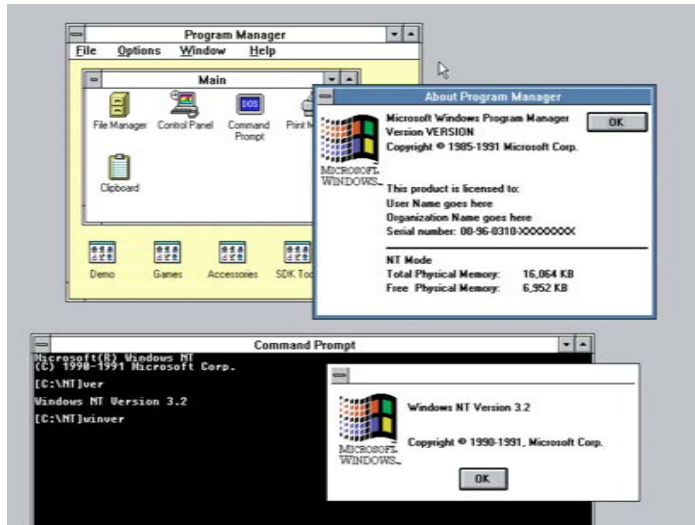


# Windows NT

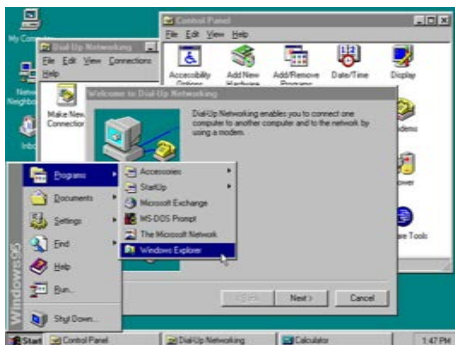
July 1993

Business edition of Windows with 2 versions: Workstations & Server

Had various revisions & versions until Windows 2000 replaced it



# Windows 95



- August 1995
- Introduction of the Start button with The Rolling Stones' "Start Me Up"
- Internet Explorer 1.0
- Still ran on top of MS-DOS
- By end of 1998 it operated 57% of desktop OS
- Support ended 12/2001 but still being used today in some legacy systems



## Windows 98



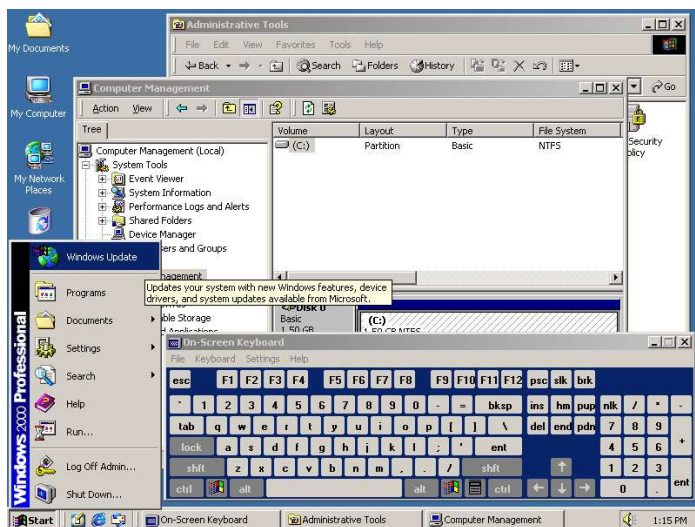
- June 1998
- Considered "tune-up" for Windows 95
- One major release 5/1999 Windows 98 Second Edition (SE)
- Support for USB, DVD & multiple monitors
- Internet Explorer 4.0

## Windows 2000

February 2000

Based on business-focused Windows NT

3 versions Professional, Server & Advanced Server

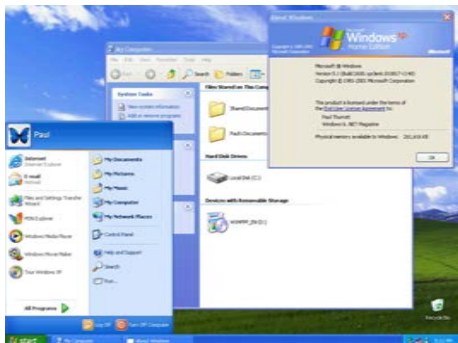


## Windows ME



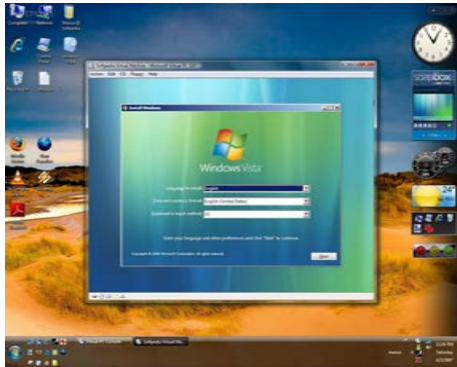
- September 2000
- Last of the Windows 9x family
- Considered the main OS for home users, made this very unpopular
- Home networking, system recover tools, IE 5.5 (later IE6.0), Windows Media Player 7 & Windows Movie Maker

## Windows XP



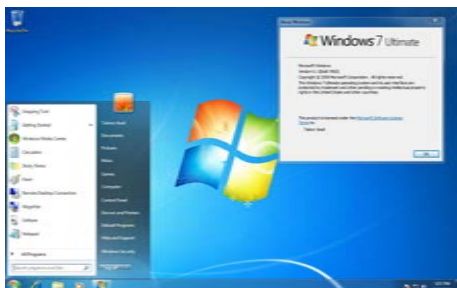
- October 2001
- Development began in the late 1990's
- Replaced Windows 2000 and ME as one OS for both business and home
- Revamped Start menu, taskbar, wallpaper & new visual effects
- Automated updates & recovery tools that worked
- Security flaws, especially in IE 6, made it vulnerable to hacking & cyber-attacks
- 5 versions: Home, Professional, Media Center, Tablet PC & Professional x64

## Windows Vista



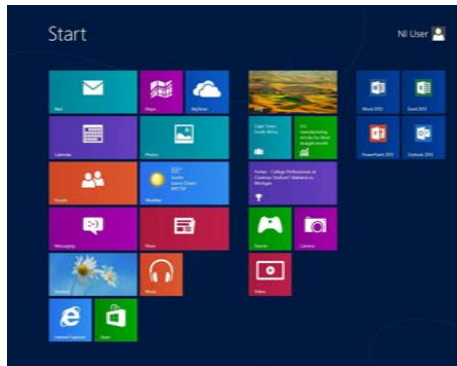
- January 2007
- Introduction of the "orb" as the new Start button and Windows Aero interface
- Saw low adoption & satisfaction due to high system requirements, more restrictive licensing terms, lack of compatibility, longer boot time, and excessive authorization prompts from User Account Control
- First version where Microsoft decided to remove some backwards compatibility
- In most cases, required the purchase of a new computer
- 6 versions: Starter, Home Basic, Home Premium, Business, Enterprise & Ultimate

## Windows 7



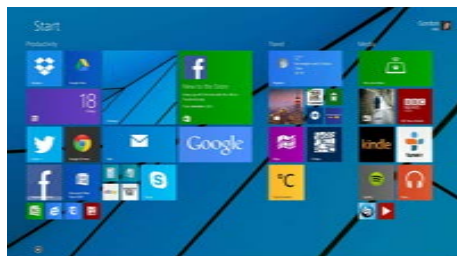
- October 2009
- Often referred as "what Vista was supposed to be"
- Fixed many issues with Vista, most users jumped from XP to 7 and skipped Vista
- 5 versions: Starter, Home Premium, Business, Enterprise & Ultimate

## Windows 8



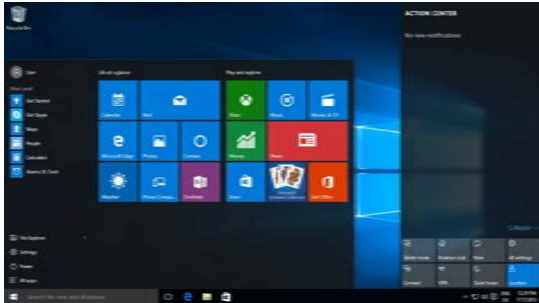
- October 2012
- Metro design to create a common interface for desktop & mobile with the introduction of "Live Tiles"
- Introduction of the Microsoft Phone
- Too much focus on mobile, removed the Start button and alienated desktop users

## Windows 8.1



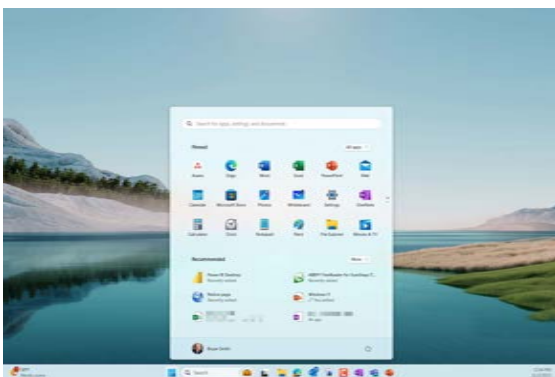
- October 2013
- Start button returns with option to boot in desktop view instead of Metro view
- RT only ran software that came pre-installed or downloaded from the Windows Store, limited its use
- First version with tight OneDrive integration
- 4 versions: 8.1, Pro, Enterprise, RT
- Support ended 1/2023

## Windows 10



- July 2015
- Return of the desktop-oriented interface with a redesigned Start menu that leveraged the Metro view
- Not Windows 9 because Microsoft didn't want it to be an incremental step from Windows 8.1
- Within 2.5 years surpassed Windows 7 as the most popular version of Windows worldwide
- Microsoft Edge replaces IE 11
- As of 9/2023, it still maintains a 71% share of Windows PCs
- 6 versions: Home, S (for Store), Pro, Enterprise, Education, IoT
- Support to end 10/2025

## Windows 11



- October 2021
- Free upgrade if your device meets the system requirements
- Redesigned Start menu that replaces live tiles with "pinned" application shortcuts
- Live tiles on a separate "Widgets" panel
- Start menu defaults to the middle of the taskbar and cannot be moved
- Improved visual design, window management and stronger focus on security
- As of 10/2023, it has 24% of Windows PC market worldwide

12:55 – 2 p.m.

# Tips to Harness the Full Potential of Microsoft 365

**John Higgins, CPA, CITP, Strategic Technology Advisor**  
*CPA Crossings LLC*

# Tips to Harness the Full Potential of Microsoft 365



Presented By  
John H. Higgins, CPA.CITP  
Rochester, Michigan



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## Learning Goals



- Identify specific opportunities to optimize the utilization of the entire Microsoft Office 365 ecosystem of apps in your organization.
- Identify the unique capabilities of various Microsoft Office 365 apps to increase the productivity of your staff.



# John H. Higgins, CPA.CITP

## Strategic Technology Advisor



john@higginsadvisoryllc.com



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Nationally recognized thought leader, advisor, author and speaker on CPA technology

Strategic technology advisor to the profession w/ 35+ years of experience

Founded and sold two CPA technology advisory startups

Former National Mid-market Technology Partner - BDO

CPA Practice advisor Top 25 Thought Leader for the CPA profession

AICPA Business & Industry Hall of Fame Inductee

Past Chair of the Michigan Association of CPAs

Passionate advocate for the CPA profession!

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## Presentation Outline

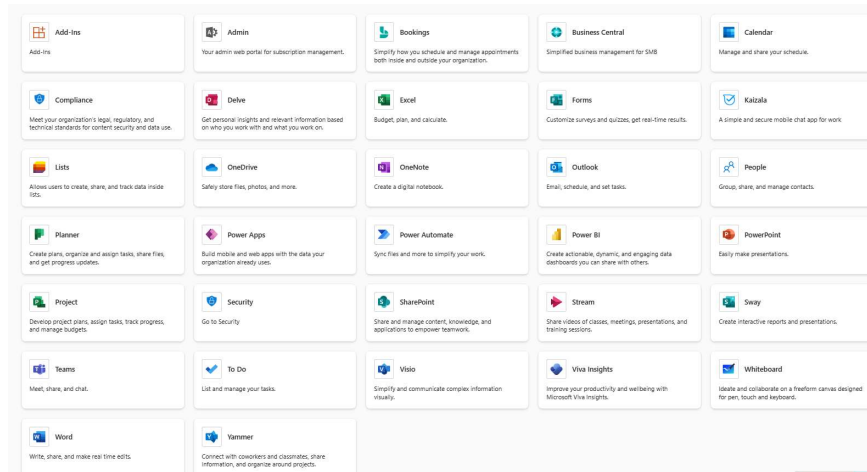
- [The Big Picture](#)
- [Time Saving Outlook Tips](#)
- [The Core Apps](#)
- [Streamline Communications With Teams](#)
- [File Sharing & Collaboration With SharePoint](#)
- [Get Organized With OneNote](#)
- [Stay Organized With To Do and Planner Apps](#)
- [Control Your Schedule w/ Bookings App](#)
- [Wrap-Up](#)



3



# Microsoft 365 Apps Collection

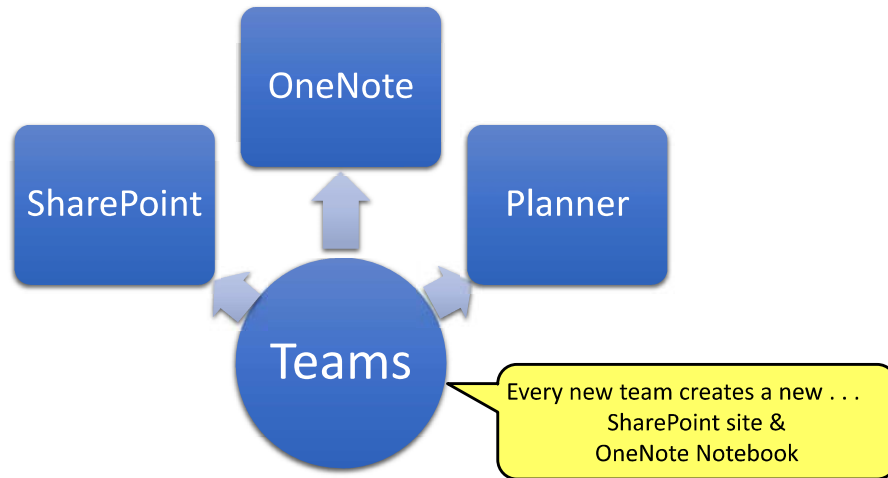


## Time Saving Outlook Tips

- Quick Parts
- Dictation
- Share to Teams
- Sent to OneNote
- Rules / Folders / Favorites
- Categories & Flags



## The Core Apps



## Streamline Communications With Teams App

- ✓ Make all meetings Teams meetings
- ✓ Leverage custom tabs
- ✓ Use private channels as customer / client portal
- ✓ Minimize use of "chat"
- ✓ Teams & Stream for process documentation
- ✓ Understand Teams & SharePoint relationship

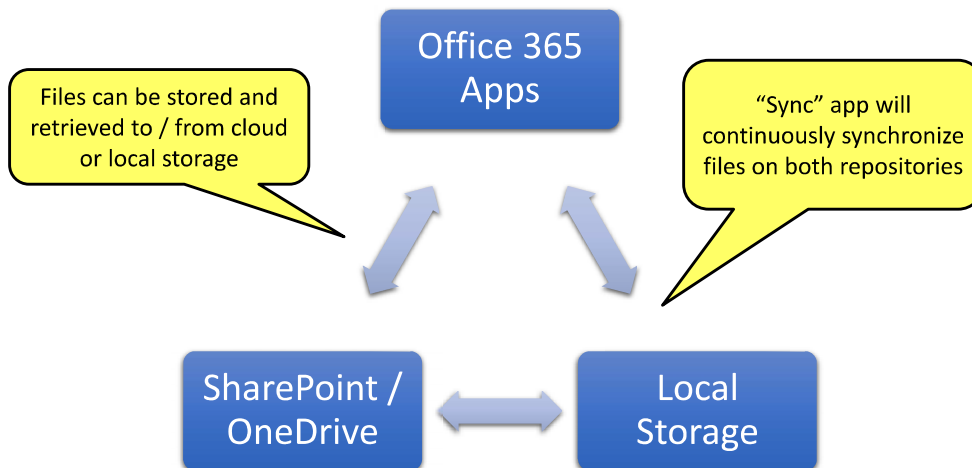


## File Sharing & Collaboration With SharePoint App

- Teams and SharePoint work in harmony
  - Teams for conversation storage
  - SharePoint for file storage
- File Sharing
- Versioning
- Alerts
- Sync App



## SharePoint / OneDrive Sync App

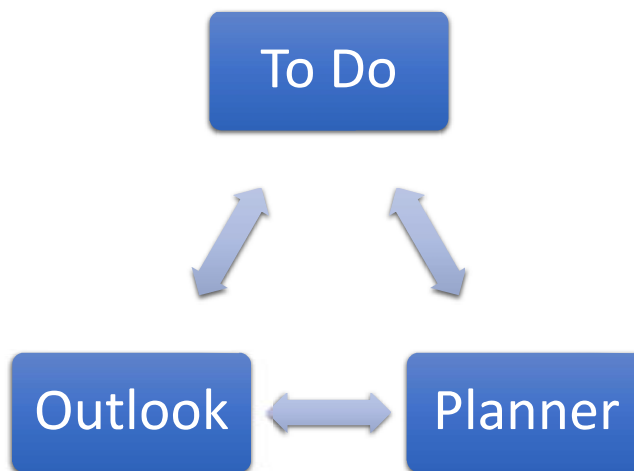


## Get Organized With OneNote

- Each team generates a OneNote notebook
- Leverage dictation
- Send emails to OneNote
- Link to files
- Use tags for quick retrieval
- Setup a tab shortcut to notebook in the team
  - Client / customer team
  - Client / customer SharePoint site
  - Client / customer notebook



## Stay Organized With “To Do” and Planner Apps



## To Do App

- Consolidates “to do” items from:
  - Outlook flagged email message
  - Outlook tasks
  - Planner tasks
  - To Do app tasks
- Create custom to do lists



## Planner App Key Features



Simple and intuitive interface

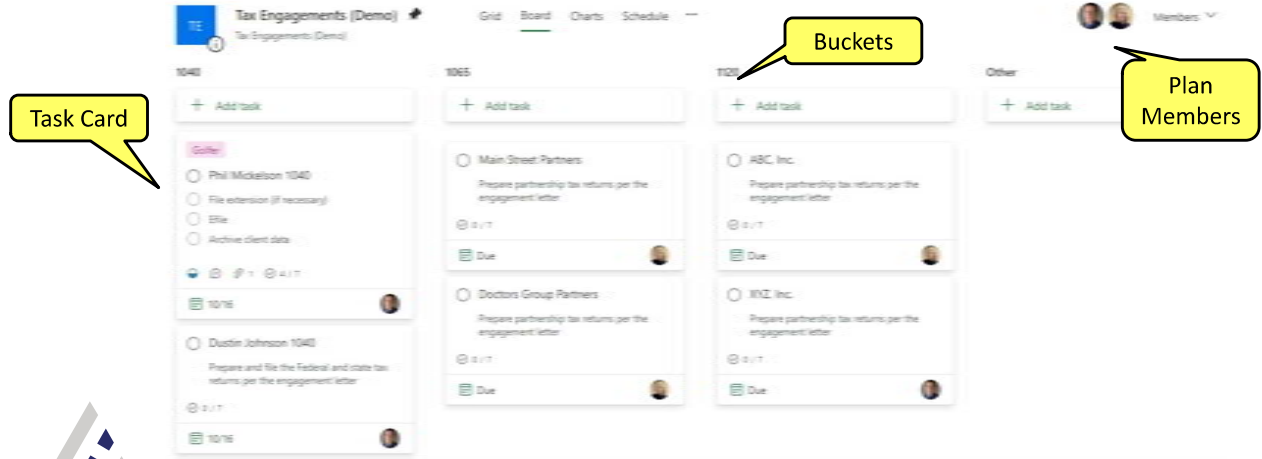
Useful for project and event planning

Integrates with many Microsoft 365 apps

Tasks can be assigned to external users

Visual progress reporting tools

## Planner App Interface



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## Control Your Schedule With The Bookings App

- Setup a bookings page
- Define appointment types
- Keep it simple
- Use with Outlook Quick Parts
- Test it!



15

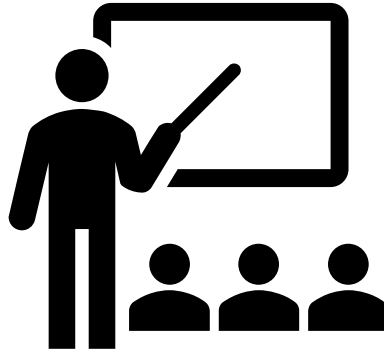
## Additional Apps

- ✓ Power BI for visual KPI dashboards
- ✓ Forms app for quick surveys and data gathering
- ✓ Lists app to create and manage custom lists
- ✓ Stream to host videos / Teams meetings recordings
- ✓ Power Automate and Power Apps to automate routine processes (RPA) / workflow automation

## Microsoft Co-Pilot AI for 365

- GPT-4 (ChatGPT) technology embedded in Microsoft 365
- In initial general release for 300 license minimum
- Examples
  - Brainstorming in whiteboard app
  - Create graphic images in PPT with DALL-E
  - Turn paragraphs into bullets for PPT
  - Email text composition coaching in Outlook
  - Identify and group unanswered questions across all of OneNote
  - Teams meeting recap

## WRAP-UP



## Presentation Wrap-Up

- There is an abundance of opportunity to increase productivity with Microsoft 365
- Microsoft 365 provides a platform to support a remote work environment
- Take time to learn how you can utilize the various apps in your organization
- Stay tuned to Microsoft 365 Co-pilot
- It's a journey not a destination!



## Questions ?



# Thank you!!!

2:15 – 3:15 p.m.

# Cryptocurrency Technology & Market Update

**John Higgins, CPA, CITP, Strategic Technology Advisor,**  
*Higgins Advisory, LLC*

# Blockchain & Cryptocurrency 15 Years Later



Presented By  
John H. Higgins, CPA.CITP  
Rochester, Michigan



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## Learning Goals



- Review the current state of the cryptocurrency market
- Update on the innovation in cryptocurrency and blockchain technology



# John H. Higgins, CPA.CITP

## Strategic Technology Advisor



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## Presentation Outline

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- [Cryptocurrency Market Update](#)
- [Cryptocurrency Technology Update](#)
- [Blockchain Technology Update](#)
- [Wrap-up](#)



3

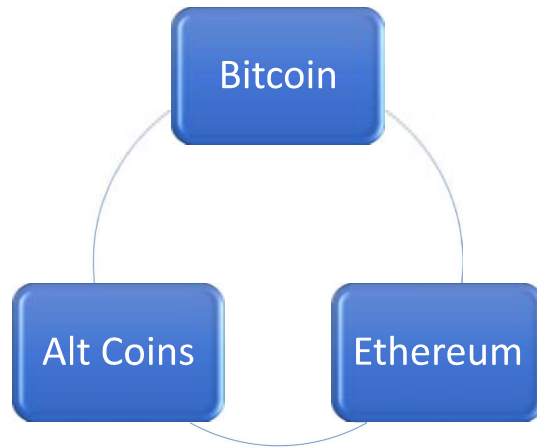
# CRYPTOCURRENCY MARKET UPDATE



## Interesting Cryptocurrency Facts

- First Bitcoin transaction was January 12, 2009
- Bitcoin market cap \$716 billion\*
- Cryptocurrency market cap \$1.4 trillion\*
- Over 5,000 alt coins\*
- El Salvador has made bitcoin legal tender as of September 2021

# Bitcoin, Ethereum & Alt Coins



# Bitcoin Update

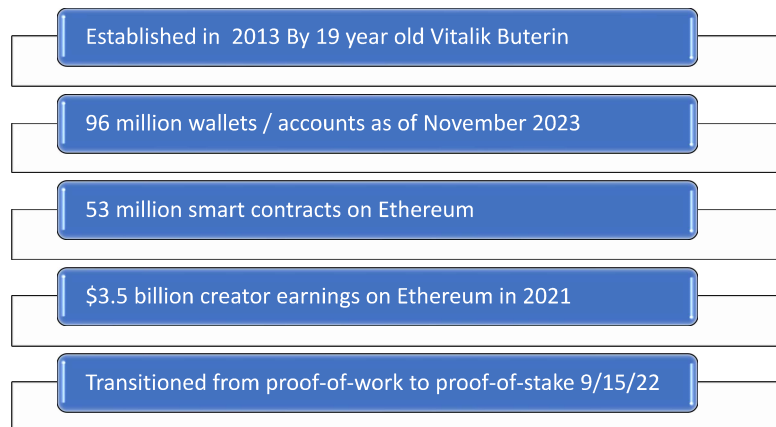
- 19.5m circulating supply of BTC as of 11/20/23
- 21m is the maximum supply to be produced
- Bitcoin mining reward is cut in half every 210,000 block (approx. every four years)
- 12 spot bitcoin ETF applications with SEC
- Opens the door for institutional investors
- SEC classifies bitcoin as a commodity

# Bitcoin Miner Reward Halving History

Date	Halving Amount	New Mining Reward	BTC Price
November 2012	25 BTC	25 BTC	\$12
July 2016	12.5 BTC	12.5 BTC	\$648
May 2020	6.25 BTC	6.25 BTC	\$8,572
April 2024 (est.)	3.125 BTC	3.125 BTC	??

[ChartsBTC \(@ChartsBtc\) / X \(twitter.com\)](#)

# Ethereum Update



## Alt Coins Update

Alt = alternative to Bitcoin

Namecoin launched 4/18/11 as first alt coin

SEC considers alt coins to be unregistered securities

FTT is the native altcoin of bankrupt FTX exchange

## BTC ETFs coming to a global money manager near you?

- ETF = Exchange Traded Fund
- Trade like an equity stock
- Can invest in commodities, i.e. Bitcoin
- A dozen BTC applications pending with SEC as of 11/22/23
- Approval anticipated by Q1 2024
- Anticipate material buy-in from institutional investors and money wealth managers



# Spot Bitcoin ETF Applications with SEC as of 11/20/23

- Grayscale
- 21Shares / Ark
- Ishares / BlackRock
- Bitwise
- VanEck
- Wisdomtree
- Invesco / Galaxy
- Fidelity
- Valkyrie
- Global X
- Hashdex
- Franklin

## Larry Fink, CEO BlackRock

### Then

- [Larry Fink 2017](#)

### Now

- [Larry Fink 2023](#)

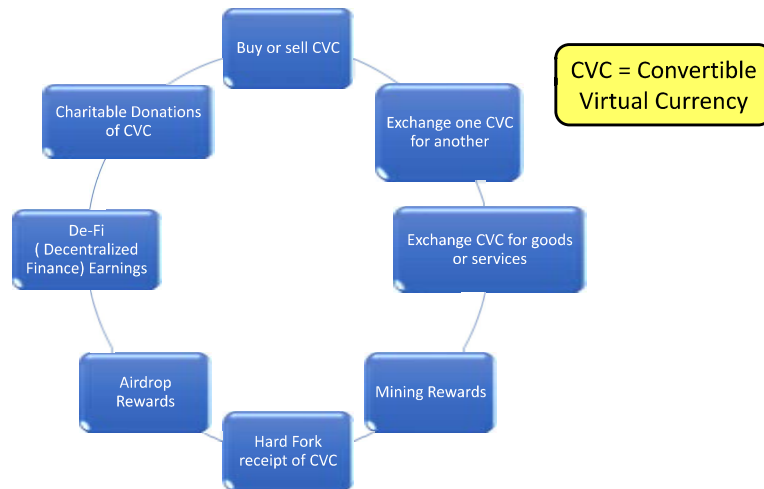
# FEDERAL TAX IMPLICATIONS OF CRYPTOCURRENCY TRANSACTIONS



## The Challenge for the IRS

- “On-chain” cryptocurrency transactions are anonymous
- Many participants are clueless on the tax implications of trading in cryptocurrency
- The number of taxpayers transacting in cryptocurrency is growing exponentially
- The potential for tax revenue collection is substantial

## Taxable Virtual Currency Events



## IRS Notice 2014-21

- Issued 3/25/2014
- Provides “virtual currency” taxation guidance
- Defines “convertible” virtual currency (CVC)
- CVC is treated as property (business / investment / personal) for tax purposes
- CVC is not treated as currency
- CVC income reported at fair market value as of date received

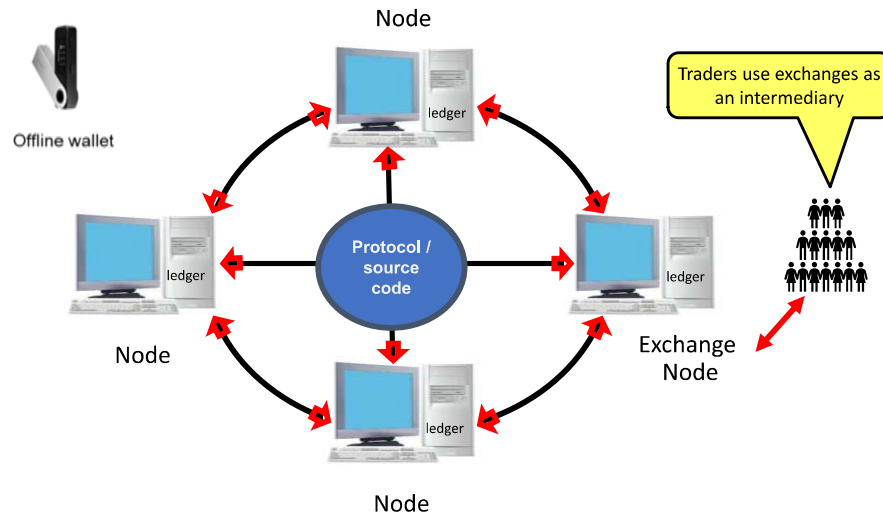
## Cryptocurrency Exchanges Have Challenges

- 1<sup>st</sup> generation suffered numerous hacks
- 2014 **Mt. Gox** files bankruptcy due to hack
- 2022 **Voyager** and **Celsius** declare bankruptcy due to market volatility and unsecured loans
- 2022 **FTX** files bankruptcy due fraudulent use of customer funds by CEO Sam Bankman-Fried
- 2023 **Binance** CEO (CZ) Pleaded guilty to financial crimes

## CRYPTOCURRENCY TECHNOLOGY UPDATE



# Cryptocurrency Technology



# New Trends in Cryptocurrency Technology

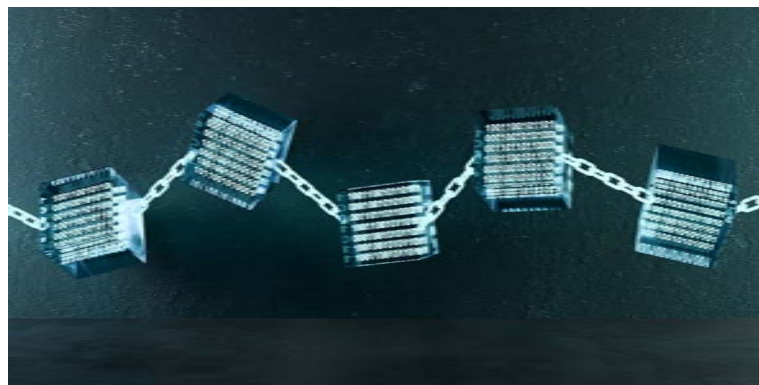


# CRYPTOCURRENCY TAX COMPLIANCE SOFTWARE



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# BLOCKCHAIN TECHNOLOGY UPDATE



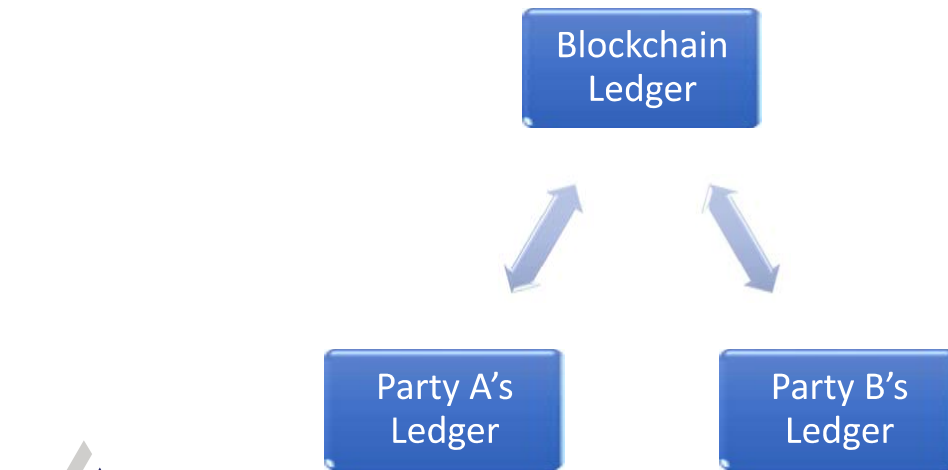
23

Blockchain is a revolutionary way to validate, record and preserve information digitally

## Attributes of Blockchain Technology

- Can store any type of digital information
- Based on mathematics and cryptography
- Immutable / shared / distributed transaction ledger
- May not rely on a central authority
- Emerging and evolving technology

## The Shared Blockchain Ledger



## Emerging Blockchain Applications

- Cryptocurrency
- Supply chain tracking
- Intellectual property protection
- Medical history
- Voting systems
- Identity management

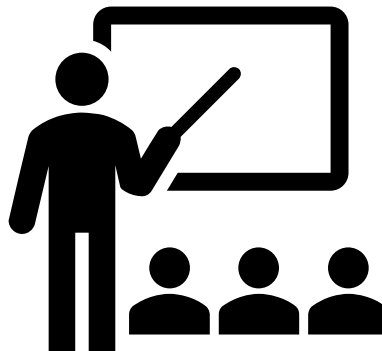


Blockchain  
application video



Blockchain uses mathematics to  
validate transactions instead of a  
central authority

## WRAP-UP



## In Summary

- After 15 years, cryptocurrency is advancing into the mainstream
- ETF approval by SEC will be a significant milestone
- The technology for managing your cryptocurrency keys needs to get easier
- Beware of the alt coins and unregulated exchanges
- Blockchain technology is advancing well beyond crypto

## Questions ?

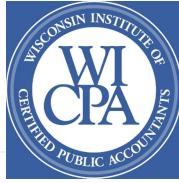


# Thank you!!!

2:15 – 3:15 p.m.

# Practical Security Tips for CPAs

**Bryan Smith, CPA, CITP, CISA**, *Owner, DataSmith Pro, LLC*



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Wisconsin Institute of  
Certified Public Accountants

# 2023 Accounting Technology Conference

Developed by Bryan L. Smith, CPA.CITP, CISA

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## Practical Security Tips for CPAs

2023 Accounting Technology Conference



## Bryan L. Smith, CPA.CITP, CISA Owner, DataSmith Pro, LLC

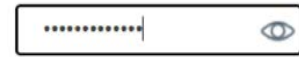
- Co-founder of CPA Crossings, LLC
- Strategic technology advisor to CPAs w/ 40+ years of experience
- Nationally recognized author and presenter on CPA technology
- Extensive knowledge and experience in proper Excel design techniques as well as helping CPAs build spreadsheets that are accurate
- As a Certified Information Systems Auditor (CISA), spent a considerable amount of time auditing and validating thousands of Excel spreadsheets
- Developed various data analysis and Microsoft Power BI courses and has worked with multiple organizations to train and coach staff on proper data analysis techniques
- Masters of Science in Information Assurance (MSIA)



## Presentation Outline

- [Creating and Managing your 100's of Passwords](#)
- [Using Two-Factor Authentication](#)
- [Email Security Measures](#)
- [Safe Web Browsing](#)
- [Wrap-Up](#)

# Creating and Managing your 100's of Passwords



## Passwords, Passwords, Passwords

Cloud apps have grown exponentially

Mobile apps have followed suit

Most require a username and password

From a weather app

- No financial data, but to save your weather locations across devices

To a banking app

And EVERYWHERE in between!!

# Passwords Over Time

Dates back to ancient Roman military

Means to determine if you are authorized to have access

Often depicted as a lock 

Earliest "password" I remember was my locker combo

Then came a 4-digit ATM PIN

- 0-9 allowed number, so  $10^4 = 10,000$  combinations

# Password Hacking

A random guess

- PIN = 8095

Intelligent guess

- Users bday = 10/25/1998
- PIN = 1025 or 1098

Use app or device to run through ALL combinations

- 4-digit PIN = 10,000 combinations

Social Engineering

- Phishing email to get you to enter



## Password Protection

What did you do if someone got your locker combo?

Lock account after so many failed attempts

Force changes every so often

Don't allow last so many passwords

Don't allow repeating characters or numbers

Require security questions

Require a second device (ATM card and PIN)

## Password Management of 100's of Logins

Make them all the same

Write them down

Type them in a document

Add them to Outlook Contacts

How else do you do it?

# Password Security Best Practices

Create long, random, **unique** passwords

Never write them down

Change them regularly

Never give them to someone

Implement Multi-Factor Authentication

Use a Password Manager App

# Password Management App

Saves passwords in an encrypted file

One "master" password to decrypt the file

Two-factor authentication when login on a new device

Generates passwords based on criteria

Reports/notifications that find bad passwords

Can be synched on-line and used across devices

Can fill-in logon credentials for apps

# Notes About Password Management App

There is no "silver-bullet" when it comes to IT security

Password Management Apps are not the end all

Password Management Apps can have issues

You still need to be diligent

Consider a Defense In Depth strategy

- Multi-levels of protection
- Implement two-factor authentication for ALL apps where it is available
- Use VPN (Virtual Private Network) when remote

## Demonstrate a Password Management App



# Using Two-Factor Authentication

## What is Multi-Factor Authentication?

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A way to verify user identity

Requires user to provide two or more means of verification

Usually, other means required after you enter username and password

Authentication/verification means

- Something you know - password or PIN
- Something you have - smartphone or USB key
- Something you are - fingerprint or facial recognition

## How Does Multi-Factor Authentication Work?

Access app that requires login

Enter username and password

Prompted to enter another verification method

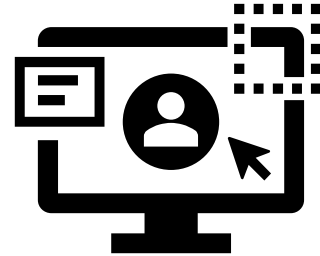
- Authentication app
- Message to phone or email
- Fingerprint or facial recognition app

If you don't have access to 2nd-factor then you are denied

## Demonstrate Two-Factor Authentication



# Email Security Measures



## Email Risks

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### Phishing/Spoofing Attack

- Ask for money, login credentials or sensitive information

### Malware

- Includes a virus that is installed on the device

### Ransomware

- Encrypts your files and demands payment to decrypt

### Social Engineering

- Use psychological manipulation to get sensitive information

## Email Security Best Practices

Train employees

Take phishing/social engineering seriously

Be wary of email attachments

Don't click on email links

Don't use business email for personal use and vice versa

Only use corporate email on approved devices

Use two-factor authentication

## How to Identify Risky Email

Asks you to click link to logon to your account

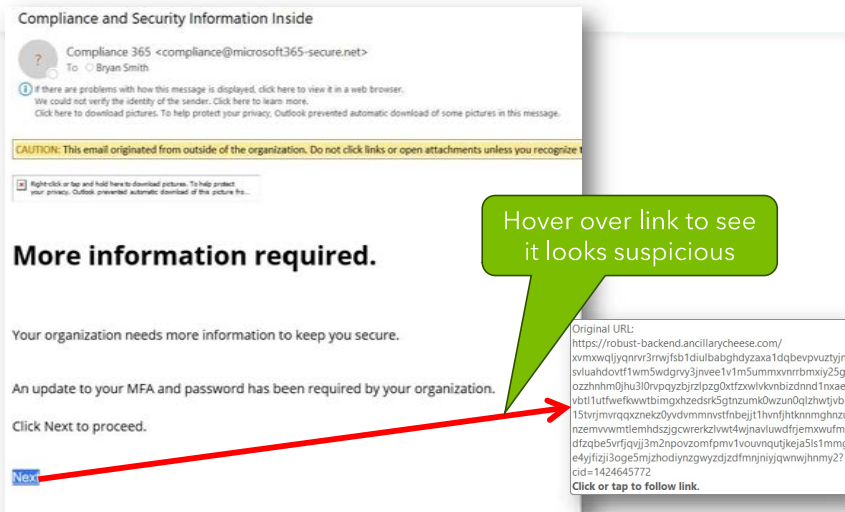
Requests money or information

Receive an attachment that you aren't expecting

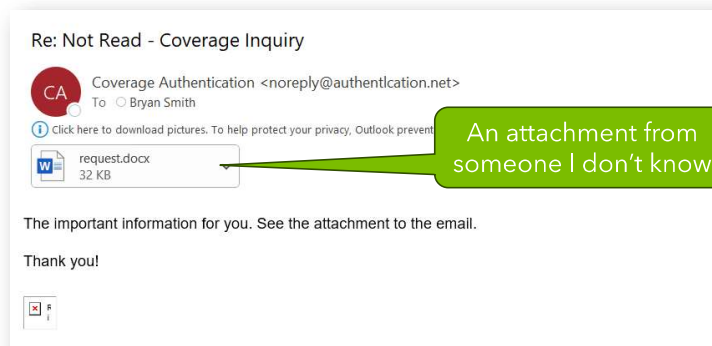
Email is out of context for the sender

If it sounds unbelievable, it probably is

## Example #1



## Example #2





## Example #3

Update Password Notification For Bsmith



Cpascrossings Notification <akhtar.choudhury@theprgpartnership.com>

To: Bryan Smith

Start your reply all with:

Looks good!

What do you think?

I like it!

Feedback

Request for password reset not from company of account



Hi [bsmith@cpacrossings.com](mailto:bsmith@cpacrossings.com)

Password for [bsmith@cpacrossings.com](mailto:bsmith@cpacrossings.com) has subsequently run out of date today

19, Mar 2021 at 04:24:29pm

You can change your password or Proceed using the same password.

**Proceed Same Password**

From Cpacrossings.com Support

Practical Security Tips for CPAs

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## Example #4

Tax Document from CPA Management Systems Inc.

Tax1099 Support <noreply@tax1099.com> (Tax1099 Support via zenwork.com)

To: Bryan Smith

You forwarded this message on 1/21/2021 8:17 AM.  
The actual sender of this message is different than the normal sender. Click here to learn more.  
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

1099-NEC.pdf  
66 KB

Dear CPA Crossings LLC,

Greetings from **Tax1099.com**!

Your 1099-NEC was submitted by CPA Management Systems Inc for 2020.

Instructions for opening the form:

Click on the attachment provided with this email. You will be prompted for your password, which is 8 characters. Please enter the first 4 characters of the name listed after the word "Dear..." at the beginning of this email, all lowercase, and the last 4 digits of the tax ID (either SSN/ETIN or ITIN).

For example:

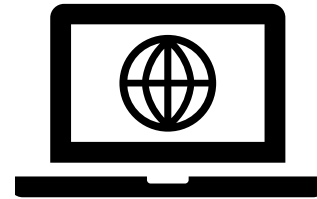
1. If your name appears on the form as Mary May with an SSN of 711223456, then the password would be mary3456 (first 4 characters of your Full Name / Business Name + last 4 digits of your SSN/ETIN number).
2. If your business name appears on the form as A & D with ITIN as 012847934, then the password would be ad7934 (first 2 characters without spaces and special characters of your organization name + last 4 digits of your ITIN/ETIN number).
3. If your business name appears on the form as Mary May PLLC with ITIN as 012847934, then the password would be mary7934 (first 4 characters of your organization name + last 4 digits of your ITIN/ETIN number).

Wow!! Sound so legit!!  
This is the extent hackers  
will go through

Practical Security Tips for CPAs

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# Safe Web Browsing



## Web Browsing Risks

Spam

Identity theft

Invasion of privacy

Cyber espionage

Waste of time

# Web Browsing Best Practices

Train employees

Stick with one browser & keep it up-to-date

Customize your browser security settings

Only use https websites when entering username and password

Use firewall software

Keep anti-virus software up-to-date

Don't use unsecure WiFi without VPN

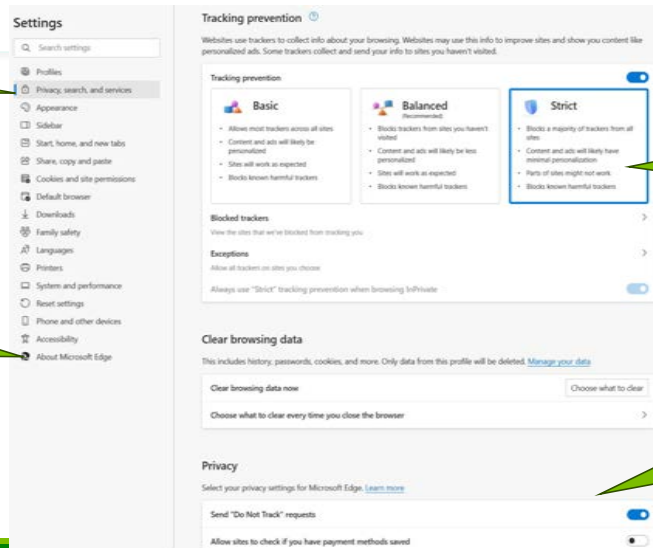
# Web Browser Security

- Microsoft Edge, Google Chrome, Apple Safari, Mozilla Firefox, DuckDuckGo and more
- Pick one so you learn how to secure it
  - [Edge](#)
  - [Chrome](#)
  - [Safari](#)
  - [Mozilla](#)
  - [DuckDuckGo](#)

## Example – Microsoft Edge Settings

Privacy Settings

Check version and updates



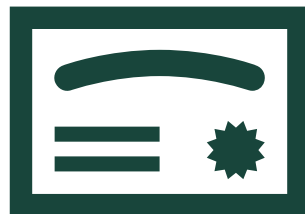
Some settings are set as groups

Scroll down for many more options

## Wrap-Up



# Questions?



## Thank You!!



Bryan L. Smith, CPA.CITP, CISA



[bsmith@datasmithpro.com](mailto:bsmith@datasmithpro.com)



3:30 – 4:45 p.m.

# CPA Technology Trends Update

**Bryan Smith, CPA, CITP, CISA, Owner, DataSmith Pro, LLC**



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Wisconsin Institute of  
Certified Public Accountants

# 2023 Accounting Technology Conference

2023 Accounting Technology Conference

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## CPA Technology Trends Update

Developed by Bryan L. Smith, CPA.CITP, CISA



## Bryan L. Smith, CPA.CITP, CISA Owner, DataSmith Pro, LLC

- Co-founder of CPA Crossings, LLC
- Strategic technology advisor to CPAs w/ 40+ years of experience
- Nationally recognized author and presenter on CPA technology
- Extensive knowledge and experience in proper Excel design techniques as well as helping CPAs build spreadsheets that are accurate
- As a Certified Information Systems Auditor (CISA), spent a considerable amount of time auditing and validating thousands of Excel spreadsheets
- Developed various data analysis and Microsoft Power BI courses and has worked with multiple organizations to train and coach staff on proper data analysis techniques
- Masters of Science in Information Assurance (MSIA)



## Presentation Outline

- [Adopting Cloud-Based Accounting Solutions](#)
- [Data Analytics and Business Intelligence for CPAs](#)
- [Practical Applications of AI and Machine Learning](#)
- [How RPA is Streamlining Accounting and Auditing Processes](#)
- [Wrap-Up](#)



# Adopting Cloud-Based Accounting Solutions

## What Did The Pandemic Teach Us?



Being digital and cloud based is no longer optional

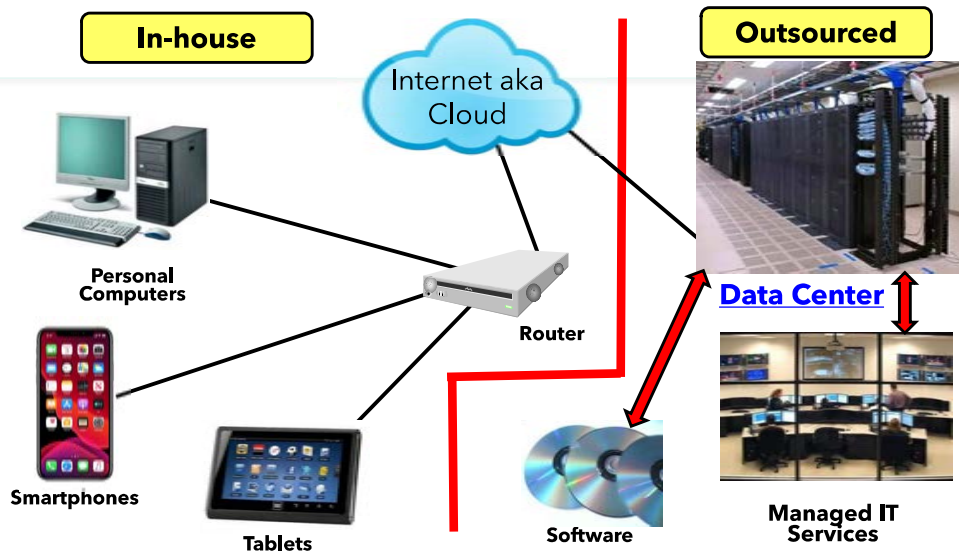


The cloud model is resilient and scalable

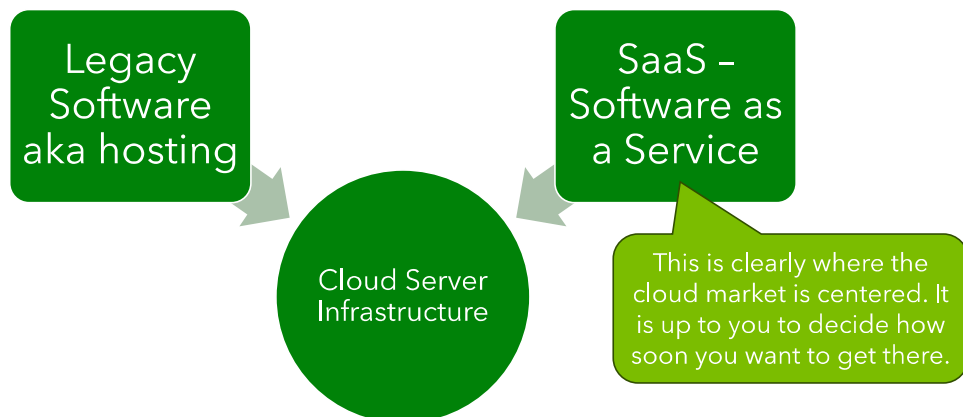


Work from home can be a strategic advantage

# The Cloud Computing Model



# Alternative Cloud Based Software Strategies



# Advantages of Cloud-Based Accounting Solutions

## Cost Efficiency

- Reduced infrastructure costs
- Pay-as-you-go pricing model

## Accessibility

- Anytime, anywhere access to financial data
- Facilitates remote work and collaboration

## Scalability

- Easily scale resources based on business needs
- Accommodates growth without significant IT investments

# Advantages of Cloud-Based Accounting Solutions (continued)

## Automatic Updates

- Regular updates and enhancements without user intervention
- Ensures the latest features and security patches

## Data Security

- Advanced encryption and security protocols
- Data backups and disaster recovery measures

## Integration

- Seamless integration with other business applications
- Enhances overall business efficiency

# Challenges of Cloud-Based Accounting Solutions

## Security Concerns

- Data privacy and confidentiality
- Risks of unauthorized access and data breaches

## Dependency on Internet Connection

- Reliance on a stable and secure internet connection
- Potential disruptions affecting access to financial data

## Customization Limitations

- Some solutions may have limited customization options
- Adaptation to unique business processes may be challenging

## Learning Curve

- Training employees on new software
- Resistance to change and potential productivity dips during the transition

# Mitigation Strategies of Cloud-Based Accounting Solutions

## Security Measures

- Implement multi-factor authentication
- Regularly update passwords and access controls

## Redundancy Planning

- Backup internet connections
- Contingency plans for internet outages

## Vendor Evaluation

- Thoroughly vet cloud service providers
- Ensure they comply with industry standards and regulations

## Comprehensive Training

- Provide extensive training sessions for employees
- Develop support systems for ongoing learning



## Case Studies of Cloud-Based Accounting Solutions

- Eliminate disconnected apps
- Simplify IT infrastructure
- Flexible & scalable platform

ORACLE  
NETSUITE



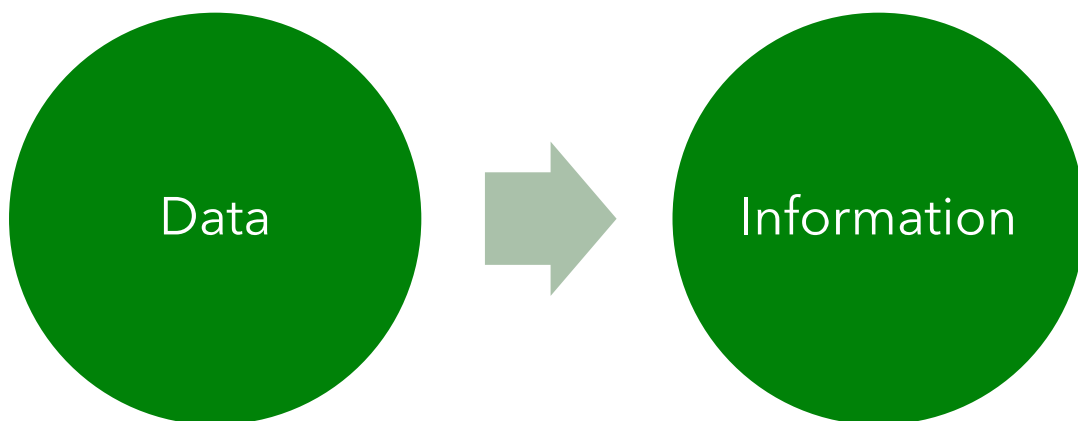
## Data Analytics and Business Intelligence for CPAs

# Data Analytics Defined

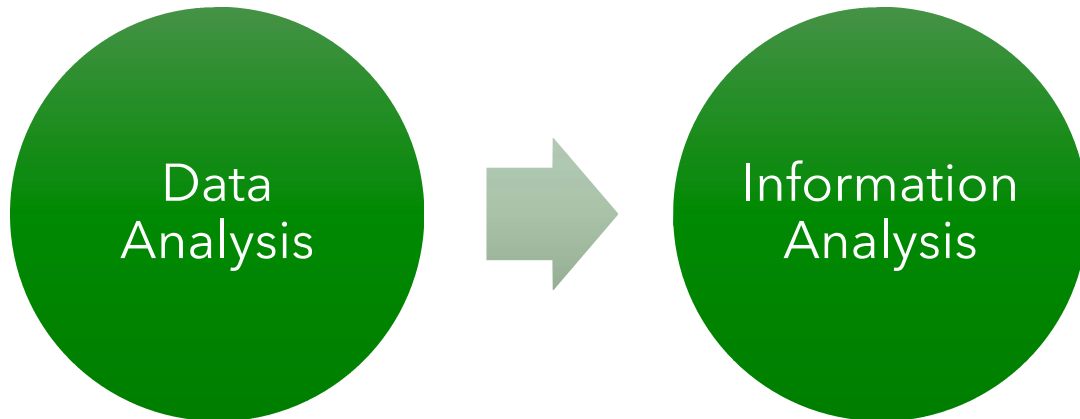
➤ **Data analytics**, also known as analysis of data or data analysis, is a process of *inspecting, cleansing, transforming, and modeling data* with the goal of *discovering useful information, suggesting conclusions, and supporting decision-making*.

Source: Wikipedia

# What is Data?



## What is Data Analysis?



## Why Data Analysis?



# Business Intelligence Defined

➤ **Business Intelligence** (BI) is an umbrella term that includes the *applications, infrastructure, tools*, and *best practices* that enable access to and *analysis of information to improve* and *optimize decisions* and *performance*.

Source: Gartner, Inc. IT Glossary

# What is BI?

- BI does not tell business users what to do or what will happen if they take a certain course (that's Business Analytics)
- BI is more than generating reports
- Provides a way to examine data to understand trends and derive insights
- BI is used to ***Make Insightful Decisions***
- Some people include BI with data analysis

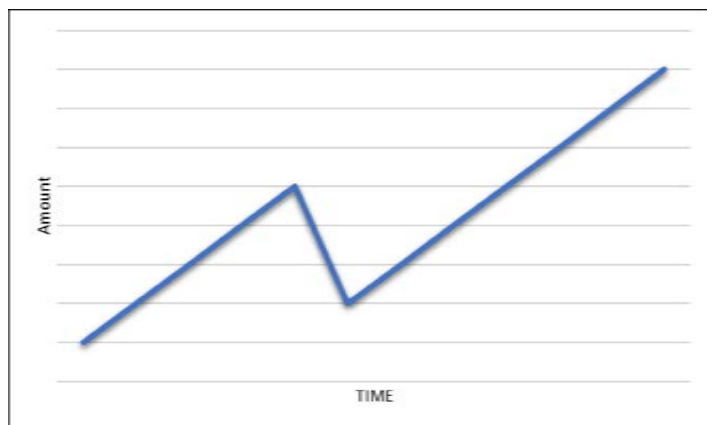


# What are Visualizations?

- Tells the story of our data
- Pictures are worth a 1,000 words
- Limited tables (rows & columns of data)
- Graphics, pictures, charts, etc.
- Interactive visualizations
- Take your audience into consideration
- Create without bias

## Visualizations - The New Paradigm

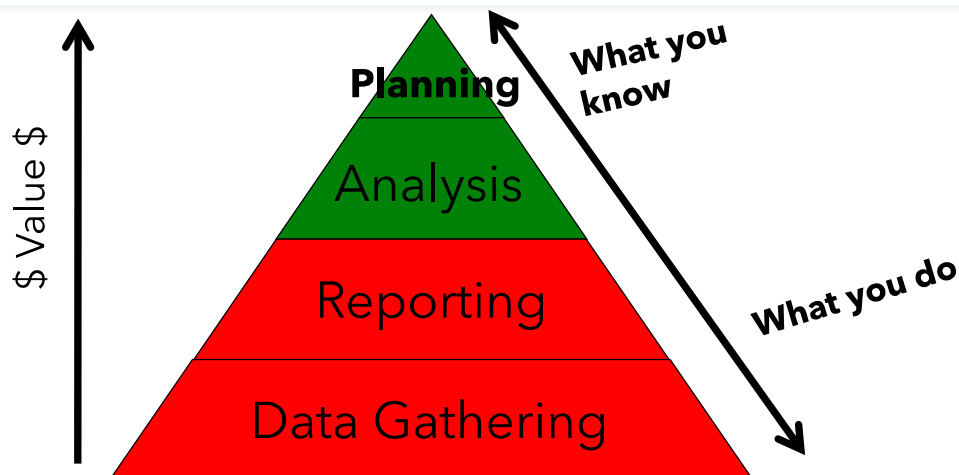
Time ▾	Amount ▾
Jan	100
Feb	200
Mar	300
Apr	400
May	500
Jun	200
Jul	300
Aug	400
Sep	500
Oct	600
Nov	700
Dec	800



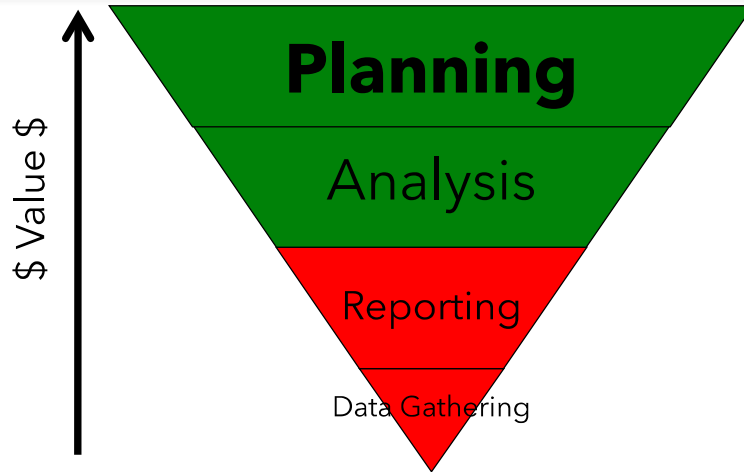
## Why is this Important to CPAs?

- Data is being accumulated at an unprecedented rate
- Move from **transaction processing** to **transaction analysis**
- Move from **report preparation** to **report analysis**
- Move from **paper to visual** reporting & dashboards
- Insights into a lot of data, very quickly
- Pace of change requires the ability to react quickly

## Accounting Dilemma



# The New Accounting Paradigm



# A Look At Using Data Analytics



# Practical Applications of AI and Machine Learning



## RPA vs. AI vs. ML



RPA (Robotic Process Automation) is the automation of "doing"



AI (Artificial Intelligence) is the automation of "thinking"



ML (Machine Learning) is the automation of "learning"

## Things to Know About AI & ML



AI is the programming of machines to think, work and react like humans



Machine learning is a subset of AI that teaches machines how to learn



Builds on the foundation of big data, data analytics and IoT



Human to machine interface is an important component

## Simple Example of AI & ML in Use - Navigation



Enter destination

AI recommends a route



As you drive and traffic conditions change

ML recommends a change in route



Benefits

Saves time & money  
Reduces stress

# Practical Application of AI in Accounting

## Invoice Processing

- Scan a vendor invoice and it enters data into AP system

## Expense Reporting

- Take picture of receipt and it enters data into expense report

## Bank Reconciliation

- Bank transactions are matched with cash records

## Fraud Detection and Prevention

- Identify patterns and anomalies that suggest accounting fraud

# Practical Application of ML in Accounting

## On-line Customer Shopping

- Suggest related products
- Suggest similar products for out-of-stock items

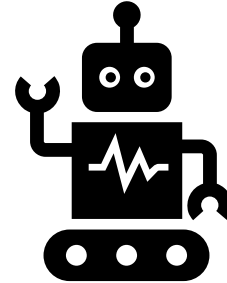
## Customer Support & Help

- Provide recommendations to questions
- Provide list of most common questions for a product

## Transaction Processing

- Based on past transactions, recommends appropriate entry

## How RPA is Streamlining Accounting and Auditing Processes



## Things to Know About RPA

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Software (ro)**bots** that perform routine tasks automatically

Often uses the same interface as a human worker

Mimic human – computer interactions

Rules based task automation and decision making

For processes that have defined inputs and outputs

Think player piano

## Things to Know About Bots & Robots



A bot is a computer program designed to execute a specific task automatically



A chatbot is a bot designed to interact with humans conversationally, via text or voice



A robot is a machine built to resemble a human being or animal in appearance and behavior

## Practical Application of RPA in Accounting



### Order Processing

Take orders from third-party and enter them in your system



### Sales Support

Route product questions to appropriate individual



### Data Gathering

Retrieve data from different systems and combine into a single data model  
Replace the "hook & crook" method of getting data



# Practical Application of RPA in Auditing



## Data Extraction

Capture data from various sources  
Standardize data and populate audit systems



## Transaction Testing

Use "fuzzy" logic to compare vendor addresses  
Compare payments for reasonableness



## Exception Flagging

Compare transactions to pre-defined "rules"  
Route exceptions to appropriate authority for resolution

## Wrap-Up



# Presentation Wrap-Up



## Cloud-Based Accounting Solutions

Increase cost efficiency  
Increase accessibility  
Increase scalability



## Data Analytics

Provide more valuable services like analysis and planning

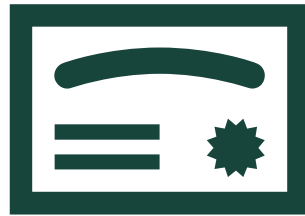


## RPA, AI & ML

Making huge impacts on the accounting industry

# Questions?





## Thank You!!



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