

A VERY SHINY OBJECT

Harnessing AI in Business



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/ CEO & Managing
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/ 2024

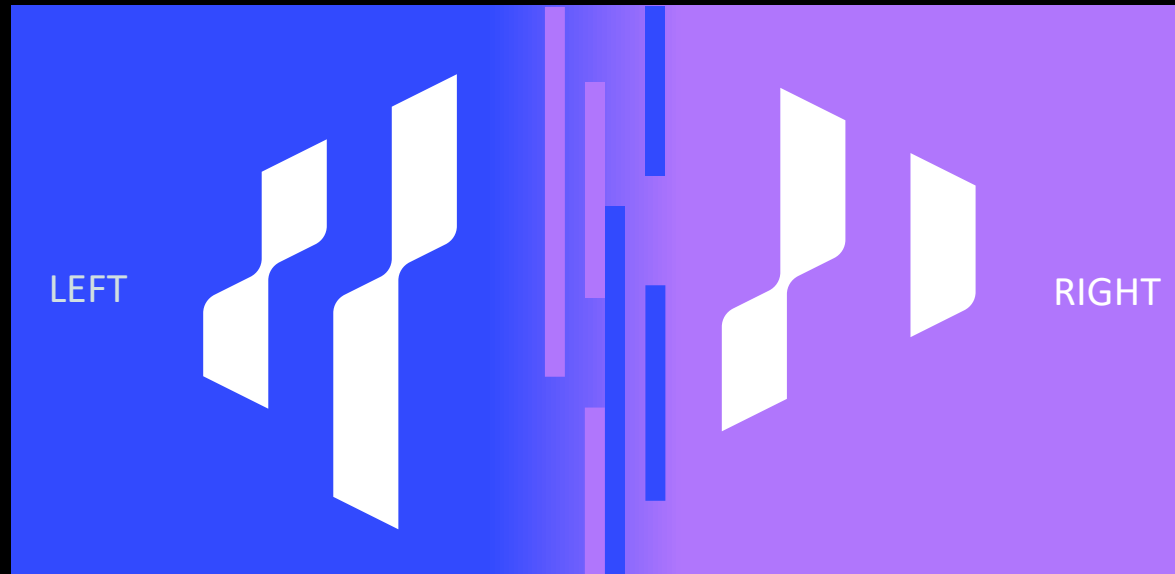
October 28-30

The Westin Harbour
Castle, Toronto

Introducing Electric Mind

We're changing the way people think about consulting with the Electric Mindset – we combine both ways of thinking to create holistic solutions and strategic perspectives to address today's challenges

- Creative solutions
- Forward thinking
- Dynamic adaptability
- Visionary and bold



- Engineering precision
- Analytical decision-making
- Efficiency & optimization
- Dependable delivery

THE RESULT?

Holistic solutions that combine technical and strategic perspectives to address today's challenges, where technology is intrinsic to business success.

How to Spot a Shiny Object

A simple (perhaps obvious) framework

Customer Value

Is there a “killer app”, or unique, real value that customers care about?

Financial Gain

Is there a compelling way to increase revenues or lower costs?

Pre- Conditions

Do the conditions exist to realize the customer or financial value if we implement the technology?



2018: TD acquires Toronto-based
AI start-up, Layer 6, for purported
\$100MM



Canada Trust



What is different?

- **Generative AI based on large language models (LLM's)**
- **You don't have to train it**
- **Distribution is (or will be) embedded**
- **Broad range of meaningful use cases**
- **Competition is driving rapid innovation and affordability**
- **Very low (technical) barriers to adoption**
- **Human reinforced training**

By the numbers

- **ChatGPT4 is 1.7T in tokens**
- **ChatGPT cost \$100MMM+ to train**
- **Microsoft commits to buy 100% of power generation from Three Mile Island for 20 years to meet power needs**
- **The human brain has 100MM neurons, but 100T synaptic connections**

 Meta AI

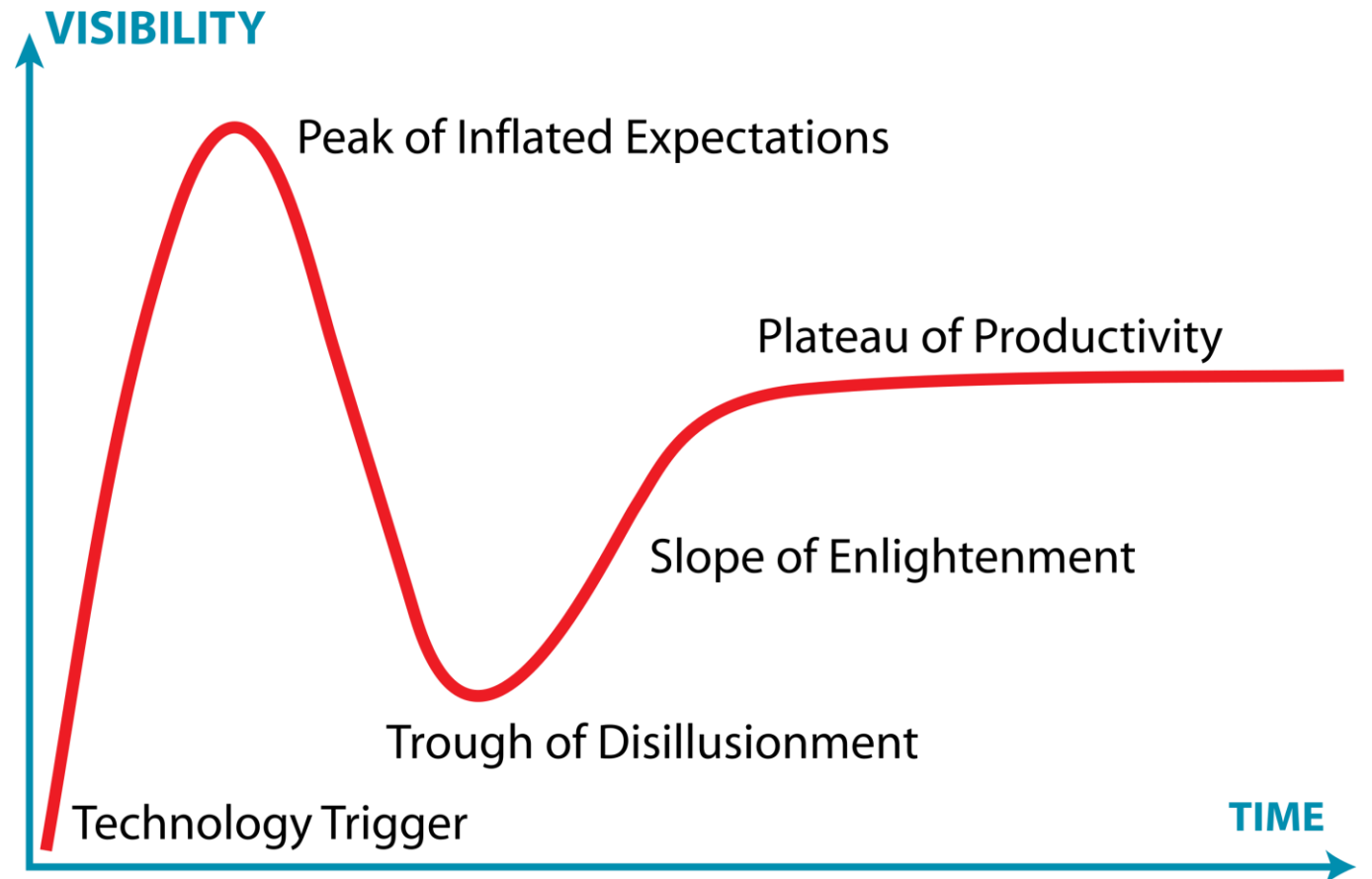
Chat GPT
OpenAI

 Claude

Gemini



The Hype Cycle: A useful reference you have seen before



Doomerism

A large, semi-transparent image of a nuclear mushroom cloud is centered in the background of the slide. The cloud is white and grey, with a bright orange and red glow at its base, set against a dark red background.

“AI represents a fundamental risk to the **existence** of civilization”

- Elon Musk

“The alarm bell I’m ringing has to do with the existential threat of them taking control”

- Geoffrey Hinton

**Successful rich people
sometimes get it wrong.**



UTOPIA

I think that most people are underestimating just how radical the upside of AI could be.

Dario Amodei, Anthropic, Machines of Loving Grace



Will AI unlock a new era of human prosperity and leisure?

More likely, Mark Zuckerberg will just get a bigger yacht.



So who is right?

Technology adoption is about people. Human behaviour will predict the impact of AI, chiefly Fear and Greed

The most likely outcome is steady improvement in productivity over a long period of time.

The Internet is 25+ years old and many businesses are still not online.

The Stochastic Parrot

“Singularity, where machines surpass human intelligence, is not on the immediate horizon”

- Yan LeCun, Chief AI Scientist at Meta



Winners so far!

**Consultants! Boston
Consulting Group, 20% of
revenues**

**McKinsey, 40% of 2024
revenue**





**More winning: NVIDIA \$3.5T;
Comprises 10% of the
Nasdaq**

***(We saw the similar growth at
Cisco and Nortel during the
Internet boom)***

AI in 2024 at most financial institutions

- ChatGPT became widely available in 2022. Two years later, most financial institutions are similar in adoption and maturity.
- CEO's and Boards hired strategy consultants to run education and assessment programs.
- Cost-oriented business cases make sense for routine, repetitive operations like digitization
- Higher function work and roles, we prefer to assume higher productivity
- The most common scale implementation in financial services is to create agents and bots that are job aids for employees and provide better access to product and service information at the point of need.
- The risk posture in many banks is about risk elimination. Many organizations are nowhere close to being comfortable with any direct customer exposure to AI solutions. Most banks took 10+ years to be comfortable with cloud computing which is arguably much simpler.
- There are conflicting points of view around centralization versus democratization of AI. The risk crowd wants to see something heavily controlled by the center, whereas the business and technology want the freedom to test and learn.
- There continues to be a flurry of interest and activity. This does not mean organizations are focused on their highest priority issues.

As a Job Aid

- An alternate to Google for Search
- Software Development
- Content Creation
- Content Summarization
- Content Analysis and Interpretation

Adoption is about behaviour change

As an Agent

- Front-office Assistant
- Self Service Chat Bots
- Task specific Agents

Adoption is risk management

As an Analyst

- Predictive Analytics
- Optimization Tasks
- Document processing
- Business Rules Automation

Adoption is risk management and engineering

My weekly blog

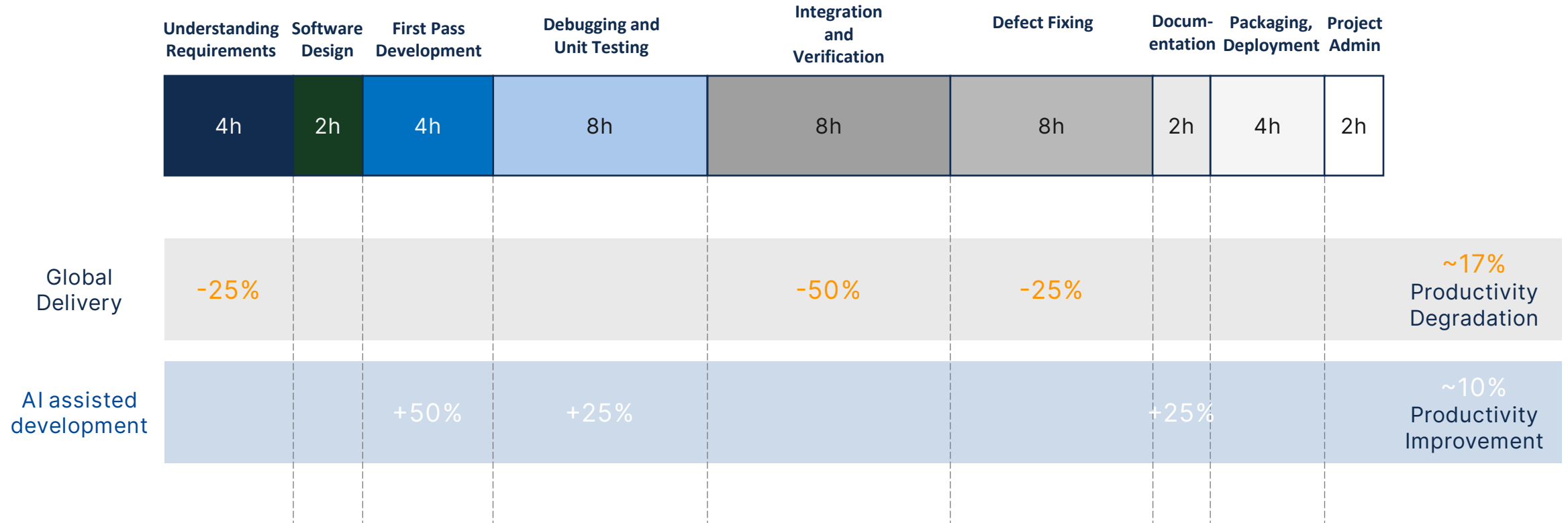
An all-company email I send every Sunday night or Monday morning

- I upload the last two years of blogs
- ChatGPT said I combine “humour, personal anecdotes and business updates using a casual writing style”
- My experience having ChatGPT write my blog
 - I still had to tell it what to write
 - It did not have access to current events
 - After 45 mins of prompting to alter style, I gave up.



Weekly Developer Task View

- Developers spend most of their time on indirect activities versus “writing code”



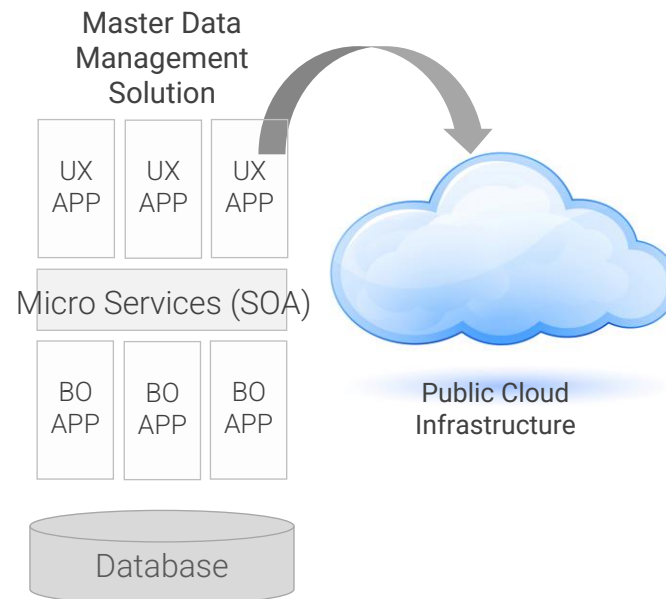
Developers may only spend about 20% of their time actually writing code.

Blue Sky

Building a standalone Broker Master Data Management Solution


Insurance client asked for standalone, bespoke master data management solution for broker and brokerage data.

We were able to develop the complete MVP solution in less than two weeks, using GenAI to produce



- The Functional Architecture
- High-level requirements
- Database Schema for Postgres
- CRUD services layer in Flask/Python
- User Interface Elements
- DevOps Pipeline

Transaction History

 Transaction Glossary

 Hide Custom Search

View: **Last 4 weeks** | [Last 3 months](#) | [Last 6 months](#) | [Last 12 months](#)

View: **All** | [Pending](#) | [Posted](#)

[Questions about your transactions?](#)

Filter by Date Range

From: 

To: 

Filter by Month

Month: Year:

Additional Filtering Options 

From lower limit:

To upper limit:

Category:

Transaction Type

Transaction location:

[Get Details](#)

Transaction History

I am going to upload my credit card transactions. Can you help me analyze them?



Absolutely, I can help with that! Once you've uploaded your transactions, I can assist in categorizing spending, identifying trends, or anything specific you'd like to focus on.



Transaction History



how much did I spend on coffee last month?



Based on your transactions, here's what you spent on coffee:

1. **Starbucks:** \$4.25
2. **Tim Hortons:** \$8.99 + \$12.50 = \$21.49

Total Coffee Spending: \$25.74

Let me know if this looks good!

Transaction History

When was the last time I paid the phone bill



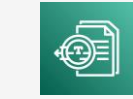
Your last phone bill payment was on **October 10th** for **\$75.99**. Let me know if you need anything else related to bills or expenses!



Digitization and Document Processing

A large Canadian FI wanted to increase **Straight-Thru-Processing** for a set of functions that depended on highly dynamic, non-structured forms, with 100's of possible variants

1. *Rapidly experiment with different providers*
2. *Highly improved performance versus traditional OCR and IDP solutions*
3. *Consumption based pricing*
4. *Cloud and API deployment*
5. *Built a compelling business case where previous attempts had failed.*



AWS Textract

✓ Handles complex forms and tables well but might require **post-processing to clean up** and structure the data effectively.



Azure Document Intelligence

✓ Provides a balance between **pre-built and custom model capabilities**, but custom model training can be a bit complex for beginners.



Google Document AI

✓ Particularly strong in **extracting key-value data** from structured document types such as invoices and receipts, custom **model training available** but time consuming.



Google Vertex AI

✓ Generalized **multimodal AI** providing a basic **cognitive RPA** for transforming documents into structured data through machine reading comprehension

Document Processing Metrics

Tool	Accuracy	Precision	Recall	F1
AWS Textract	0.80	0.80	1.00	0.90
Azure DocInt	0.78	0.80	0.95	0.87
+ Training Data	0.92	0.92	0.99	0.96
Google DocAI	0.83	0.87	0.92	0.90
Google Vertex	0.89	0.89	0.99	0.94

		POSITIVE	NEGATIVE
ACTUAL VALUES	POSITIVE	TP	FN
	NEGATIVE	FP	TN

$$Precision = \frac{TP}{TP + FP} \quad Recall = \frac{TP}{TP + FN}$$

$$Accuracy = \frac{TP + TN}{TP + FP + FN + TN}$$

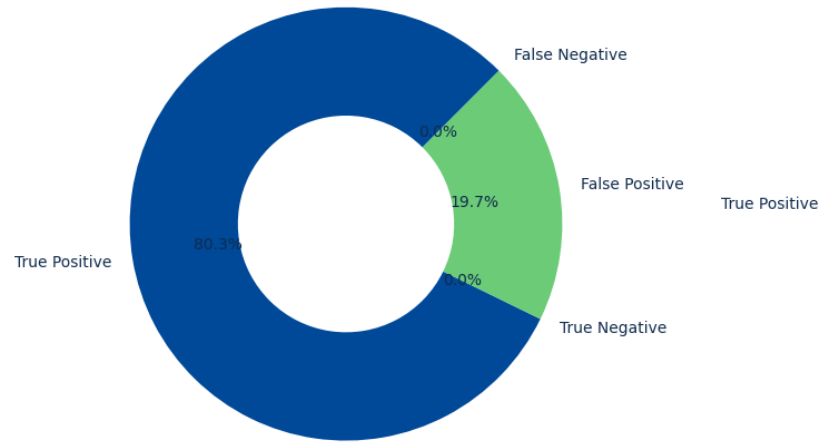
$$F1\ Score = 2 \times \frac{Precision \times Recall}{Precision + Recall}$$

(Source)

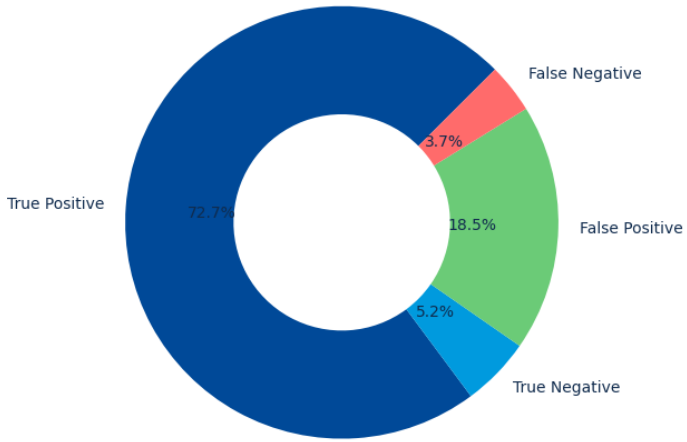
Document Processing Charts



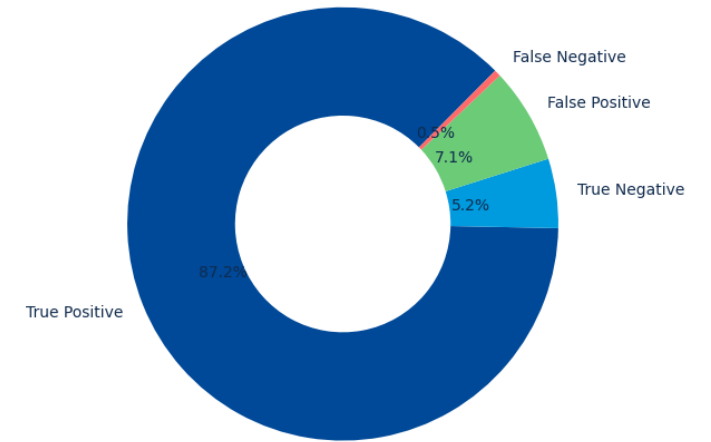
AWS-Texttract Predictions



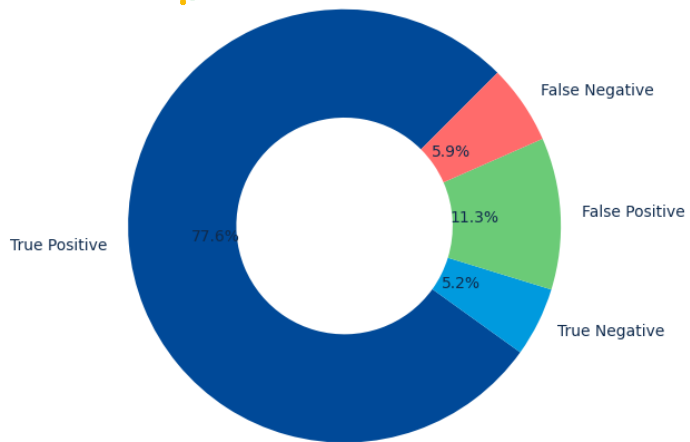
Azure-DocInt Predictions



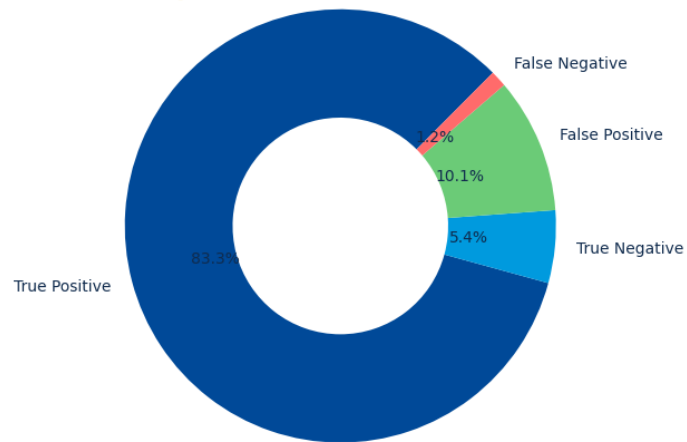
Azure-DocInt-Custom Predictions



Google-DocAI Predictions



Google-Vertex Predictions



What can we expect to see in the future

- Hype will subside. GenAI will become mainstream and pervasive in software solutions
- Major platform SaaS vendors like Salesforce and ServiceNow will continue to make large investments.
 - Salesforce projects \$2T in expanded addressable market
 - ServiceNow projects a \$1T addressable market based on AI
- Contact Center vendors will dominate GenAI in the assisted channel domain, with Salesforce and Amazon Connect leading presently.
- Domain-specific software vendors will embed AI in their products
- Competition will drive the cost of LLMs down. Training costs are rapidly coming down. Small LLM's that can be privately hosted are sufficient for most business applications. ChatGPT 5 is exciting but probably not required.
- *Most organizations won't need significant AI engineering skills.* Organizations need to know what they can use it for and then focus on integration and exploitation versus how the black box itself works.
- Lastly,
 - Most of the work in AI adoption will be done by software providers.
 - The barrier to entry is low, so there unlikely to be significant first mover advantage

Thank you!

