# CORUM A.I. & the New M&A Playbook



#### Rielly Milne, SVP, Communication Strategy, Corum Group Ltd.



- Rielly manages and oversees the production of Corum's webcasts and online events in coordination with the World Financial Symposiums.
- He brings media production experience from technology reviews, hospitality promotion, sporting event live streaming, and travel content.
- Prior to joining Corum in 2019, he was a coxswain for the U.S. Men's Rowing Team in Oakland, CA during their preparations and trials for the 2020 Tokyo Olympics.
- Rielly holds a bachelor's degree from the University of Washington in Communication.



WFS EDUCATING

SUBSCRIBE

Ξ

#### GROWTH & EXIT STRATT FOR SOFTWARE AND IT COMPA

## **World Financial Symposiums**

Educating Technology Leaders

#### WFS.com

World Financial Symposiums

Educating Technology Leaders



#### A.I & the New Tech M&A Playbook



# **Corum has 30 years of** transaction experience in A.

#### **Corum's A.I. Transactions**







# Corum's dealmakers all have experience with A.I.



#### We welcome your questions!

#### Email questions to info@corumgroup.com

#### This event is being recorded

On demand webcast will be available at www.corumgroup.com



#### Welcome

"Generative A.I. for Business Leaders" Presented by Dr. Ivan Ruzic

A.I. Market Research Report

**"6 Chatbot Cautions" Presented by Bruce Milne** 

Closing

#### **Presented By**



#### Ivan Ruzic, Senior VP, Corum Group Ltd.



- Successful 30+ year career in the software and services industry that has included virtually every senior executive role.
- Resume spans marquee pioneering IT companies such as CA, USL, Novell, BEA systems and Borland.
- Four-time CEO. Multiple startups and turnarounds.
- Extensive international operations experience and in addition to the United States involved in M&A in Europe, Africa and Asia.
- Recent transactions in AI/NLP, cybersecurity, professional services, data discovery/governance and IOT for life sciences.



# **Generative AI for Business Leaders**

Ivan Ruzic

September 2023



- What is Generative AI?
- Generative AI State of Development
- What Business Leaders need to know



#### • What is Generative AI?

- Generative AI State of Development
- What Business Leaders need to know

#### What is Generative AI?





- Artificial intelligence (AI) is the ability of a computer or machine to think and behave like a human.
- Generative AI is a class of AI with three key features:
  - Can handle generalized rather than specialized use cases
  - Can generate novel, human-like output rather than merely describing or interpreting existing information, and
  - Interfaces that both understand and respond with natural language, images, audio, and video.
- Designed to be enhanced and customized for many different use cases

#### **Generative AI Provides Many Benefits**





#### If the internet makes the world flatter ... Al makes the world faster!

#### Two Years Old .. And Already Many Use Cases





#### Some of the Big Dogs in Generative AI !







- What is Generative AI?
- Generative Al State of Development
- What Business Leaders need to know

#### **AI** Patent Activity is Explosive





- The United States and China are leading the charge in AI innovation, especially in recent years.
- Other countries that are also making significant strides in Al innovation are Germany, Japan and South Korea.
- Three of the Top 5 are in Asia
  - China
     Germany
     Japan
     South Korea
     United States

Source: https://iamip.com/the-rise-of-artificial-intelligence-patent-activity-in-europe-around-the-world/

#### **AI** Patent Activity is Explosive





- The United States and China are leading the charge in AI innovation, especially in recent years.
- Other countries that are also making significant strides in AI innovation are Germany, Japan and South Korea.
- Three of the Top 5 are in Asia

Source: https://iamip.com/the-rise-of-artificial-intelligence-patent-activity-in-europe-around-the-world/

#### The AI Armies of the Tech Giants





#### Al employees as a % of workforce:

- Meta (6.5%)
- Microsoft ( 3.2%)
- Google (3.0%)
- Apple (2.9%)
- Amazon (0.7%)

#### **Text-to-Text :ChatGPT**





- General-purpose AI model released December 2022.
- "General purpose" trained on a massive amount of information across the internet.
- Conversational provides answers to questions and generates text that sound and look like they were written by a human.
- In the background a large language model (LLM) imitates human conversation during interaction.
- Remembers things you have said to it in the past (retains context) and capable of correcting itself when wrong.
- Trained to refuse inappropriate requests ("Guard Rails").

#### Text-to-Text : GPT-4 (gold standard for now)





Extensible via Plugins Expedia Expedia WOLFRAM

🏓 instacart

Many, many others (500+)

- ChatGPT/GPT4 now part of the Microsoft ecosystem
- Huge trained on a broader set of data 1.76 trillion parameters and trained on 20 Terabytes of text data [5.7x bigger that GPT-3]
- Released in March 2023
- Significant enhancement
  - Multimodal\*
  - Support for third-party applications via Plugins and APIs
  - Larger inquiries (up to 8k tokens will be increased to 32k tokens soon – about 25,000 words)
  - Many emergent capabilities
- 110% more truthful & hallucinates 53% less than ChatGPT
- Defines "smart" <u>surpasses</u> human performance in a wide array of tests.

#### **Text-to-Image : Stable Diffusion**





Prompt: A veiled woman who is sad, face hidden.

Prompt: A dinosaur made of wool in a realistic forest with blurred background, 8k

Prompt: old woman, natural light, sharp, detailed face, magazine, press, photo, david lazar, canon, nikon, focus

#### Text-to-Code : StarCoder & Bard



I have a deadline coming up and I still need to run evaluation of my model. How can I speed this up?		
There could be three things going on here. First thing is that running evaluations is expensive computationally speaking. Second reason is that evaluating models requires training data which needs to be loaded onto memory before starting inference process. Third reason is that loading large datasets onto memory is slowing down our computations significantly due to high latency involved while accessing disk storage devices. If you haven't already done so please read <u>https://www.tensorflow.org/guide/data_performance</u> . Also note that tensorflow provides tfrecords format which allows us to save tensors efficiently without having to convert everything to native TF types. Please refer to <u>https://www.tensorflow.org/tutorials/load_data/tfrecord</u> for more details regarding usage of tf records files alongside keras preprocessing layers.	Help me, I am tra	can you fix this code with a bug and add line by line comments in Korean.
	Well, vim is great <u>https://www.vim</u> If you still feel stu	<pre>1 visited = set() 2 3 def dfs(visited, graph, node): 4   if node not in visited: 5     print (node) 6     for neighbour in graph[node]: </pre>
lf none of above options seem feasible to you, then you can always parallelize your workload across GPUs. Tensorflow supports distributed strategies API which makes distributing tasks over GPU clusters very easy. Refer to <a href="https://www.tensorflow.org/api-docs/python/tf/distribute/MirroredStrategy">https://www.tensorflow.org/api-docs/python/tf/distribute/MirroredStrategy</a> for more info.		7 dfs(visited, graph, neighbour)
	How can l insta	The bug in the code is that the 'visited' set is not being updated. The code should be updated to add the current node to the 'visited' set before calling the 'dfs' function
What is a Dockerfile?	If you already b	recursively. The updated code with Korean comments is as follows:
Dockerfiles describe how to build images which contain software packages and their dependencies. These docker files are used to generate containers during runtime. Containers allow applications to isolate their own environments without worrying about system configuration conflicts etc	If you all leady f prompt / termi Note that CUD/ errors during c while Anaconda upgrade your P If you wish to s	1 # 방문한 노드의 집합을 만듭니다. 2 visited = set() 3 4 # 깊이 우선 탐색을 수행합니다. 5 def dfs(visited, graph, node): 6 # 현재 노드가 방문한 노드가 아니라면 7 if node not in visited: 8 # 한자 노드로 바다하니다.
	above except re For more detail	8       * 면색 노드를 당운만 노드로 표시입니다.         9       visited.add(node)         10       * 현재 노드를 출력합니다.         11       print(node)         12       * 현재 노드의 인접 노드에 대해 깊이 우선 탐색을 수행합니다.         13       for neighbour in graph[node]:         14       dfs(visited, graph, neighbour)

#### **Developing AI Ecosystems : Google**





- Multilingual translation proficient in 100 languages (tested to "mastery" level)
- Coding proficient in numerous programming languages
- Flexible engine driving 25 Google applications, including Gmail, Google Docs & Google Sheets – and search
- Customizable specialized versions available Med-PaLM2, Sec-PaLM2 (Google Cloud security)
- Scalable four available sizes Unicorn, Bison, Otter & Gecko (runs on mobile devices)
- Accessible available to developers via Google's MLOps platform – Vertex.ai or the PaLM API.

https://ai.google/discover/palm2

#### **Developing AI Ecosystems : Open-Source**



- Open-source AI movement spurred on by Proprietary LLM moats
- LLMs with a few billion parameters can compete with very large models in terms of performance - if trained on suitable large datasets
- Can fine-tune smaller LLMs to impressive degrees with a much smaller budget and a modest amount of data – new techniques such as LoRA (Low Rank Adaptation)
- Pace of open-source LLMs advancement much faster than proprietary because different teams can build on top of each other's work
- LLMs range between 7-13 billion parameters can now run on strong consumer-grade GPUs

Model	Provider	Open-Source	Speed	Quality Params		Fine-Tuneability
gpt-4	OpenAI	No	★☆☆	****	-	No
gpt-3.5-turbo	OpenAI	No	★★☆	****	175B	No
gpt-3	OpenAI	No	★☆☆	****	175B	No
ada, babbage, curie	OpenAI	No	***	****	350M - 7B	Yes
claude	Anthropic	No	★★☆	****	52B	No
claude-instant	Anthropic	No	***	****	52B	No
command-xlarge	Cohere	No	<b>★★</b> ☆	****	50B	Yes
command-medium	Cohere	No	***	****	6B	Yes
BERT	Google	Yes	***	★☆☆☆	345M	Yes
Т5	Google	Yes	★★☆	****	11B	Yes
PaLM	Google	Yes	★☆☆	****	540B	Yes
LLaMA	Meta AI	Yes	★★☆	****	65B	Yes
CTRL	Salesforce	Yes	***	****	1.6B	Yes
Dolly 2.0	Databricks	Yes	★★☆	****	12B	Yes

Many Open Source LLMs will run on a local computer and in some cases on a laptop!

#### AI Has Already Surpassed Humans in Many Tasks





"...The performance of GPT-4 has been *understated*. GPT-4 is in the 90th percentile of human testing for many metrics ..... and now vastly outperforms the human average in many fields ranging from medicine to law to wine tasting theory."

GPT-4 Report: Alan Thompson, Ph.D.

Source: https://time.com/6300942/ai-progress-charts/

#### This is Just the Start .. Better Models Coming !





The next generation of models is highly likely to exhibit **Artificial General** Intelligence (AGI), on par or surpassing real human capabilities – possibly with real physical embodiment.

- Larger, faster, more accurate, more truthful, less hallucinogenic generally more capable
- They will bring new emergent capabilities, some of which we may not be able to predict
- They will also bring additional management challenges

#### What has made these Advances Possible?







#### Plus . . many improvements to Algorithms

#### More Advanced Models May Pose Unique Risks



Capability	Concern
Cyber-offense	Can discover vulnerabilities in systems (hardware, software, data) & can write code for exploiting those vulnerabilities.
Deception	Has skills necessary to deceive humans & impersonate humans effectively.
Persuasion & Manipulation	Can shape people's beliefs, in dialogue and other settings (e.g. social media posts), even towards untrue beliefs. Social Engineering.
Political Strategy	Can perform the social modeling and planning necessary for a bad actor to gain and exercise political influence, not just on a micro-level but in scenarios with multiple bad actors and rich social context.
Weapons acquisition	Gain access to existing weapons systems or contribute to building new weapons.
Long-horizon Planning	can make sequential plans that involve multiple steps, unfolding over long time horizons (or at least involving many interdependent steps). It can perform such planning within and across many domains.
AI Development	Could build new AI systems from scratch, including AI systems with dangerous capabilities.
Situational Awareness	Can distinguish between whether it is being trained, evaluated, or deployed – allowing it to behave differently in each case. The model knows that it is a model, and has knowledge about itself and its likely surroundings.
Self-proliferation	The model could break out of its local environment (e.g. using a vulnerability in its underlying system, suborning an engineer, exploiting limitations in the systems for monitoring its behaviour post-deployment).

Source: DeepMind, May 2023, "Model evaluation for extreme risks"

#### Generative AI ... Potential for Abuse



- <u>MegaSyn</u> GenAI model used for developing new therapeutics from a publicly available molecule database
- Normally penalizes predicted toxicity and rewards predicted target activity ["reinforcement learning"]
- Inverted the logic so model rewarded for both toxicity and bioactivity
- Scored using organism-specific lethal dose model (LD<sub>50</sub>)
- Model generated 40,000 lethal molecules in <6 hours, including many known chemical warfare agents!!

Dual use of artificial-intelligence-powered drug discovery



**Fig. 1** A t-SNE plot visualization of the LD<sub>50</sub> dataset and top 2,000 MegaSyn Al-generated and predicted toxic molecules illustrating VX. Many of the molecules generated are predicted to be more toxic in vivo in the animal model than VX (histogram at right shows cut-off for VX LD<sub>50</sub>). The 2D chemical structure of VX is shown on the right.

### Use cases like this mandate some form of regulation!



- What is Generative AI?
- Generative AI State of Development
- What Business Leaders need to know

#### Generative AI will Increase Productivity ... a LOT!

- McKinsey investigated 63 Generative AI use cases across 16 functional areas and 850 occupations
- AI now estimated to add \$11-\$17 trillion in global economic value annually
- Generative AI <u>alone</u> likely to add \$2.5-\$4.5+ trillion
  - Cost reductions and increasing worker productivity
- 75% of Generative AI <u>value</u> is expected to be realized in four areas:
  - Marketing & sales
  - Software engineering
  - Customer operations
  - R&D



Impact as a percentage of functional spend, %

#### Productivity Will Vary by Industry & Job Role





Will have an impact across ALL industry sectors, but especially: banking, high tech and life sciences

Potential to automate repetitive tasks that take up to 60-70% of employees' time. Pace of workforce transformation likely to accelerate

.. the technology is advancing so rapidly that it likely to achieve human level performance in some technical capabilities sooner than previously thought ..

Source: McKinsey, June 2023, "The economic potential of generative AI"

Generative AI productivi impact by business func	ty tions <sup>1</sup>	14 Qu		SUDE	14 cho		SE		Talent		
Low impact	High impact	ettering and	net operation	ware ware	and a engineer	nd operation	ateo) oistand le	and finan	orporate	organital	6
	<b>Total,</b> % of industry revenue	Total, \$ billion	760- 1,200	340- 470	230- 420	580- 1,200	280- 530	180- 260	120- 260	40- 50	<b>6</b> 0- 90
Administrative and professional services	0.9-1.4	150-250									
Advanced electronics and semiconductors	1.3-2.3	100-170									
Advanced manufacturing <sup>3</sup>	1.4-2.4	170-290									
Agriculture	0.6-1.0	40-70									
Banking	2.8-4.7	200-340									
Basic materials	0.7-1.2	120-200									
Chemical	0.8-1.3	80-140									
Construction	0.7-1.2	90-150									
Consumer packaged goods	1.4-2.3	160-270									
Education	2.2-4.0	120-230									
Energy	1.0- 1.6	150-240									
Healthcare	1.8-3.2	150-260									
High tech	4.8-9.3	240-460									
Insurance	1.8-2.8	50-70									
Media and entertainment	1.5-2.6	60-110									
Pharmaceuticals and medical products	2.6-4.5	60-110									
Public and social sector	0.5-0.9	70-110									
Real estate	1.0-1.7	110-180									
Retail <sup>4</sup>	1.2-1.9	240-390									
Telecommunications	2.3-3.7	60-100									
Travel, transport, and logistics	1.2-2.0	180-300									
		0 000 4 400			-						



AI will replace sometimes but enhance often

7% of workers in the US likely will be displaced

Estimated about 25% of current work tasks in the economy can be automated

But that 63% will be MUCH more productive

63% will be complemented

30% largely unaffected

At least 12M Americans may need another field of work by 2030

Estimated that 50% of today's tasks will be automated by as early as 2045

Mostly Blue-Collar positions

Most of those displaced will find employment - likely in jobs that do not exist today

Source: Goldman Sachs. "The Potentially Large Effects of Artificial Intelligence on Economic Growth" Source: McKinsey, June 2023, "The economic potential of generative AI"

#### AI... No Shortage of Policy Challenges





- AI in all its forms will reshape society expect rapid and unplanned workforce transitions.
- What does the future of work look like in terms of occupations and skills? What does this mean for workforce planning?
- How can workers be supported as their activities shift over time? What retraining programs can be put in place? What incentives are needed to support private companies in order to continue to invest in human capital?
- How to fund earn-while-you-learn programs (such as apprenticeships) to enable people to retrain while continuing to support themselves and their families?
- What policy steps can be taken to prevent generative AI from being used in ways that harm society or vulnerable populations? What about privacy and security?
- Regulation what new policies can be developed, and existing policies amended, to ensure human-centric AI development and deployment includes human oversight, diverse perspectives and accounts for societal values?
# **European Regulators Lead the Way**





 Recently the European Parliament voted on the AI ACT - proposed law to establish requirements for AI developers and users based on risk levels.

Draft law

- Bans AI systems considered an "unacceptable risk," including "real-time and remote biometric identification systems, such as facial recognition."
- Outlines "high-risk" AI, defined as "AI systems that negatively affect safety or fundamental rights," in toys, cars, and medical devices, as well as in law enforcement and border control.
- "All high-risk AI systems will be assessed before being put on the market and also throughout their lifecycle"
- Approval is part of a process that will include talks between EU member countries before a final version of the law is agreed
- Finalization expected by the end of the year

# Most Models don't meet EU Standards



	\$€ OpenAI	a cohere	stability.ai	ANTHROP\C	Google	BigScience	ο Meta	Al21 labs	X ALEPH ALPHA	Eleuther RI	
Draft AI Act Requirements	GPT-4	Cohere Command	Stable Diffusion v2	Claude	PaLM 2	BLOOM	LLaMA	Jurassic-2	Luminous	GPT-NeoX	Totals
Data sources	• 0 0 0			0000	••00			0000	0000		22
Data governance	••00		••00	0000	$\bullet \bullet \bullet \circ$			0000	0000	$\bullet \bullet \bullet \circ$	19
Copyrighted data	0000	0000	0000	0000	0000	$\bullet \bullet \bullet \circ$	0000	0000	0000		7
Compute	0000	0000		0000	0000			0000	• • • •		17
Energy	0000	• • • •	$\bullet \bullet \bullet \circ$	0000	0000			0000	0000		16
Capabilities & limitations				• • • •		$\bullet \bullet \bullet \circ$		••00	• 0 0 0	$\bullet \bullet \bullet \circ$	27
<b>Risks &amp; mitigations</b>			• 0 0 0	• 0 0 0	$\bullet \bullet \bullet \circ$		• 0 0 0	••00	0000	• • • •	16
Evaluations		••00	0000	0000		$\bullet \bullet \bullet \circ$	••00	0000	• • • •	• • • •	15
Testing			0000	0000			0000	• • • •	0000	0000	10
Machine-generated content	$\bullet \bullet \bullet \circ$		0000		$\bullet \bullet \bullet \circ$	$\bullet \bullet \bullet \circ$	0000	$\bullet \bullet \bullet \circ$	• • • •	••00	21
Member states		0000	0000			0000	0000	0000	• 0 0 0	0000	9
Downstream documentation	$\bullet \bullet \bullet \circ$			0000				0000	0000	$\bullet \bullet \bullet \circ$	24
Totals	25 / 48	23 / 48	22/48	7 / 48	27 / 48	36 / 48	21/48	8 / 48	5 / 48	29 / 48	

- Most flagship AI models, including those created by OpenAI, Google, and Meta, don't currently comply with EU regulations.
- The top score possible was 48, but none of these models came close. The top score was Bloom (open-source), which scored 36 points. Least compliant models were Claude, Luminous and Jurrasic-2

# **Advice for CEOs : Areas Primed for Automation**





### Guidelines for starting with Generative AI

- Need a clear understanding of the problems/opportunities to be solved/addressed
- Investment in data quality is crucial for successful implementation
- Pay attention to security use a multi-layered approach
- Recruiting, <u>training</u> (advances moving fast) and retaining employees with skills in AI will have a huge impact on success
- Establish guidelines for use
- Monitor outcomes accuracy, efficiency and cost savings
- Start slow then accelerate

# Advice for CEOs : Generative AI Limitations





Great benefits with some risks - CEOs should mitigate these risks from the start

- Fairness : algorithmic bias due to imperfect training.
- Intellectual Property : training data and outputs present IP risk.
- Privacy : careful with PII.
- Security : bad actors can accelerate the sophistication and speed of cyberattacks. Models can be "poisoned" easily by changing a fraction of a % of its data.
- Explainability : neural networks are complicated we still don't really know how they work
- Reliability : can produce different answers to the same prompt.
- Organizational Impact : Generative AI may significantly affect the workforce.

McKinsey & Company

# The economic potential of generative AI

The next productivity frontier

June 2023



QuantumBlack, AI by McKinsey

# What every CEO should know about generative AI

Generative AI is evolving at record speed while CEOs are still learning the technology's business value and risks. Here, we offer some of the generative AI essentials.

Goldman Sachs

**Global Economics Analyst** 

The Potentially Large Effects of Artificial Intelligence on Economic Growth (Briggs/Kodnani)

✓ Table of Contents

26 March 2023 | 9:05PM EDT



# What's happened since I wrote this presentation



- Generative AI has worked out how to solve Captchas.
- Microsoft Research validates GPT-4 is good enough for automating medical tasks, such as clinical trial design.
- Doctor GPT, an open-source LLM trained on medical data sets, has passed the US Medical Licensing Exam. <u>This LLM fits on most devices!</u>
- Stability AI has just released Stable Coder, a LLM tuned specifically for programming and StabilityChat, a ChatGPT competitor.
- DoD has established a Generative AI task force for both defensive and offensive purpose
- Microsoft has authorized use of ChatGPT on Azure. This means secure private & controlled instances – eliminates concerns about outside access to private data.
- Google and Universal music are working on licensing voices for AI-generated songs. Artists
  opt-in. Text-to-music has come a long way!

# **Closing Thoughts**



- Generative AI is a true disruptor and will have a profound economic and social impact. As a society, are we ready for this?
- AI has surpassed humans at a number of tasks and the rate at which humans are being surpassed at new tasks is increasing.
- GPT and cousins are just the start of this journey towards Artificial General Intelligence (AGI), and its closer than most people think.
- As we approach AGI, we will need intelligent regulation to help us manage the worst-case scenarios – but regulation that doesn't stifle innovation.
- Embodiment is also closer than most people think facilitated by low-cost computing at scale, 5G, advances in long-life energy storage and inexpensive DC motor technology.
- Open-source models will accelerate the adoption and availability of many more novel & specialized applications – and will likely drive more M&A activity.
- Expect to see a continued boost to investment activity in the sector including M&A.

"... the single most important thing to understand about AI is how fast it's moving."

Dario Amodei – Anthropic CEO

CORUM Just the beginning for ....

# **Generative Al**

Ivan Ruzic

ivanr@corumgroup.com

September 2023

# CORUM A.I. M&A Research Report 2023





Source: 451 Research & Pitchbook & Corum Group

### **AI M&A Disclosed Value**





Source: 451 Research & Pitchbook & Corum Group

# **AI VC Funding**





Deal Value — Deal Volume

# AI M&A Volume by Top Target Sectors





Source: 451 Research & Pitchbook & Corum Group





### AI Sellers by Geography: YTD





### Al Buyers by Geography: YTD





Source: 451 Research & Pitchbook & Corum Group

### **AI Top Buyers: YTD**





Source: 451 Research + Pitchbook & Corum Group

### **Recent Largest Deals**





### **Representative Transactions**





August 2023

**Transaction Value:** 

\$175M

#### **Seller Description:**

Cybersecurity integration & consulting services for federal governments, defense, military

#### **Rationale:**

"The addition of SealingTech is a natural extension of our growth strategy, adding critical, mission-ready solutions for our Department of Defense and Intelligence Community customers," said Carey Smith, Parsons' President & CEO. "SealingTech's defensive cyber capabilities complement our leading offensive cyber capabilities and increase our share in the full-spectrum cyber operations market."

### **Representative Transactions**





AI tool maker & developer of Minecraft-like open-source MMORPG game built for the web

#### **Rationale:**

This acquisition broadens the capabilities of OpenAI's primary offerings with addition of new talented team.

Source: 451 Research & Pitchbook & Corum Group





Seller: Paperspace [USA]

**Announced Date:** 

July 2023

**Transaction Value:** 

\$111M and 11x EV/Sales

**Seller Description:** 

GPUs-enabled open-source cloud computing and AI/ML models development SaaS

#### **Rationale:**

Integration of Paperspace's infrastructure and tooling with DigitalOcean's products will enable customers to more easily test, develop and deploy AI applications.

Buyer: DigitalOcean [USA]

### **Representative Transactions**







Seller: EcoPlant [Israel]

**Announced Date:** 

June 2023

**Transaction Value:** 

\$50M

#### **Seller Description:**

Energy efficiency and predictive maintenance platform that combines IoT and predictive AI analytics

#### **Rationale:**

This acquisition expands buyer's industrial IoT offerings and boosts its air compressor product portfolio.

**Buyer: Ingersoll Rand [USA]** 





Seller: Cyclica & Valence Discovery [Canada]

**Announced Date:** 

May 2023

**Transaction Value:** 

\$40M for Cyclica & \$47.5M for Valence Discovery

#### **Seller Description:**

**Cyclica** -> AI-enabled deep learning drug discovery & predictive analytics SaaS **Valence Discovery** -> AI-enabled deep learning drug discovery SaaS

#### **Rationale:**

"The strategic acquisitions of Cyclica and Valence add industry-leading capabilities in digital chemistry, as well as ML and AI, which combined with our large-scale automated wet-laboratories and supercomputing capabilities, enables us to deploy what I believe is the most complete, technology-enabled drug discovery solution in the biopharma industry. These acquisitions cement Recursion as the center of gravity for the best and brightest in ML and AI who want to reimagine how drugs are discovered," said Chris Gibson, CEO of Recursion.

Buyer: Recursion Pharmaceuticals [USA]





**Announced Date:** 

January 2023

**Transaction Value:** 

\$1.2B and 12.5x EV/S

#### **Seller Description:**

Provides AI-based digital investigation SaaS and related APIs to businesses and law enforcement and services agencies

#### **Rationale:**

Thoma Bravo plans to combine Magnet Forensics with Grayshift to create an end-to-end digital investigations platform to empower public safety agencies.





- 1. M&A deal volume demonstrated steady growth. PE firms accounted for about 23 % of all deals.
- 2. IT Services became the largest subsector by M&A market volume, followed by Business Intelligence and Information Management. And Industry-specific applications and Security again emerged as the most highly sought sectors in terms of successful exit rates.
- 3. North America accounted for the largest market share (more than half). About a third of the market is represented by EMEA companies and about 12% by APAC-based companies.
- 4. Main trends fueling the AI market growth in 2023 generative AI, NLP, IoT, RPA, the Metaverse and Computer vision.





# Tech M&A Research Report

Complete Global Market Report Available Upon Request info@corumgroup.com

On demand webcast will be available at: www.corumgroup.com

# **Presented By**



### Bruce Milne, CEO, Corum Group Ltd.



- Founded or owned four software companies, including AMI, an Inc. 500 firm rated by IDC as the fastest growing computer-related company in the world.
- Advisory boards for Microsoft, IBM, DEC, Comdex and Apple.
- Board member/founding investor in some of the most innovative firms in their field, including Blue Coat, Bright Star and Sabaki.
- Past advisor to two governors and a senator, a board member of the Washington Technology Center.
- Founder of the WTIA, the nation's most active regional technology trade association.
- Worked with the Canadian government to found SoftWorld.
- One of the 200 most influential individuals in the IT community in Europe.
- American juror for the recent Tornado 100 Awards given to Europe's top technology firms.
- Graduate with Distinction from Harvard Business School.

**State of the Market:** 



# Don't be Naïve...

# **Generative A.I./Chatbots**



¥



# Software companies have no book value or fixed valuation.

It's about intangibles, your story, & future potential.



Your price in a properly run global search can be extraordinary.



# The technology is fascinating, Ò **Chatbots** have limits.



 Old data is useless for research and valuation comps.





# 1. Garbage In, Garbage Out

- Old data is useless for research and valuation comps.
- Public data from chatbots is often years old.
- You need today's data.

#### -☆- 4⁄ Examples Capabilities "Explain quantum computing in Remembers what user said May simple terms" → earlier in the conversation in

Limitations May occasionally generate incorrect information "Got any creative ideas for a 10 Allows user to provide follow-up May occasionally produce year old's birthday?" -harmful instructions or biased corrections content How do I make an HTTP request Trained to decline inappropriate Limited knowledge of world and in Javascript?" -requests events after 2021

ChatGPT



 $\triangle$ 



# 1. Garbage In, Garbage Out

Confidential buyer data is only available from leading tech investment banks with large research staff like Corum.



# **2. Script Neutrality**

- How you tell your story and explain future potential is critical.
- Mapping you to best practices and disruptive trends based on real-world experience.
- Armor piercing sounds that are known to get buyer attention.
- These are not the strengths of chatbots.



# Chatbot writing is okay, not extraordinary


CONFIDENT

# 3. What You Don't Know!

- The optimal outcome requires information on who's buying in your space, deal specifics, & why.
- Confidential information not included in a chatbot's database.



# 3. What You Don't Know!

 Chatbots don't know confidential specifics, e.g. who to contact.



# 4. Disruptive Trends

- What disruptive trends do you need to ride?
- What derivative technologies & untapped markets are there?
- How will you help the buyer ride the wave of growth these trends create, and not fall victim?
- Strategizing the future is beyond chatbot capability.

# 5. You – The Big Unknown

- What do chatbots know about you?
- Your tax/estate issues, health, family needs?
- Desire for legacy & a better life?



# 5. You – The Big Unknown

Issues like whether to do a stock or asset sale or taking earn-outs and complex trusts are issues for professionals, not chatbots.





#### **Chatbot Cautions**

# 6. Security

The same people supplying chatbots also host social media, cloud services, and communication networks.



DATA

DATA

DATA

DATA

#### **Chatbot Cautions**

# 6. Security

- Your confidential information, financials, plans, etc. should not be uploaded into the chatbot database.
- Do you trust them not to misuse?
- What about data breaches?





# Don't rely on chatbots for the most important transaction of your life!

#### Use **professionals** who know the buyers, have the process, team, skills, & experience needed.

A track record of success.



#### The process, your story, & personal buyer outreach is need to gain the:

# OPTIMAL OUTCOME





# **OPTIMAL OUTCOME**

**Maximum Value** 

**Best Structure** 

**Lowest Taxes** 

**Minimal Liability** 



# Stay tuned for future webcasts on Artificial Intelligence



#### We welcome your questions!

#### Email questions to info@corumgroup.com

#### This event is being recorded

On demand webcast will be available at www.corumgroup.com







- Half-Day
- Tech M&A Bootcamp
- The most attended tech executive conference in history





- 90 Minutes
- Industry Update
- Overview of the M&A Process







#### After the Deal – Celebration





# www.CorumGroup.com

# CORUM Thank you!