Artificial Intelligence

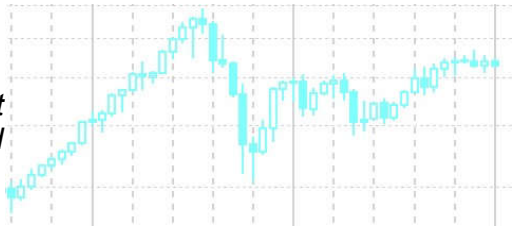
Share Market Toolbox

AI – What is it? and How can I trade and profit?

Robert Brain
November 2026



"The share market can seem mystical and almost like black magic; but with the right support and assistance, it just seems like magic."
Robert Brain



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Version: 1b

Introduction

About this presentation

This presentation is a brand new one and is based on contemporary information, data and the trading environment.

It is the basis for your future research and exploitation.

About... Robert Brain

Nimble Short term Investor

consultant, educator and part-time* share trader
web-based sharemarket-support business

- Many years experience as trainer, presenter, conference facilitator (*Scouts*)
- Share Market – active 20+ years* (slowly at first)
- Chartist ie. technical analyst (ATAA member and ex-national director)
- Provide support and tuition to traders and investors ***Brainy's Share Market Toolbox***
- ex Member Mensa
- Engineering Degree (structured thinking with an eye for charts and diagrams)
- 30+ years – professional experience (IT and management)
- **No AFS license! (Can't give advice)**
- BullCharts software (convenor Australian BullCharts User Group and authorised reseller with special pricing)

* - Not yet enough capital to live off the proceeds of trading (after trading as a hobby until a career change in 2008).

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Brainy's Share Market Toolbox

About... Robert Brain

consultant, educator and part-time* share trader
web-based sharemarket-support business

Regarding IT and IT infrastructure and AI:-

- Many years of professional experience in an IT environment;
- Providing, managing and supporting IT infrastructure (computers, major computer platforms, networks, remote equipment);
- Managing IT Help Desk teams.

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Introduction

AI – Artificial Intelligence

Artificial Intelligence was first introduced some years ago, but has grown significantly in recent years – grown in a number of ways.

And in 2026 there is more and more demand for funds to be invested in Artificial Intelligence as well as concerns from the general public about the development of Artificial Intelligence 'systems'.

And demand from investors for opportunities.

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Introduction

Is there an AI bubble?

In recent times
there has been talk that perhaps
we are seeing an AI bubble.

Perhaps, with the rapid growth
in AI-related companies, and
investors who are keen to throw money,
that maybe the AI-related share prices
have raced too far ahead?

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Introduction

Is there an AI bubble?

In early November 2026
there was an AI “rout”,
with many related companies share prices
falling significantly, and both the
NASDAQ 100 and NASDAQ Composite
down by more than 10% from recent highs.

Q: Is the sell-off over?

Are there still opportunities?

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Artificial Intelligence ‘tools’

There are many AI ‘tools’.

Some are free to use, and there are pay-for-use options, including:

- Google Gemini
- Microsoft Copilot
- Meta AI
- Claude (Anthropic)
- ChatGPT (OpenAI)

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Introduction

Artificial Intelligence ‘tools’

These are often referred to as:

- AI Search Engine;
- AI chatbot;
- Conversational AI;
- AI Assistant.

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Artificial Intelligence ‘tools’

- These AI tools are in very widespread use by many, many people and companies;
- Many users are paying a subscription fee in order to access the tool (and the AI tool will remember the chat history);
- Staff leverage it in daily activities;
- Some companies have implemented AI and consequently retrenched staff.

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Artificial Intelligence ‘tools’

- ‘AI agents’ are in widespread use:
  - companies develop the agent and embed it in workflows;
  - staff leverage it in daily activities.

AI agent: *“An autonomous software system that uses artificial intelligence to perceive its environment, make decisions, plan multi-step workflows, and take actions using external tools to achieve a specific goal.”*

[ref: https://www.ibm.com/think/topics/ai-agents]

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Artificial Intelligence ‘tools’

So, simple Artificial Intelligence and
‘AI agents’ are in widespread and growing use.

Is all of this about to end? Could it end over night?

It is difficult to see
all of this suddenly crashing
and falling apart.

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AI – How can we profit from it?

There are many products and companies
that feed into the AI “boom”;

There are many ways that we can
invest / trade in these companies;

In the following slides,
look for the investing opportunities;

And remember the old
‘picks and shovels’ story.

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Today's agenda

Artificial Intelligence (AI):

- Exactly what is it?
  - hardware – servers, systems
  - networking, internet access
  - AI facilities / data centres
  - infrastructure to support it.
- What can we do with it?
- How can we invest/trade in AI-related companies?

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What is "AI"?

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What is “AI”?

For many of us,
“AI” is the thing that we ‘talk’ to on our device (phone, laptop, desktop, etc.).

eg. ChatGPT (from OpenAI),
Claude (Anthropic),
Copilot (Microsoft),
etc., etc.

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AI – What is it?

What is “AI”?

Have you used Artificial Intelligence (AI)?

How fast is the response?

Has it been useful?



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Exactly what is “AI”?

It’s a tool that can be used for several things:

- Researching (like a Google search tool) by accessing many websites all at once;
- Summarising a mass of text or documents;
- Writing text, and polishing text;
- Problem solving;
- Generating images and art (and videos, music);
- Writing code and build apps;
- Travel itineraries and booking flights, accomm

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AI – What is it?

AI needs...

AI needs a few “things” for all this to work:

- User interface on the device
  (usually a browser but not necessarily, eg: LM Studio, Ollama, etc.);
- Communicate via local network to internet;
- Internet connection to data centre;
- Data centre “system”
  (computers, software,
  electricity, water supply, etc.).

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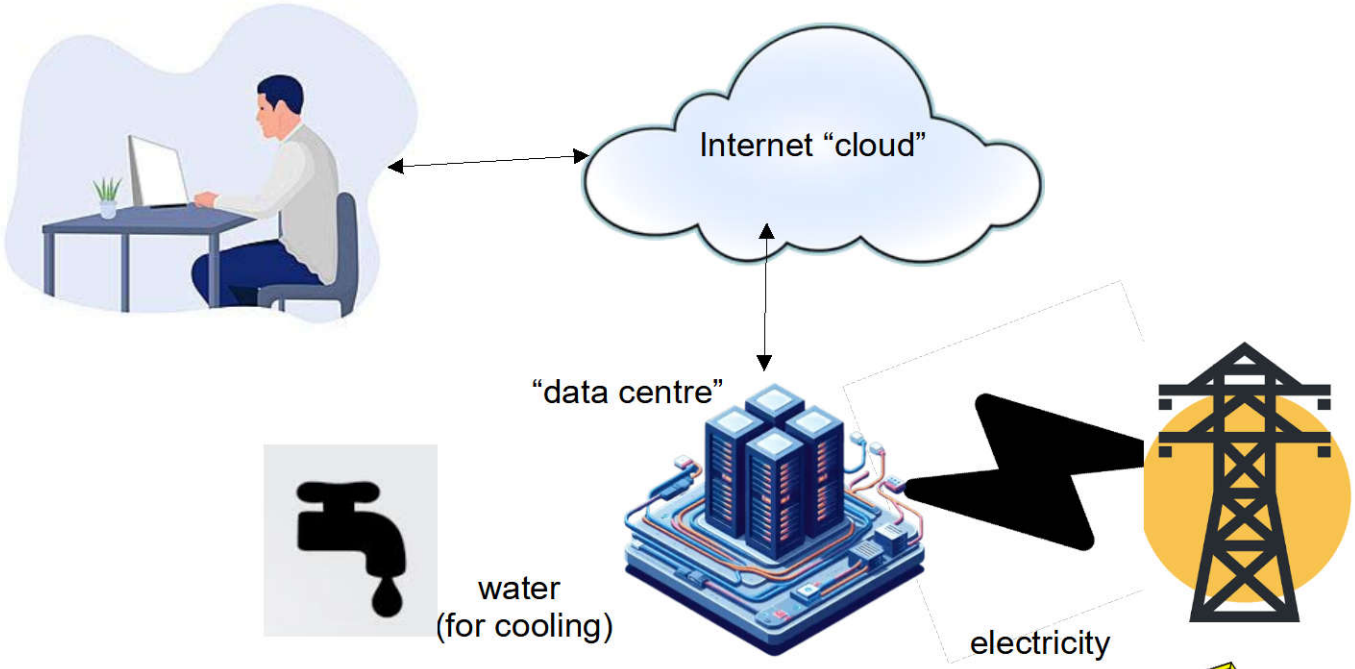
AI needs...

We need a few “things” for this to work:



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BTW...

By The Way:

(If you want to know exactly where your AI or general search request is going to, try using a networking tool such as: PingPlotter or TraceRoute.)

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Traditional IT equipment

First, some IT basics:-

For many years many companies have run their own IT in-house computer servers and systems.

Traditionally, a medium to large company would have had a computer room, with one or more computer system racks, containing one or more computer servers.

The modern AI data centres are a much larger version of this.

So, what does all this look like?

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AI Needs infrastructure

Conventional computer room



Ack: https://17ways.com.au

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Data Centre Infrastructure

A typical computer room / data centre contains:

- Racks
- File servers
- Network equipment
- Computer chips / CPUs / GPUs
- Computer memory – eg. RAM
- Storage Devices – HDD, SSD
- Power supply
- Water.

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Computer Rack

- "42RU" (Rack Units) (height)
- Cost ~ $1,100 each.
- Floor standing ~2m tall.
- Also come in shorter units, and wall-mount versions; but not for data centres.
- Requires: power cables and power outlets.
- It can house multiple file servers, and networking equipment (Ethernet switches).
- Internal width to mount 19 inch "rack-mount" equipment.



[one RU = 1.75 inches = 44.45mm]

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Classic 1RU rack-mount file server

- Cost ~ $19,000 each (Dell PowerEdge R570).
- Power cable and network cables connect in the rear.
- What is inside one of these? – See next slide.



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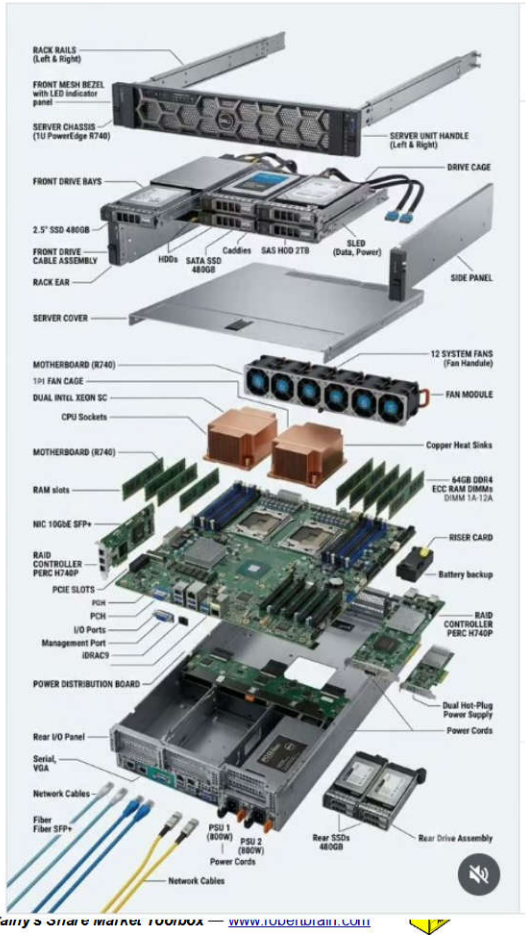
AI Needs infrastructure

Classic 1-RU file server

- Dell PowerEdge R570
- HDD – Hard Drive(s)
- SSD – Solid State Drives
- System fans
- Motherboard
- Copper heat sinks
- RAM memory sticks
- NIC – Network Interface Card
- Disk RAID Controller
- PCE slots
- Power Cards
- Ack: https://www.instagram.com/reel/DbVQgPjuWOX/



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Modern AI data centre server

- Rack-mount Dell PowerEdge XE9680
- 6-RU tall
- A large data centre might have thousands
- Cost: $150,000 to $250,000 each
- A 42 RU cabinet might accommodate just 7 of these.



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AI Needs infrastructure

some AI data centre server manufacturers

- Dell Technologies
- Lenovo
- Supermicro
- Hewlett Packard Enterprise
- Cisco Systems
- IBM
- Fujitsu
- Oracle

All are listed companies

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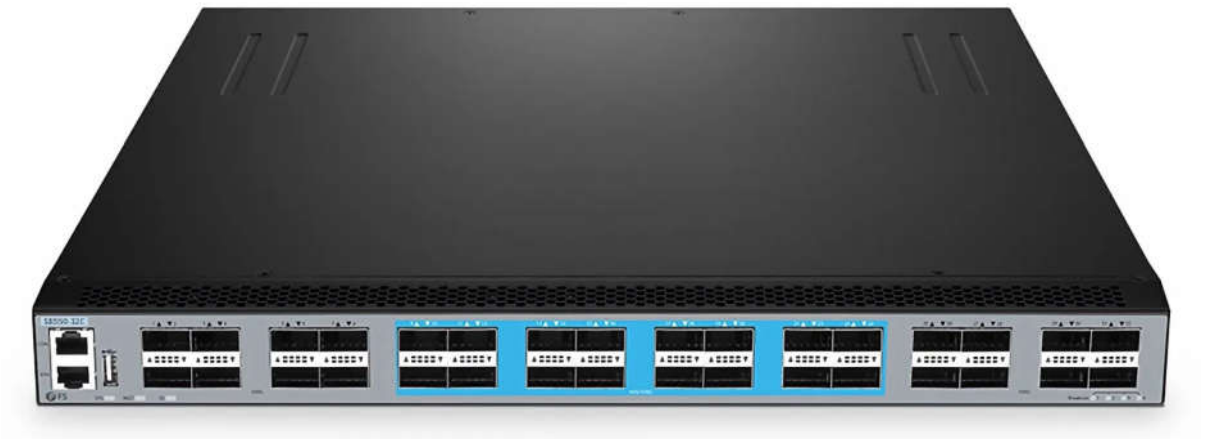
Networking equipment

- The Ethernet switch will interconnect servers and the local network
- A large data centre might have hundreds, or even thousands
- eg. 32-port managed 100Gigabit network switch (FS, S8550-32C)
- Cost: $10,745 each.



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AI Needs infrastructure

some Networking eqpt manufacturers

- NVIDIA
- Dell Technologies
- Broadcom Inc
- Hewlett Packard Enterprise
- Cisco Systems
- Arista Networks
- Juniper Networks
- Nokia
- Huawei

All are listed companies

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Computer chips (GPU)

- Very popular NVIDIA “chips” (a data centre might have thousands)
- The Blackwell series come in two versions:
  Air-cooled and Liquid-cooled (now superseded by NVIDIA Vera Rubin)
- Can cost AU$20,000 to $40,000 each.

[refer: https://www.nvidia.com/en-gb/data-center/rtx-pro-6000-blackwell-server-edition/]





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AI Needs infrastructure

some AI Chip/GPU manufacturers

- NVIDIA
- AMD (Advanced Micro Devices)
- Broadcom Inc
- Qualcomm
- TSMC (Taiwan Semiconductor Manufacturing Co)
- Samsung Electronics
- Intel Corporation
- Huawei

All are listed companies

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Computer memory

- Is used in conjunction with Storage Devices (see next slides)
- Enhanced versions of old-school RAM are used in data centres.
    - High Bandwidth Memory (HBM)
      (cost ~ $200 per 24GB stack)
    - Standard Server DRAM (DDR5) – cost ~ $1600-$2000+ per 32GB
    - Server DDR5 (RDIMM, MRDIMM)
    - Graphics DDR (GDDR SDRAM)
    - LPDDR (Low-Power DRAM)
- Cost: Note that there is currently a high rate of inflation for these products
- A large data centre might have many thousands of these.



RAM = Random Access Memory

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some Computer memory manufacturers

- SK Hynix
- Samsung Electronics
- Micron Technology
- SanDisk
- Kingston Technology

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Storage devices

- Conventional, but high speed (Enterprise), Hard Disk Drives (HDD)
- Solid State Drives (SSD)
- A large data centre can have more than 100,000 of these
- Can cost: AUD$230 / terabyte





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AI Needs infrastructure

some Storage "system" manufacturers

- Seagate Technology
- Western Digital
- Huawei
- Dell Technologies
- Hewlett Packard enterprise

All are listed companies

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Data Centre

A data centre might contain:

- About 300 cabinets, or up to 1,000+
- About 50 servers in a small centre up to 100,000 servers in a large hyperscale centre;
- Between 1,000 and 10,000 GPUs or much more.

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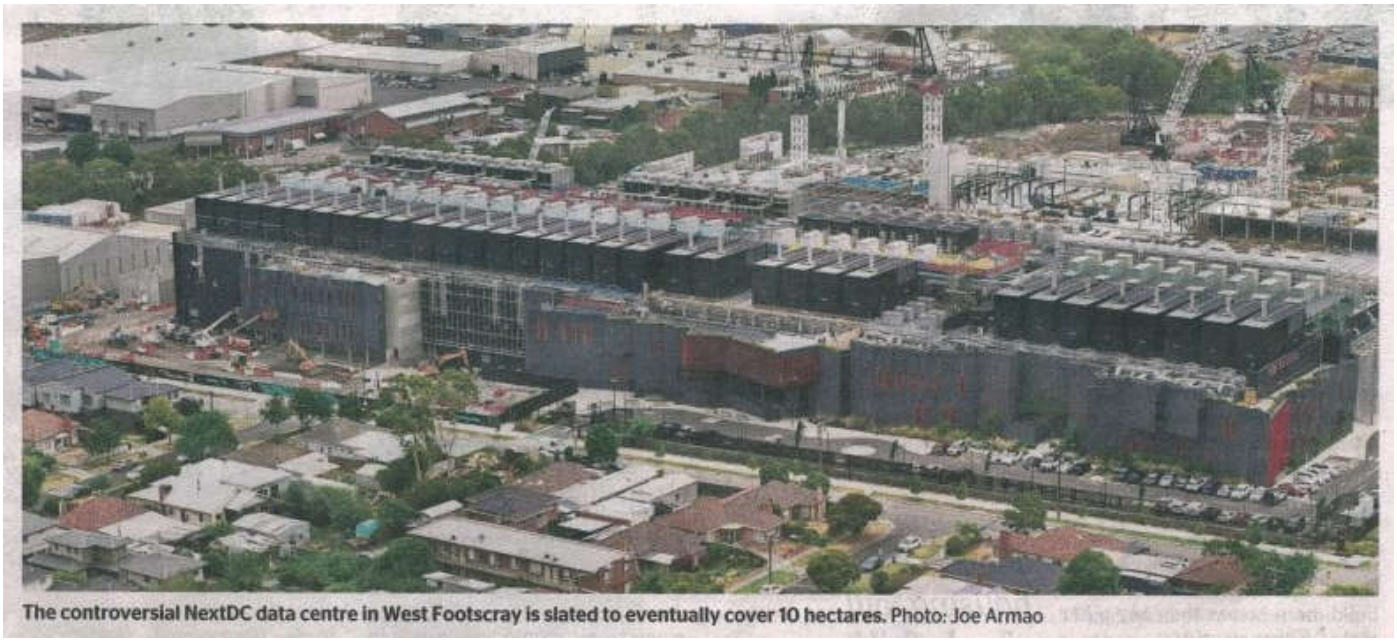
AI Needs infrastructure

Data Centre – How big?

Some people might say “ginormous”



The controversial NextDC data centre in West Footscray is slated to eventually cover 10 hectares. Photo: Joe Armao

The Age, 20 Oct, 2026, p6.

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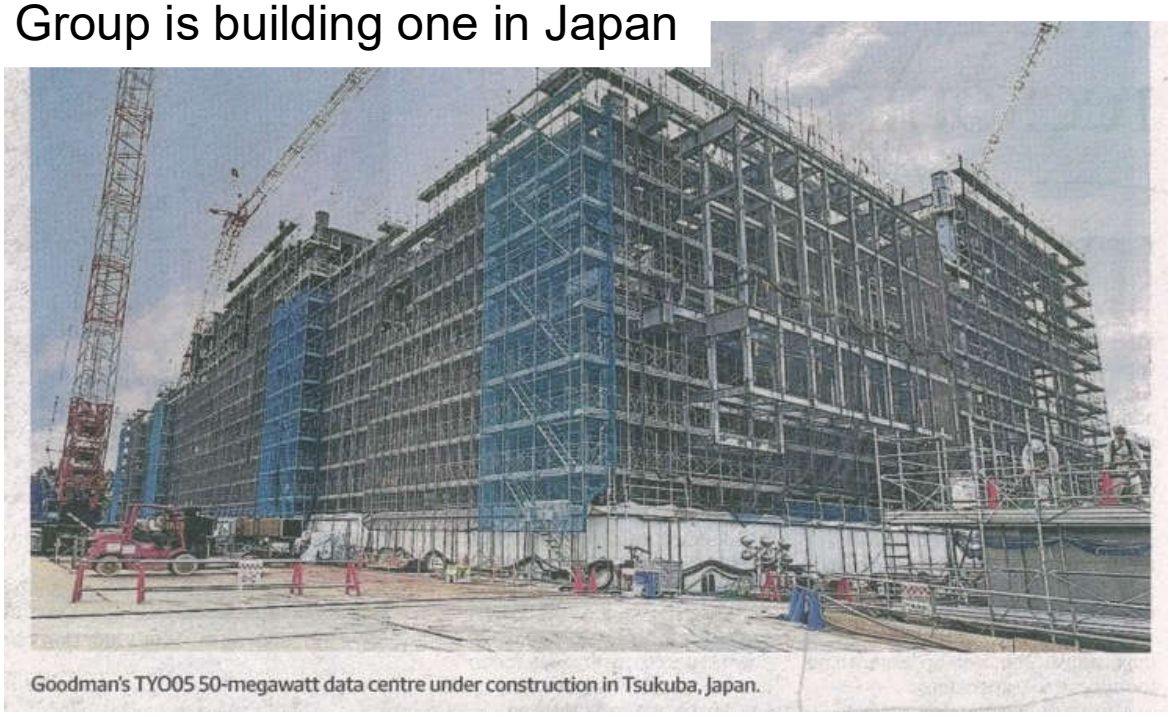
Data Centre – How big?

Goodman Group is building one in Japan



Goodman's TYO05 50-megawatt data centre under construction in Tsukuba, Japan.

AFR, 5 November, 2026, p28.

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AI Needs infrastructure

Data Centre – Infrastructure needs

There are huge electricity needs (supply and transmission):

Data centre rush needs $5b electricity upgrade in SA

AFR-9-11-26 (p.8)

Simon Evans and Jenny Wiggins

A proposed $5 billion upgrade of electricity grid transmission capacity in South Australia would only be finished by 2032, casting doubt on the prospects of almost 30 data centre proposals being considered in the state.

The early-stage proposals are concentrated in remote locations to ward off rising community backlash, making the planned 500-kilometre upgrade of high-voltage electricity lines and substations by the state's electricity transmission network owner ElectraNet crucial to their plans.

ElectraNet – which is 54 per cent owned by superannuation and investment funds including Australian Retirement Trust, with China's State Grid Corporation holding 46 per cent –



Skylab is proposing to build a data centre near Tailem Bend, south-east of Adelaide.

Data Centres – How many?

- In Australia there are already more than 160 data centres in operation;
- NextDC currently has 17 of these, plus several more in the planning stage;
- CDC Data Centres has 18 in operation;
- In Australia there are at least another 90 in the planning (and maybe up to 225 more);
- The USA has more than 4,000 data centres in operation.

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How to profit?

How to profit?

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Data Centre construction

- Data centre planning and construction;
- Building companies;
- Trade labour:
  - electricians
  - plumbers
  - computer cabling.

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A Data Centre needs electricity:

Electricity from:

- the local electricity grid, or
- a solar farm, or
- gas generators (or diesel generators), or
- a combination of these.



There are issues (resulting in public backlash):

- Large data centres consume **enormous** amounts of electricity!
- Local gas or diesel generators are very noisy (impacting local population).





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Opportunities



Electricity suppliers:

- the local electricity grid,
- solar farms,
- electricity transmission providers,
- gas (or diesel) generator suppliers.





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A Data Centre needs water:

Data Centre Systems can get very HOT:

- Traditional file servers and data centres generate a lot of heat which is normally dissipated into the air conditioned computer room via rack-mounted fans (can be 40mm square).





(one RU = 1.75 inches = 44.45mm)

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A Data Centre needs water:

Water supply:

- Modern data centres and computer hardware (eg. NVIDIA GPUs) generate **enormous** amounts of heat which needs to be dissipated.
- To cool the immense heat that is generated by the GPUs and systems, modern cooling methods involve liquid cooling systems and water (requires water supply and pipe systems).



.com

How to profit?

Opportunities

Water supply:

- Recycled water supply,
- Treated wastewater supply,
- Massive rain water collection systems,
- Closed-loop water reticulation systems.

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Investing / Trading *

- There are very few AI companies in Australia, compared to USA;
- There are data centre companies in Australia;
- Invest directly* in overseas companies;
- Invest* in overseas instruments (eg. ETFs);
- Invest* in Australian-based ETFs (see over...).

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How to profit?

Investing / Trading *

Some of the possible investing / trading opportunities in Australia include:

- **BrainChip Holdings** (ASX:BRN) – Develops neuromorphic processor intellectual property designed for edge-AI processing
- **Appen** (ASX:APN) – Provides data and language technology services used to train machine learning and AI models
- Betashares **Artificial Intelligence ETF** (ASX:CHAT)
- Betashares **Robotics and Artificial Intelligence ETF** (ASX:RBTZ)
- Global X **Artificial Intelligence ETF** (ASX:GXAI)
- Global X **FANG+ ETF** (ASX:FANG)
- Betashares **NASDAQ 100 ETF** (ASX:NDQ)
- There will be more, now and in the future.

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Definitions

Hyperscaler

- A hyperscaler is a large technology company that owns and operates massive, globally distributed data centers to provide scalable cloud computing, storage, and networking infrastructure.

Top Hyperscaler Companies:

- Amazon Web Services (AWS)
- Microsoft Azure
- Google Cloud Platform (GCP)
- Meta
- Oracle Cloud Infrastructure (OCI)
- Alibaba Cloud

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SUMMARY

Artificial Intelligence (AI):

- Exactly what is it?
  - hardware – servers, systems
  - networking, internet access
  - AI facilities / data centres
  - infrastructure to support it
- What can we do with it?
- How can we invest/trade in AI-related companies?

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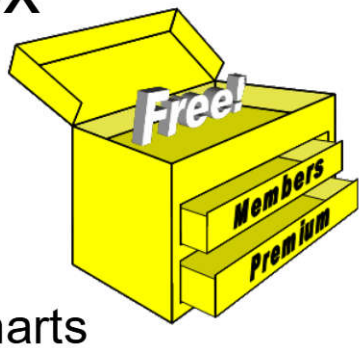
Don't forget my Toolbox



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