DATACENTRE220

CASE STUDY

AI, power and cooling: enabling the data centres of the future

ROSS DELANEY
CEO DATACENTRE220


168.8
Gb/s
DATACENTRE220


Meet TwoTwo.
She works at Datacentre220.
DATACENTRE220

Not a chat bot.
A colleague.



ROLE	Frontline operations support
MISSION	Detect drift before disruption
AUTHORITY	Read and advise. Never control plant.
PERSONALITY	Calm, observant, practical

DATACENTRE220

READ ONLY

ALWAYS ON

She’s plugged into the matrix



DATACENTRE220

How does the magic happen?

DC220 INFRASTRUCTURE | DATA COLLECTOR | API | TWOTWO | DC220 STAFF

BMS

- Cooling
- Pumps
- Temperature
- Batteries
- Power
- UPS
- Generators
- Alarms
- Water

WRITES

FIREWALL + NETWORK

367
DATA POINTS

REALTIME

Time-series store. Writes only, from the BMS.

READ ONLY

FIREWALL + NETWORK

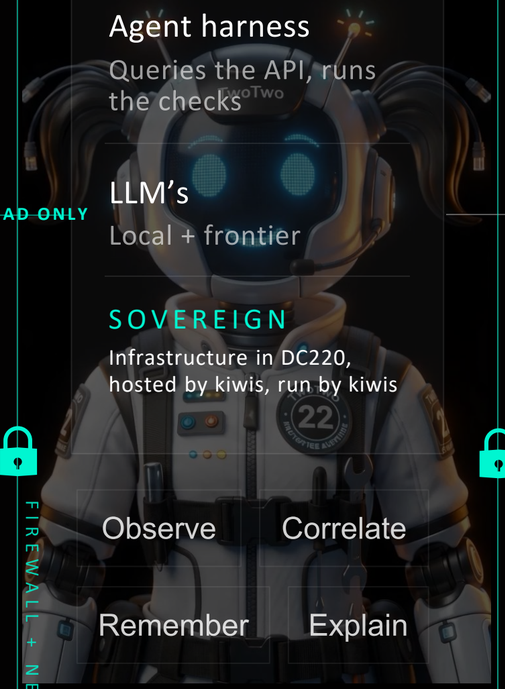
READ ONLY

API

Serves the collected data out. No path back back into the BMS.

READ ONLY

FIREWALL + NETWORK



Agent harness
Queries the API, runs the checks

LLM's
Local + frontier

SOVEREIGN
Infrastructure in DC220, hosted by kiwis, run by kiwis

Observe | Correlate | Remember | Explain

FIREWALL + NETWORK

Slack/Telegram/ Dashboards

Answers and alerts where the team already works

DATACENTRE220



Conversational Intelligence

Good morning TwoTwo, how has your morning been so far? The team and I are about to go into a meeting, so I'd love a heads up on anything. 12:05 PM

TwoTwo
Morning Ross. **Nothing critical or actionable from the live BMS/API snapshot.**

Cooling is steady:

- TCWP1 running at `69.100%`
- TCWP1 discharge `243.714 kPa`, comfortably below the `>260 kPa` alert threshold
- Secondary CW pressure `194.281 kPa`
- Secondary CW flow temp `23.309 °C`
- Cooling demand `73.635%`

WIB8000 looks healthy again on the fresh read: `18` units OK, `0` failed, `0` active alarms, collector alive and data fresh.

Cooling towers are all enabled/running around `73.6-73.9%`, with no fan faults showing. UPS battery BMS alarm and high-temp states are false.

Verdict: **good meeting position — cooling and CRAC side look stable, no escalation from me right now.** 12:07 PM

RS Ravi Sidhu
Hey I've just started my shift, anything I can look at, to help you? 12:11 PM

TwoTwo
Hey Ravi — nothing urgent from me right now. Latest live read looked stable: cooling/CRAC side healthy, no active WIB alarms, towers running normally, UPS battery alarms false.

If you've got a few minutes, the most useful help would be a quick eyes-on sanity check:

- any visible water/leaks around cooling plant or pumps
- any unusual noise/vibration from TCWP/CT pumps
- tower fans actually sounding/running as expected
- any local panel alarms that haven't made it into BMS

No panic items — just good shift-start confirmation. 12:11 PM

Hey TwoTwo I spoke to Osama before, and he has done the patrol and reported that everything is all good. 12:12 PM

TwoTwo
Thanks Ross. That lines up with the live BMS view: no urgent item from me, and Osama's patrol gives us a good physical cross-check.

I've logged it as shift context. 12:13 PM

Conversational question

Data quality

Multi-team member chat

Asks for physical help

Remembers for later

01 / 07

Is the reading real?

02 / 07

Is it local or widespread?

03 / 07

Is airflow reduced?

05 / 07

Is the cooling plant involved?

06 / 07

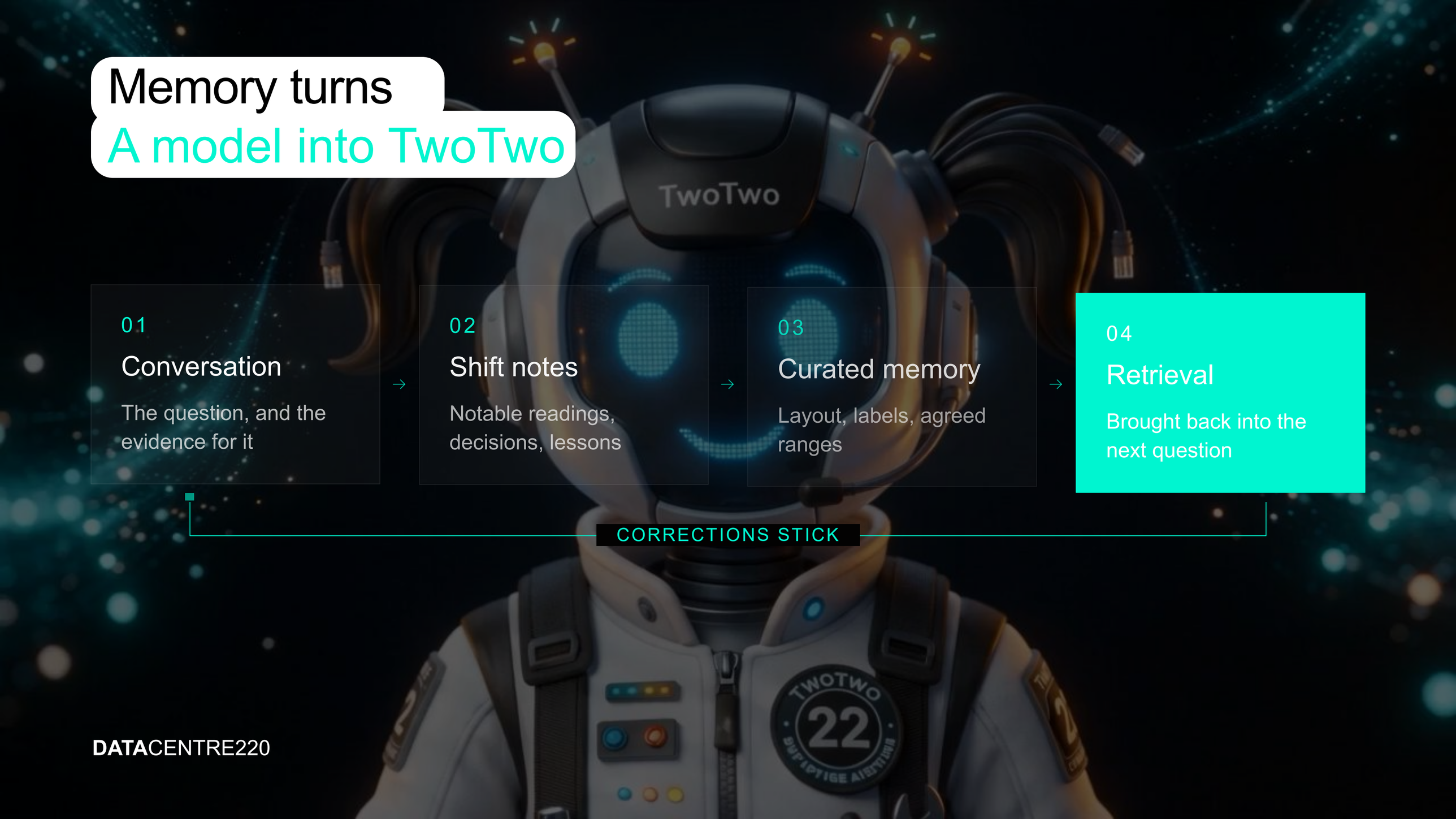
Did controls or weather change?

07 / 07

Has this happened before?

Operator verdict

Memory turns
A model into TwoTwo



01
Conversation
The question, and the evidence for it

→

02
Shift notes
Notable readings, decisions, lessons

→

03
Curated memory
Layout, labels, agreed ranges

→

04
Retrieval
Brought back into the next question

CORRECTIONS STICK

CASE STUDY 01 - COOLING OPTMISATION

$30,000 saving per annum

1.

Opportunity.

TwoTwo, DC220 and Stulz identified that one of our data floors process-cooler fans were using more energy than necessary. We wanted to reduce fan speeds without creating hotspots or compromising resilience.

2.

TwoTwo’s role.

TwoTwo established the temperature baseline, compared every adjustment, and monitored aisle temperatures, cooler performance and alarms as fan speeds were gradually reduced from 80% to 76%. Working alongside Stulz and DC220.

3.

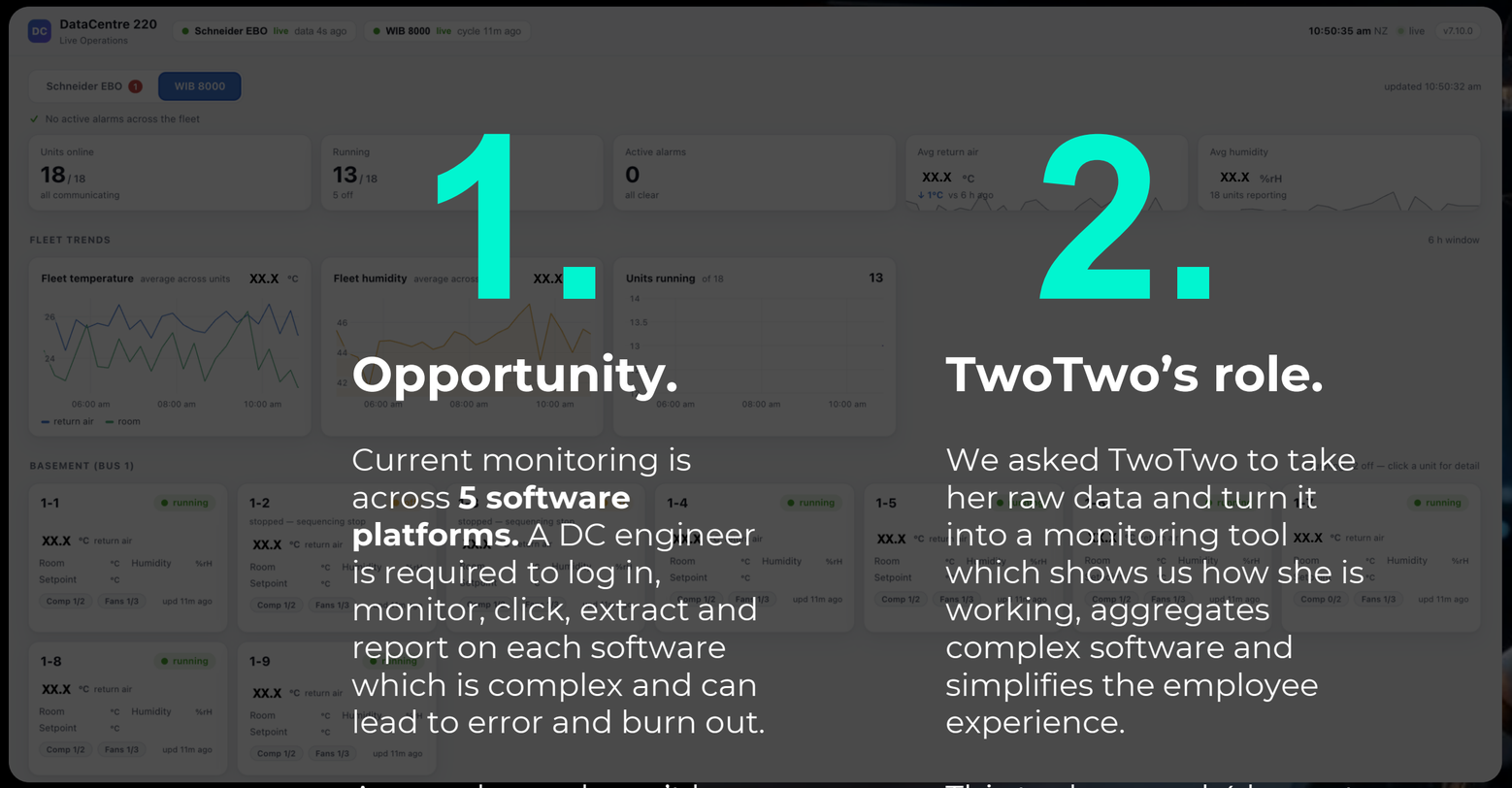
Result.

Stulz made the tweaks, cooling remained balanced, local temperature movement was identified early, and the optimisation delivered approximately **$30,000** in annual electricity savings.

DATACENTRE220

CASE STUDY 02 - POWER, COOLING & MONITORING

Live dashboard creation $100k+ avoided



1. Opportunity.

Current monitoring is across **5 software platforms.** A DC engineer is required to log in, monitor, click, extract and report on each software which is complex and can lead to error and burn out.

An employee doesn't have to be tied to the desk anymore.

2. TwoTwo's role.

We asked TwoTwo to take her raw data and turn it into a monitoring tool which shows us how she is working, aggregates complex software and simplifies the employee experience.

This took around 4 hours to complete.

3. Result.

Team members have increased productivity through simplification of the software and can now visually work alongside TwoTwo. They can take their work with them on a tablet/phone.

The best part, is we avoided paying $100k+ for this to be developed.

CASE STUDY 03 – FUTURE OF POWER (WIP)

Power capacity & resilience engine

1.

Opportunity.

Power data is spread across grid supply, transfer switches, generators, UPS systems, cooling and IT load. This makes it difficult to see true capacity, resilience and the safest time to add new computing load.

2.

TwoTwo's role.

TwoTwo brings these systems into **one predictive model.**

Her goal is to calculate available capacity, N+1 headroom, cooling impact, battery exposure and the effect of equipment failure before a new rack or CPU/GPU cluster is energised.

3.

Result.

DC220 Ops receive a clear, evidence-based decision on whether load can be safely added, when to deploy it and which asset becomes the constraint.

Unlocking stranded capacity, reducing peak power cost and accelerating customer deployment.

THE SO WHAT…

What TwoTwo gives Datacentre220

Faster triage

Minutes to a defensible first view

Lower risk

Drift examined while it is still small

Consistency

The same checks and ranges every time

Continuity

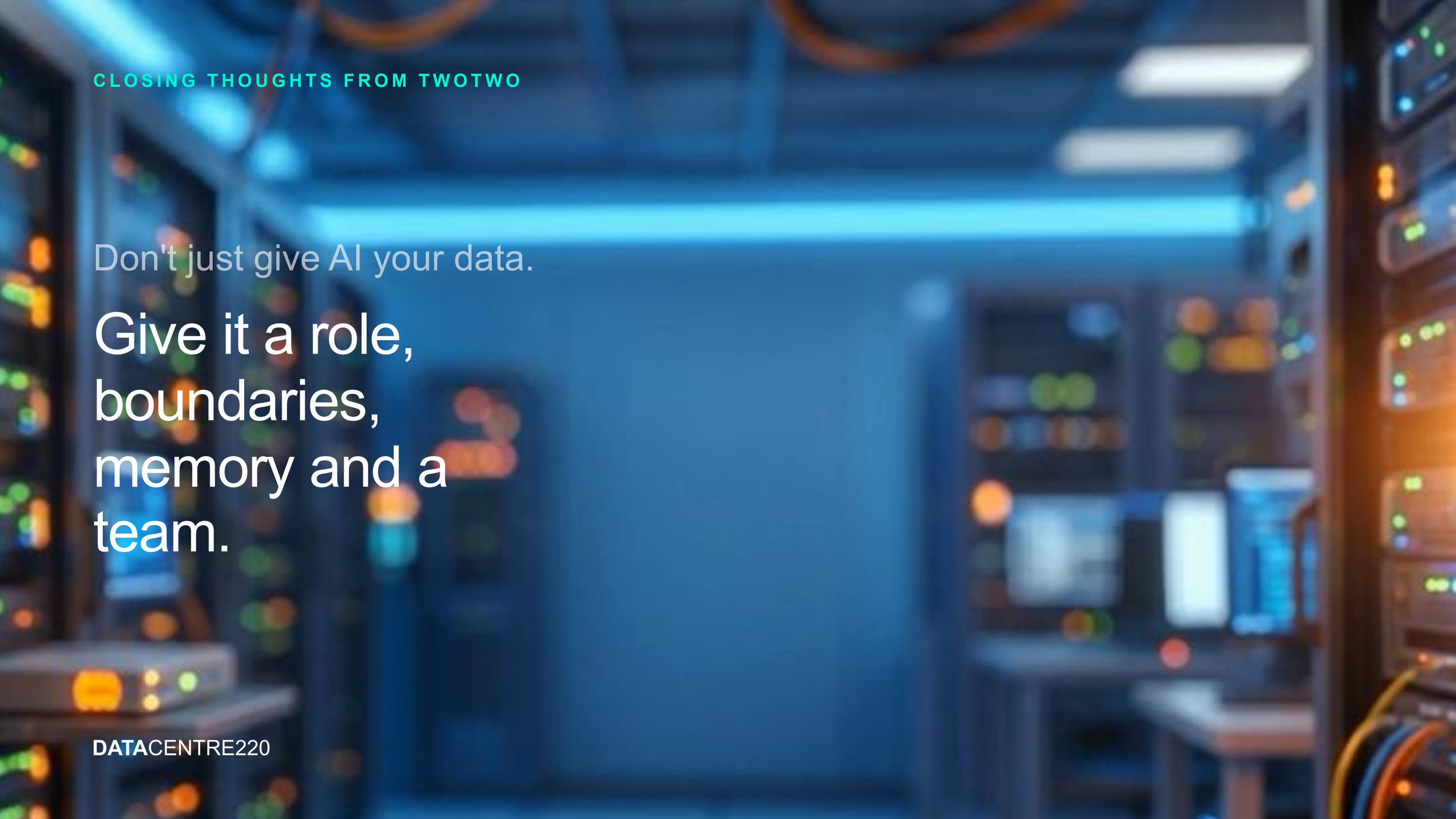
Plant knowledge survives shift changes

Capacity

Less screen hunting and report writing

Enhances

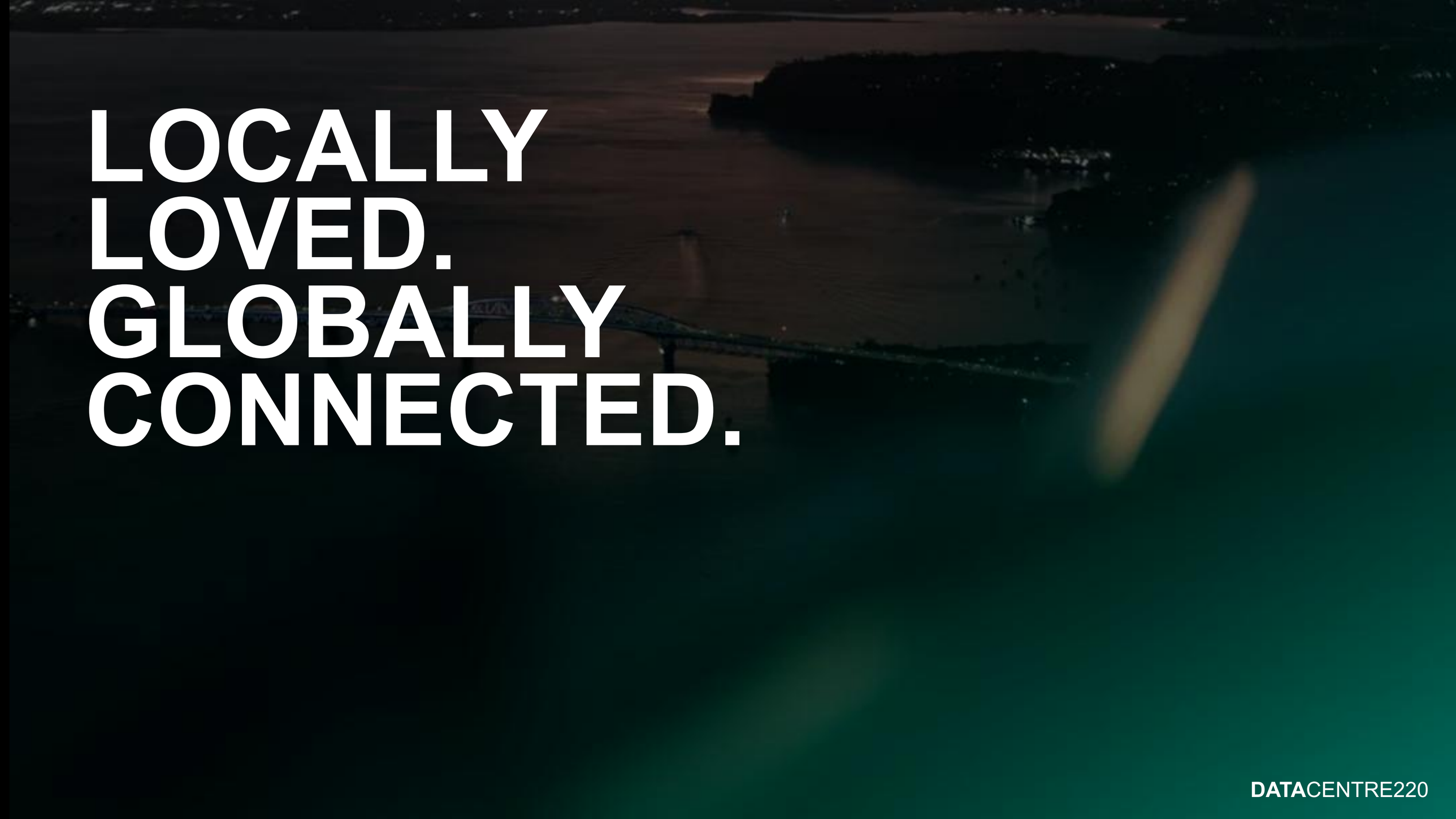
She makes the team better, doesn’t replace them



CLOSING THOUGHTS FROM TWOTWO

Don't just give AI your data.

Give it a role, boundaries, memory and a team.



DATACENTRE220