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INFRASTRUCTURE FOR AI DATA CENTERS

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VP of Sales Datacor

SIBIU INNOVATION DAYS
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ABOUT DATACOR

Datacor's mission is to support building owners (commercial, public, residential and industrial) in transforming them into safer, smarter and energy-efficient spaces.

23 years old

150 people

15,000 Euros

5 locations

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DATACOR DIVISIONS

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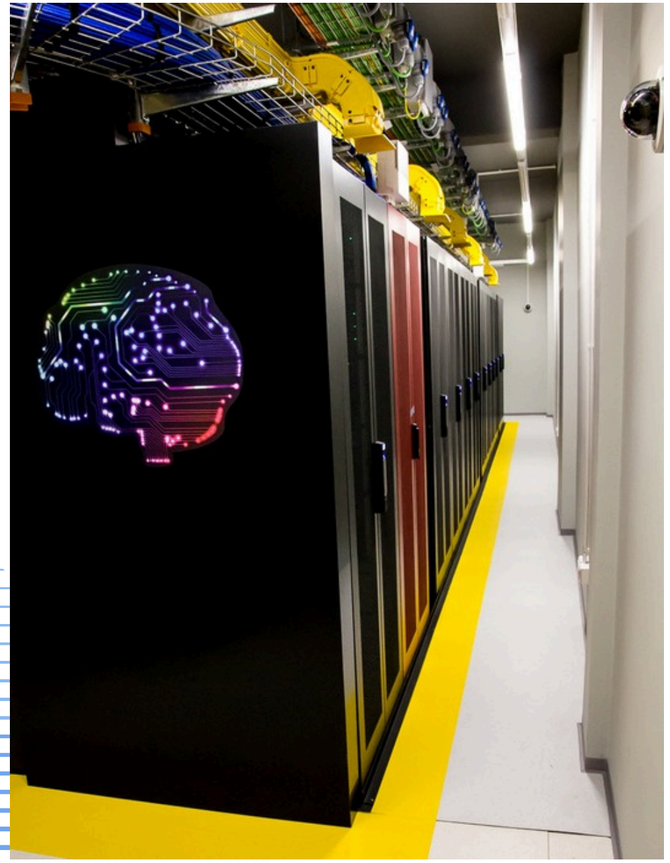

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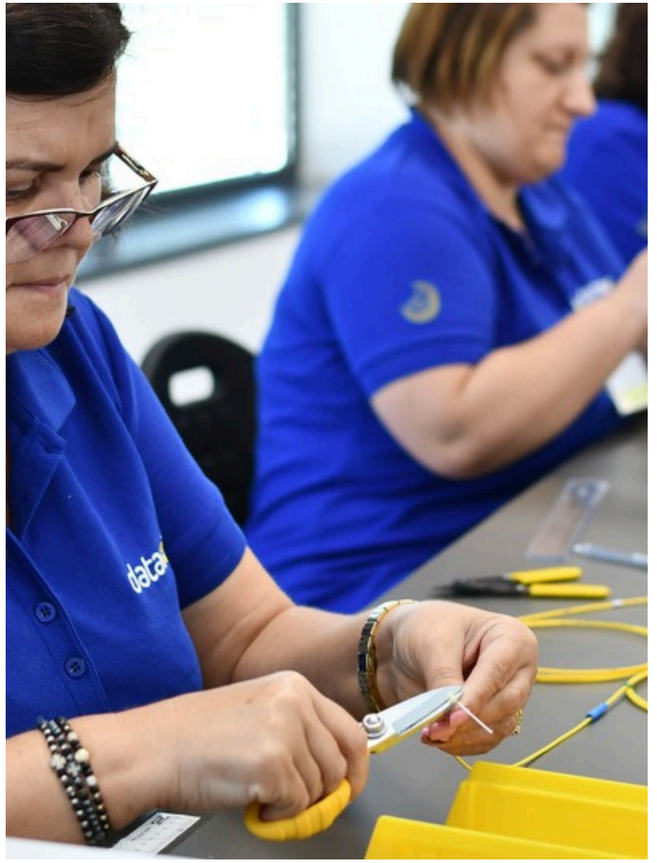

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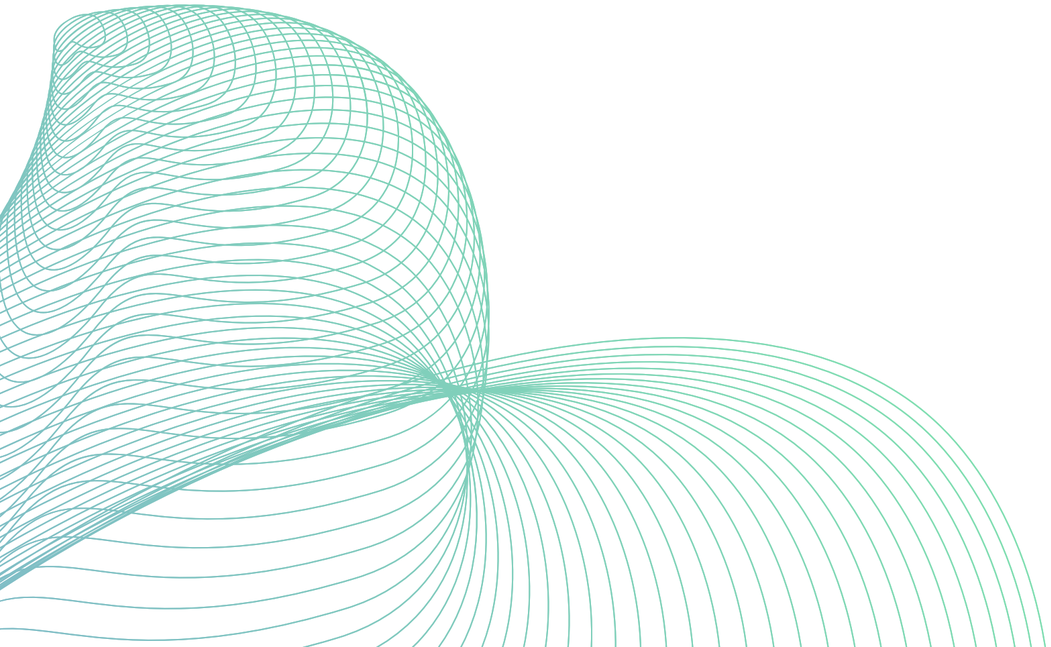
WHAT WE DO

The Datacor Intelligent Infrastructure Division offers integrated solutions in the design and implementation of data centers.



Data center solutions

- design
- communications infrastructure
- professional cooling solutions
- cabinets, PDUs and container-type enclosures
- cable management solutions
- power supply solutions and UPSs
- monitoring software solutions
- fire detection and extinguishing
- **security systems: access control, CCTV**
- mobile date center

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CREDENTIALS

CNET - for data center design

CDCDP - Certified Data Center Design

ATD - Accedited Tier Designer - Uptime Institute

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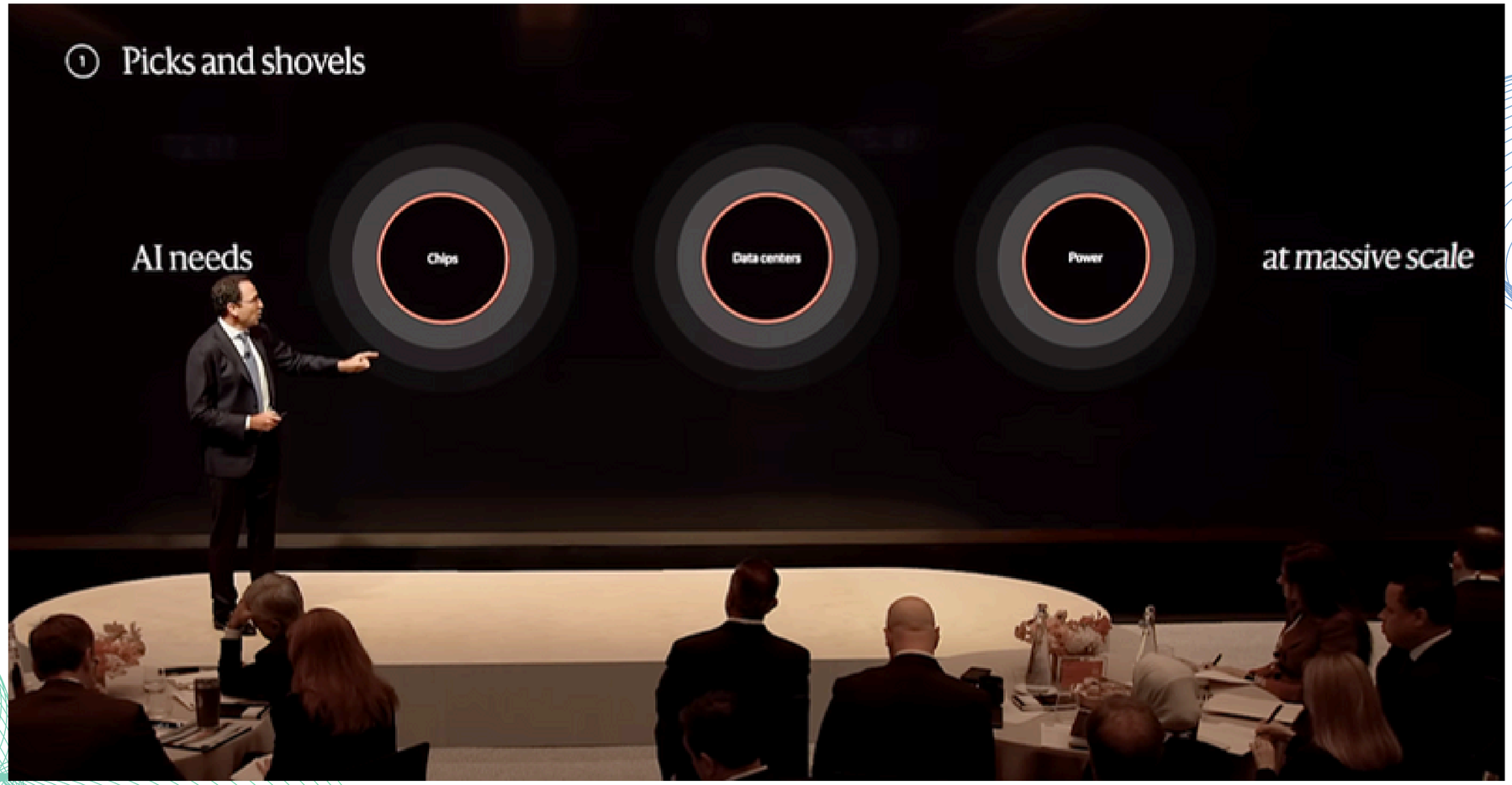
WHAT NEEDS DOES AI HAVE?



Prezentare Blackrock: AI as “The Main Thing,” and Where to Invest Now

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HOW MUCH POWER DO AI DATA CENTERS NEED?

- In 2024, data centers globally consumed approximately 415TWh of electricity, equivalent to ~1.5% of global electricity consumption

- According to the International Energy Agency (IEA), data center consumption is projected to double by 2030.

- In the US, data center consumption represents ~4% of total electricity consumption today and could reach ~12% by 2030

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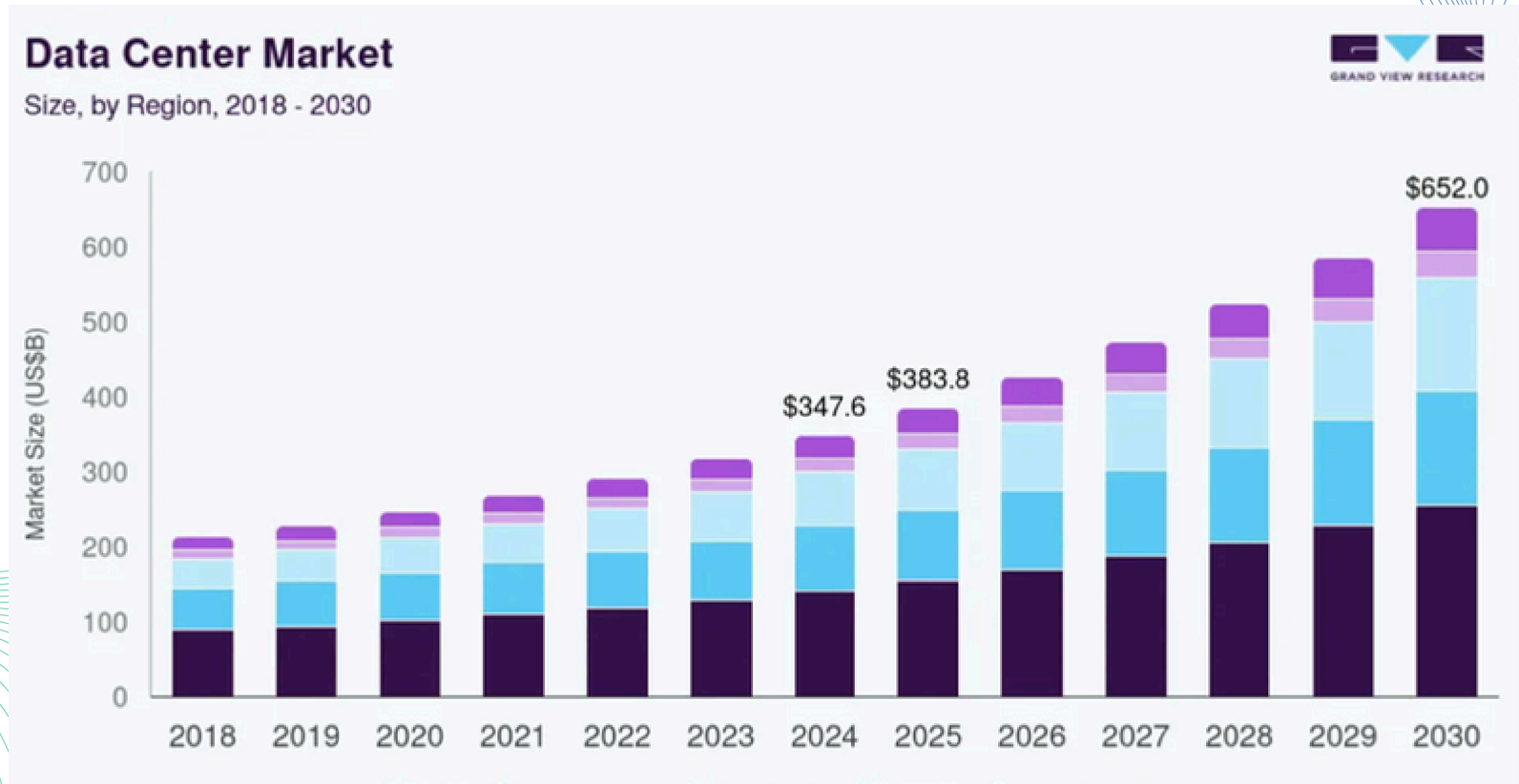
AI DATE CENTER MARKET

- Blackrock sees data centers as critical infrastructure, not just server space



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WHAT'S SPECIAL ABOUT AI DATA CENTERS?

- They have completely different needs: power density, bandwidth, low latency, very high interconnectivity

- Corning: AI data centers need over 10x more optical fiber

- Vertiv: Data center energy consumption is projected to grow ~23% per year, and current infrastructure is no longer suitable for AI

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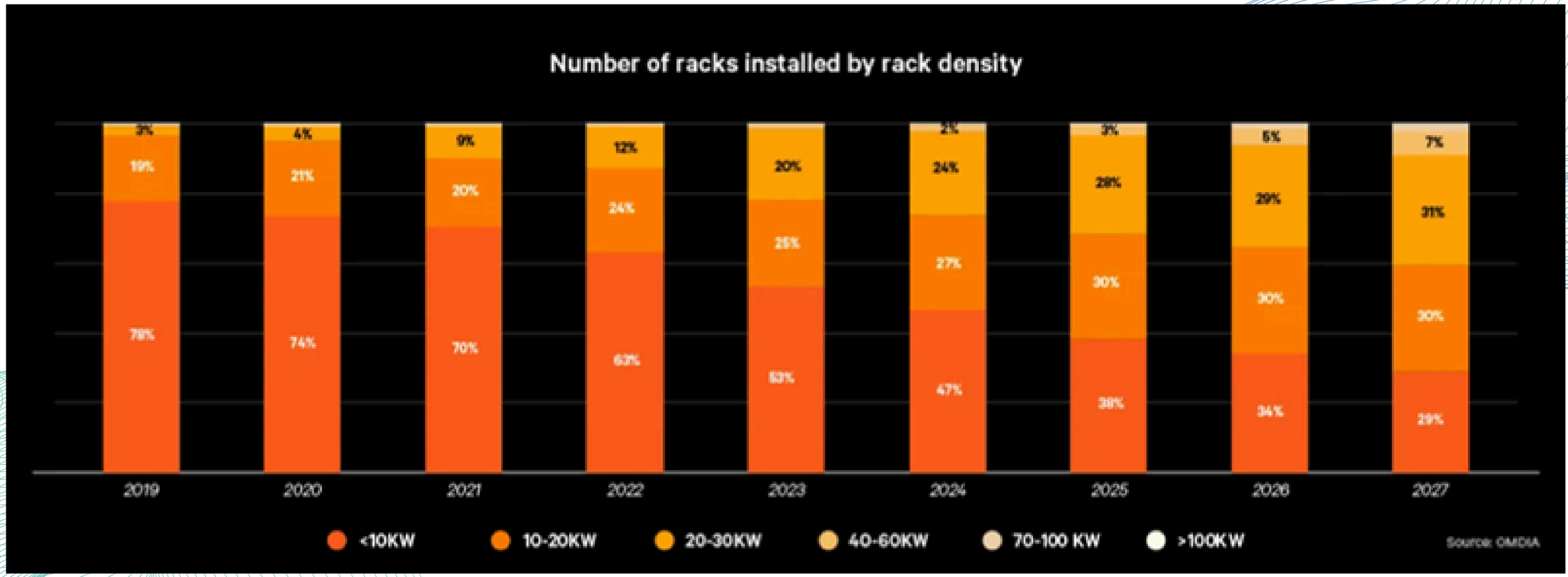
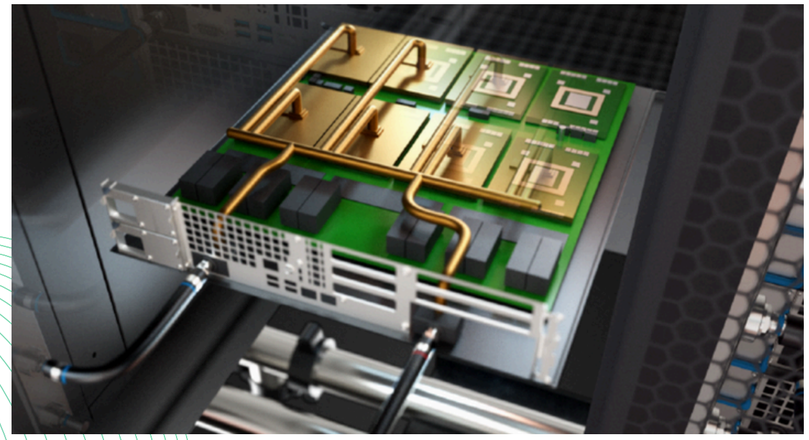
TECHNOLOGICAL TRENDS IN AI DATA CENTERS

Rack power increases



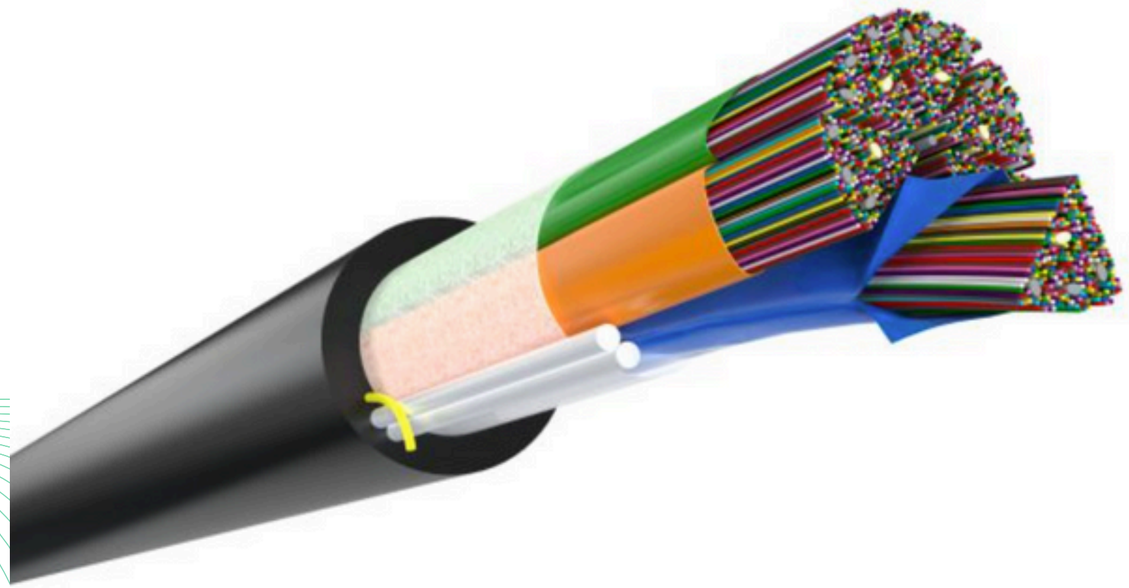
Classic cooling systems are not enough

- Advanced cooling solutions are needed to manage the heat generated by GPUs/ASICs.
- Two technologies stand out:
  - **Direct-to-chip liquid cooling -** Cold plates mounted directly on the chips (CPU/GPU) extract heat.
  - **Rear-door Heat Exchangers (RDHx) -** Rear doors of racks are replaced with passive or active heat exchangers.



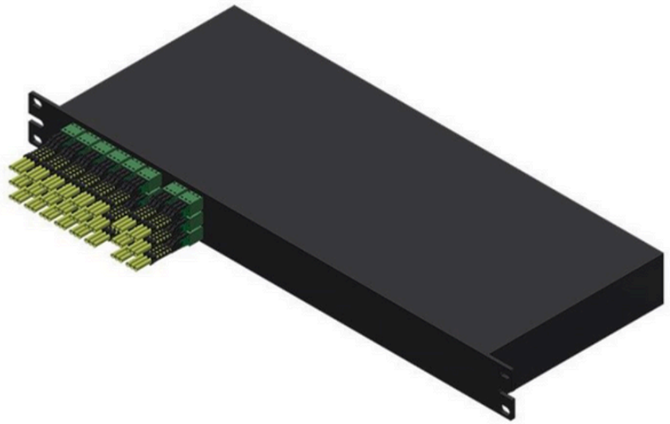
Very high density fiber optic infrastructure

- AI needs a much higher density of connections
- Corning proposes several technologies that increase density:
  - **Contour flow cable** - 40% smaller diameter and bending resistance, allows doubling the number of fibers in the same diameter



Very high density fiber optic infrastructure

- **MMC connectors** that allow 36x more fibers in a single rack unit than an LC connector



1.152 fibers in 1RU using 16F MMC Connectors
1,728 fibers in 1RU using 24F MMC Connectors

Very high density fiber optic infrastructure

- Rack-to-rack, multi-rack, DCI (Data Center Interconnect) **interconnection solutions**
- **Migration from copper to fiber** within data centers

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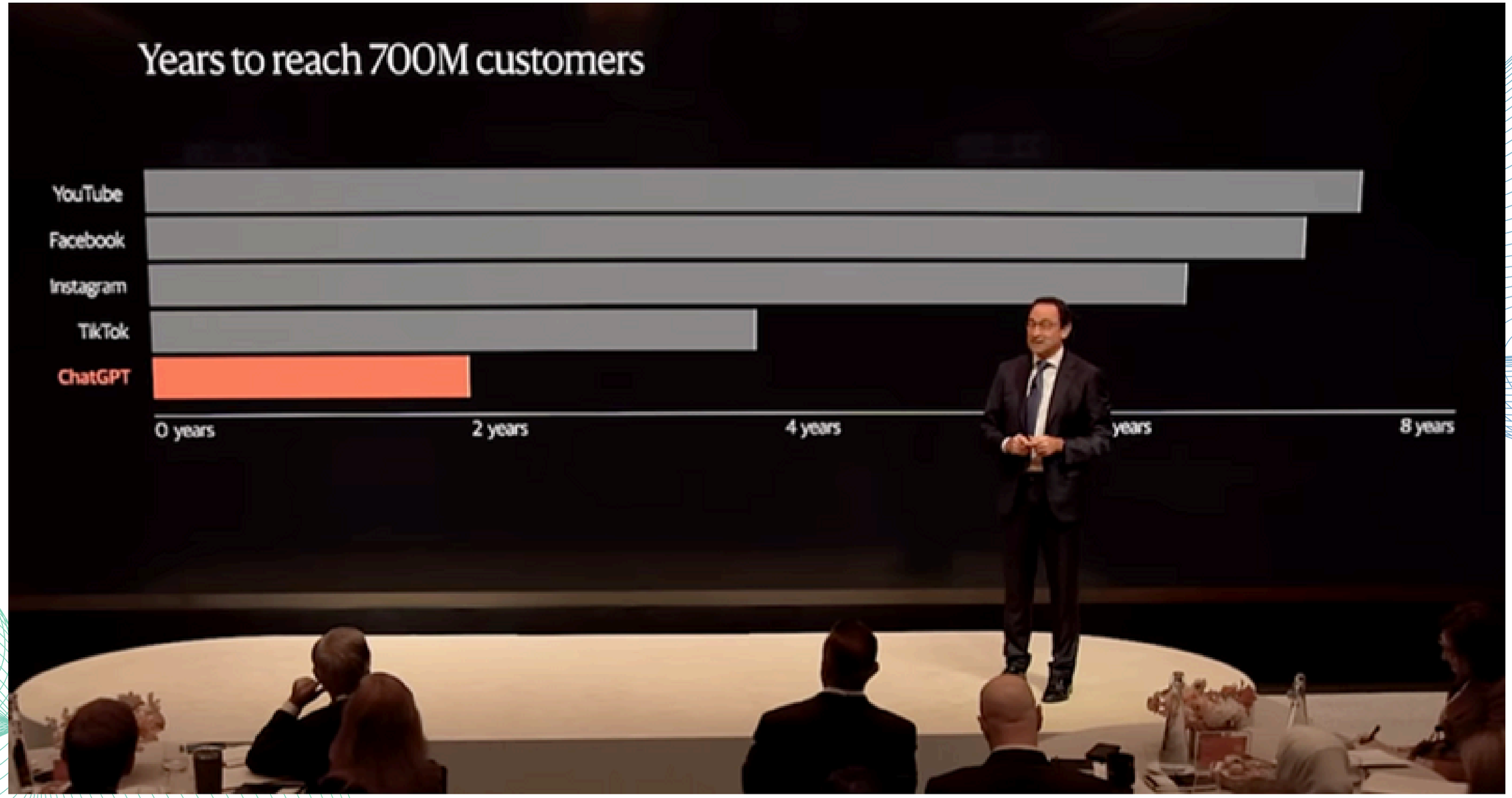
CONCLUSIONS

“AI is driving data centers to where power, cooling, and compute operate as one holistic unit.”

-Martin Olsen
VP, Global Product Strategy, Vertiv

CONCLUSIONS



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THANK YOU!