

What are Datacenters? *And why we even need so many of them?*

Ahmed Saeed
Assistant Professor

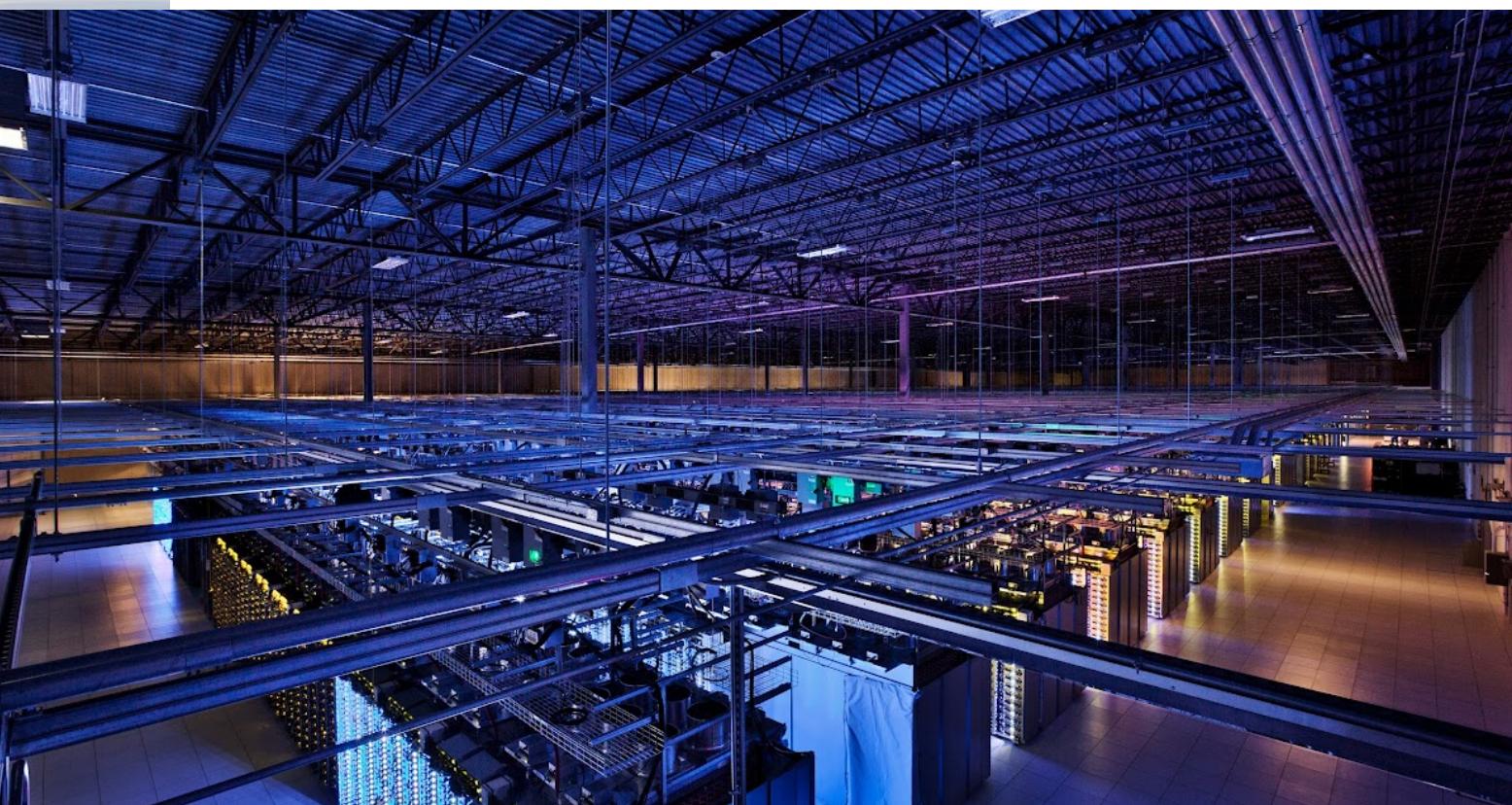


What are datacenters?

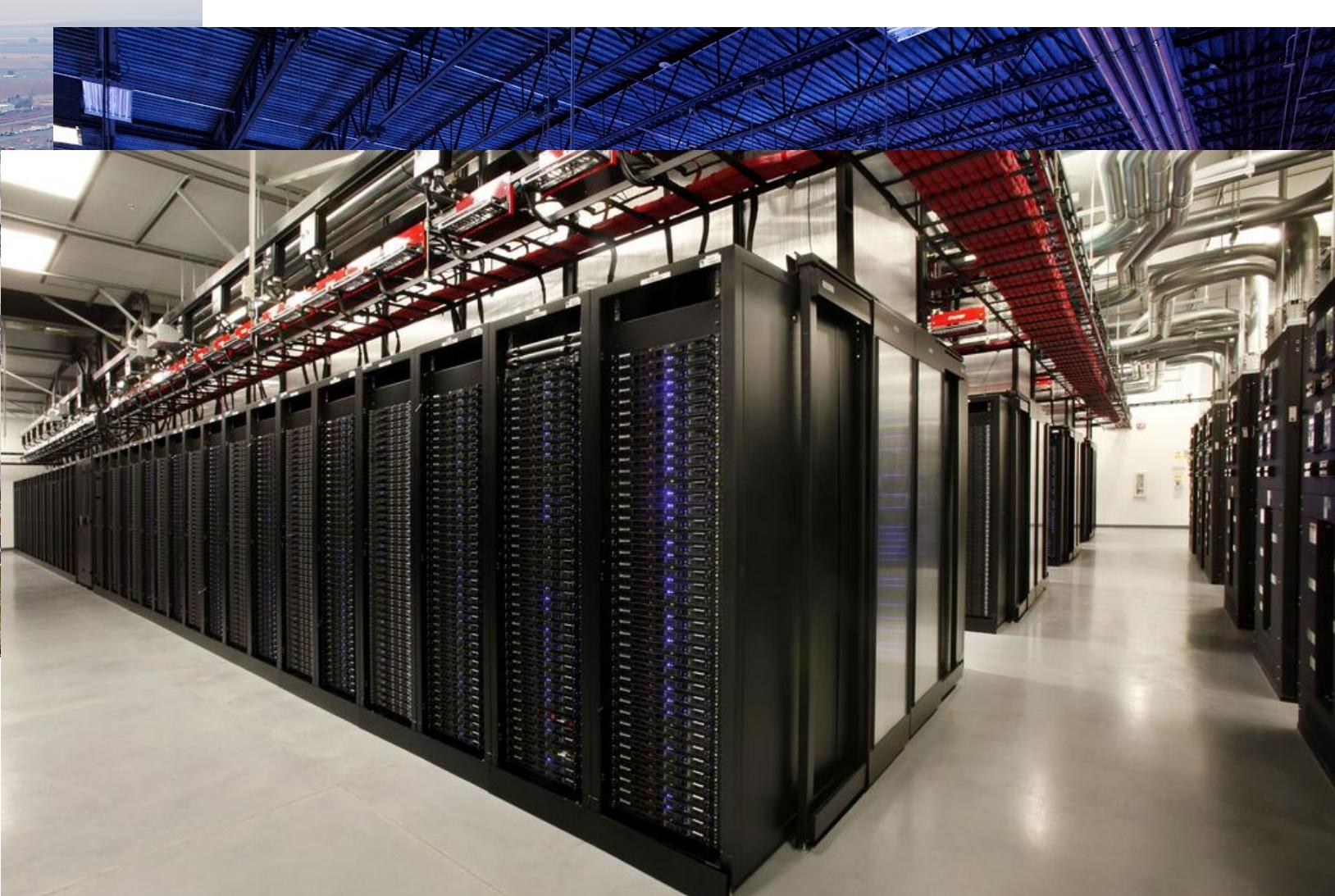
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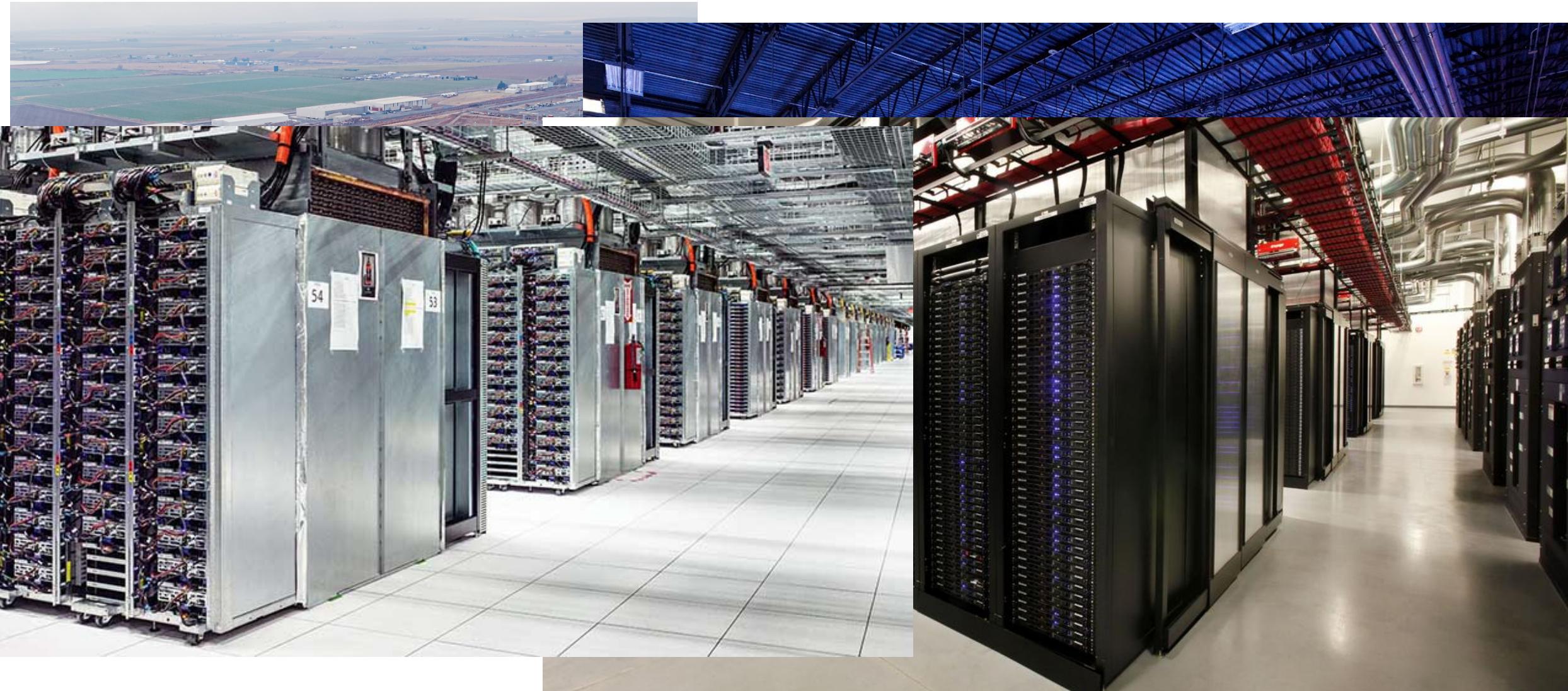
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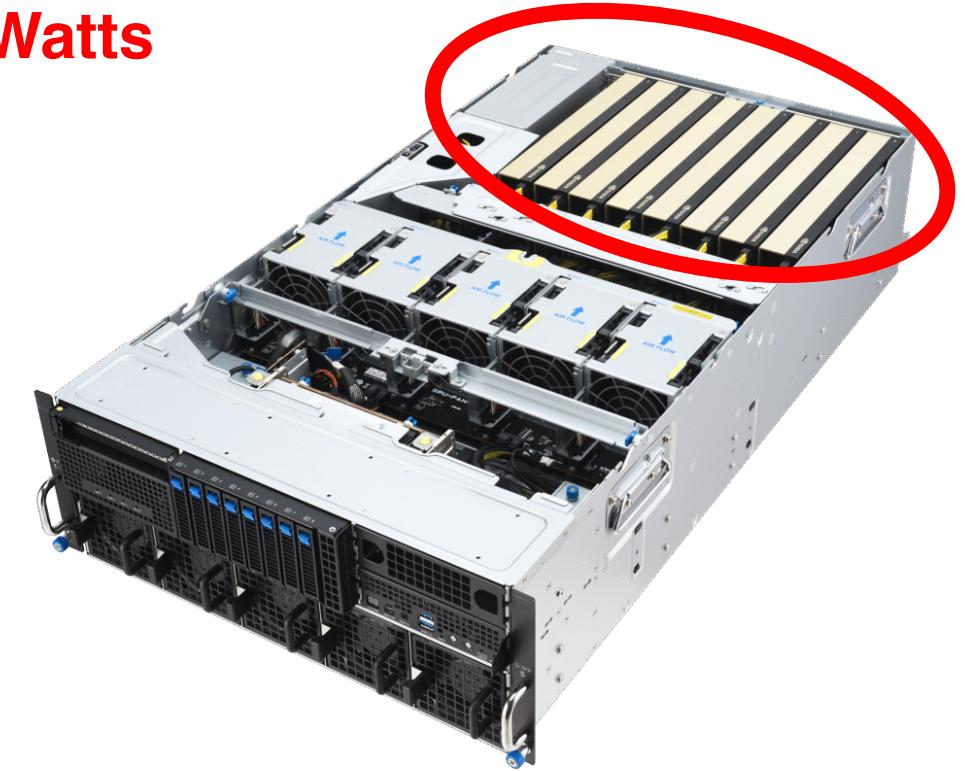
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**8 Graphics Processing Units
(GPUs) each drawing up to 700
Watts**



Types of Datacenters

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- Enterprise datacenter (on premise datacenters)

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- Colocation datacenters

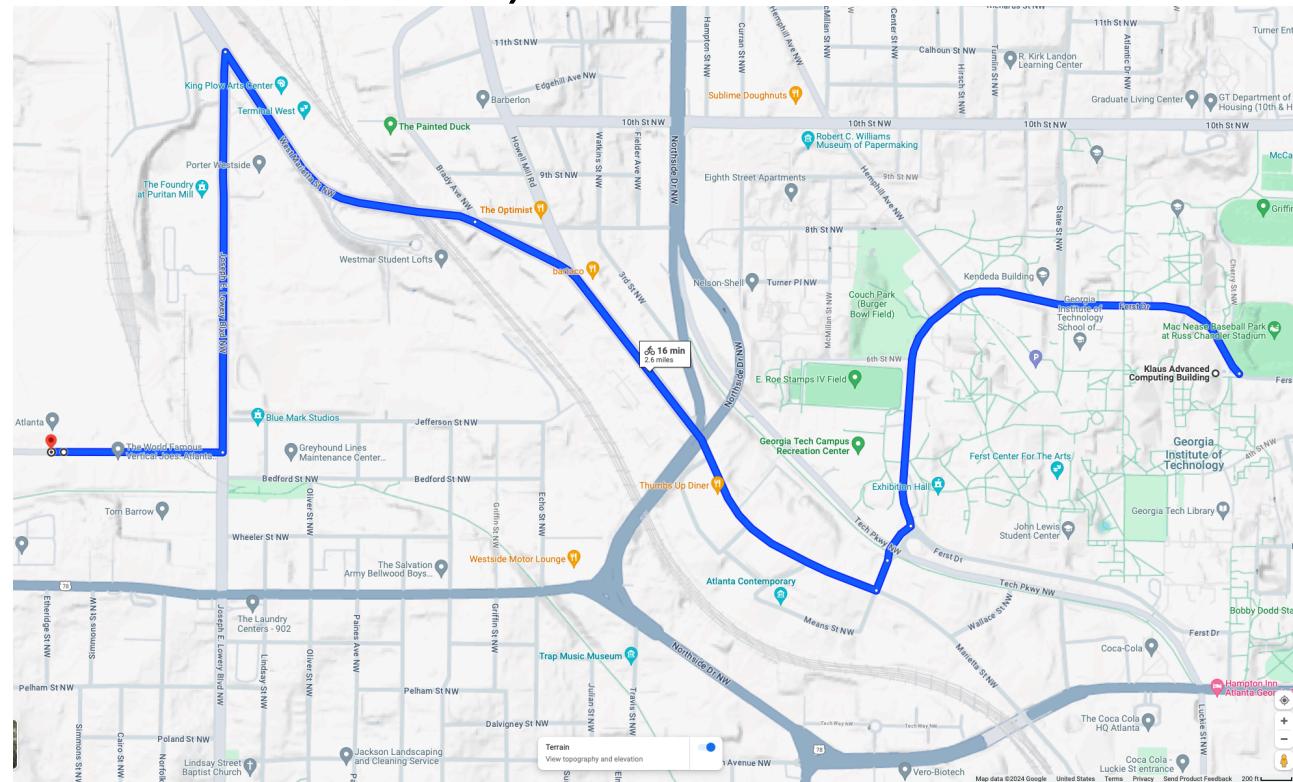
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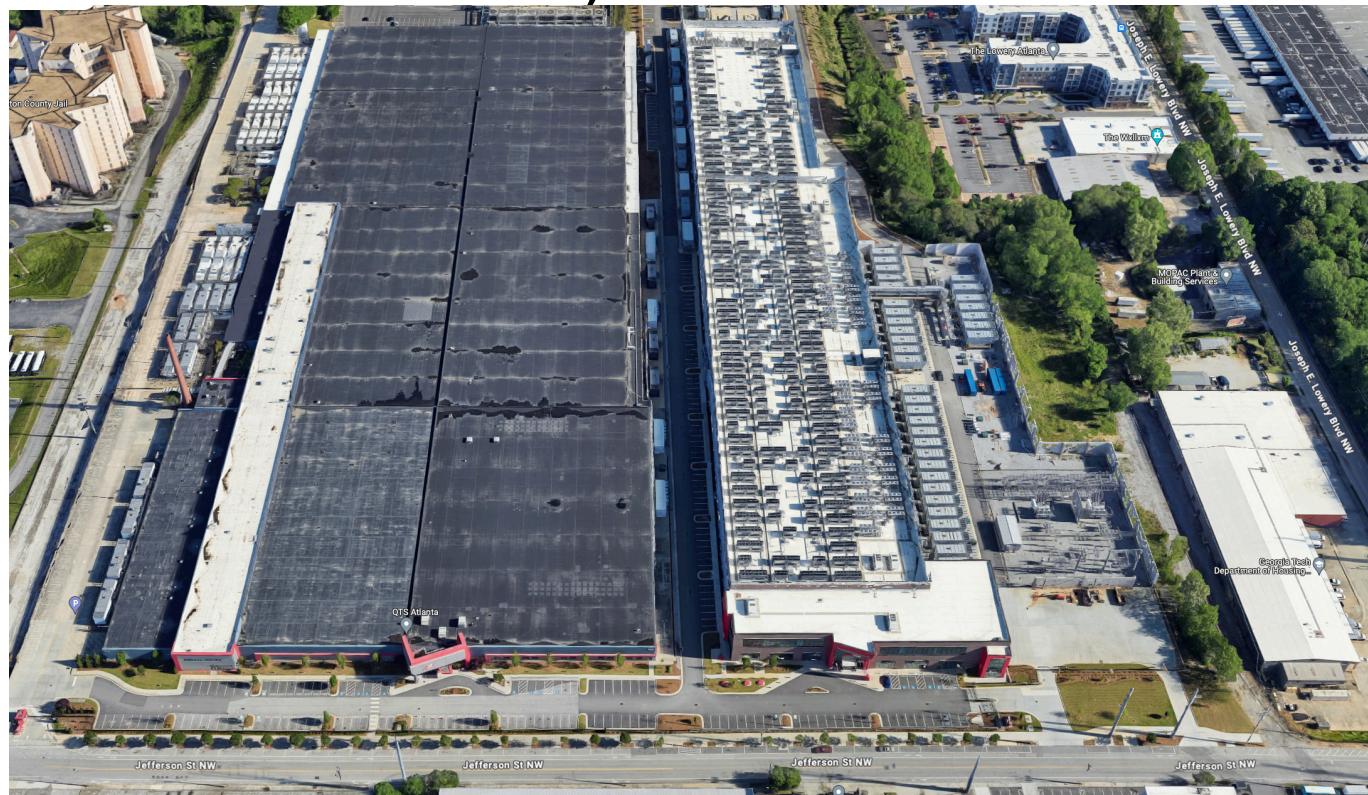
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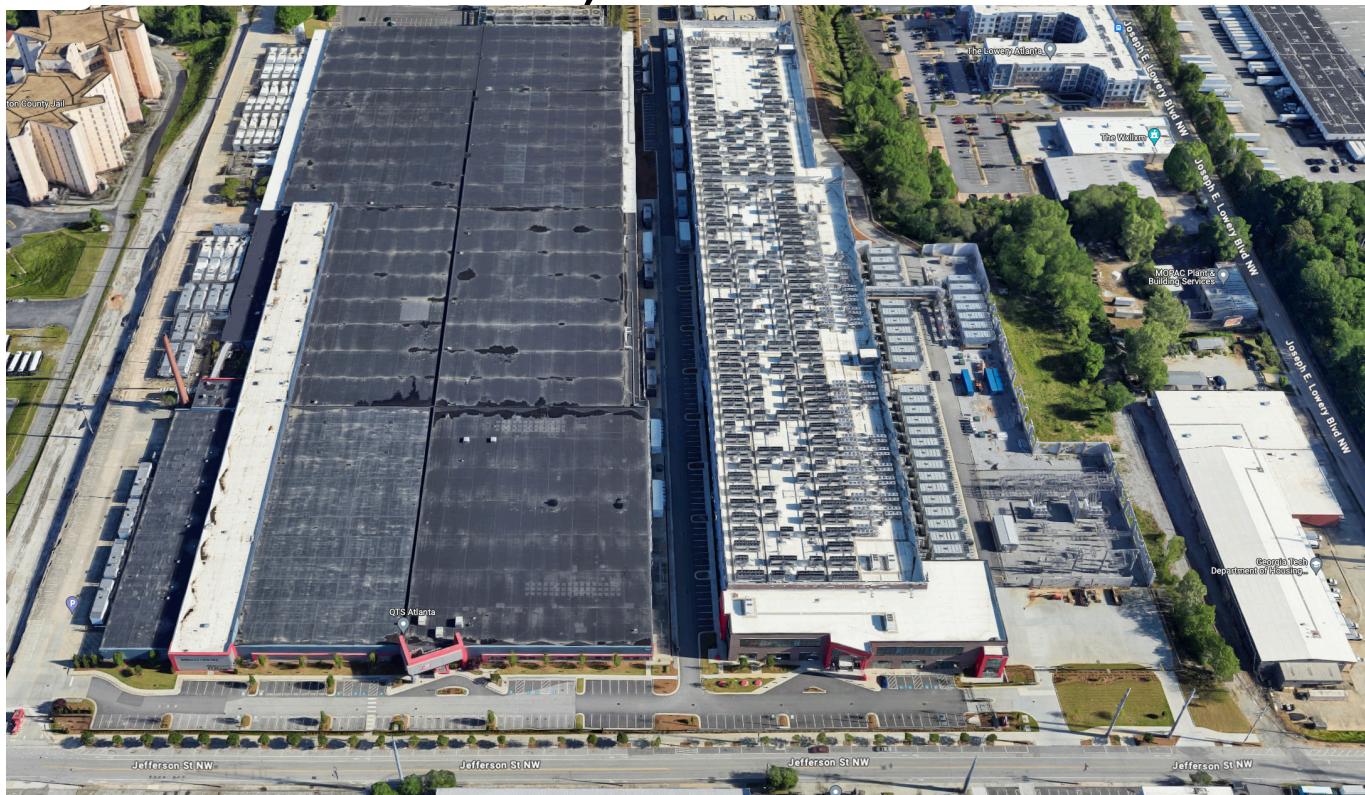
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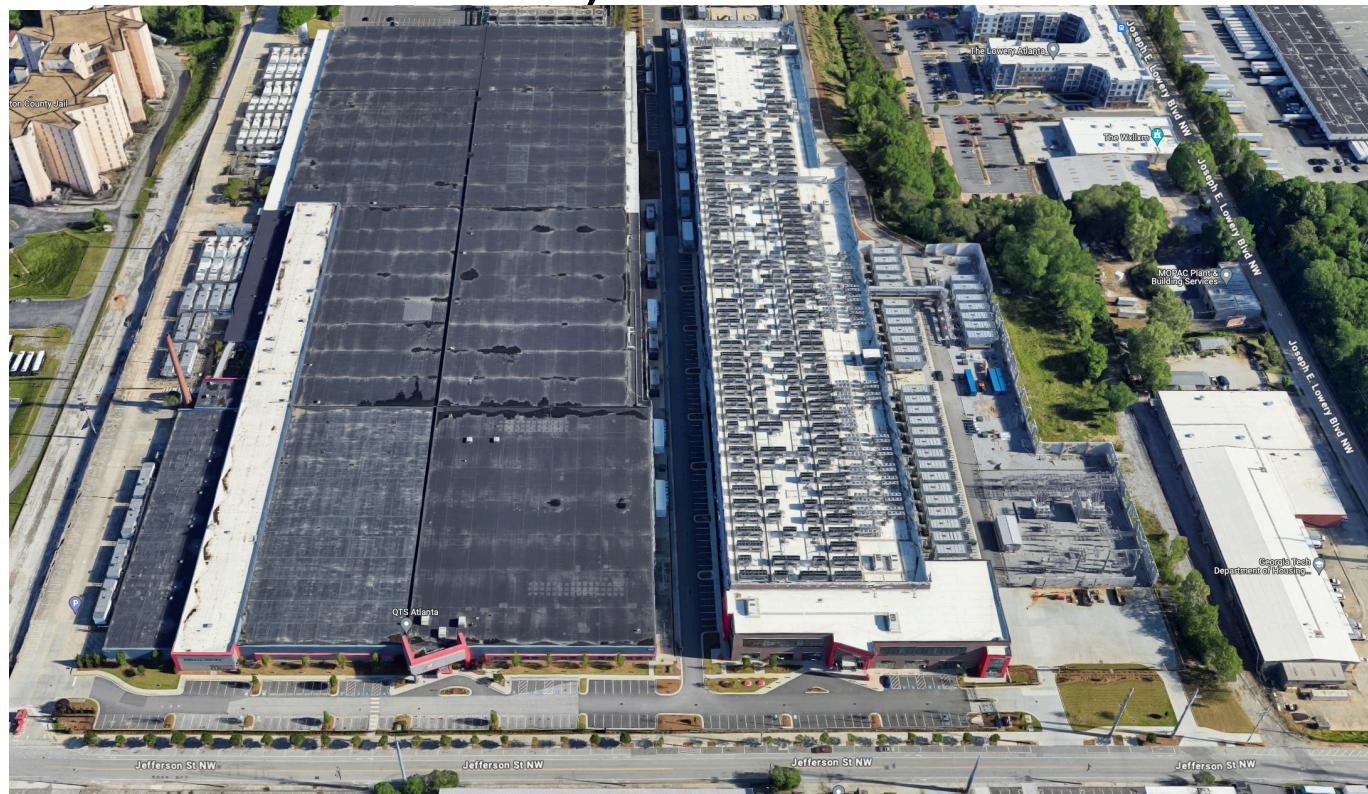
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- Enterprise datacenter (on premise datacenters)
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- Edge datacenters



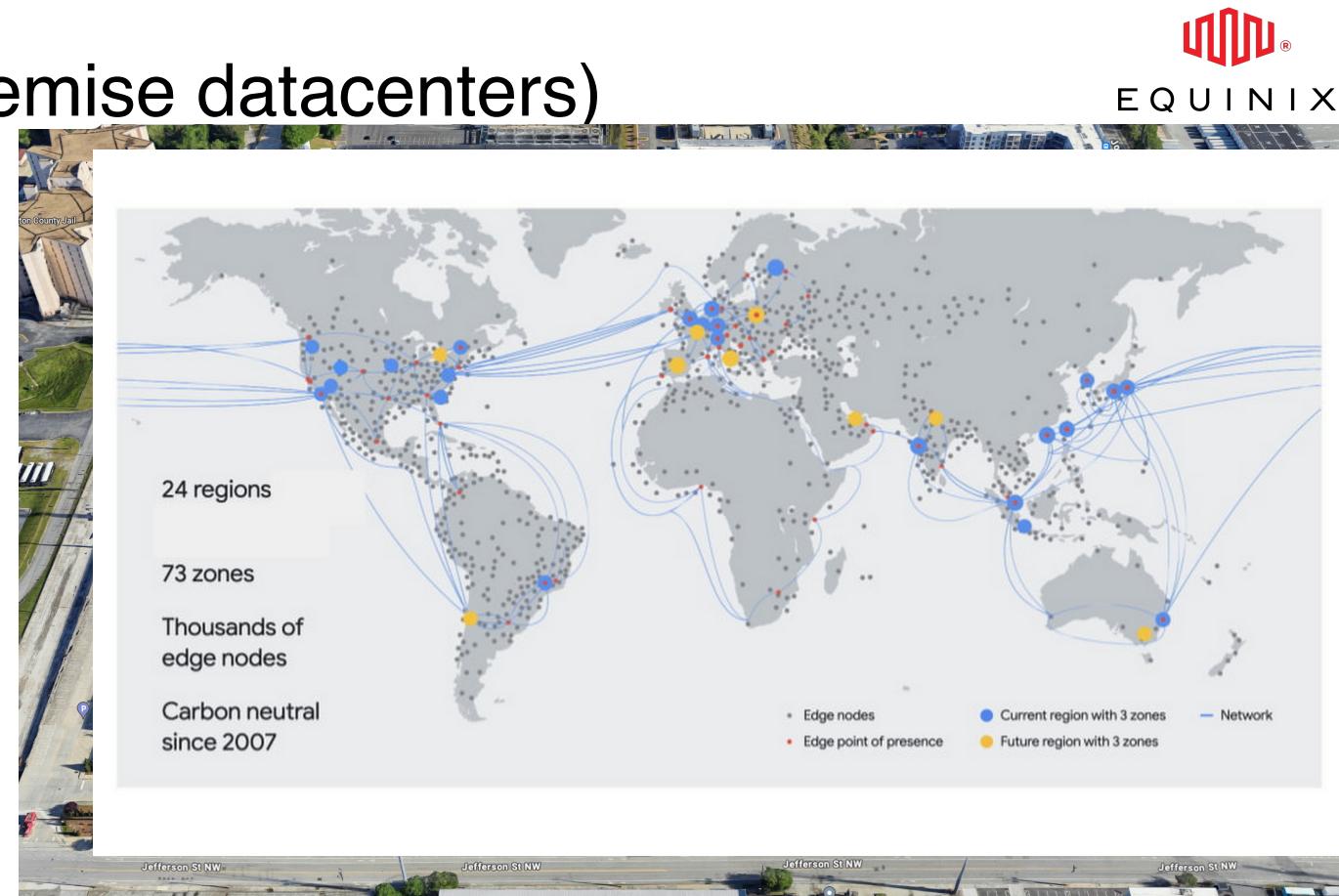
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- Enterprise datacenter (on premise datacenters)
- Colocation datacenters
- Edge datacenters
- Hyperscale datacenters



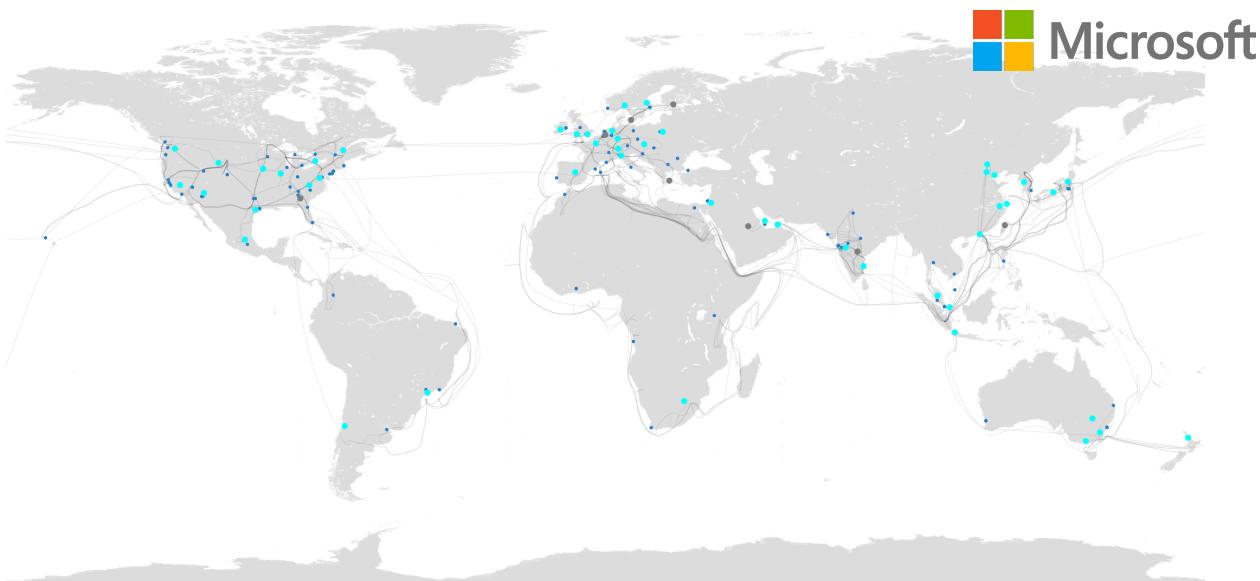
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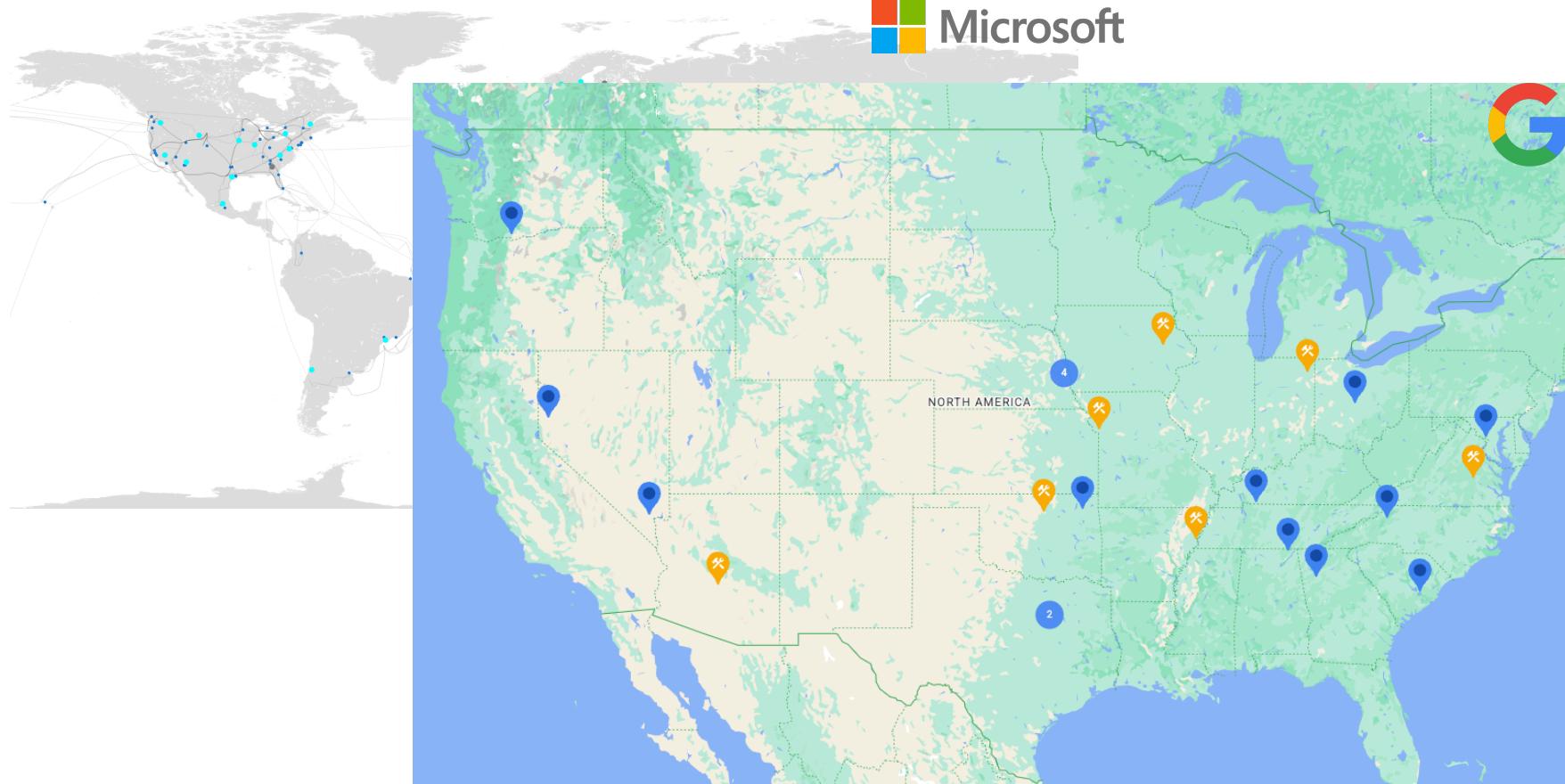


Where are datacenters?

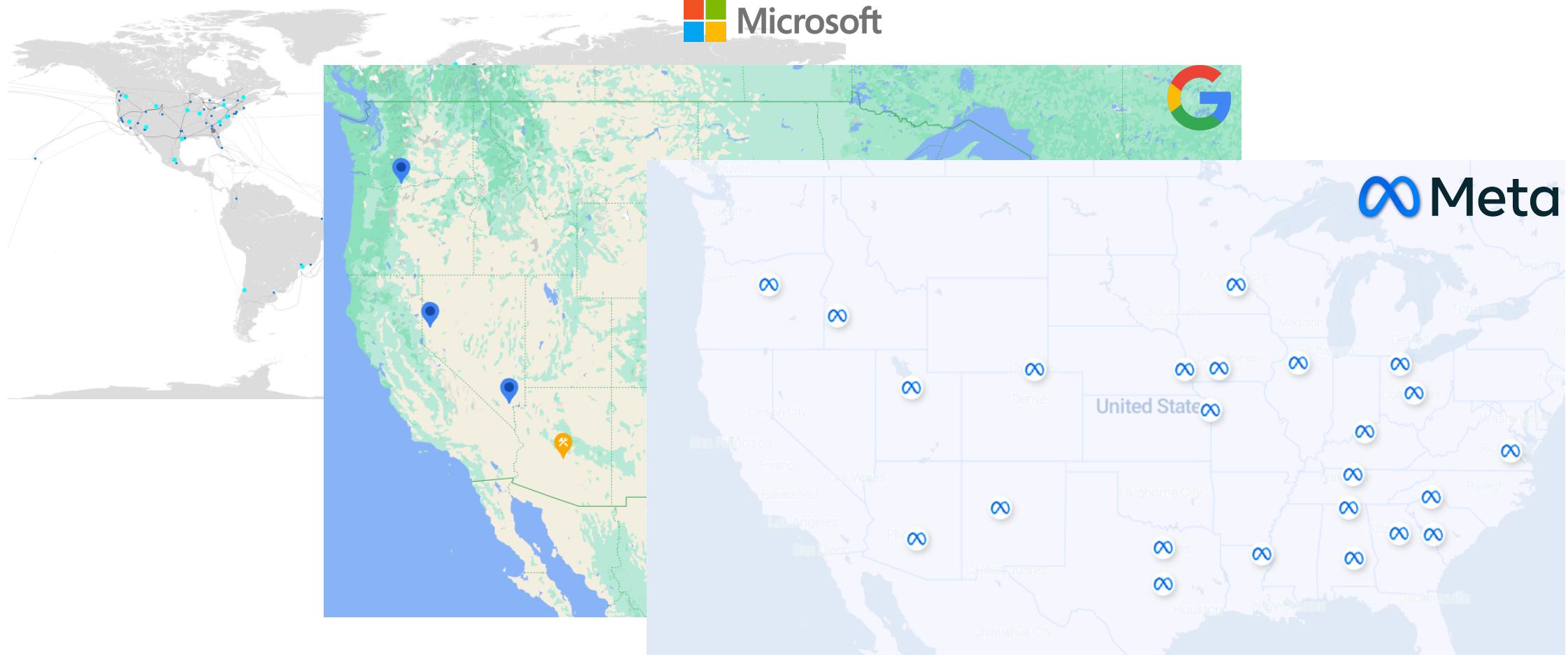
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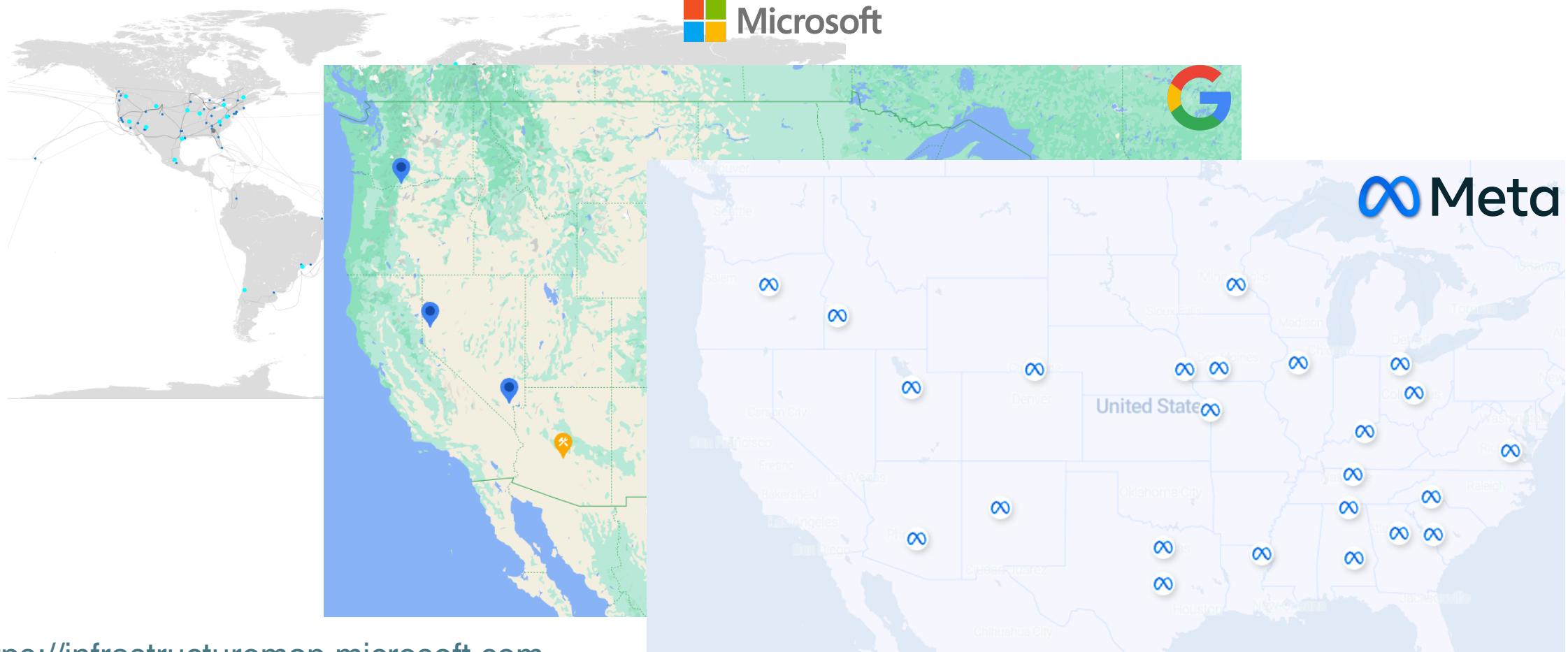
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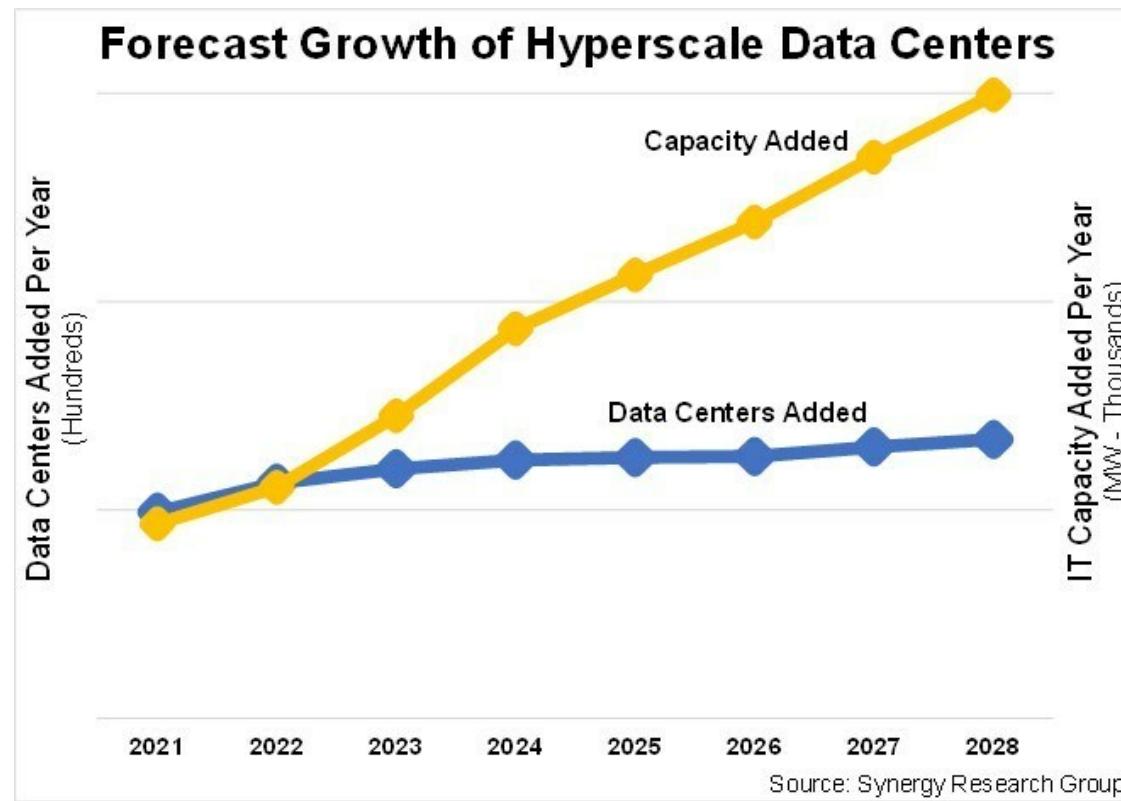
<https://infrastructuremap.microsoft.com>

<https://datacenters.google/>

<https://datacenters.atmeta.com/>

<https://www.datacentermap.com/>

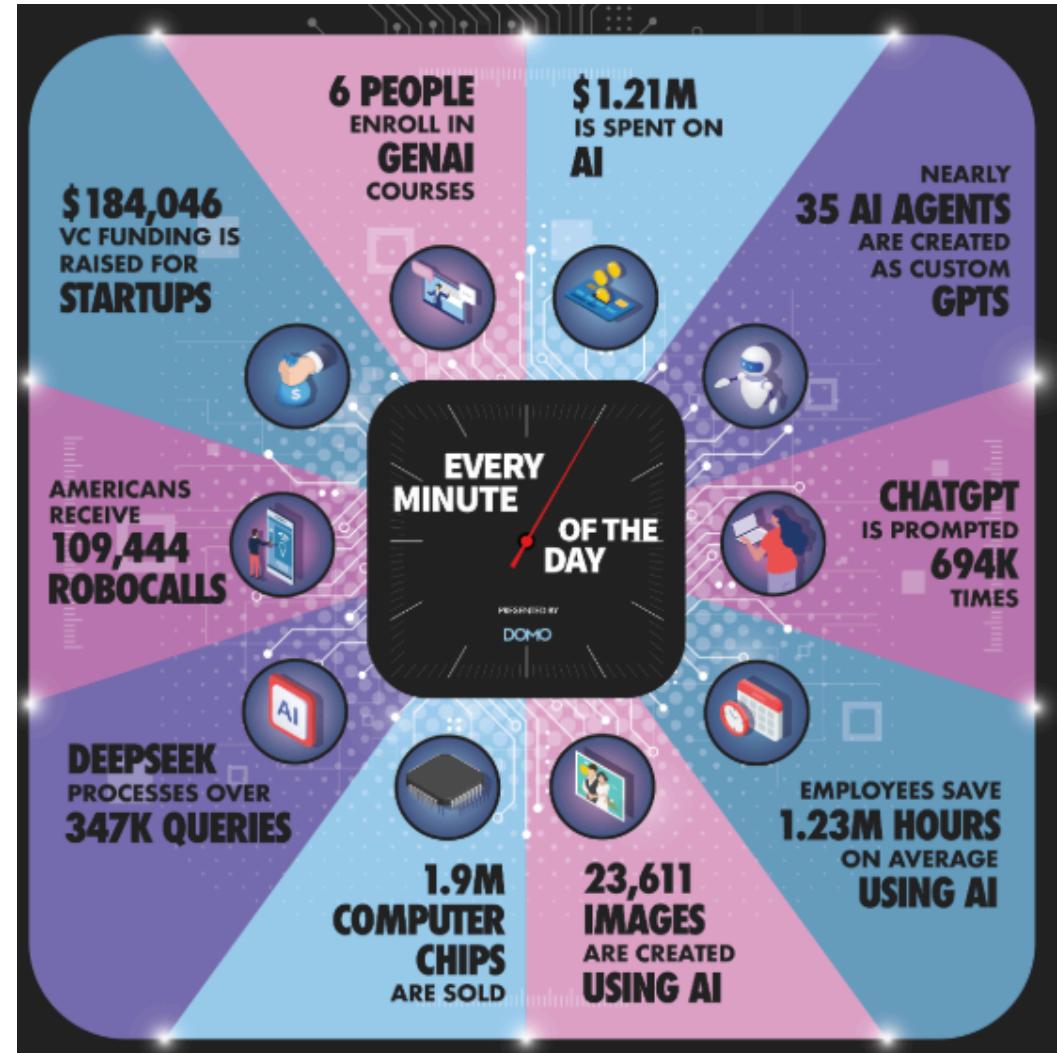
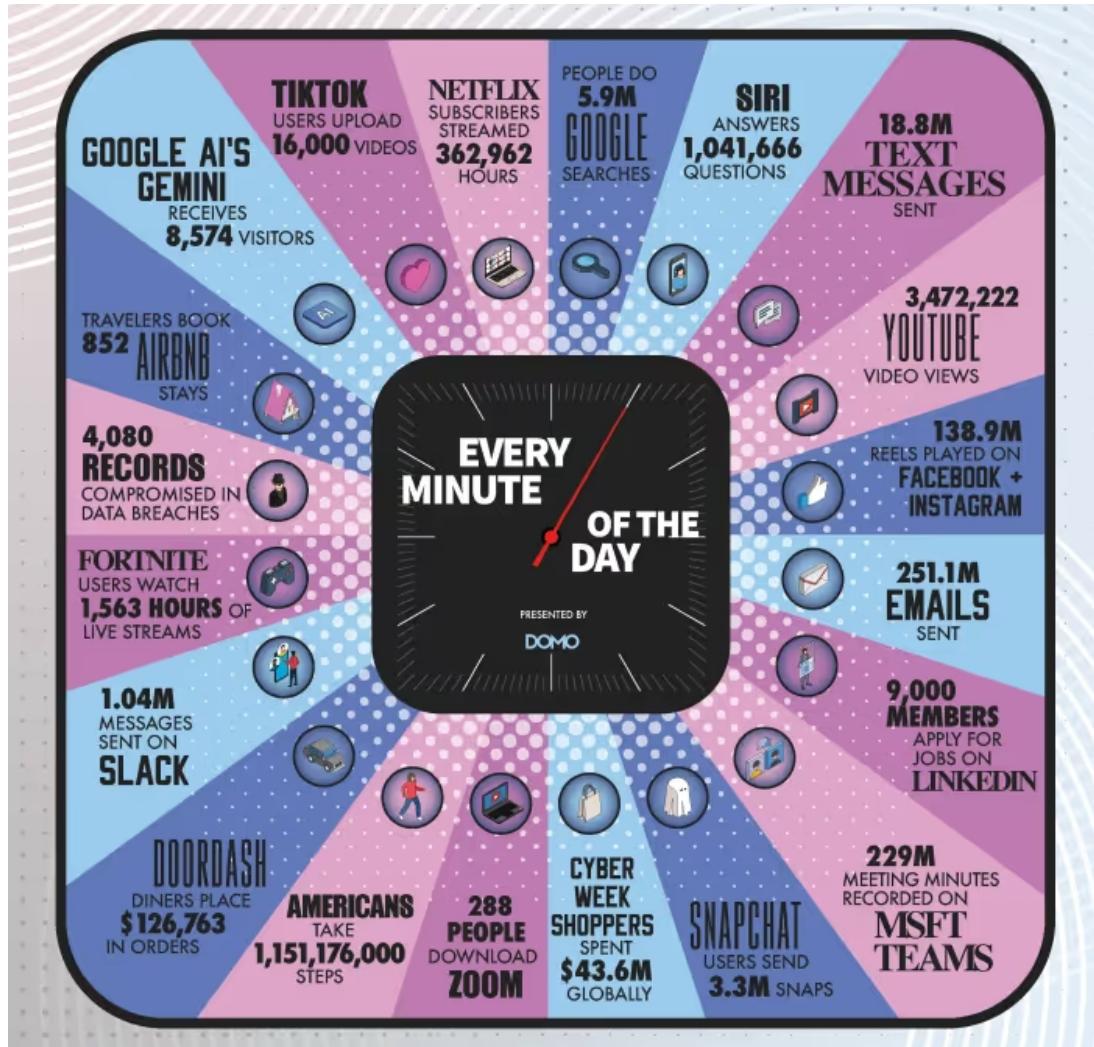
How much are we building?



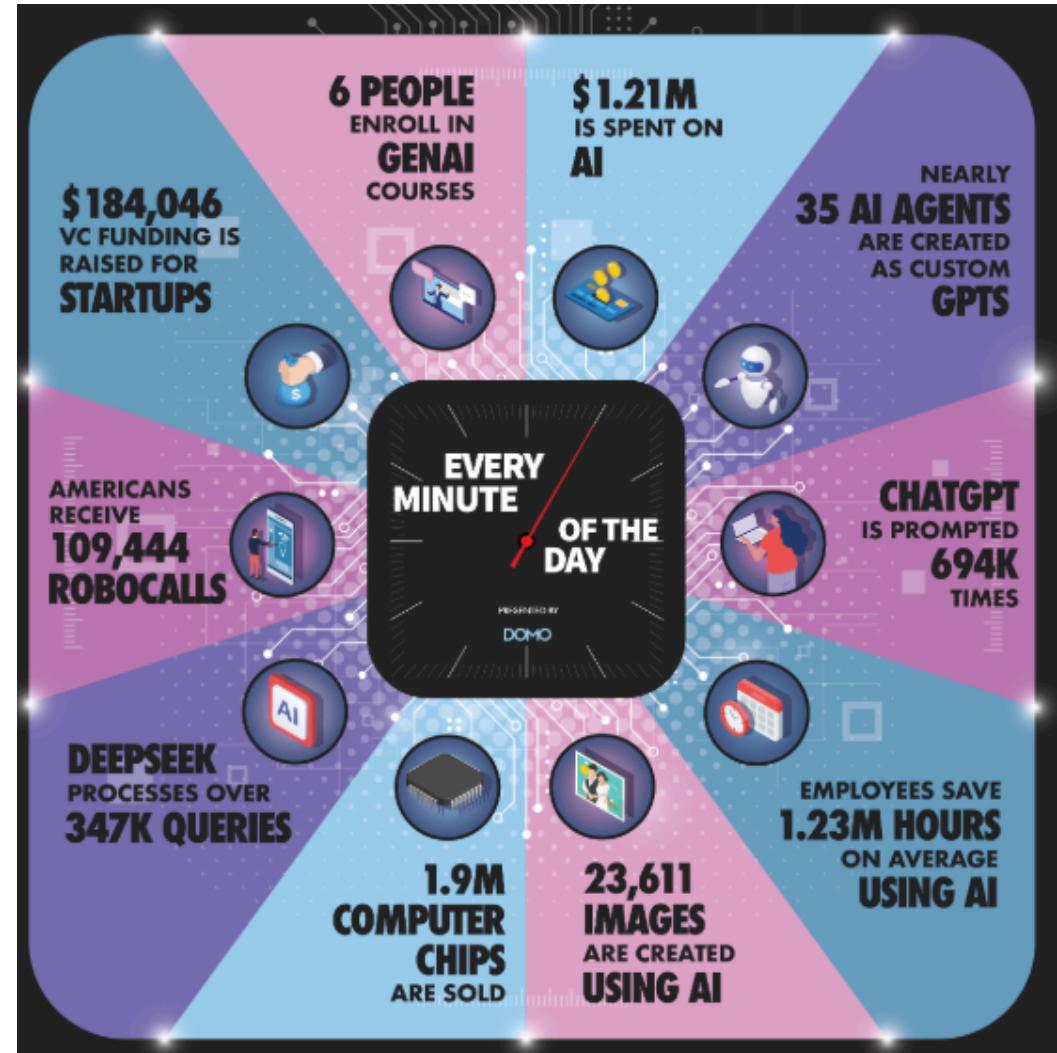
Hyperscale Data Center Capacity to Almost Triple

(<https://www.srgresearch.com/articles/hyperscale-data-center-capacity-to-almost-triple-in-next-six-years-driven-by-ai>)

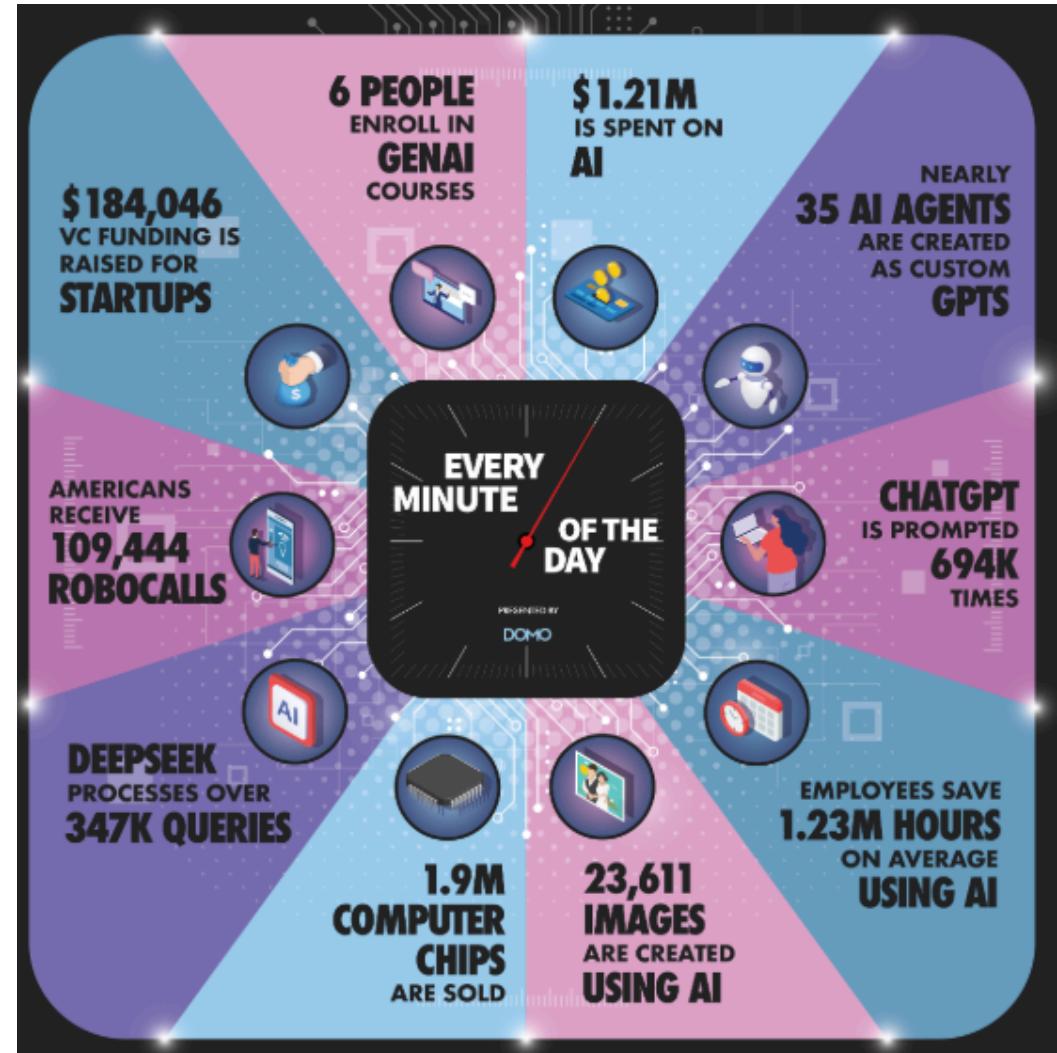
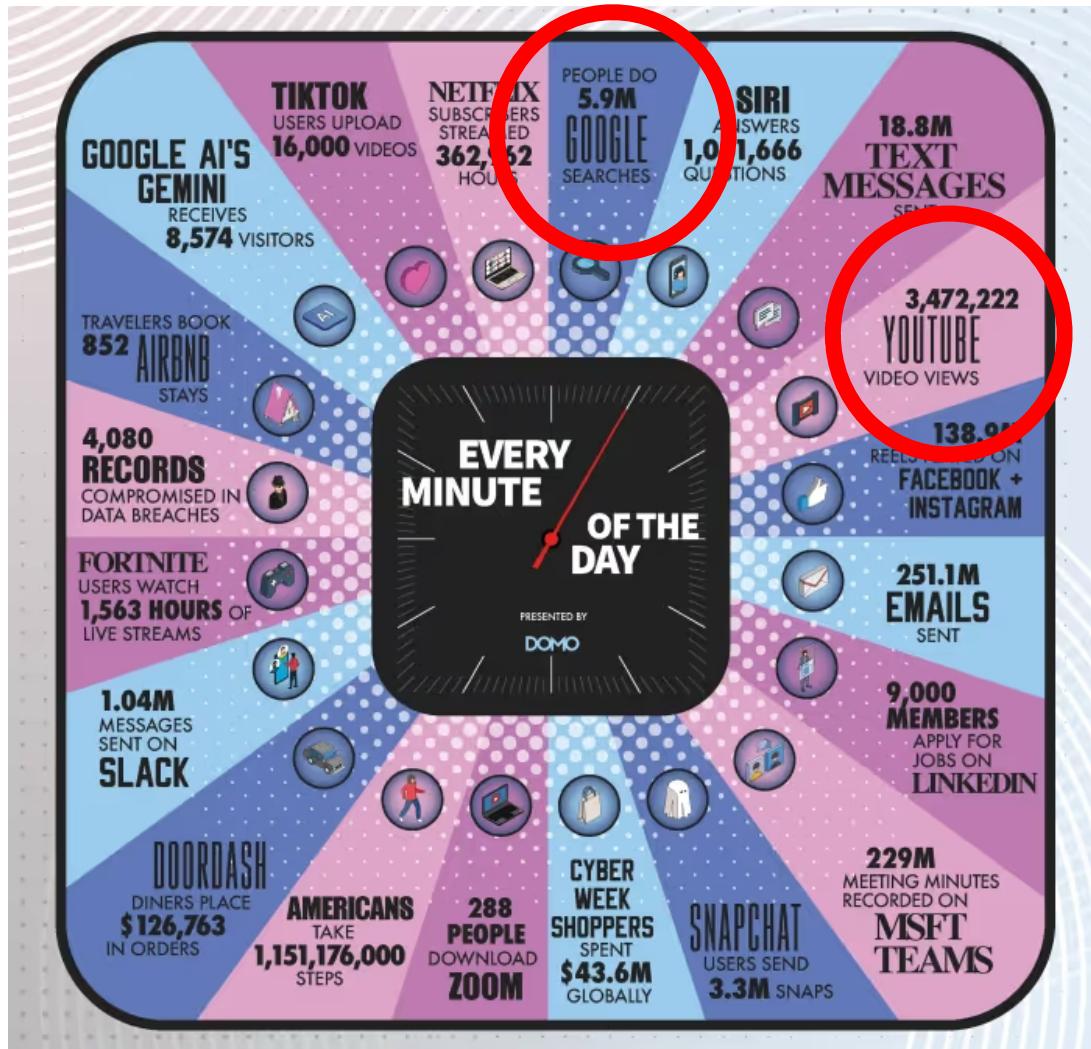
Why are building so much?



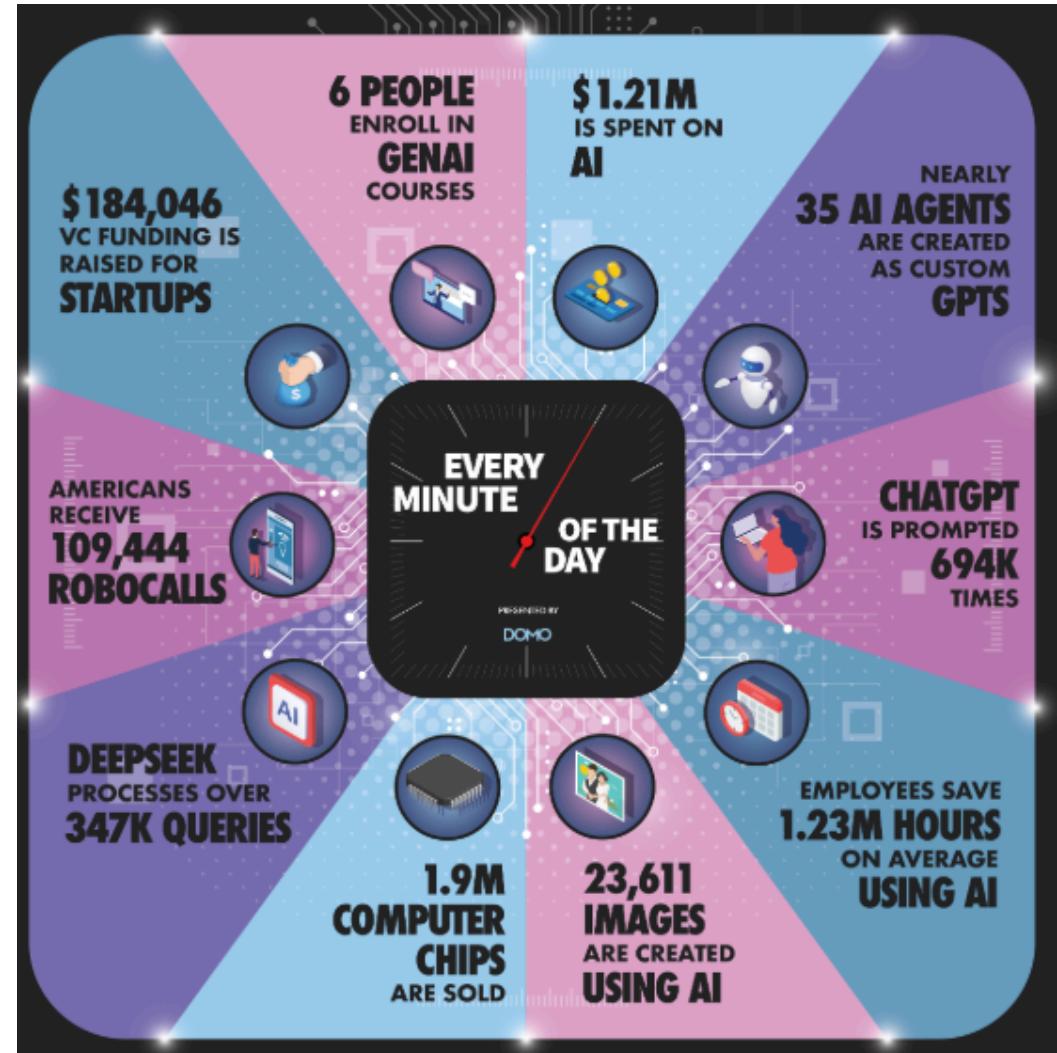
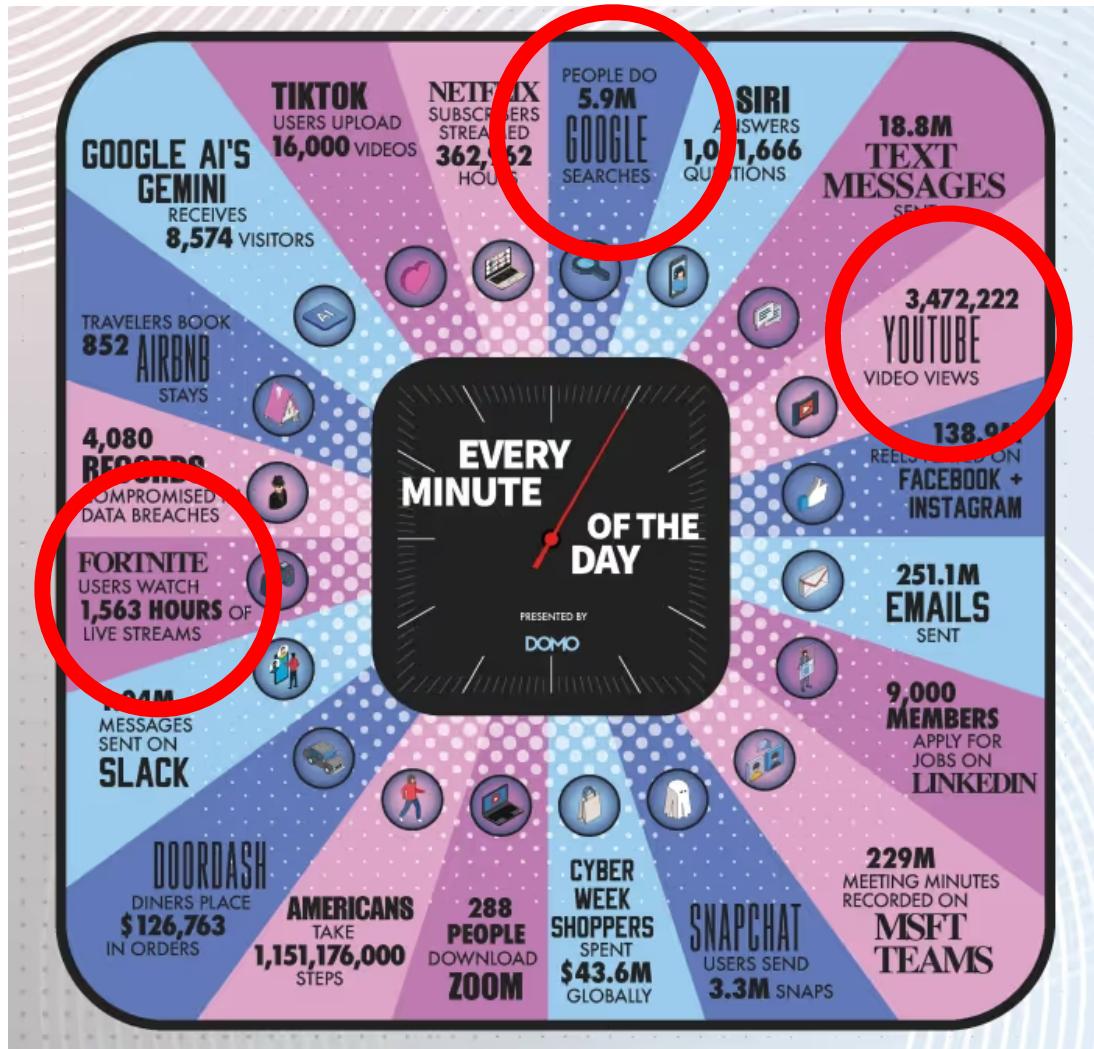
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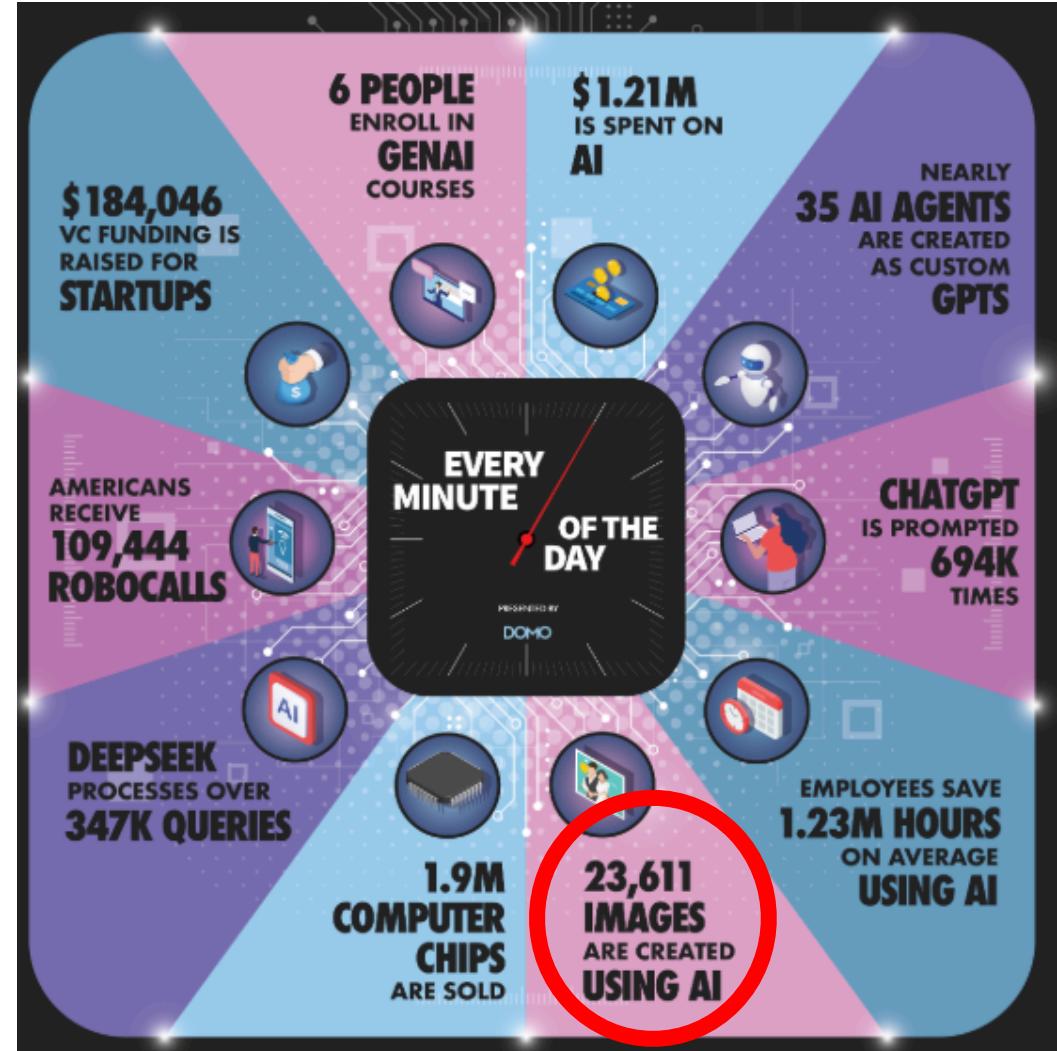
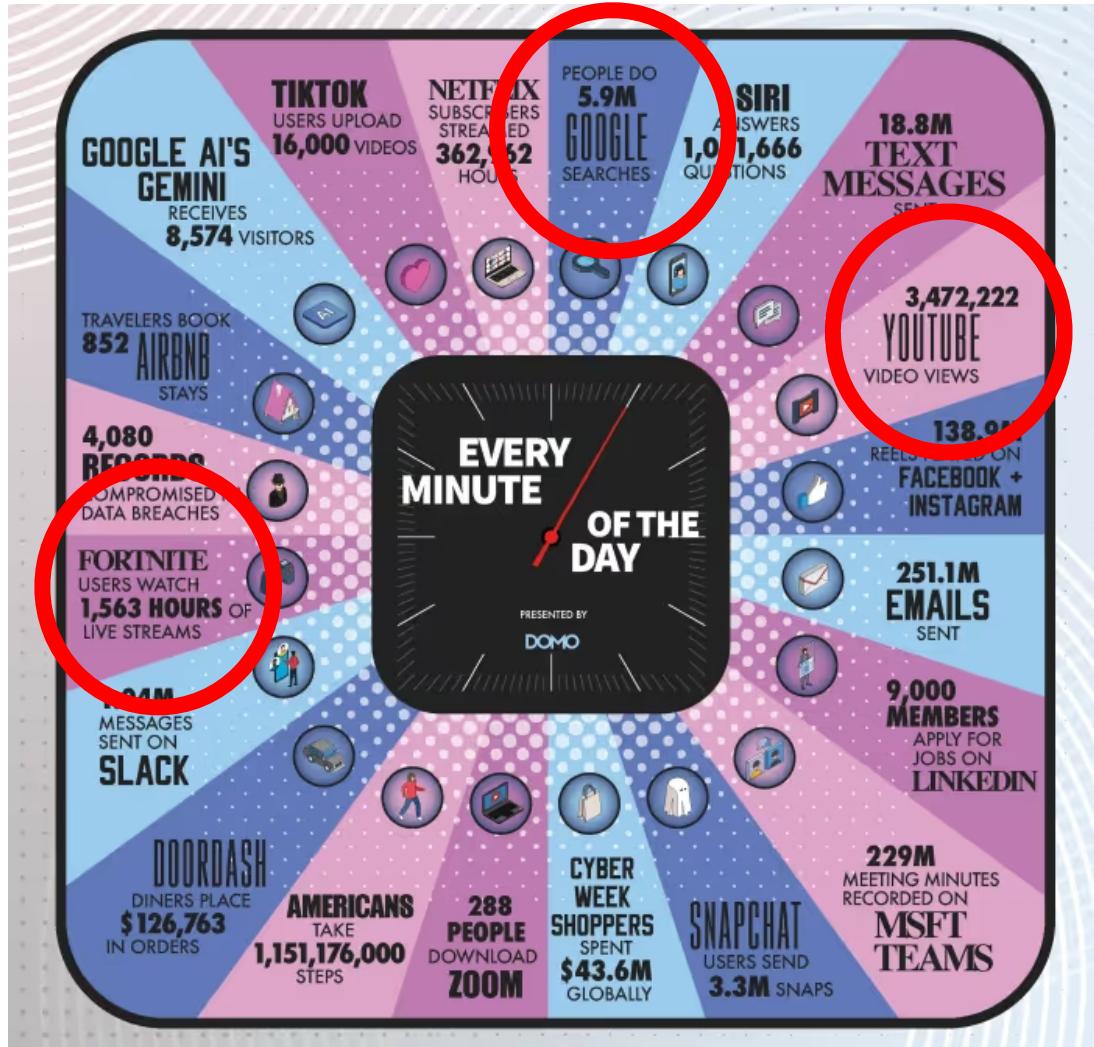
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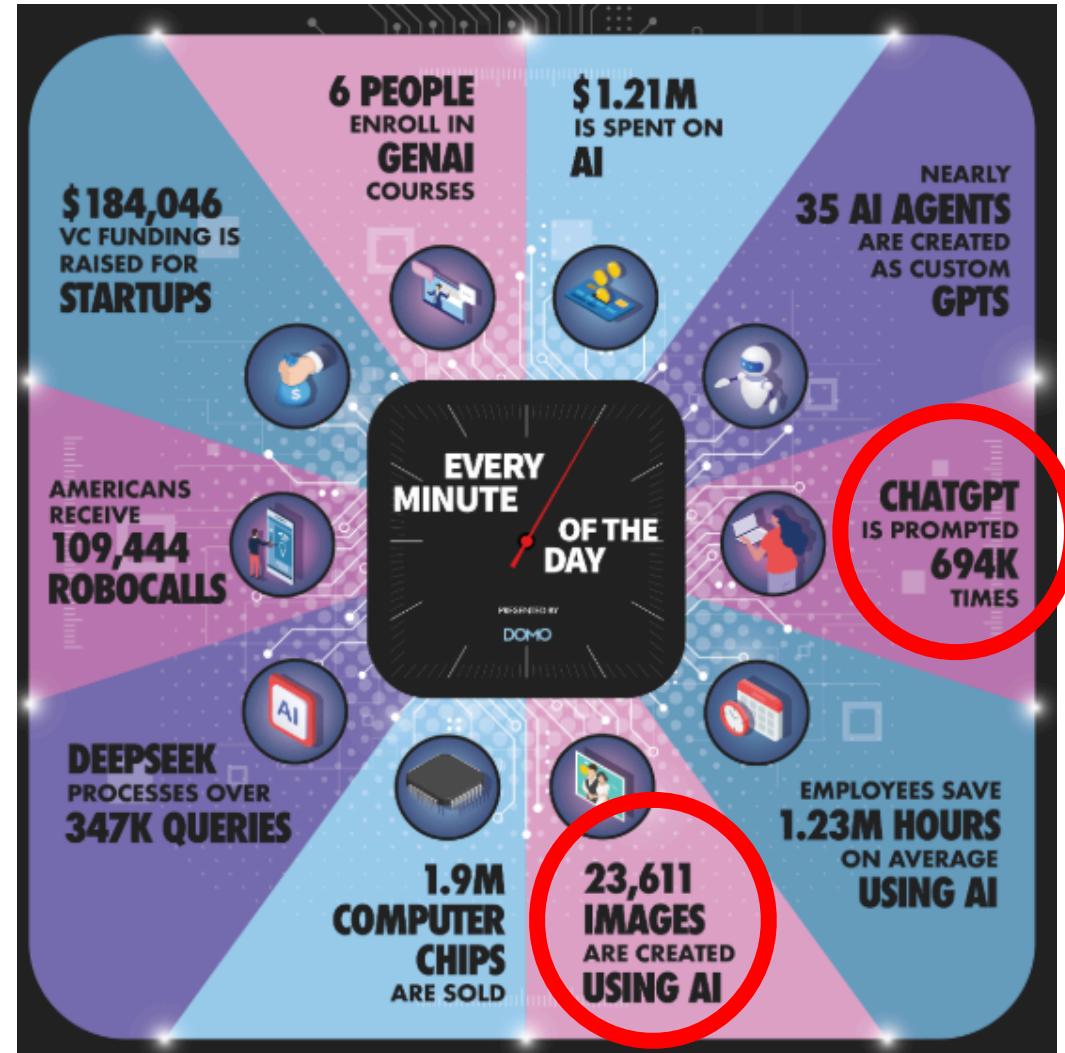
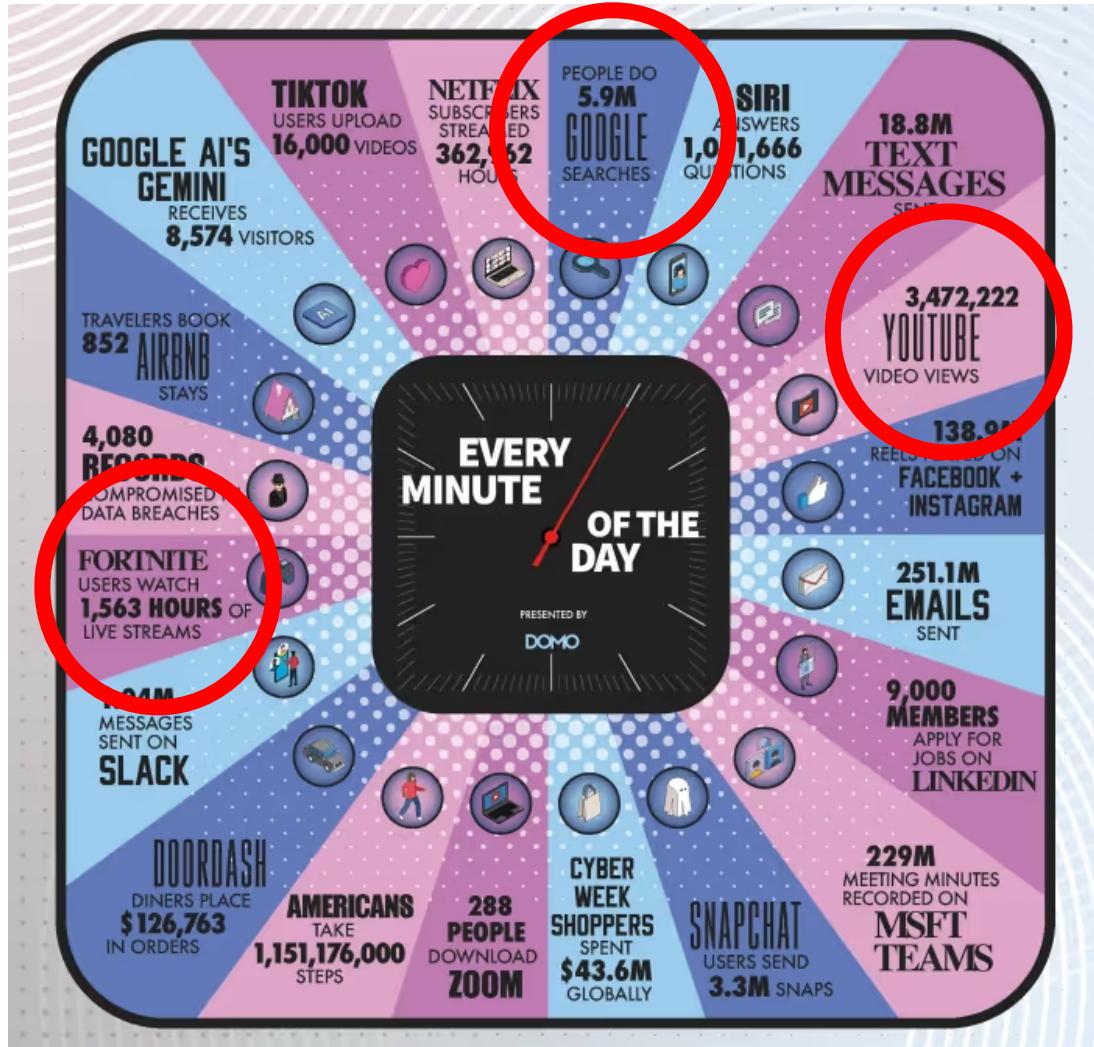
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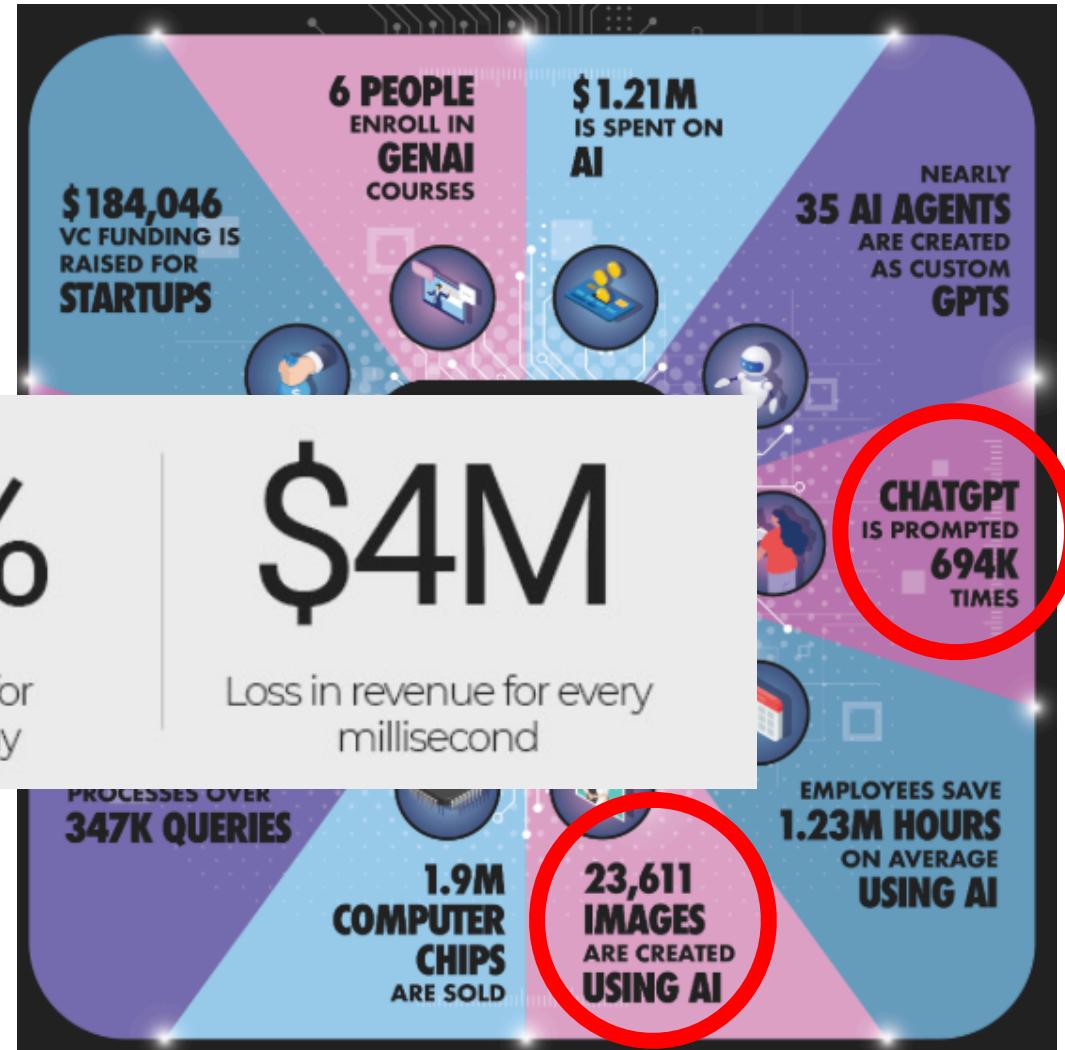
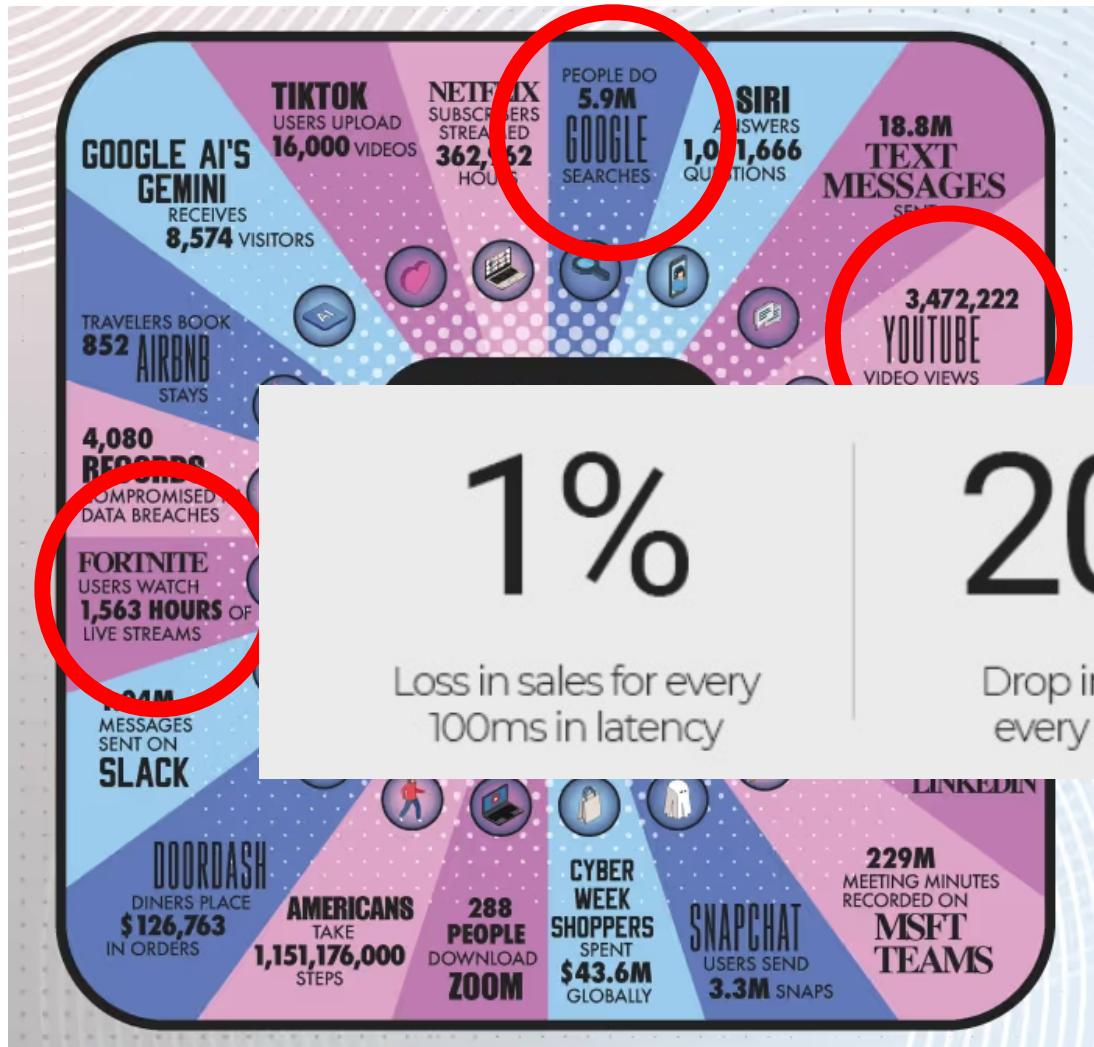
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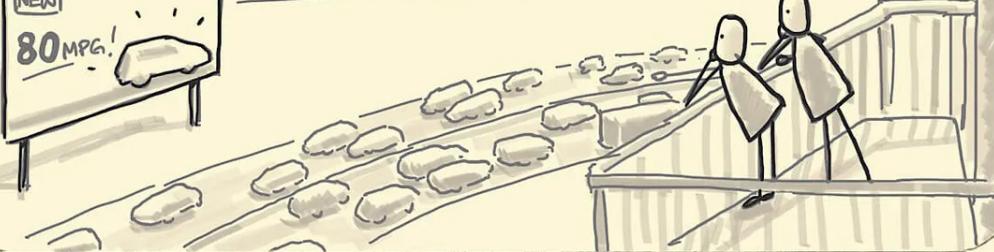
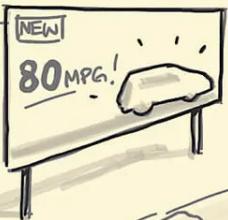


JEVON'S PARADOX

FUEL EFFICIENCY GAINS TEND TO **INCREASE**,
NOT DECREASE, FUEL USE.



THESE NEW CARS ARE SO
EFFICIENT EVERYONE'S
DRIVING EVERYWHERE
THESE DAYS.



sketchplanations