The Internet of Things

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This Talk Will Be Heresy

ps: it's not about things at all

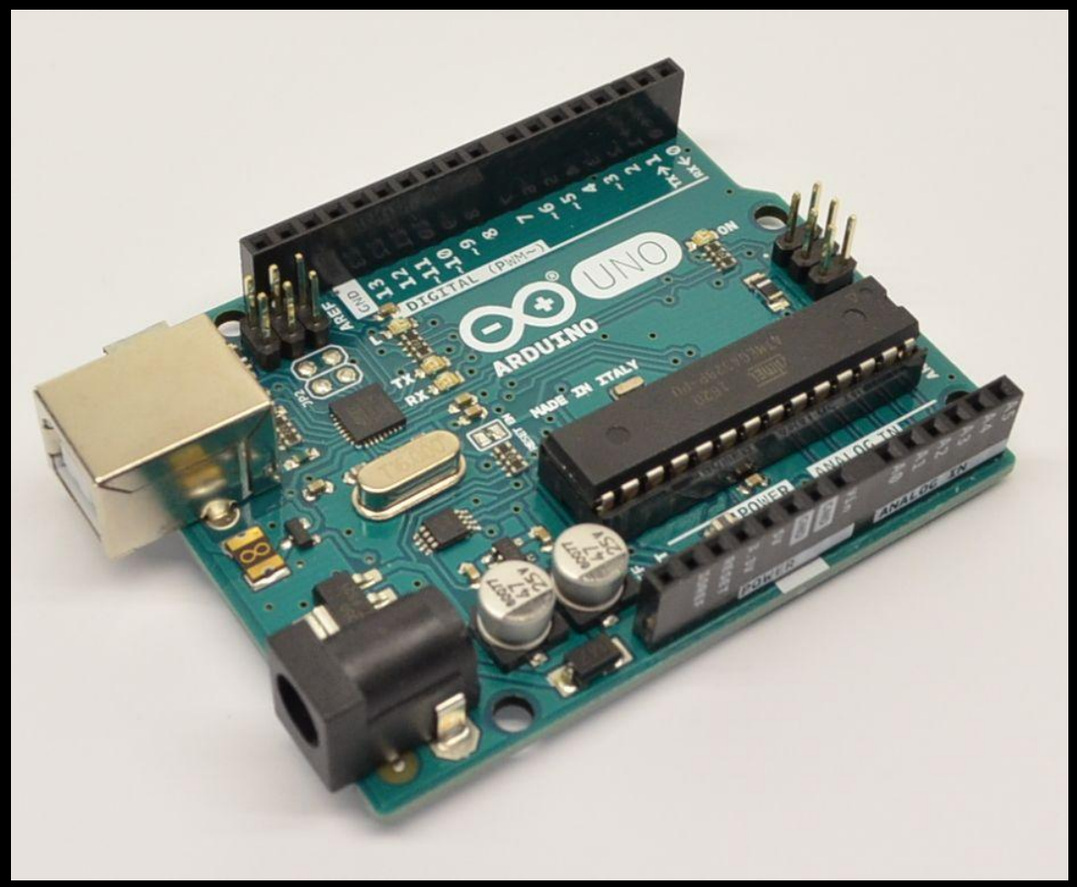
How it started*

Project SunSPOT[1]
Sun Labs
Started in 2003
First 32-bit IoT Developer Platform
802.15.4 Radios
IPv6
Nothing to store the data

* for me

Next Came Arduino

8-bit MCUs
No Networking
Released in 2007
Not 32-bit until 2012



A Protocol History?

802.11:	1997
802.15.4:	2003
Zigbee:	2003
BLE:	2004
LoRaWAN:	2015

In the Beginning

- The Internet of **Things**
- All about the 'Things'
- Data was secondary

Photo by Alina Grubnyak on Unsplash

Why are we doing this?

- ★ Collect data
- ★ React to data
- ★ Model systems
- ★ Make Digital Twins

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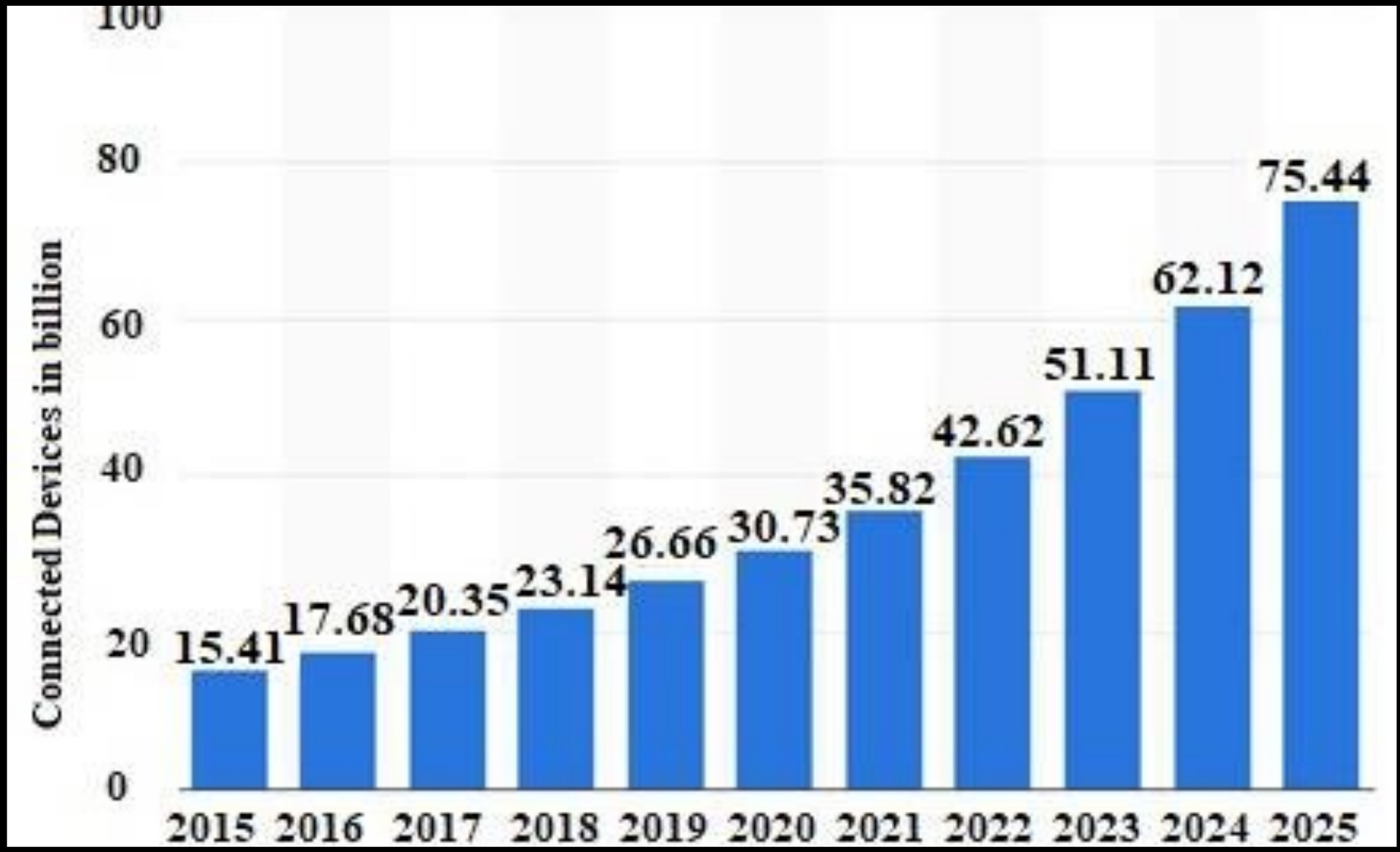
Billions of Things

- ✦ 20 Billion things?
- ✦ 100 Billion things?
- ✦ Depends on whom you ask, and when
- ✦ Still all about the things

Photo by Yun Xu on Unsplash



All The Things[2]

ALL THE
THINGS!

But the Data!

Let's Do Some Maths

75 billion things

10 bytes of data per thing

Every minute, of every hour of every day

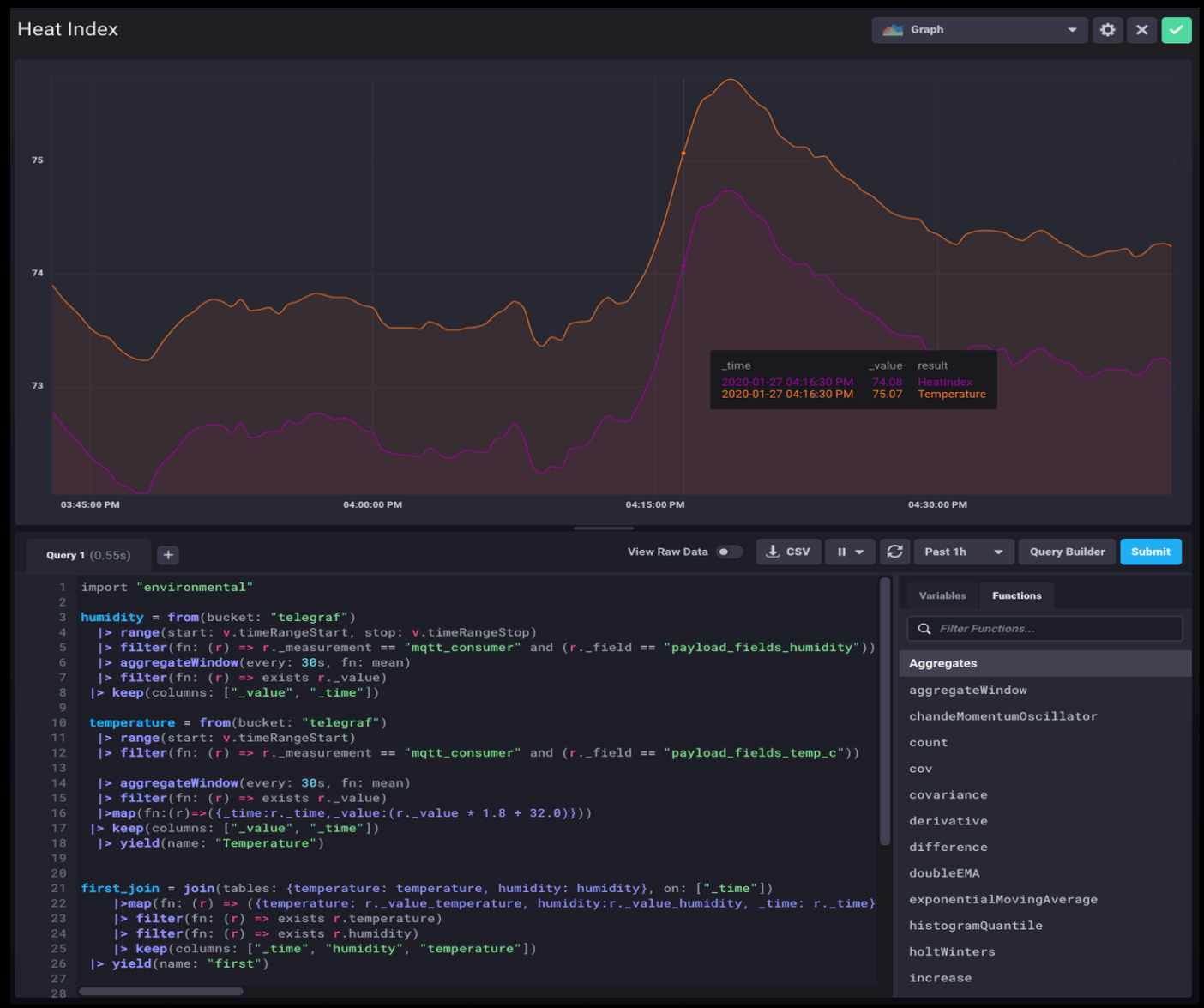
750,000,000,000 bytes/minute

750 GB/minute

1 PB/day

It's no longer about the Things

Collect
Analyze
Interpret
Visualize
React
Store
Expire
Remove



Heresy!!!!

I told you so

Manage The Data

Managing the data will become as big an issue as managing the devices

Remember, 1PB/day!

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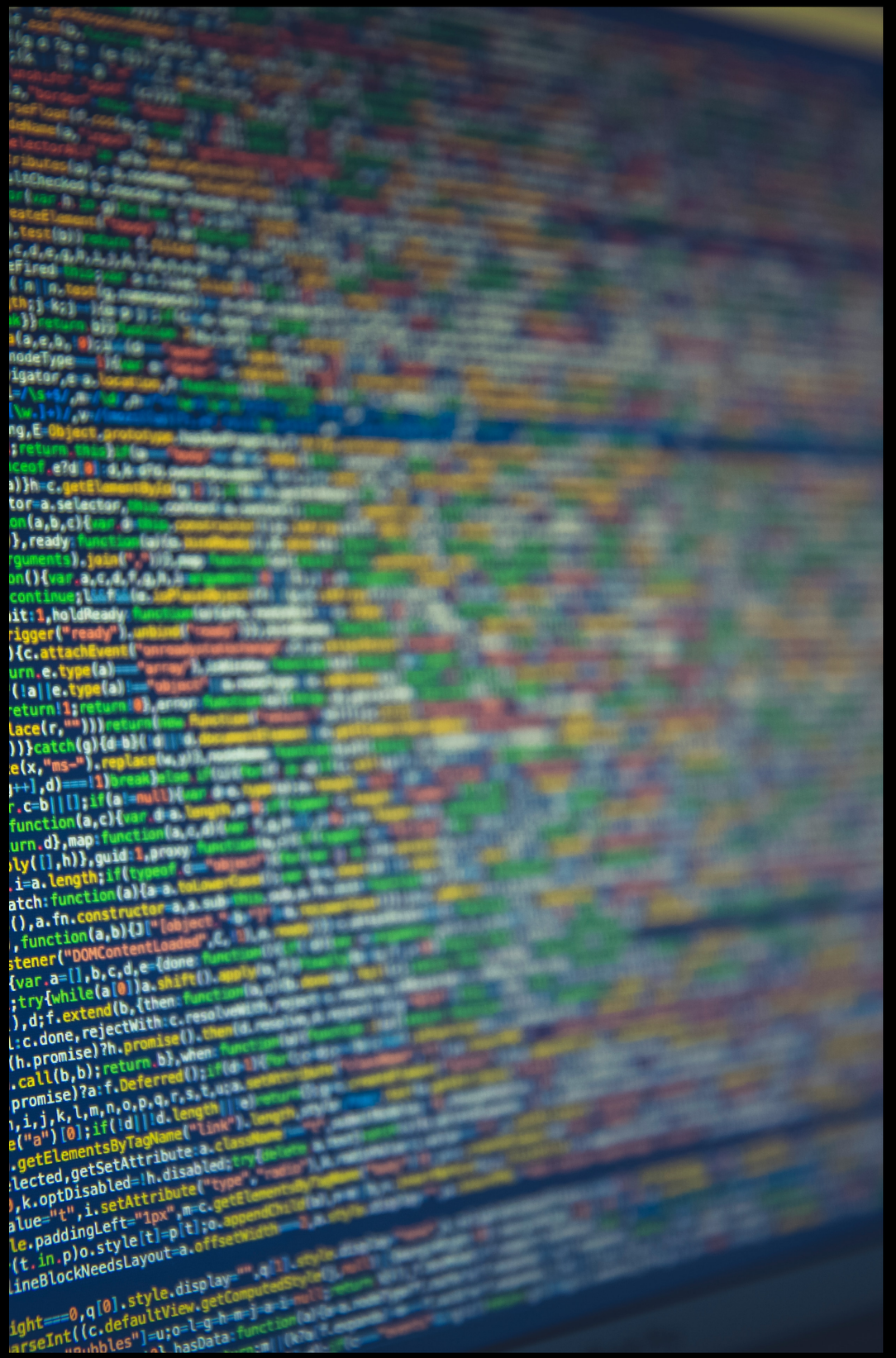
Data First
Things Second

Start with the answers
you're looking for
Move to the data you'll
need to get those
answers
Finish with the devices
you need to get that data



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Remember ...

- ✦ It's about the data, not the Things
- ✦ It's about what you *do* with the data, not just about collecting it
  - ✦ Data must be actionable to be useful
- ✦ It's about managing the data after you collect it

It's the Internet of Data

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Thank You!

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Sources

1:http://sunspotdev.org
2. https://www.researchgate.net/figure/Internet-of-Things-IoT-connected-devices-from-2015-to-2025-in-billions_fig1_325645304
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