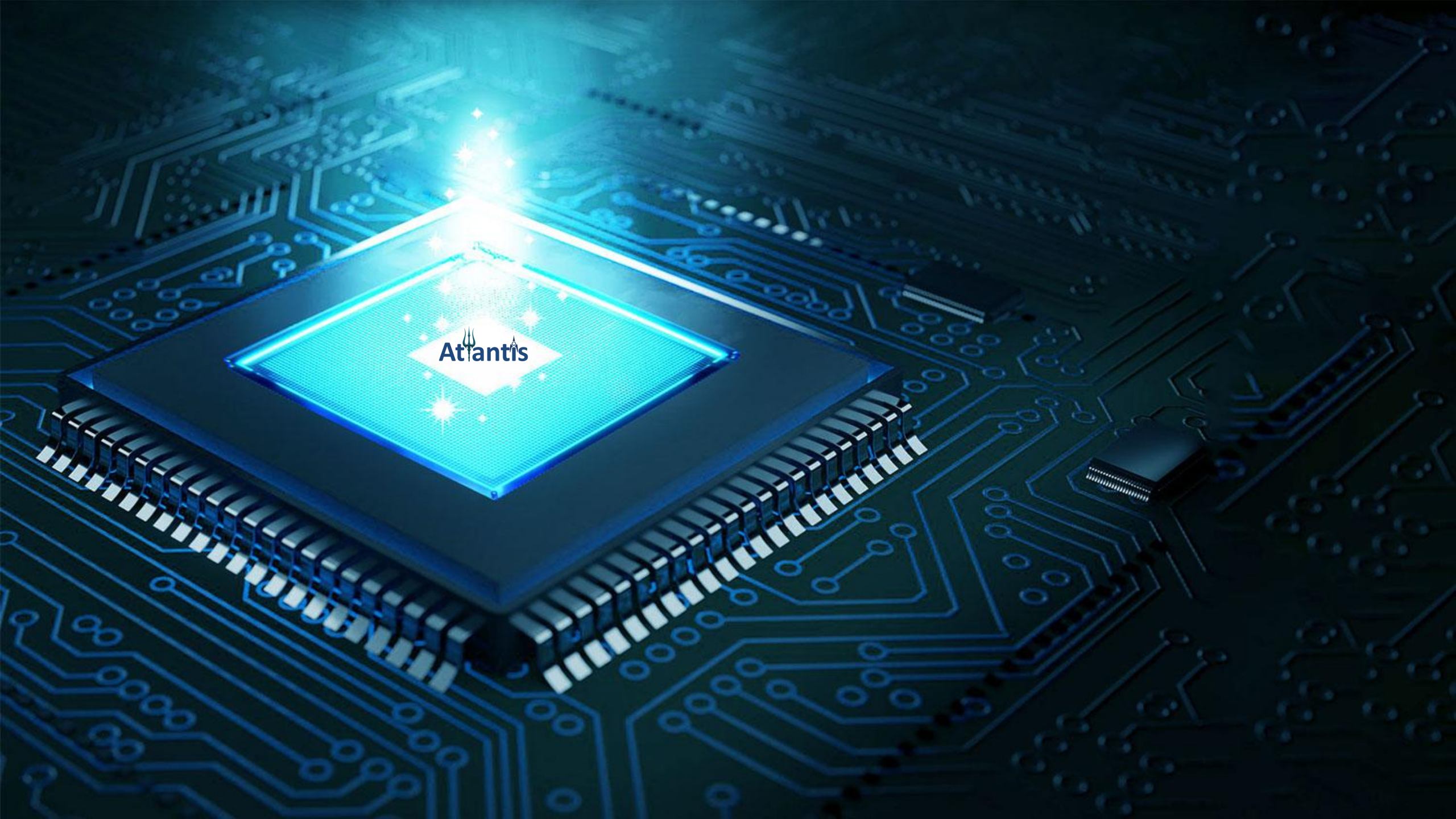




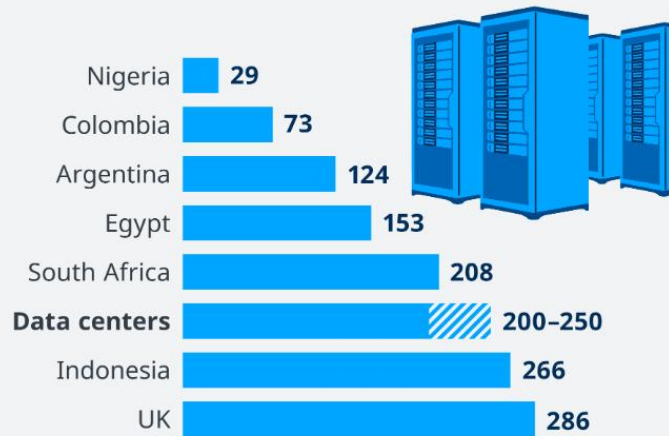
Atlantis

The Problem

- It gets harder and less profitable to invent new ways to shrink transistors.
- Even when shrinking transistors, the speed and power efficiency are still a drawback.

Data centers use more electricity than entire countries

Domestic electricity consumption of selected countries vs. data centers in 2020 in TWh



Source: Enerdata, IEA

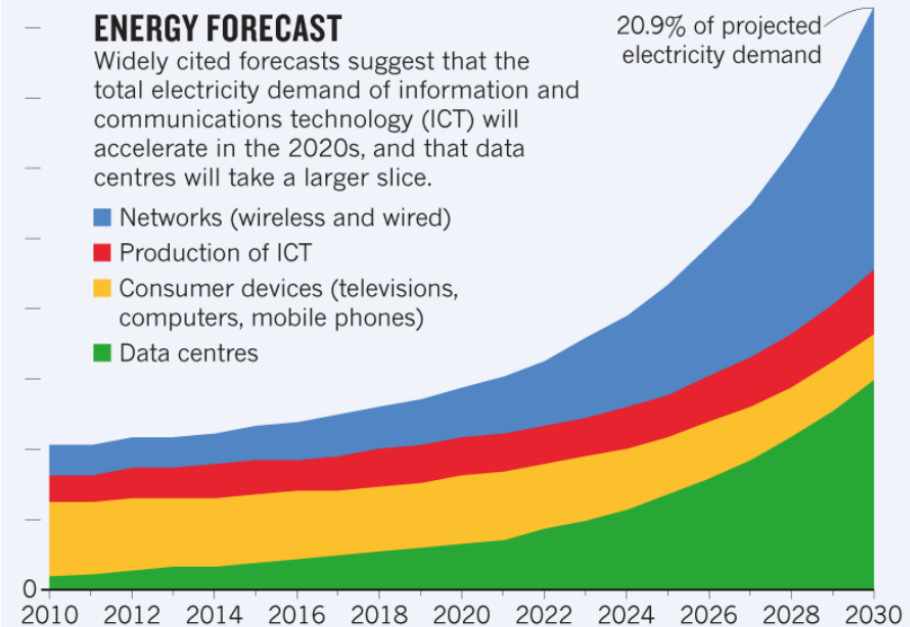
9,000 terawatt hours (TWh)

ENERGY FORECAST

Widely cited forecasts suggest that the total electricity demand of information and communications technology (ICT) will accelerate in the 2020s, and that data centres will take a larger slice.

20.9% of projected electricity demand

- Networks (wireless and wired)
- Production of ICT
- Consumer devices (televisions, computers, mobile phones)
- Data centres

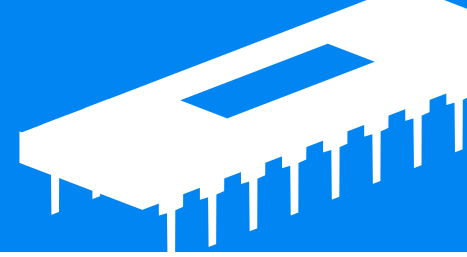


The Solution – a full photonic chip

- **CMOS compatible** – Can be produced at any fab using standard processes and materials
- **Power efficient** - Power consumption is much better than the electric equivalent.
- **Faster** - About 2 magnitudes faster than the current technology.
- **Scalable** - More components can be realized on the chip without changing its area.



Comparison vs electronics

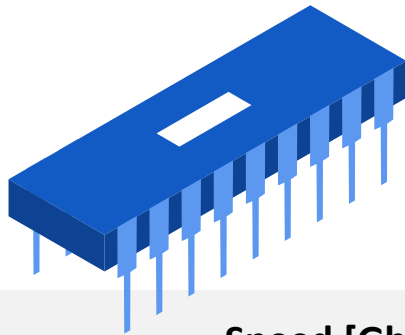


Example - VSC850 Switch

VITESSE

 **Microsemi**

 **MICROCHIP**



Electric Version

Photonic Version

Speed [Gb/s]

1.6

200

Energy Consumption [mw]

220

12

Size [mm]

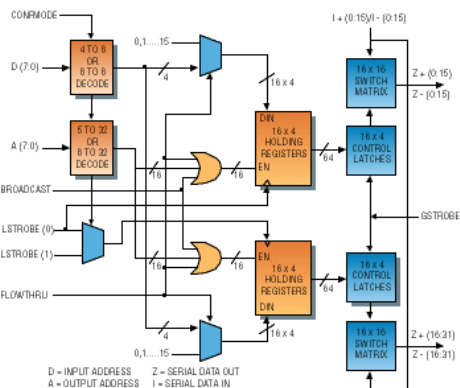
17 * 17

20 * 16

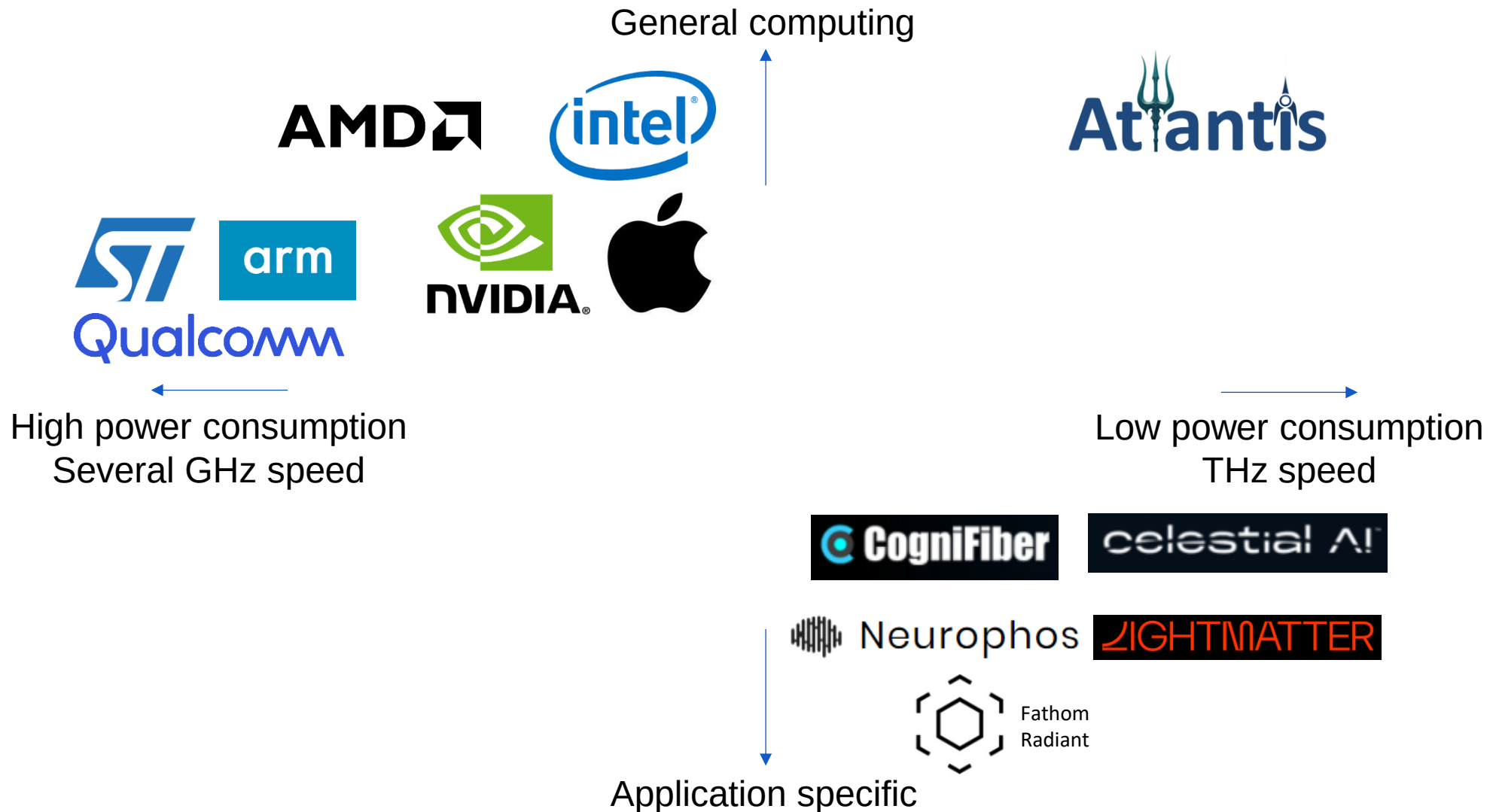
Price [\$]

14.47

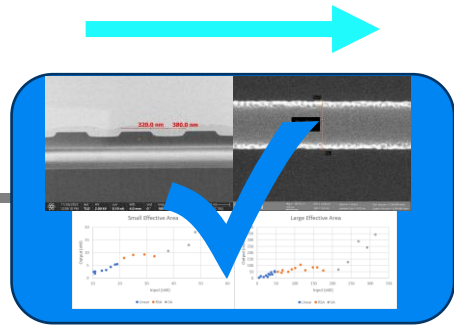
10



Competition



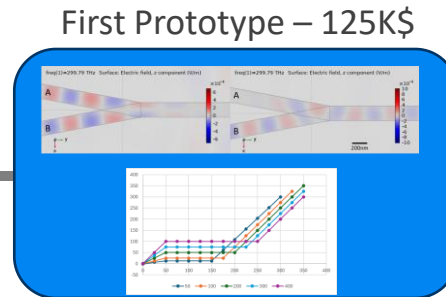
Timeline



Research

Showing the phenomena on chip

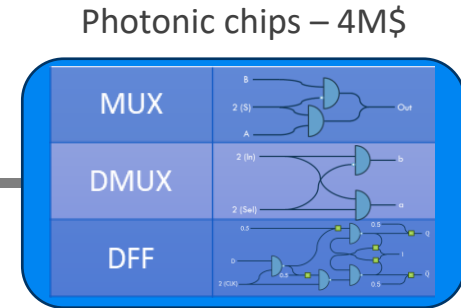
We are here



library of devices

Expanding our POC to a full range of devices

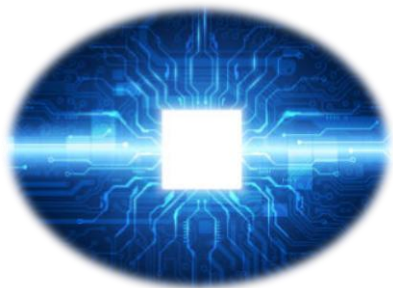
Fab Prototype – 1.3M\$



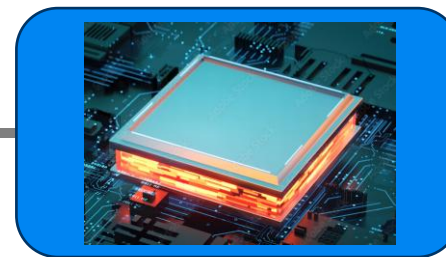
Complex logic

First photonic chip sent to customers

Initial Use case and cooperation with a fab
First sales



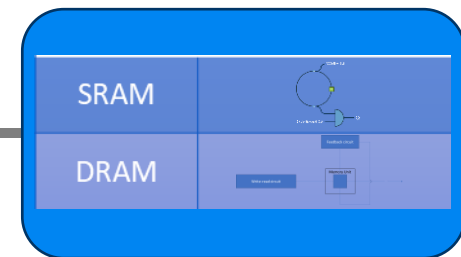
Full microprocessor



Layered design – 4 years

Full market penetration and starting cooperations aimed for full microprocessor

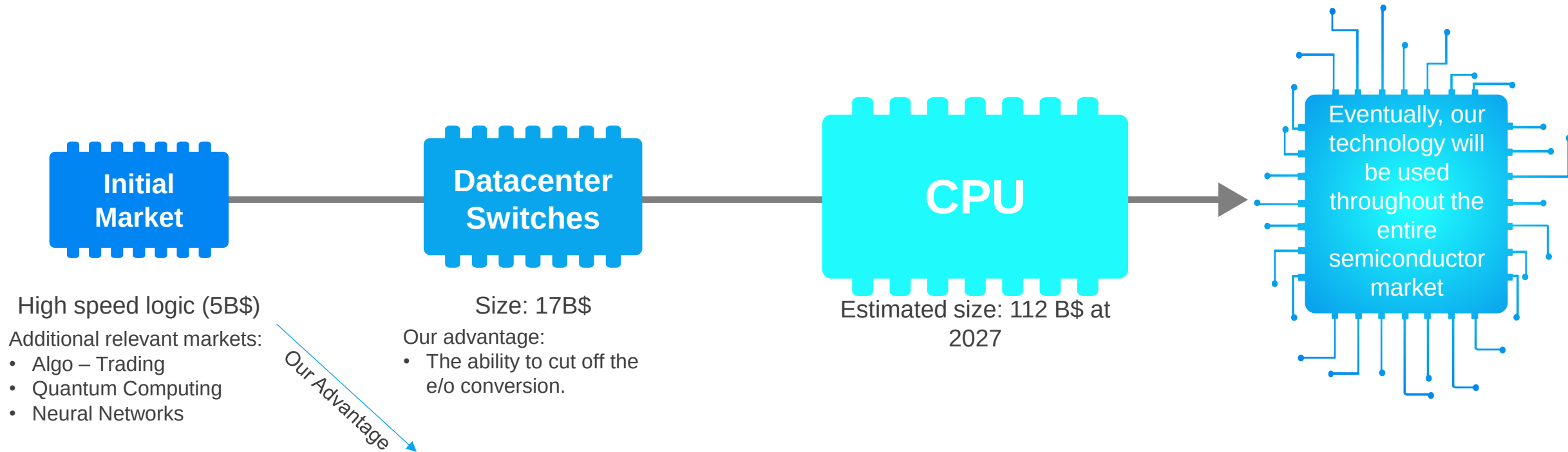
Integration of memory and logic



Memory – 3 years

Complex Designs and licensing of IP

Market Size



High speed logic gate	Electronic gate	Photonic gate
Propagation delay [ps]	95	40
Power Consumption [mW]	230	100
Supported Data Rates [Gbps]	14	Up to 100

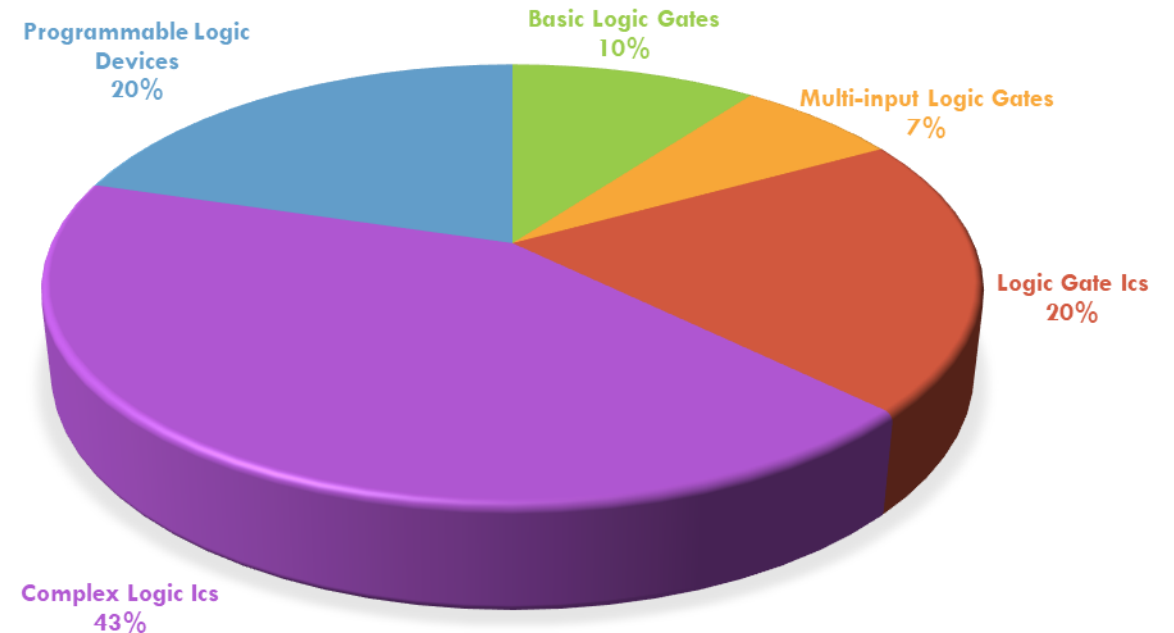
Market Analysis

Market	Size (B\$)
Basic Logic Gates (AND, OR, NOT, NAND, NOR, XOR, XNOR)	3
Multi-input Logic Gates (Gates with more than two inputs)	2
Logic Gate ICs (e.g., quad gates and hex inverters)	6
Complex Logic ICs (Multiplexers, Decoders, Flip-Flops, etc.)	12.5
Programmable Logic Devices (PLDs) (PALs, GALs, CPLDs)	6

5

Market adoption direction
Simplest to most complex

Market by device complexity (total: 26.5B\$)



We estimate that our market share will begin in 1% of the High-speed market (5B\$->50M\$) in 4 years

And will grow exponentially as the technology advances

Achievements



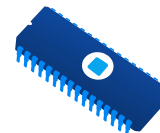
IIA

Funded by the Israeli Innovation
Authority



Patent Pending

The technology is patent pending



Initial POC

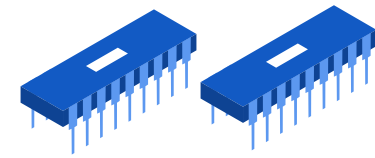
Designed and produced a POC
for the device



**In the process of enlisting
as a MAFAT supplier**

And creating a library of photonic
devices

Meet Our Team



2 more team members waiting to join

Eyal Terkieltaub Lee

Founder

The initiator of the project and the inventor of the technology. Holds an MSc in the field of electro-optical computing and accumulated a large network of connections in the industry. In addition, he has vast research experience in various fields and a deep understanding of complex systems.



Prof. Jacob Scheuer

Advisory board

The head of the Department of physical electronics at the school of EE, Tel Aviv University. He specializes in light-matter interactions in the nano-scale and novel semiconductor optoelectronic devices.



Dr. Amit Golander

Advisory board

Ex-CTO at Huawei with a vast connection network and a deep understanding of the semiconductor market and technology. In addition, he has a rich R&D background, including as a startup founder.





THANK YOU

eyal@elics-world.co