GOLDMAN KNOX

arm

ARM IPO 2023

Arm Company Overview

Arm, or Advanced RISC Machines Ltd, is a semiconductor and software design company. The England-based business started its journey in 1990.

Although, the story begins a few years earlier. In 1979, Christopher Curry and Herman Hauser created Acorn Computers. Their main aim was to make electronics more accessible to the average consumer.

Then, when the computer market collapsed in 1985, they struggled to stay operational. This meant the company had to scale down its activities.

Part of that was reducing the cost of chip development research. To do that, Acorn sent a group of engineers to a cabin just outside Cambridge.

At first, the team worked under the name Acorn RISC Machines (ARM). They developed the processor that was used in the original Acorn Archimedes.

After a few years of financial struggles, the group of engineers needed a fresh start.

That's when Advanced RISC Machines came around. It began as a joint venture between Apple, Acron, and VLSI Technology.

Each one of the major corporations supplied a different element to the new business. Acorn provided the main manpower.

Moving on, VLSI contributed tools and technology, while Apple offered up the capital. The iPhone company invested around $3 million to get Arm off the ground.

After that, it took around three years for the new semiconductor business to get off the ground. In 1993, Arm had its first profitable year.

Since then, the establishment has grown exponentially. By 1994, the firm opened up branches in Silicon Valley and Tokyo.

A couple of years later, Arm signed a few significant licenses with phone manufacturers. That included Texas Instruments, Samsung, and Nokia.

This marked a huge milestone for the company, but it would still continue to grow. By 1998, Arm went public, and within a few months, the business was worth over a billion dollars.

The next impressive achievement would be in 2003. The brand established a new cell phone processor that can ensure personal data is secure at the hardware level. This technology quickly spread to other devices like smart TVs and edge gateways.

2004 was also an exceptional year for the organization. Arm launched the A.R.M. family of processors and released the DesignStart program. This solidified the company as one of the leaders in its field.

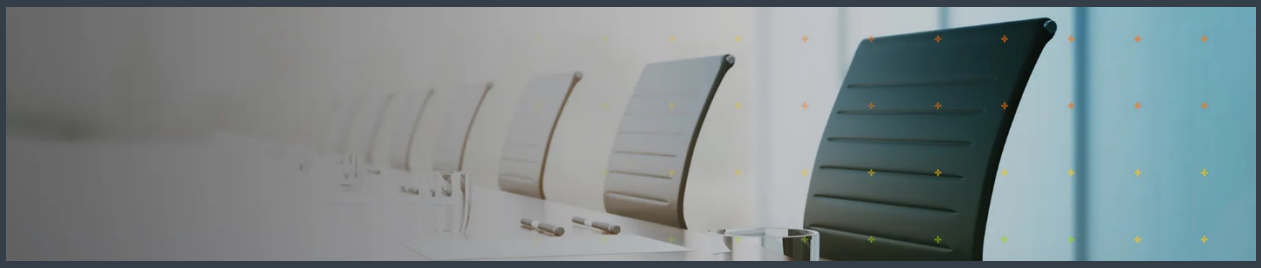
The establishment's main source of income comes from licensing its designs. It has many intellectual property deals that bring in revenue. It's also important to note that the company doesn't manufacture its own chips like many of its competitors.

Lastly, in 2016, SoftBank bought out Arm, turning it back into a privately owned business. Today, Arm supplies semiconductors and software all across the globe. It has major branches in Asia, Europe, the Middle East, Africa, and North America.

Arm Leadership

- **Rene Haas:** Chief Executive Officer (CEO).
- **Jason Child:** Executive Vice President and Chief Financial Officer (CFO).
- **Kirsty Gill:** Chief People Officer (CPO).
- **Spencer Collins:** Executive Vice President and Chief Legal Officer (CLO).
- **Tamika Curry Smith:** Senior Vice President and Chief Diversity Officer (CDO).
- **Drew Henry:** Executive Vice President of Strategy and Marketing.
- **Will Abbey:** Senior Vice President of Sales and Partner Enablement.
- **Dipti Vachani:** Senior Vice President and General Manager of the Automotive Line of Business.
- **Paul Williamson:** Senior Vice President and General Manager of IoT Line of Business.
- **Chris Bergey:** Senior Vice President and General Manager of Client Line of Business.
- **Mohamed Awad:** Senior Vice President and General Manager of Infrastructure Line of Business.
- **Richard Grisenthwaite:** Executive Vice President and Chief Architect.
- **Gary Campbell:** Executive Vice President of Central Engineering.

Arm Board of Directors



- **Masayoshi Son: Chairman of the Board** – also the founder, representative director, corporate officer, and CEO of SoftBank Group Corp.
- **Rene Haas: Board Member** – current CEO of Arm.
- **Karen Dykstra: Board Member** – previously served as the CFO and CAO of Arm. In addition, She's the former CFO of AOL, the online service provider.
- **Tony Fadell: Board Member** – founder and former CEO of Nest. He's authored over 300 patents in the last 30 years.
- **Jeff Sine: Board Member** – co-founder and partner of the Raine Group. He's the former vice chairman of UBS Investment Bank.
- **Paul Jacobs: Board Member** – founder, chairman, and CEO of XCOM Labs. He's also the former chairman and CEO of Qualcomm Inc.
- **Rosemary Schooler: Board Member** – former corporate vice president for Intel.
- **Ron Fisher: Board Member** – vice chairman of SoftBank Group. He's also the founder and managing partner of SoftBank Capital.

Arm Lead Investors

A total of four investors are linked with funding Arm ventures.

These include:

- The United Kingdom Government
- SoftBank Vision Fund
- Haier Capital
- BVA

Arm's latest funding was a $46.4 million grant. The British government awarded this capital as prize money from the Research and Innovation fund.

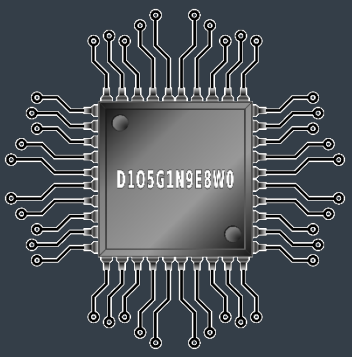
Arm Notable Partnerships

The following is a list of Arm's most significant partnerships.

- Arduino
- The University of Michigan
- Google
- Cadence
- Mbed OS
- Intel
- Autonomous Vehicle Computing Consortium (AVCC)
- Defense Advanced Research Projects Agency (DARPA)

Arm Notable Products

Here are a few of Arm's most impressive products.



- Immortalis
- Neoverse
- Cortex-X
- Cortex-A
- Cortex-R
- Cortex-M
- Ethos NPU
- CoreLink
- Mali GPU
- Mali ISP

Arm Project Highlights

In this section, we'll walk you through some of Arm's greatest accomplishments.

Cortex Processors

In 2004, Arm Holdings launched a series of processors to target a few industry needs. For starters, developers were looking for a more affordable version of integrated circuits.

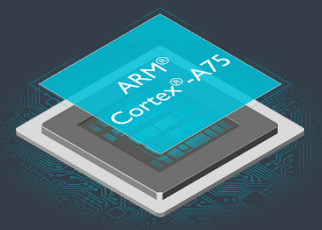
This became a reality when the Cortex-M came out. It provided users with access to 32-bit computing for less than $1.

As you can tell, not only was this cost-effective, but the processor was also incredibly efficient. It consumed a fraction of the energy that competing devices used. Because of how effective it was, Cortex-M has made its way into billions of consumer devices.

DesignStart

Using the physical IP specialist Artisan library, Arm was able to create DesignStart. This development allowed designers to produce custom Arm chips with almost no risk. Plus, the process was much faster than ever before.

Arm Graphic Processor



Following the release of DesignStart, Arm acquired mobile graphic specialist Falanx. That made it possible for the company to develop its first graphics processing unit (GPU). By late 2007, the Mali-200 made its debut and shipped out worldwide.

Cortex A-9

The Cortex A-9 was a later version of the processors that put Arm on the map. Although, the advanced unit was much more powerful. This evolution led to a significant boost in processing performance. That enabled the rise of a new generation of powerful mobile devices.

Big.LITTLE

In 2011, Arm announced the launch of big.LITTLE. This was a design strategy that paired an energy-efficient core with a powerful processor.

The resulting device was able to handle a huge workload while consuming little power. That's where the name of the invention came from. This enabled designers to deliver high-end experiences, using less than 70% of the energy needs.

Platform Security Architecture

With the increasing demand for secure online interaction, Arm created a new product in 2017. The Platform Security Architecture or PSA is a secure IoT framework. This changed the way people interacted with cybersecurity.

Not long after that, PSA expanded to become the first RoT assurance scheme.

Flexible Access

After the phenomenal success of DesignStart, Arm set off to improve the process once more. That's when Flexible Access came into play.

This piece of software allowed designers to experiment and innovate with Arm technology. It gave users access to IPs, tools, support, and training. On top of that, the service came at a minimal up-front, one-time cost.

Neoverse

Neoverse was another leap for processors and supercomputers that came in 2019. The platform delivers a scalable foundation for efficient high-powered computing.

That means it can improve the overall performance of any system. For example, designers can use them to power cloud data centers, or even edge servers. This became the foundation of one of the world's fastest supercomputers, Fugako.

Ethos AI Processors

In 2020, Arm focused its research on artificial intelligence. This led to the creation of the Ethos processor. It's a smaller version of the Cortex unit, with a couple of other key differences.

First off, Ethos was considerably more powerful. Other than that, the processor was also ultra-low energy consuming, and cost-constrained. That gave us the globe's first Neural Processing Unit (NPU).

Arm Financial Summary

Since Arm left the public market in 2016, we know very little about the company's financial situation.

As of 2021, the total revenue of the establishment was around $2.7 billion. This is a 35% increase in the earnings of the previous year.

Moving on, the company made over $1.54 billion in royalty revenues. The 20% boost in profit came from the continuing growth of 5G smartphones. Plus, the ever-rising popularity of ADAS and IVI chips going into cars.

Besides that, Arm also has a few non-royalty investments. That includes ventures like new business models such as Flexible Access. This resulted in a 61% expansion in licensing revenue. Therefore, Arm was making an additional $1.13 billion.

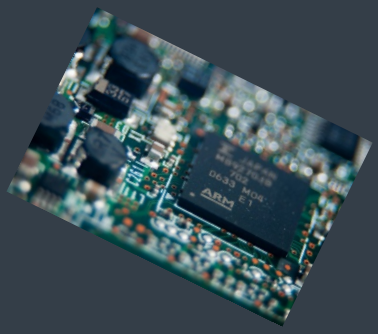
As for the adjusted earnings before interest and taxes, they were up by around 68%. This translates into a profit of almost $1 billion.

Lastly, by the end of 2021, Arm managed to set new records in chip sales. The company shipped a whopping 29.2 billion processors worldwide. Nearly eight billion of those were achieved in the final quarter of the year.

Acquisitions

Throughout its tenure, the chip manufacturer has accumulated around 23 companies. Now, here's a look at some of Arm's most noteworthy acquisitions in chronological order.

- **Wicentric**: acquired April 16, 2015.
- **Sansa Security**: acquired July 30, 2015.
- **Carbon Design Systems**: acquired October 19, 2015.
- **Apical**: acquired May 18, 2016.
- **Allinea Software**: acquired December 17, 2016.
- **Mistbase**: acquired on February 20, 2017.
- **NextG-Com**: acquired on February 22, 2017.
- **Simulity**: acquired in July 2017.
- **Stream Technologies**: acquired on June 12, 2018.
- **Falanx Microsystems:** acquired on June 23, 2020.

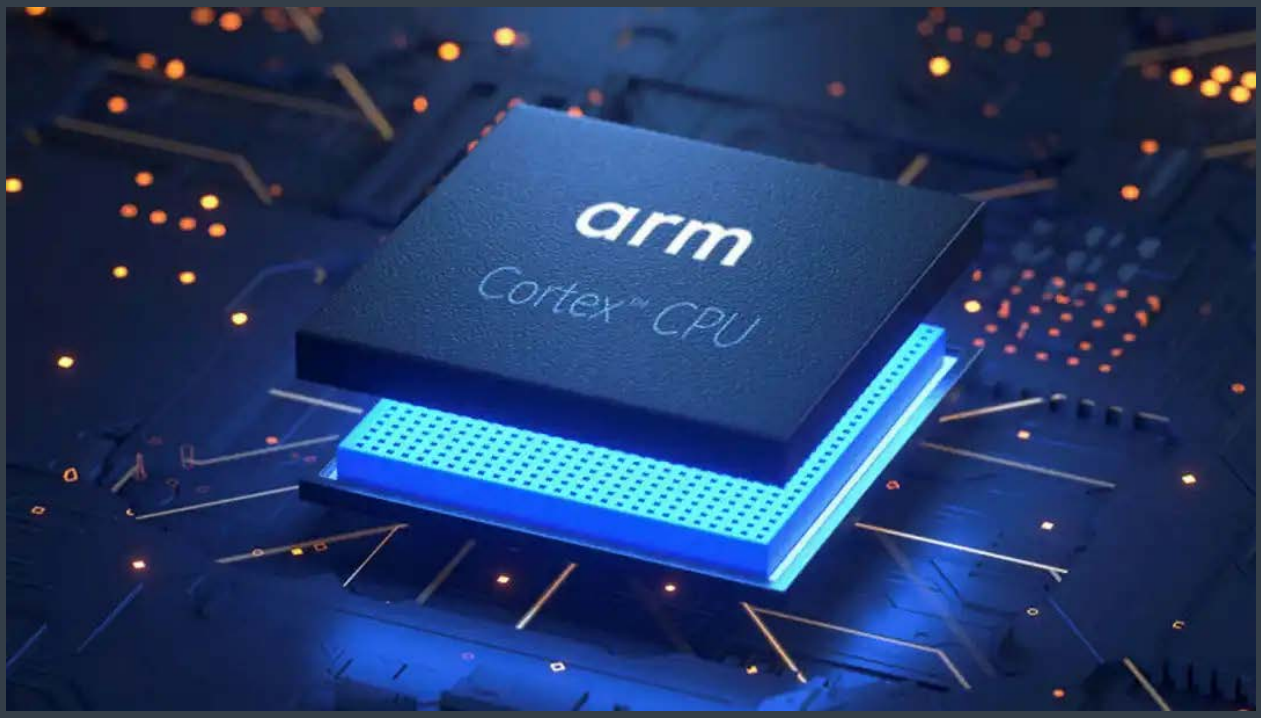


Investments

Other than corporate acquisitions, Arm has made a few other investments. Here are some of the highlights.

Date of Announcement	Company Name	Money Raised
June 7, 2022.	Arduino	$32 million
October 18, 2021.	Pragmatic Semiconductor	$80 million
December 20, 2019.	Swim	$7 million
May 3, 2019.	Blu Wireless	$15.6 million
June 5, 2018.	Ambiq Micro	$11.4 million
April 27, 2018.	Civil Maps	$10 million

Arm Initial Public Offering (IPO) Journey



1998

The first time Arm Limited decided to go public was in 1998. The owners listed the company on the London Stock Exchange and Nasdaq. Arm remained a publicly traded business for about 18 years, before a regime change.

In 2016, SoftBank bought out the establishment in an effort to diversify its portfolio. Quickly after the acquisition, Arm returned to private status and became a wholly owned subsidiary.

2020

In early 2020, Nvidia, a competing graphic card company, tried to take over Arm. They offered SoftBank $40 billion to outright buy the establishment.

Sadly, the deal would face a lot of backlash. That was because of security concerns in the UK, along with issues with competitors.

For instance, businesses like Google, Microsoft, and Qualcomm protested the sale. All these companies rely pretty heavily on licenses sourced from Arm. In addition, Arm's subsidiary in China strongly opposed the buy-out.

Even though the deal wasn't agreeable to many parties, it remained in negotiations for years. This would take a toll on SoftBank's desire to take Arm public again.

2021

During the period from 2020 to 2021, the semiconductor business took quite a hit. The market stalled, and many companies suffered huge losses.

To improve the state of the business, Arm set out a few goals for the near future. For starters, the establishment reallocated its resources.

That involved shifting funds to maintain the current market position. To do that, the organization focused on smartphones, consumer electronics, and embedded computing.

Other than that, Arm would increase royalty revenue per chip sold. It achieved that by boosting the value of the processors.

Plus, there was a company-wide initiative to establish market leadership in emerging technology. This included areas like autonomous vehicles, IoT, and augmented reality headsets.

Finally, Arm introduced new business models to change the competitive landscape. The quickest way to do that was to directly license the technology to OEM and cloud firms. This was all in hopes that Arm would be stable enough for the initial public offering soon.

2022

At the beginning of 2022, the Nvidia–SoftBank deal finally fell through. That's when the latter decided to relaunch the Arm IPO efforts.

Unfortunately, around the same time, chip sector stocks took quite a dip. Due to the breakdown of supply chains, the microprocessor market was suffering.

Almost all large corporations had shortages in resources triggered by the Covid-19 pandemic. This left Arm in a peculiar position. Therefore, any plans for an IPO were pushed until further notice.

2023

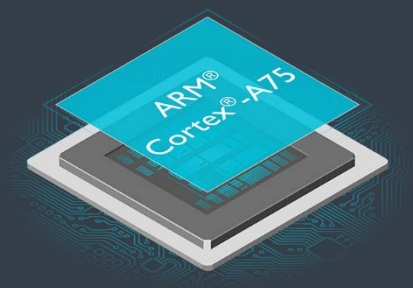
In April 2023 SoftBank announced that they would be listing Arm on the Nasdaq this year, the valuation has yet to be announced.

The main underwriters for the IPO are Goldman Sachs and JP Morgan.

While there's extensive turmoil in the chip market, Arm may be able to avoid disaster. This is due to its large holdings in a variety of sectors. For example, it has many investments in the car industry, which is holding strong after the pandemic.

Arm has an estimated IPO valuation of between $30 to $80 billion and we expect it to list at the higher end of this range.

Investor Information



- Arm Limited was founded in 1990.
- The company's main aim is to bring people together and improve the human experience. It does that through semiconductors and other innovative technologies.
- Arm offers technology that delivers an unparalleled range of processing products. These span across all global markets and sectors.
- The establishment has a goal to free engineers, designers, and software developers to think big.
- One of the world's fastest supercomputers, Fugako runs on an Arm processor.
- Arm customers have created 240 billion Arm-based chip variations to date.
- The business has over a thousand hardware, software, and service providers.
- About 99% of the world's smartphones run on an Arm-based processor.
- Arm produced around 900 chips per second.
- The company employs over 6,300 people across 85 countries.
- Arm signed north of 2,000 technology licenses.
- Almost 90% of the world's wearable devices run on Arm chips.
- As of 2022, Arm has more than 8,100 patents, with a few still pending.
- Arm expects around 90% of new enterprise apps will include some form of AI by 2025.
- The Arm processor helps power Amazon's web services.