

Q4)

Fatih YILDIZ

Although today the difference between RISC and CISC is less critical thanks to powerful hardware, ISA choice still matters.

In the past, when memory was expensive, it was compelling to use the CISC architecture (and Intel's x86) since it contains more data per instruction and hence requires less memory. However, with the developments over the last 10-20 years, memory became cheaper than ever. So CISC took a hit.

RISC architecture processors use electricity more efficiently, hence offer longer battery life, which is a must in today's electronic devices since even cars now run on batteries.

With compilers and software development tools becoming more and more efficient, RISC architecture becomes more viable since developers' jobs became easier. Also, it being more reliable on computer scientists than hardware designers puts RISC in a more advantageous position since computer science and software is the hottest topic around the world.

RISC has already been in use in mobile devices with ARM for a long time. With Apple's recent decision to use M1 chips (which are based on ARM, hence RISC architecture) on new computers, it is likely that we see the RISC architecture gain more popularity not only in mobile devices but also in computers in the next 5-10 years considering Apple has been setting the trend for the technology for a long time. Note that M1 chip is not only a CPU such as Intel's i9, but is a system-on-a-chip, offering faster data transfer, which is in high demand.

Although I think RISC will beat CISC in the market in the following years, it is still not totally safe to switch to ARM processors for now since even the most sophisticated translation software such as Apple's Rosetta 2 fails to convert some of the existing apps (such as some Adobe tools) to run flawlessly with chips like M1.