Our future may well involve the reality of science fiction's cyborg, persons who have developed some intimate relationship with a machine. It is likely that implantable computer chips acting as sensors, or actuators, may soon assist not only failing memory, but even allow fluency in a new language, or enable "recognition" of previously unmet individuals. The progress already made in therapeutic devices, in prosthetics and in computer science indicate that it may well be feasible to develop direct interfaces between the brain and computers.

Worldwide there are at least three million people living with artificial implants. In particular, research on the cochlear implant and retinal vision have furthered the development of interfaces between neural tissues and silicon substrate micro probes.

The latest stage in the evolution towards the implantable brain chip involves combining these advances in prostheses technology with developments in computer science. The linkage of smaller, lighter, and more powerful computer systems with radio technologies will enable users to access information and communicate anywhere or anytime.

The technology for implantable devices is becoming available, and at prices that make such systems very cost effective. Four stages of introduction of such devices are layed out. The earliest adopters will be those with a disability, who will use this as a more powerful prosthetic device. The next stage, represents the movement from therapy to enhancement, and it is at this point that ethical evaluation becomes imperative. One of the first groups of non-disabled "volunteers" will probably be the professional military, where the use of an implanted computing and communication device could be lifesaving. The third group of users will probably be those involved in very information intensive businesses, who will use these devices to develop an expanded information transfer capability. Following will be the general public, the entire implementation is expected to take 20-30 years, with the first prototype device available in the next 5 years.

As intelligence or sensory "amplifiers", the implantable chip will generate at least four benefits: 1) it will increase the dynamic range of senses, enabling, for example, seeing IR, UV, and chemical spectra; 2) it will enhance memory; 3) it will enable "cyberthink" invisible communication with others, and 4) it will enable consistent and constant access to information where and when it is needed. For many these enhancements will produce major improvements in the quality of life, and their performance in a job.

The brain chip will probably function as a prosthetic cortical implant. The user's visual cortex will receive stimulation from the computer based on an artificial "window" interface.

Although in its infantile stages, the concept of a super human is goal likely to be reached in our lifetime. One can only imagine how this will change the human race.