Chip 'n' charge

"Why on earth did Deep Blue play 44Kf1? Did it not see 45Qe3? " asked Viswanathan Anand, commenting on the much publicized rematch of Kasparov and Deep Blue recently. He was (obviously) referring to the 'human-like' approach of Deep Blue in the second game of the match. Experts opine that this possibly could've been one of the main reasons for Kasparov's defeat. In fact, Kasparov had practiced hard with a chess-playing computer - GIGS in the run off to this match. And he expected Deep Blue also to play more or less the same way as GIGS.

Computers are known to calculate moves in a particular way. They are distinguished from humans by the way they calculate moves meticulously. They are known to use brute force against the intuition, background knowledge and experience of humans. Faster the calculation of moves, the better it is in chess. But that is not all which determines a player's success. However, Deep Blue, unlike other computers was programmed to play more 'humanly' while taking advantage of the rapid exploration of millions of board positions.

International chess grand master Joel Benjamin's role in Deep Blue's success is undeniable. But he was only instrumental in imparting chess playing tactics through software programs. What actually made the difference was the technology used in chip making. Deep Blue was made more 'knowledgeable' and chess specific right at the developmental stage.

The Deep Blue team used the new Power two super chip processor developed for IBM RS/6000 SP machines along with chess specific VLSI processors, which could exhibit outstanding chess acumen. This very well explains the 'out of the way' approach of Deep Blue in the second game. Deep Blue is just an example of how computer chips have been used to accomplish tasks far beyond the domains of just processing data. With chips getting tinier and faster all the time, manufacturers are making it perform more functions than traditionally associated with it. Chips, which traditionally contain an ALV and a bit of memory, are also bundled now with instructions for specific needs. Take for example the MMX technology introduced by Intel. Intel Pentium MMX contains special instructions within the chip to process multimedia information faster and better. Along with enhanced processing speed compared to earlier versions of pentiums, MMX is offering value for buyer’s money. In fact, MMX would be an integral part of all future versions of computer chips. MMX, which is yet to make its entry into the market fully, is already facing the threat of being relegated to the oblivion with competition among chip manufacturers intensifying.

Intel, which triggered off an era of faster processors, finds itself in the thick of an intense competition for faster chips. Within a span of four years of the introduction of Pentium, the processing speed has increased more than twice and is expected to go up to four times in a few months' time. The latest Pentium II from Intel has just been named the fastest PC in the world with an unprecedented 266 MHz clock speed. This is expected to go up to 400 MHz very soon. Not just that, latest developments in chip technology would make chips grow tinier with a single silicon wafer producing two chips. Also with chips growing smaller and information carrying capacity increasing, laser light may prove too large to etch tracks on chips. Scientists are already looking for alternative ways of etching. With manufacturers chipping in something new and buyers accepting nothing less than the best, we could well be witnessing a pint-sized clone of a brain soon.

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