Bryan: The next big thing may be artificial intelligence

By Jay Bryan, Special to The Gazette March 1, 2013

IBM’s Watson creamed two human champions on Jeopardy in 2011. The computer, which is not connected to the Internet, plays the game by crunching through multiple algorithms at dizzying speed and attaching a percentage score to what it believes is the correct response.

Photograph by: HO, Vancouver Sun AFP/Getty Images

MONTREAL — It’s been two years since an IBM computer named Watson humbled humankind, or at least the part of it that takes quiz shows seriously, by beating two carbon-based Jeopardy champions at their own game. Now a prominent investment analyst suggests that episodes like this are something we’d better get used to.

This is more than an observation about the sweep of technological progress. It has immediate investment implications, believes economist Peter Berezin, chief strategist at Montreal’s BCA Research.

More than a decade after the tech wreck of the early 2000s left a generation of investors chary of such stocks, it’s time to rethink, Berezin said on Friday. A major resurgence of high-tech companies could well be a key investment theme of the next decade or two.
long-term economic progress — from bare subsistence a few hundred years ago — stems from technological gains triggered by a gradual rise in intelligence. If this rise can be greatly accelerated by new technologies like artificial intelligence, biotechnology, nanotechnology and robotics, the implications are breathtaking, not least for the companies that make this possible.

Over the longer term, perhaps in 20 years or more, we could even be talking about something called the “technological singularity,” a point when human history ends, to be replaced by whatever happens in a world run by computers or other devices whose intelligence exceeds our own.

But for every wise person who believes this singularity is on its way — and this speculation about self-improving machines goes back to the middle of the 19th century, when the first mechanical calculators were invented — there’s another who thinks it’s unlikely.

Intel co-founder Gordon Moore has stated that “I am a skeptic.” Ironically, his accurate 1965 prediction that the power of computer chips would tend to double every two years is a key support for the idea that machine intelligence might surpass that of humans. But “I don’t think this kind of thing is likely to happen, at least for a long time,” he told a 2008 computing conference.

In any event, a more immediate question for investors is whether the tech sector is headed for a very big upturn as a result of the same trends that excite singularity theorists.

Berezin thinks it is. For the first time in history, there are ways to boost intelligence much more rapidly than by improving nutrition and health. An obvious one is the steadily rising power and smaller size of our computers, particularly now that some devices are being linked directly to the human nervous system, for example to provide sight to the blind.

And we should also think about the power of biotechnology. The cost to sequence the human genome has fallen even faster than that of computer power, notes Berezin.

On the outskirts of Shenzhen, China, he points out, a biotech company known as BGI-Shenzhen has 4,000 scientists at work. Some are studying the entire genomes of 1,000 brilliant individuals in order to isolate the genetic characteristics that contribute to high intelligence. “They will probably succeed,” Berezin says, based on what is already known about links between genetic variation and intelligence.

Some of these advances can raise serious ethical questions, but once these are sorted out, there’s not much question that technologies this powerful will be able to generate enormous revenues.

Since tech-wary investors continue to shy away from this sector, tech stocks look now like a bargain to Berezin, trading at price-to-earnings ratios about seven per cent below those of industrial stocks in general. A more typical valuation over the past three decades has been around 40 per cent above the industrial average, he notes, reflecting profit growth over this period that’s been nearly twice as strong as for industrial stocks in general.

Here’s one example of tech’s growing capabilities. Since his Jeopardy triumph, Watson has tripled his processing speed and shrunk from the size of a room to that of a pizza box. And he’s matured, moving from quiz-show showboating to diagnosing lung-cancer x-rays — with nearly double the accuracy of the best-trained doctors.

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