Making Tech Work Takes Work

Technology, Privacy, and eCommerce

Technology is taking over. In so many facets of our lives, technology dominates human competition and is replacing not just human labor but human expertise. I wrote previously about Watson destroying former “Jeopardy!” champions. But the original harbinger of this Second Machine Age came in 1997 with Deep Blue’s defeat of reigning world chess champion Garry Kasparov. Deep Blue was a purpose-built IBM supercomputer. By 2009, Pocket Fritz, a chess engine running on a cellphone, was competing and winning chess tournaments at a grand master level.

The direct competition between humans and computers for chess supremacy is done. The humans lost. Yet, humans still compete in chess matches against computers and emerge victorious. But the humans themselves are now also using computers. These hybrid teams regularly beat the strongest individual computer or human players. The lesson to be drawn: Humans *plus* machines are more potent than humans or machines alone (for now).

There is another lesson from hybrid chess that often gets lost in celebrating the fact that the human element remains relevant. The top hybrid teams are often not composed of the strongest human or machine players. Rather, the top teams are those that devise the best way to combine their human and machine components. After an international tournament won by weak players using mediocre machines, the aforementioned Kasparov observed, “Weak human + machine + better process was superior to a strong computer alone and, more remarkably, superior to a strong human + machine + inferior process.”

In my last column, I explained why introducing technology is often more cost-effective than adding headcount. The communications overhead of additional people leads to increasingly more coordination costs. Thus, at scale, there are larger potential gains from increasing the productivity of your existing headcount than in adding headcount. But I also warned at the end of the column that

this view was overly simplistic.

Introducing technology can have a profound positive impact on productivity. But only if it is done well. Properly integrating the technology with your people is the hardest part, and also the most important. Studies done by MIT professors Brynjolfsson and McAfee, who co-wrote the book *The Second Machine Age*, have found that for every dollar invested in new technology, a corresponding $10 investment in organizational capital — process redesign, hiring and training — is required to realize the potential gains from the new technology. As a result, there is of ten a lag of five to seven years before seeing the full performance benefits of the new technology. As Brynjolfsson and McAfee write, “The best way to use new technologies is usually not to make a literal substitution of a machine for each human worker, but to restructure the process.”

What many organizations seem to expect when they introduce technology is some form of magical intermediary that will yield superior outputs from the exact same inputs. There are few instances where new technology can be inserted into an existing process and produce substantially better results without any changes to the process. Technology is a complement. When harnessed correctly, it can act as a potent force multiplier. But correctly means that it must be aligned with your people through a well-designed process. When it comes to people, process and technology, process is often the problem.

Just as there is no Easy Button, there are no easy solutions to getting process right. While process is the problem, people are often the obstacle. People do not like change, especially when those people are trained to respect precedent. Indeed, one of the most humorous but depressing moments in my Lean Six Sigma training came when management guru George Eckes was answering common questions about the why and how of process improvement initiatives. He came to the question: “How do I get management buy-in for my process improvement project?” He looked solemnly at the camera and replied, “I don’t know.” He went on to explain that management buy-in was a necessary condition for a successful process improvement initiative, not an outcome.

Inertia is a powerful force that cannot be overcome by technology alone. Buy-in and active support from the top is absolutely necessary to make organizational changes, including the introduction of technology. The mandate cannot end with the decision to procure and deploy some new technological toy. For it to be anything other than a toy, the new technology has to be integrated into a workflow designed to maximize its impact. The technology must be adapted to your people, and your people must adapt to the technology

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