THE GLOBE AND MAIL

Waste, not the cost of labour, is at the root of our productivity problem

JACOB STOLLER, SPECIAL TO THE GLOBE AND MAIL

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Jacob Stoller is the author of Productivity Reimagined.

As Canadians ponder a future that's less dependent on the U.S., our productivity crisis takes on a new urgency. Given the lack of progress in that conversation, it would be timely to review our assumptions about productivity and how we can improve it.

Economists define productivity growth as increasing output relative to all inputs, e.g. labour, materials, equipment, facilities. Improving this ratio triggers a virtuous cycle leading to higher profits, job growth, better quality and lower prices.

However, the prevailing metric used for reporting on productivity, labour productivity defined as GDP per worker hour, gives an inaccurate and often misleading picture of our progress in pursuing this virtuous cycle.

Statistics Canada reported, for example, that nearly 90 per cent of postmillennium labour productivity growth came from capital deepening, that is, investments in assets such as machinery and information and communication technology infrastructure to improve business outcomes. The remaining 10 per cent came from improved labour quality, that is, the value contributed by a better educated and more experienced work force.

Conspicuously absent was any improvement from using resources more efficiently. Capital investments and worker education are vital, but these are inputs, not outputs, and mislabelling them obscures the troubling fact that despite these investments, we've seen zero growth in output relative to resources deployed.

Total factor productivity (TFP) or multifactor productivity (MFP), also tracked by Statscan, removes these fictional outputs, creating a better representation of how efficiently the economy produces with respect to all inputs.

Without the artificial boost from capital investments, the prospects for a tech-powered productivity boom look far less rosy. Recent studies confirm this, such as research by MIT's Industrial Performance Center (IPC), which found that productivity gains from factory automation in the U.S. during the 2010s were completely nullified by loss of flexibility, causing costs to increase, not decrease.

TFP statistics also reveal how widespread our productivity crisis is. For example, "Business sector, goods, special aggregation," a Statscan index that represents the goods that average Canadians depend on, has declined since 2000 by an average annual rate of 0.476 per cent. A similar index for services is not much better, increasing by only 0.1 per cent per year.

Technology can play a pivotal role in turning this around, but it's not a magic bullet. What's needed is a comprehensive approach that addresses the productivity deficit in all sectors, with or without technology. A viable path would be to embrace the global operational excellence movement.

Operational excellence promotes a set of practices aimed at improving productivity through more efficient work processes. At its core is a concept called continuous improvement (CI). Pioneered by Toyota during Japan's post-Second World War turnaround and often referred to as lean, CI raises companies' productivity by attacking literally thousands of incremental waste and quality problems that naturally occur in workplaces.

The high productivity growth of companies that follow this approach has come from engaging entire workforces in identifying and correcting such problems. Improving productivity therefore becomes the business of all employees.

While the tactical methods associated with CI are widely practised superficially under the banner of lean or six sigma, some leading organizations have embraced CI as a business strategy. A few examples are GE Aerospace, Robert Bosch, Turner Construction, Mayo Clinic and Massachusetts Life, plus a growing number of small- and medium-sized enterprises. Notable government programs to promote these methods include those of Japan, Singapore, Sweden, Finland and Washington State.

CI organizations avoid the pitfall of pursuing technology primarily to reduce head count – a myopic practice that IPC calls "zero-sum automation." By regularly receiving input from front-line workers, CI companies gain a thorough understanding of their work processes and consequently get a much better return on automation investments. Their approach is typically what IPC calls "positive sum automation" – technology deployments that enable workers to be more productive.

The respect for workers that's central to CI environments also improves the psychological and physical health of employees, as confirmed by high employee engagement and low turnover statistics.

Sadly, Canada lags in CI adoption. For example, since the Shingo Institute in the U.S. established the Shingo Prize for Operational Excellence, 214 U.S. companies won the prestigious award, while Canada had only seven winners, all by foreign-owned companies.

Ironically, productivity loss owing to waste is so widespread that it's easy to find business cases for CI. Value stream measurements used in CI typically tally waste at around 50 per cent, reflecting industry stats for manufacturing (40 per cent), food (46 per cent), and health care (42 per cent).

The evidence shows that waste, not the cost of labour, is at the root of our productivity problem.

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