Future Skills Centre | Centre des Compétences futures

Project Insights Report

The Impact of Remote Work on Engineering

PARTNERS
Ontario Society of Professional Engineers

LOCATIONS
Ontario

INVESTMENT
$80,000

PUBLISHED
May 2023

CONTRIBUTORS
Rachelle Taheri, Research and evaluation associate at FSC

Samir Khan, Senior research and evaluation associate at FSC

Executive Summary

Many professionals switched to remote work during the pandemic and indicators suggest the trend has permanence. Engineers are among professional employees seeking to continue working from home, with some even expecting salary premiums to return to the office and considering changing employers if they cannot.

The Ontario Society of Professional Engineers sought to understand the impact on productivity and work culture of remote work in this industry, whether some equity seeking groups are disadvantaged, and to identify organizational strategies for adapting. Although the research is industry specific, insights are applicable across other professional sectors.

KEY INSIGHTS

1. Engineers surveyed increasingly expect employers to offer remote options, and to be paid more to return to the office.

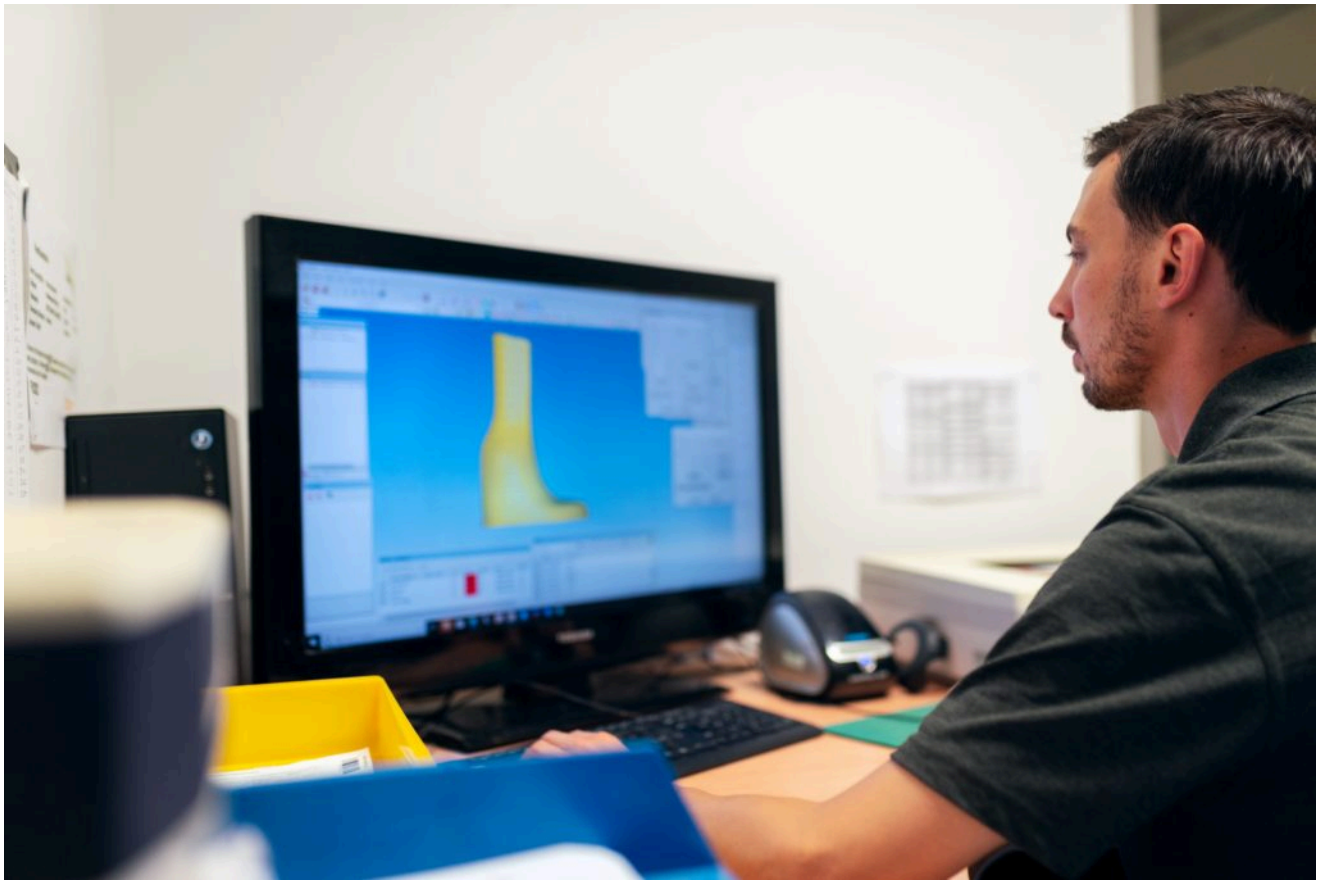
2. There is a disconnect in perceived productivity in a remote working arrangement reported by employees, supervisors and employers— 50% of workers but only 37% of supervisors perceived an increase in productivity. Employers were less confident in drawing strong conclusions.

3. Employers need to balance their preferences for where and how employees work with their recruitment and retention goals.

The Issue

Almost two-thirds of engineering professionals surveyed, regardless of age, gender, or recency of immigration, said they wanted to continue to work from home, and nearly two in five said working remotely was so crucial it would determine whether they would stay with their current employer. This project sought to understand the impact on the switch to remote work on expectations both of employees and employers and how the industry needs to adapt to those shifting expectations.

- What organizational strategies are needed to maintain team cohesion and to address detrimental effects on onboarding and mentorship and equity seeking groups and early-career workers?
- What impact has the switch to remote work had on the attitudes, expectations and experiences of engineers and their employers?
- What are the implications of the preference for remote work on the future of the engineer profession?



What We Investigated

This project researched the impact of the experience of remote work for engineers, the degree of preference for continuing to work from home, the effects on productivity and hours worked, the impact on teams, the perceived effects of working from home or wanting to on career development, and the impact of a permanent shift to more frequent and pervasive remote work on the engineering labour market. While this research was conducted on the engineering sector, it's potentially relevant as well for other sectors in which professional workers prefer the experience of working from home that resulted from the pandemic.

- Engineers prefer to work-from-home, reporting better work-life balance, shorter commutes, less work-related stress. What are the implications for the future of the engineering profession and what do employers need to consider as a result?
- For women, the advantages of better balance between family, personal life and career may be especially important, but if salary scales adjust to favour in-office work the existing pay gap may widen. How can employer policies address this concern?
- What are the effects of working from home on productivity and hours worked?
- Remote work may come at the expense of a longer learning curve for experience-based knowledge and mentorship. What organizational strategies can be put in place to help early-career employees develop?

✔ What We're Learning

The pandemic-driven move to remote learning may be a permanent feature of the future of work, including among professionals. Employees need to understand that their overwhelming preference for working from home may have trade-offs in their career development, especially for equity seeking groups and workers in the early stage of their career. Employers need to adapt or risk unhappy workers and retention issues. Organizational strategies are required to ensure newcomers and early-career employees are developed and that existing inequities such as the gender pay gap are not exacerbated.

The project revealed several insights of relevance to the engineering profession specifically as well as to other professions that were impacted by shifts from office-based to home-based work. These include:

- Engineers prefer to work from home: As a result of the work-from-home experience, many engineers reported enjoying better work-life-balance, reduction in commuting times and, to a lesser extent, reductions in work-related stress. Regardless of age, gender, or recency of immigration, almost two-thirds (64%) of engineering professionals indicated wanting to continue working-from-home three days or more per week. Only 9% would like to see a full-time return to the office. Nearly two in five engineers reported that the ability to work remotely is critical to whether they stay with their current employer. The survey results indicate that engineers in Ontario are increasingly expecting work to offer remote options, and/or compensatory salary premiums to those who work in-office.
- Trade-offs to work from home: Focus group responses suggested the attractions of working from home may come at the cost of a more drawn-out learning curve for acquiring experience-based knowledge of 'how things are done' in Canada, and at the expense of mentorship opportunities. This situation poses risks for newcomers and people early in their professional careers. For women, the advantages of a better balance between family and personal life and career may be especially important. However, if salary scales adjust to favour in-office employment, the effect

could be to widen the existing pay gap. While not definitive, remote work may also impact team cohesion.

- Employers' organizational strategies: Employers will need to balance their preferences for where and how employees work with their goals for recruitment and retention. Even amongst employers who do offer flexibility, the research indicates that organizational strategies will be needed to maintain team cohesion and to address any detrimental effects in the areas of mentorship, extended onboarding and salary premiums.
- Uncertain productivity impacts: Half (50%) of non-supervisory engineers report that their productivity increased while they were working-from-home, while only 12% report reduced productivity. Engineering supervisors estimated that productivity increased for somewhat more than a third (37%) of the staff who reported to them but declined for about one fifth (20%). Employers were less confident about drawing strong conclusions on the impact of working from home on productivity.

Why It Matters

The preference for remote work in professional sectors has profound implications for the labour market that cannot be ignored without exacerbating labour shortages in sectors already struggling to recruit and retain workers as a result of an aging workforce. This project has yielded valuable insights into the impact of remote work on engineering that may be applied across sectors.

The research suggests structural changes may be underway in the engineering profession and the broader labour force that may endure beyond the pandemic.

Engineering is typically viewed as a hand-on profession, and one whose employees many would have expected to return to the office when restrictions were lifted.

The finding that engineers still prefer to work from home to the point where many would consider leaving a job in which they cannot, suggests that professional workers' expectations have shifted substantially across all sectors.

The fact that these patterns of preference held amongst engineers regardless of demographic characteristics further suggests that remote work confers some baseline benefits to all workers.

State of Skills:
Quality of Work

As Canada navigates continuing labour shortages in critical areas of the economy, policymakers and employers are looking for more effective approaches to recruit and retain workers

Read Thematic Report

Employers and policy makers should take the strong preference for working from home seriously, or risk worker dissatisfaction, high turnover and labour market churn at a time of sectorally concentrated labour shortages.

The shift to remote work has implications for equity, diversity and inclusion, and policy makers and employers need to provide supports to ensure newcomers and early-career workers do not lose out on mentorship and experiential learning opportunities. They must also ensure that any location-based salary scales do not widen the gender pay gap.

These findings are of consequence not only to employers, but potentially to professional associations which may use them to advocate for their members' interests, national sectoral organizations implementing location-based pay scales, and science and technology policy makers who can reasonably expect short-term misalignments between the jobs many engineers currently have and their preferences for working from home. This may lead to a spike in turnover.

What's Next

The insights gleaned from this project suggest some clear next steps for employers and policy makers.

The findings confirm lessons about the different preferences of different kinds of workers and concerns about how younger workers are being impacted by lack of access to in-person workplaces as well as the benefits of building relationships with managers and other networks.

Have questions about our work? Do you need access to a report in English or French? Please contact communications@fsc-ccf.ca.

How to Cite This Report
Taheri, R., Khan, S. (2023) Project Insights Report: The impact of Remote Work on Engineering. Toronto: Future Skills Centre. https://fsc-ccf.ca/research/impact-of-remote-work-on-engineering/

Funded by the Government of Canada's Future Skills Program

Canada

The Impact of Remote Work on Engineering is funded by the Government of Canada's Future Skills Program. The opinions and interpretations in this publication are those of the author and do not necessarily reflect those of the Government of Canada.

The Future Skills Centre acknowledges that the Anishinaabe, Mississaugas and Haudenosaunee share a special relationship to the ‘Dish With One Spoon Territory,’ where our office is located, bound to share and protect the land. As a pan-Canadian initiative, FSC operates on the traditional territory of many Indigenous nations across Turtle Island, the name given to the North American continent by some Indigenous peoples. We are grateful for the opportunity to work in this territory and commit ourselves to learning about our shared history and doing our part towards reconciliation.