



# EMPLOYMENT PROSPECTS 2023-28

LONDON REGION'S INFORMATION TECHNOLOGY  
SECTOR



Smart Prosperity  
Institute



LONDON  
ECONOMIC  
DEVELOPMENT  
CORPORATION

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## About Smart Prosperity Institute

Smart Prosperity Institute is a national research network and policy think tank based at the University of Ottawa. We deliver world-class research and work with public and private partners—all to advance practical policies and market solutions for a stronger, cleaner economy.

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## About the London Economic Development Corporation

The London Economic Development Corporation (LEDC) is the lead economic development agency for London, Canada. Established in 1998, LEDC is a not-for-profit organization that is funded by the City of London through a Purchase of Service Agreement.

Working with business, government, academic institutions, and industry partners, LEDC supports the growth of existing businesses, attracts new businesses to London, and strives to ensure companies have the talent, resources, and business conditions they need to continue scaling.

LEDC focuses on growing London's primary economic sectors – Agri-Food, Advanced Manufacturing, Digital Media and Tech, Health, and Professional Services. Growth in these sectors creates additional jobs through supply chains, service, retail industries, and more.

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# INFORMATION TECHNOLOGY

## Executive Summary

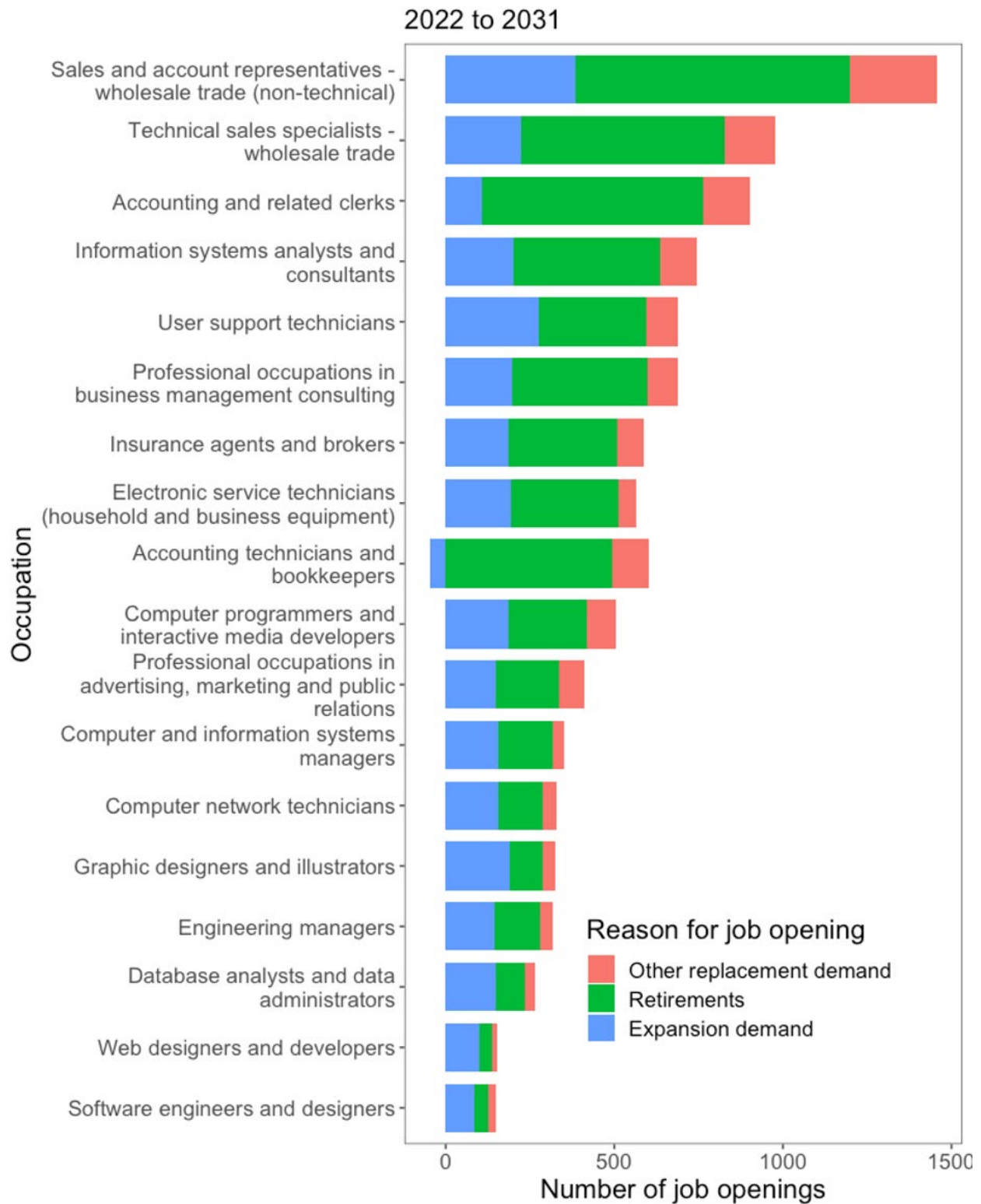
Unlike many other sectors of the economy, the information technology sector is not experiencing as significant a wave of retirements as Baby Boomers age into their 60s and 70s. But retirements will be significant in some occupations, including management and technical sales.

Employers will be navigating their labour market challenges, which are dynamic in part because of the massive disruption to general business norms caused by the COVID-19 pandemic, while also hiring to meet increased demand arising from ambitious federal targets for immigration and general demand for information technology services as multiple disruptive innovations spread throughout the globe.

Although domestic sources of recruits, including graduates of Fanshawe College, Western University and other postsecondary institutions, will meet some of this need, many new jobs must be filled through immigration. Making sure that federal immigration targets and provincial priorities are aligned with the labour market needs of the information technology sector in the London economic region will be critical, particularly for senior or niche roles where speed is of the essence.

Employers in the London economic region are preparing for these challenges by recruiting far and wide to fill positions. However, in a world of remote or hybrid working arrangements, they are not just recruiting from a bigger pond, but competing with more employers. In such an environment, employers see the value in tackling some of the most critical challenges facing our region – homelessness and the cost of living – head-on.

## Employment Projections at a Glance



## Five Key Points From This Report

1. Employment in natural and applied science occupations has exploded in the London economic region, up 35% over five years. Still, employers are facing several headwinds as they look to fill thousands of positions that will open up over the next eight years.
2. Availability and affordability of housing, once a significant advantage for the London economic region, is a critical issue, especially for recruiting younger workers who are entering the housing market for the first time.
3. The massive disruption of norms related to working in an office has ongoing impacts, as foot traffic in the core of London remains low, commercial vacancies remain high, labour markets have deepened, and commutes are becoming longer but less frequent.
4. Ending homelessness is seen as an urgent priority that will not only help people who are experiencing homelessness but also businesses that are located in the core.
5. Expanding the labour market by making information technology roles more open and attractive to women and other groups that are currently underrepresented in many roles and aligning federal and provincial immigration targets to meet the most critical needs of employers in the sector will be essential in filling the projected job openings from growth and retirements.



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## Introduction

The information technology sector is a significant component of the London economic region, accounting for more than 32,200 jobs.<sup>1</sup> Employment in the sector covers a wide range of occupations – web designers, software engineers, full stack developers, user interface designers, technical sales and data analysts, to name a few – in both the broader public sector, private sector and nonprofit sector.

With one of the fastest-growing cities in Canada at its core, the London economic region – comprising the census divisions of Elgin, Middlesex and Oxford – has grown significantly over the past five years, adding roughly 63,000 people and 20,000 new dwellings.

Unlike many other sectors of the economy, the demographic wave of Baby Boomers, only half of whom have aged into retirement as of 2021, is not such a major issue for employers in the information technology sector; however, the sector is facing other challenges that are particularly acute, especially when it comes to the labour market over the next eight years. Some of these challenges are related to technical innovations, such as generative artificial intelligence, the impact of which is uncertain at this point in time but very likely to be significant in terms of the sector's future labour market. Some are related to the disruption in office work norms that occurred during the COVID-19 pandemic, including a surge in remote and hybrid working arrangements that has receded since its peak.

Retirement rates are generally expected to increase over the next decade, with fewer working-age people for each retirement-age adult nationwide, reaching a historic low ratio of two working-age people for each retiree in 2035.<sup>2</sup> To increase the size of the Canadian labour force, the federal government has increased its targets for admitting new permanent residents, which will reach 500,000 per year by 2025.

These two general trends of an aging population and increasing working-age immigrants are well understood. But how do they vary at the local level and by occupation? Building on the Canadian Occupational Projection System (COPS) for 2022-2031, this report forecasts the expected number of job openings for critical occupations in the information technology sector in the London region until 2031.

To explore what employers are experiencing right now in terms of attracting and retaining talent, we facilitated a roundtable discussion with leading employers in the information technology sector about these region-specific and occupation-specific forecasts for job openings and opportunities for public policy changes that would help in meeting expected demands for labour over the next eight years.

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<sup>1</sup> Source: The 2021 Census reports 66,600 jobs in trades, transport and equipment operators in the Elgin, Middlesex and Oxford census divisions.

<sup>2</sup> Source: <https://www.canada.ca/en/immigration-refugees-citizenship/news/2022/11/an-immigration-plan-to-grow-the-economy.html>



## Talented people powering Southwestern Ontario's tech sector

London is home to more than 350 companies that employ more than 9,000 people in the digital media and technology sector.<sup>3</sup> It is the home base for the fast-growing fintech Paystone and established market leaders like Voices.com, Digital Extremes and Info-Tech Research Group, to name a few. The region is also a centre for education and training, with Western University enrolling more than 1,000 undergraduate and graduate students in computer science and Fanshawe College enrolling more than 3,000 students in various information technology programs.<sup>4</sup>

As shown in Figure 1, people working in information technology are relatively concentrated in the core, North and West of the City of London (dark purple on the map). Still, they live throughout the city and wider economic region.<sup>5</sup> Strong population growth over the past five years, driven by immigration and intraprovincial migration, has coincided with even higher growth in employment in the broad category of natural and applied science occupations, over 35% in five years. Overall employment in natural and applied science occupations in the Elgin, Middlesex and Oxford census divisions increased by 6,220, from 17,515 in 2016 to 23,725 in 2021.<sup>6</sup> This growth in employment in natural and applied science occupations is occurring throughout the economic region, with Oxford and Elgin census divisions gaining slightly (~5% growth) and most of the growth in natural and applied science occupations focused in Middlesex census division (~36% growth).

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<sup>3</sup> LEDC. 2023. "Digital media and tech." <https://www.ledc.com/digital-media-tech>

<sup>4</sup> For data on enrolment at Western University, see <https://www.uwo.ca/ipb/databook/04/cscitb04.html>. For Fanshawe College, see <https://data.ontario.ca/dataset/college-enrolment>.

<sup>5</sup> The map shows the share of people employed in natural and applied science occupations (NOC codes starting with 2), which includes information technology but also science, engineering and architecture roles.

<sup>6</sup> The 2021 Census reports occupations using the 2021 National Occupation Classification System; the 2016 Census reports using the 2016 National Occupation Classification system. Since the 2021 NOC was a structural update, there are some differences in how occupations are coded. This report uses the 2021 NOC.

Figure 1: Employment in natural and applied science occupations, London Economic Region

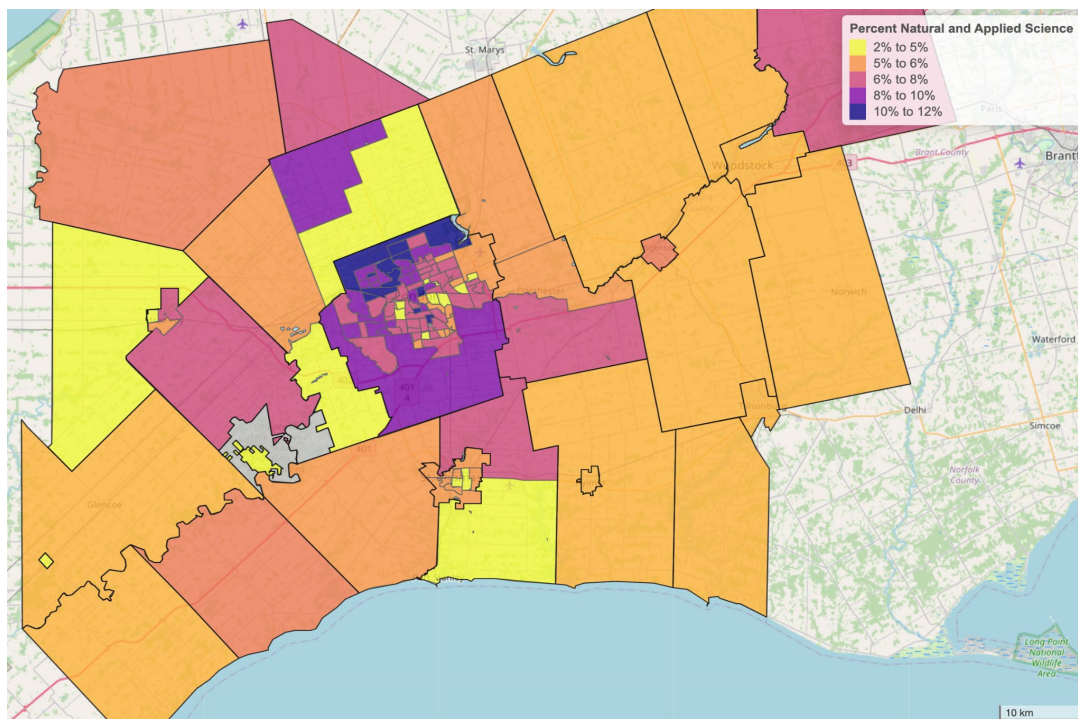
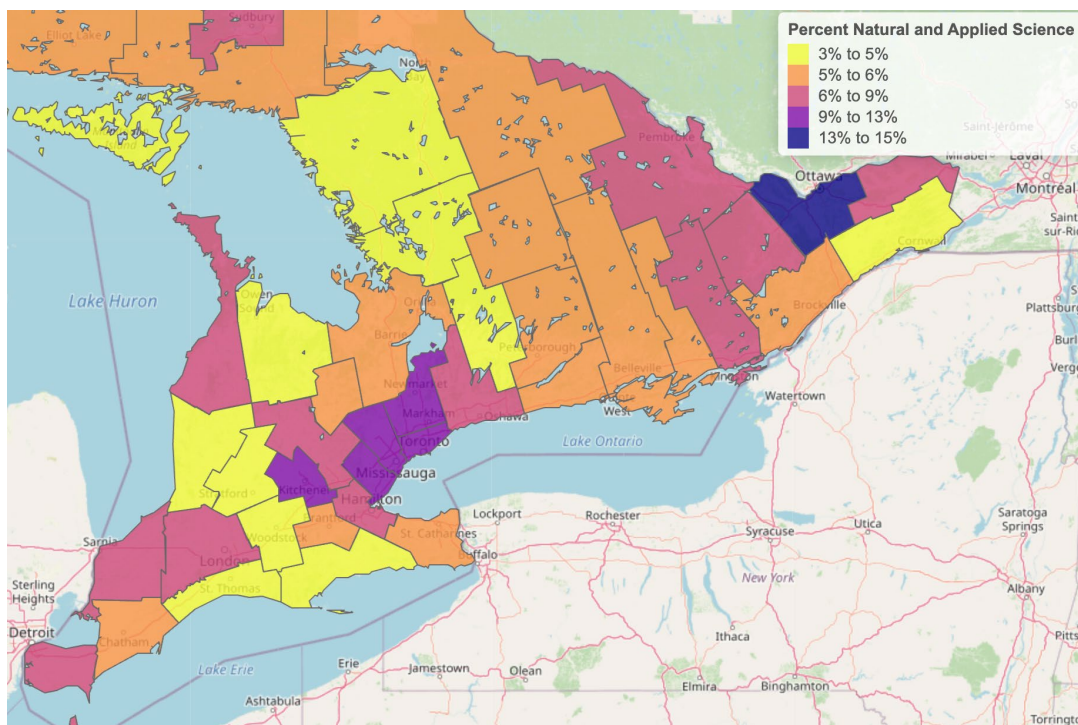


Figure 2: Employment in natural and applied science occupations, Southern Ontario



## Employment Opportunities in London's Information Technology Sector

The Elgin-Middlesex-Oxford area will need thousands of information technology workers to replace retiring workers and keep up with projected increases in demand for information technology services. The Institutional Research team at Fanshawe College has developed employment projections for 19 occupations for 2022-31; see Appendix B for details. The occupation classifications were selected to include occupations that are significant in overall employment in the region and to ensure variation in required skills and experience. The occupations include a wide range of occupations typical to information technology companies – not just software engineers but also accountants, sales people and marketers; see Data Appendix for more information.

Figure 3 shows the number of people working in these occupations in Elgin-Middlesex-Oxford in 2023. In total, these 20 occupation codes include 36,344 jobs, with over 14,000 of those jobs in four NOC codes: Sales and account representatives - wholesale trade (non-technical) (64101), Accounting technicians and bookkeepers (12200), Technical sales specialists - wholesale trade (62100), Accounting and related clerks (14200).

These projections, while important, cannot capture the whole story. In particular, projecting expansion demand is particularly challenging, as models can only project forward past trends. They lack on-the-ground knowledge of what local employers are expecting or planning for.

Figure 4 provides projected job openings in select information technology occupations for the years 2023 to 2031 for the Elgin-Middlesex-Oxford region. The projections are broken down into three components: those that will occur due to retirement, those that will occur due to projected expansions, and those which occur for other reasons, which can include workers switching industries. Detailed breakdowns for each of the 19 occupations can be found in the Data Appendix.

Figure 3: Number of jobs in select information technology occupations, Elgin-Middlesex-Oxford

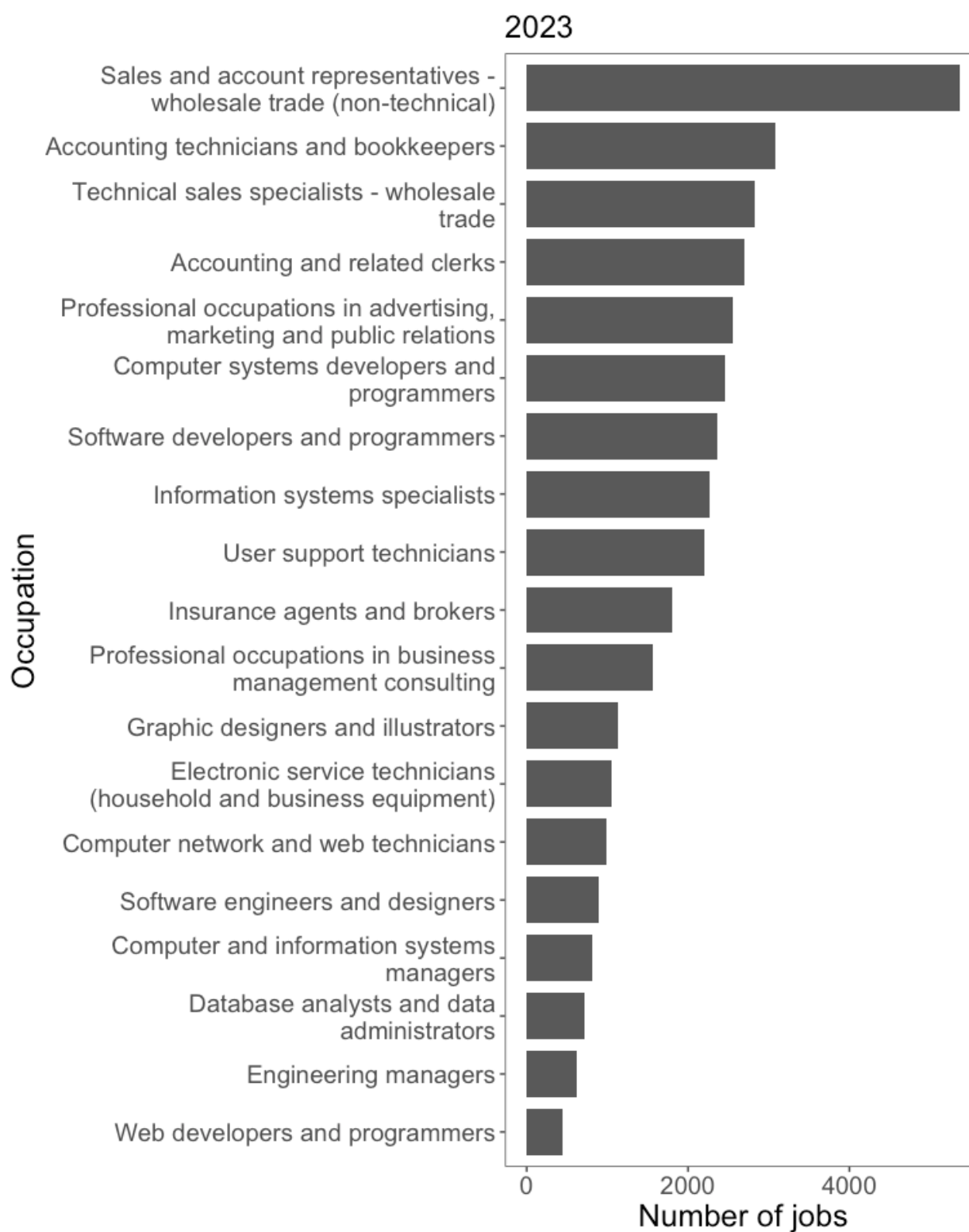
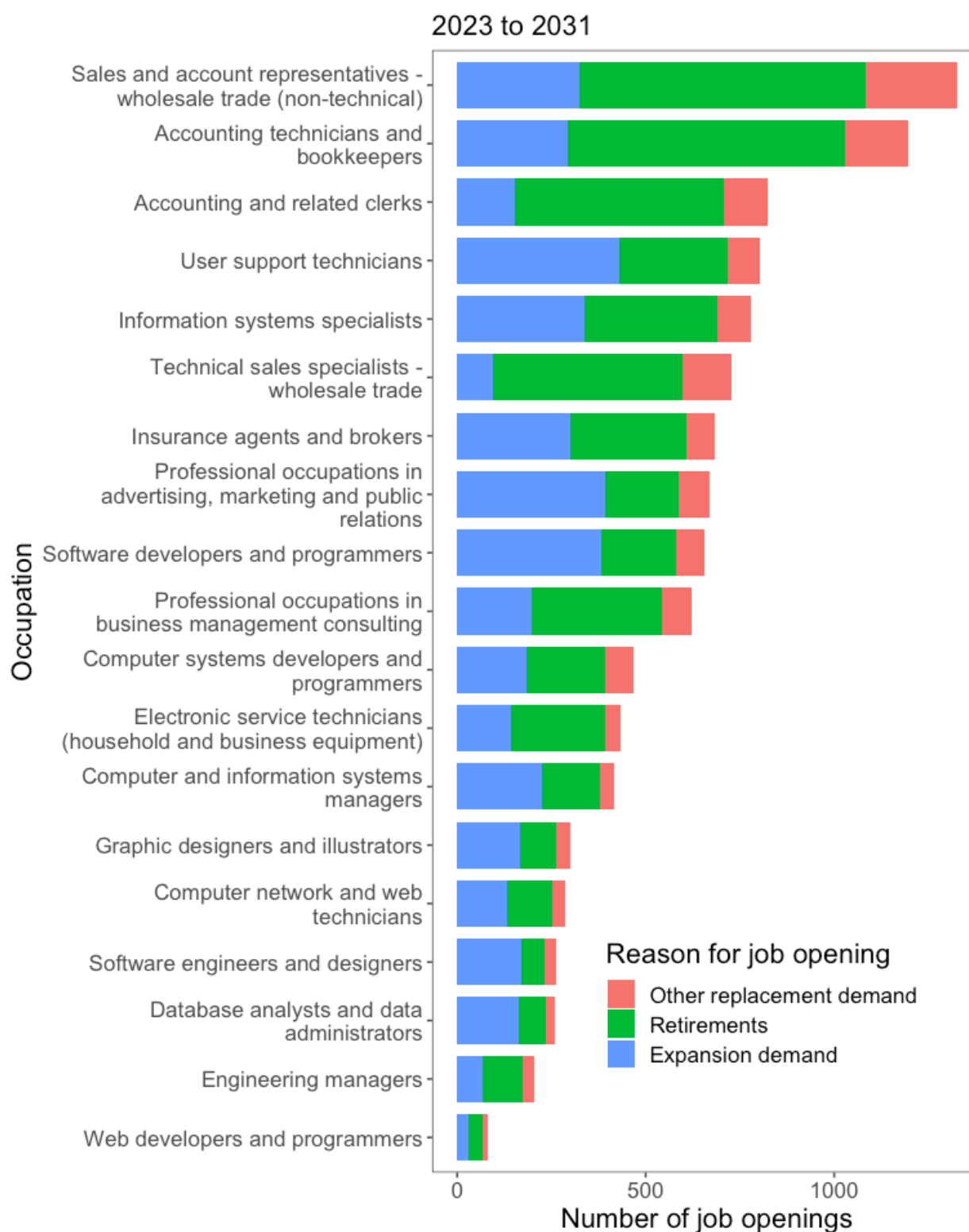


Figure 4: Projected job openings in select information technology occupations in Elgin-Middlesex-Oxford, 2022 to 2031



## Retirements will generate many job openings

Across the 19 occupations, as Baby Boomers reach retirement age between now and 2031, retirements are projected to account for between 23.7% and 69.1% of all job openings in EMO. In total numbers, retirements are projected to be particularly significant in terms of overall job openings for the following occupations:

- User support technicians (22221): 288 projected retirements
- Professional occupations in advertising, marketing and public relations (11202): 194 projected retirements
- Software developers and programmers (21232): 198 projected retirements
- Information systems specialists (21222): 354 projected retirements
- Sales and account representatives - wholesale trade (non-technical) (64101): 759 projected retirements

Combined, almost 5,300 people in these 19 occupations are projected to retire over the next eight years, representing a significant loss of experienced supervisors and workers.

The highest projected retirement rates are in supervisory occupations (~20%). Notably, **one in five** computer and information systems managers, **one in five** technical sales specialists and **one in six** information systems analysts and consultants are projected to retire over the next eight years.

## Expansion demand will account for more than half of job openings in some occupations

In addition to the job openings created through retirements, the expansion demand estimates calculated by Fanshawe College's institutional research team indicate that growing demand will drive additional job openings. The five highest areas of growth in terms of jobs needed to meet expansion demand:

- User support technicians (22221): 429 new jobs
- Professional occupations in advertising, marketing and public relations (11202): 392 new jobs
- Software developers and programmers (21232): 382 new jobs
- Information systems specialists (21222): 337 new jobs
- Sales and account representatives - wholesale trade (non-technical) (64101): 325 new jobs

Several occupations that are core to many employers in the information technology sector and are entry points for new graduates are projected to have more than half of all job openings attributable to increased demand. These occupations include, for example, web designers and developers (66%), software engineers and designers (59%), graphic designers and illustrators (58%) and database analysts and data administrators (56%).

## Immigrants and new graduates will be key recruitment sources

New employees will be a mix of new graduates and skilled immigrants, but the mix varies considerably by occupation.



There are three general sources to fill these job openings: new graduates, immigrants, and people already working in other occupations. Some of the more entry-level roles are expected to see a negative impact of people leaving those roles for other occupations, not necessarily outside of the information technology sector but different (sometimes more senior) roles.

Supervisory occupations are the most likely to be filled by people working in other occupations (including more junior roles within the same organization), accounting for at least 60% of job openings for engineering and IT managers.

New graduates are projected to account for between 7% and more than 100% of all job seekers, depending on the occupation. New graduates are expected to account for a very high proportion – upwards of 90% – of people filling graphic designer, web designer, software engineer and computer programmer roles. New graduates are expected to fill half or more of remaining job openings except for management roles and accounting technicians.

Immigrants are projected to be a significant recruitment source outside of sales occupations and accounting technicians. This phenomenon is especially true in some occupations, like software engineers and designers, where immigrants are projected to fill more than 60% of job openings.

## The View From Employers - Labour Market Challenges

LEDC convened a roundtable discussion facilitated by Smart Prosperity Institute at Fanshawe College's South Campus in London to understand information technology sector organizations' labour market challenges. Leaders from different kinds of organizations – including game developers, advertising technology and software companies – and staff from LEDC, Elgin Middlesex Oxford Workforce Development Board, Western University and Fanshawe College participated.

### Pandemic disruption, remote and hybrid work, is ongoing

The pandemic's disruption of many long-standing norms – for example, working five days a week in an office with coworkers – is ongoing. At a high level, participants asked whether the focus is on jobs for people who *live* in the London economic region, whose employers may be outside the region, or on jobs for people who *work* for employers that are based in the London economic region, whether they live in the region or elsewhere. An ongoing challenge for employers is matching their work culture and norms with the expectations of potential hires. Several participants noted that although hybrid working arrangements, may vary from employer to employer, they seem to have staying power. Generally, this was perceived to have deepened the labour pool for employers in the London economic region. But a shift to hybrid or remote work by office workers generally, not just in the information technology sector, was also recognized as reducing foot traffic in the core and diminishing the general sense of vitality during office hours.

### Ending homelessness should be a top priority

In part because so many information technology employers are located in the core of London, employers and their teams witness daily the outcomes of a broken system of income supports, unaffordable rental housing, inadequately-funded mental health care, and lack of addiction treatment capacity: people experiencing homelessness. People experiencing homelessness deserve better, and all levels of government need to work together to end homelessness in our region. Beyond the direct benefits of doing so for people experiencing or are at risk of experiencing

homelessness, perceptions of safety downtown, which are negatively affected by the general sense of social disorder, would also improve.

### Increasing home prices are eroding one of the London region's historic advantages

Participants recognized that increasingly expensive housing, whether homeownership or rental, erodes one of London's competitive advantages over other regions. Although housing in London is still relatively inexpensive compared to the GTHA, and the "Don't Tell Toronto" campaign has had some success, the cost of housing relative to compensation has increased significantly. Essentially, unaffordable housing is acting like a payroll tax on employers. The Government of Alberta's advertising campaign communicating the same message, not just in Toronto but in London, should be a warning sign.

### Recruitment of junior and co-op roles is more difficult

Relatively close proximity to major postsecondary institutions like Western, Fanshawe and even the University of Waterloo, a bit further afield, was a significant advantage in recruiting co-op students and junior roles. However, the shift of many junior and co-op roles in information technology to be remote has mitigated that geographic advantage of being close (and therefore easier to relocate or commute to).

### Employers are investing significantly in recruiting senior roles

Employers find it challenging to recruit senior roles – for example, in sales – leading them to spend significantly on recruiting people from outside the region but and the country. For those recruits, a smooth immigration process is vital to successful recruiting.

### Differences in pay across offices has become an issue as office location is less tightly associated with home location

Differences in pay for similar roles in office locations with different costs of living, which used to be an acceptable norm, are becoming an issue now that employees can work in one location but more easily live in another, potentially much lower cost-of-living location.

## The View From Employers – How to Solve Labour Market Challenges

### Revitalize the core by ending homelessness and converting empty buildings

Participants stressed the urgent need for all levels of government and the whole community to take action to end homelessness. Converting vacant commercial space that is currently contributing little to the vitality of the core into housing was identified as an opportunity to add more housing and more people in the core while reducing commercial vacancy.

### Improving housing availability and affordability

Although people who are selling homes in higher priced markets like the GTHA and moving to the London region may see London as a more affordable option, this is not the case for younger workers who are not homeowners, people who prefer to rent or people who are moving from lower-cost housing markets within or outside of Canada. The housing crisis is a significant issue for employers, especially for junior roles where renting is more common.

## Public transit helps to lower the cost of living, but it needs to be much better

Participants mentioned that living relatively close to office locations can reduce the cost of mobility by making active transportation or public transit preferred mobility modes. But the transit system needs to be more reliable, frequent and quicker to provide the quality of travel that competes with a much more expensive automobile. Participants who had relocated to London from Europe were shocked at the level of transit service and infrastructure for cycling and other cheaper, active mobility modes.

## Inter-city mobility needs to be improved dramatically

Even with ubiquitous remote meeting options, business travel between urban areas is expected in the information technology sector, especially for high-growth companies that are seeking to raise capital from outside the region. Improving mobility options – both to the airport and the train station – would be very helpful in selling the overall region as a strong base for companies to grow. Adding the early Via Rail train to Toronto would be a good start, but we should aim much higher – high frequency rail on dedicated track at a bare minimum. London is the fourth busiest train station in the entire Via network. But improving affordable, convenient options between mid-size cities in Southwestern Ontario would also be helpful – think Waterloo to London – as hybrid working arrangements make longer distance but less frequent commutes more common.

## Focus on South America

The broad region of South America – and more precisely Brazil, Colombia and Argentina – was raised as a crucial market for both business relationships and future employees, in part because of the existing community of immigrants from those countries now living in the London region (more than 6,500) and in part because of the minimal time zone differences (0 to 2 hours difference) and growing information technology sectors in the region.

## Focus on attracting more women into information technology roles generally

Participants identified specific efforts that they made to recruit and retain women into historically male-dominated roles. Still, they recognized that this is an issue that extends well beyond a specific company, as 34% of STEM degree holders are women and 23% of employees in science and technology roles are women.<sup>7</sup> Although international student cohorts into STEM post-secondary programs are more evenly balanced, this gender gap persists for domestic students and should be a priority for provincial governments and postsecondary institutions.

## Expand business benefits finder to be more comprehensive

The existing [business benefits finder](#) provided by Innovation, Science and Economic Development Canada helps connect employers to programs that may help them with labour market challenges. Still, it would be better if it included a broader range of programs – for example, benefits that may be provided at the municipal rather than federal level.

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<sup>7</sup> Wall, Katherine. 2019. "Persistence and representation of women in STEM programs." Statistics Canada. <https://www150.statcan.gc.ca/n1/pub/75-006-x/2019001/article/00006-eng.htm>

## Final Thoughts

The challenges facing information technology sector employers are not limited to their sector. Still, because their workforce is typically younger, they are different from those that employers in many other sectors are facing. Rather than being focused on losing experienced people to a massive wave of retirements, these employers focus on the talent pipeline coming from Canadian and international postsecondary institutions, shifting expectations and norms around in-person, remote and hybrid working arrangements.

As a growing sector with investors, clients and customers scattered not just within the region or province but globally, business travel and connectivity to major urban centres is essential. Improving rail and air mobility would help these employers grow their local workforce, especially senior roles.

The lower cost of housing (relative to the GTHA), once an advantage in selling the London region to future employees, has instead become a major issue as the cost of homeownership and renting has increased relative to incomes and many people being hired into entry-level information technology positions have only ever known a high-cost housing market.

Public transit service is not seen as reliable, frequent or fast enough to provide the quality of service people need to avoid the cost of owning and operating a car. Making it easier and safer to get around by public transit, biking, or walking would help to lower the overall cost of living.

The worsening crisis of homelessness, which is not limited to London but is especially acute in the core, must be addressed urgently by all levels of government and the whole community. As employers with offices in the core, these companies see daily how the status quo is not working.

Beyond the direct and severe negative impacts on people experiencing homelessness, the indirect impacts on the business environment in the core is also significant. Discouraging vacant commercial buildings and supporting their conversion to residential uses would help with housing and the overall vibrancy downtown.

While many of the direct actions that should be taken are provincial responsibilities, the municipal government should also play a role, especially regarding the availability and affordability of housing and transportation mobility options connecting the core with universities and colleges.

Employers are navigating a difficult labour market by undertaking many internal initiatives. However, they need postsecondary institutions and governments at all levels to focus on four key areas: affordable and attainable housing, ending homelessness, the talent pipeline of domestic and international students, and high-quality transportation mobility options within and outside the city.

## Data Appendix

### Method of calculating forecasts at the Elgin-Middlesex-Oxford level

COPS provides national-level projections for 293 occupational groupings covering the more than 500 specific NOC codes. Using EMSI Lightcast Analyst software, Fanshawe College's Institutional Research team has estimated expansion demand at the EMO for each occupation. These estimates represent the number of new jobs required to meet expected changes in overall demand in the industry. It is usually positive, but expansion demand could be negative. Overall, at the EMO level, expansion demand for these case occupations ranges from 3.4% at the low end to 27.7% at the high end from 2022 to 2031.

To estimate the number of job openings arising from retirements and other replacement demand, the rate of change for each component at the national level (2022 to 2031) has been applied to the baseline number of jobs in each occupation at the EMO level. Essentially, locally estimated expansion demand is added to estimates of the rates of retirements and other job openings at the national level to develop a composite projection of job openings at the EMO level. Although it would be preferable to develop EMO-level estimates of retirements and job openings for other reasons, data are not available.

An example will illustrate the general method. NOC 22221 is user support technicians. At the national level, 13% of workers in NOC 22221 are expected to retire between 2023 and 2031. That translates to 288 forecasted retirements over the same period in EMO. Another 85 jobs in that same occupation are expected to open for other reasons. Combined with the estimate of expansion demand at the EMO level of 429 net new jobs, that results in a total of 802 total job openings between 2023 and 2031.

**Table 1: Expansion demand (new jobs) 2023 to 2031, Elgin Middlesex Oxford economic region**

Occupation (NOC Code)	Net New Jobs	% Change from 2023
User support technicians (22221)	429	19.5
Professional occupations in advertising, marketing and public relations (11202)	392	15.4
Software developers and programmers (21232)	382	16.2
Information systems specialists (21222)	337	14.9
Sales and account representatives - wholesale trade (non-technical) (64101)	325	6.0
Insurance agents and brokers (63100)	299	16.5
Accounting technicians and bookkeepers (12200)	294	9.6

Occupation (NOC Code)	Net New Jobs	% Change from 2023
Computer and information systems managers (20012)	225	27.7
Professional occupations in business management consulting (11201)	196	12.6
Computer systems developers and programmers (21230)	185	7.5
Software engineers and designers (21231)	171	19.2
Graphic designers and illustrators (52120)	168	14.9
Database analysts and data administrators (21223)	163	22.8
Accounting and related clerks (14200)	154	5.7
Electronic service technicians (household and business equipment) (22311)	142	13.5
Computer network and web technicians (22220)	132	13.4
Technical sales specialists - wholesale trade (62100)	95	3.4
Engineering managers (20010)	68	11.1
Web developers and programmers (21234)	30	6.9

**Table 2: Composite projection of job openings, 2023 to 2031, Elgin Middlesex Oxford economic region**

Occupation (NOC Code)	Reason for job opening				As % of 2023 Jobs
	Expansion demand	Retirements	Other	Total	
User support technicians (22221)	429	288	85	802	36.5
Professional occupations in advertising, marketing and public relations (11202)	392	194	82	668	26.2
Software developers and programmers (21232)	382	198	75	655	27.7
Information systems specialists (21222)	337	354	89	780	34.4



Occupation (NOC Code)	Reason for job opening				As % of 2023 Jobs
	Expansion demand	Retirements	Other	Total	
Sales and account representatives - wholesale trade (non-technical) (64101)	325	759	241	1,325	24.7
Insurance agents and brokers (63100)	299	308	76	683	37.8
Accounting technicians and bookkeepers (12200)	294	735	166	1,195	38.8
Computer and information systems managers (20012)	225	155	35	415	51.1
Professional occupations in business management consulting (11201)	196	348	78	622	39.9
Computer systems developers and programmers (21230)	185	206	78	469	19.0
Software engineers and designers (21231)	171	62	29	262	29.4
Graphic designers and illustrators (52120)	168	94	39	301	26.8
Database analysts and data administrators (21223)	163	71	26	260	36.4
Accounting and related clerks (14200)	154	552	117	823	30.6
Electronic service technicians (household and business equipment) (22311)	142	251	42	435	41.2
Computer network and web technicians (22220)	132	119	35	286	28.9
Technical sales specialists - wholesale trade (62100)	95	502	129	726	25.7
Engineering managers (20010)	68	106	30	204	33.3
Web developers and programmers (21234)	30	37	14	81	18.5

Recruitment sources, 2023-2031, Information Technology Sector in Elgin  
Middlesex Oxford economic region

Occupation (NOC Code)	Recruitment source		
	New Graduates	Immigrants	Other
User support technicians (22221)	92.2%	23.1%	-11.2%
Professional occupations in advertising, marketing and public relations (11202)	129%	14.9%	-52.8%
Software developers and programmers (21232)	116.5%	40.9%	-45.8%
Information systems specialists (21222)	72.9%	33.2%	3.8%
Sales and account representatives - wholesale trade (non-technical) (64101)	58.2%	8%	19.2%
Insurance agents and brokers (63100)	60.7%	15.3%	49.1%
Accounting technicians and bookkeepers (12200)	28.8%	9.9%	53.8%
Computer and information systems managers (20012)	10.6%	27%	87.8%
Professional occupations in business management consulting (11201)	50.7%	21.1%	21%
Computer systems developers and programmers (21230)	116.5%	40.9%	-45.8%
Software engineers and designers (21231)	93.7%	51.9%	-35.2%
Graphic designers and illustrators (52120)	159.7%	34.1%	-72.9%
Database analysts and data administrators (21223)	94.5%	21.2%	-3.8%
Accounting and related clerks (14200)	63%	29.7%	-4.3%
Electronic service technicians (household and business equipment) (22311)	50.5%	32.1%	3.8%
Computer network and web technicians (22220)	96.8%	61.7%	-43.6%
Technical sales specialists - wholesale trade (62100)	52.6%	12.3%	27%
Engineering managers (20010)	12.1%	20.3%	92.2%
Web developers and programmers (21234)	116.5%	40.9%	-45.8%



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