



# Tech Market & Job Trends

November 2023



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# WELCOME



**Bruno Ribeiro, Managing Director at SparkyHeads**

Welcome to SparkyHeads' Tech Market & Job Trends Newsletter, where we bring you the latest insights into the dynamic world of Information and Communication (ICT).

I'm Bruno Ribeiro, the Managing Director at SparkyHeads, and I'm truly grateful for your interest in our comprehensive analysis.

Our mission is to provide you with a concise yet all-encompassing view of job vacancy rates, employment growth, and salary trends within the ICT sector.

We focus on the European, North American, and Brazilian markets, offering data-driven insights that hold significant value.

In this issue, we delve into a plethora of valuable insights. First, we'll explore the European job vacancy rate, employment rate, and year-to-year employment variation for managers and professionals.

Additionally, we'll examine the North American job vacancy rate, employment growth, job openings, hires, and dismissals.

Not to forget, we'll take you through the Brazilian market, shedding light on hiring and dismissals, accompanied by a comparative chart showcasing year-to-year salary growth.

As we kick off Q4, we're excited to report over 60 live job opportunities across Europe, with a focus on 25 live jobs in Machine Learning, Deep Learning, and Data Engineering.

Our analyses are rooted in data sourced from reputable authorities such as Eurostat and the Office for National Statistics UK, bolstered by other reliable sources.

We've undertaken a thorough exploration of trends and temporary market fluctuations, enabling us to decipher the ICT market's trajectory over the past year and beyond.

## About SparkyHeads

At SparkyHeads, we are more than just a tech recruitment company. Our unique expertise enables us to partner with tech organizations of all sizes, ensuring the perfect match between talent and positions.

Our core values of honesty, quality of work, partnership, expertise, empathy, and diversity form the bedrock of our operations. These principles shine through in everything we do at SparkHeads.

For further information about us, please visit our website at <https://www.sparkyheads.com/>.

We hope you find this newsletter both informative and insightful as you navigate the ever-evolving tech job landscape. Enjoy your reading! ▲

## tech talk with Nancy Brito



In this issue, we introduce you to Nancy Brito, a distinguished Managing Partner Investor at Ground Capital. With a remarkable career spanning computer science, software development, entrepreneurship, and investment.

In this interview, Nancy brings a wealth of knowledge and experience to the forefront. During this engaging conversation, we delve into a variety of intriguing topics.

From Nancy's investment criteria and the qualities that catch her eye in tech companies, to her insights on navigating the challenges of the ever-evolving tech industry.

Additionally, she shares her perspectives on the global tech landscape, offering predictions for 2024 and shedding light on distinctions and opportunities between North American and European markets.

Finally, Nancy divulges her excitement about emerging technology domains and the innovations poised to shape our future. This promises to be an illuminating dialogue with a true tech industry luminary.

**Brunno:** Nancy, thank you for joining us today. **Can you tell us a little bit more about yourself and your successful career in the tech market?**

**Nancy:** Sure, thank you for having me. Well, first of all, I was born in Canada and then I did a computer science degree at University of Toronto.

I started programming in the 1990s, which was a new thing. The first project that I did was a home banking system and that gave me a lot of exposure.

After that, I decided to move to Europe and Portugal was my choice. My family is Portuguese, so it was easy for me to get connections here and I started working at this Internet Service Provider at the time.

And that's how I started my career. I found out I already knew the software side, so I learned everything about the hardware side. And it was at a little start-up, that today is called NÓS. *[laughs]*

And so I saw how a start-up could start. And that's when I started thinking: "Hey, I can become an entrepreneur one day!"

**Brunno:** Wow, that's delightful! You have been a successful entrepreneur and investor in the tech industry for many years. **What kind of companies have caught your eye and made you want to invest in them?**

**Nancy:** Well, that's a very interesting question because I keep on changing my mind every year. There are so many new things happening!

I'm very excited with everything that has to do with artificial intelligence (AI), blockchain, and new sciences that are coming along with the digital tech.

## tech talk with Nancy Brito

All of those areas are very exciting for me to invest. I can see them changing the world very fast, but it took a really long time to get here.

Only today, we see some results of what I studied 30 years ago. So, it's really exciting to see that, but it took 30 years to see something.

So hopefully what I'll be investing today, I'll see it faster than 30 years because probably in 30 years I won't be here. *[laughs]*

“I'm very excited with everything that has to do with artificial intelligence, blockchain, and new sciences that are coming along with the digital tech.”

**Brunno:** Investing is not always a smooth ride. There must have been some bumps and bruises along the way. **How do you deal with the disappointments and frustrations that come with investing? And how do you balance your role as an investor and a mentor to the founders you support?**

**Nancy:** Well, this is always a two-way trust. I'm using other people's money and they trust me to invest it.

I'm investing money in start-ups. The founders have to trust me and I have to trust the founders.

This is the basis because we trust each other and with trust, I see that we have to be direct, even though there's always bumps on the road.

I will make sure that our communication line is open and that we can tell each other what we need to be told.

I believe that we can get through everything. And if the start-up doesn't go well, we can help out. If the start-up is doing well, we'll also help out.

We'll always be there for the start-up and we'll always make sure that our portfolio is doing well for our partners, because it's their money and I respect that a lot.

So, I see this as a network of trust and I make sure that there's transparency between all parts involved.

**Brunno:** The world is going through a lot of changes and challenges right now. There is a lot of uncertainty and volatility in the market. **How do you make sense of all these signals and trends? What are your predictions for the tech industry in 2024? And do you see any differences or opportunities between the North American and the European markets?**

**Nancy:** This is a hard question to give a straight answer to, because the world's tensions are difficult to understand.

We always have to think about solutions as a global society. And in the tech industry, we are already trained to think about global solutions. But in all other industries, people are not trained to think that way.

When it comes to the major trend that we're seeing this year. Just ask anyone about AI and everyone starts saying: "AI is going to steal my job."

Even I already thought about it. Obviously, I do not believe in that. I always see AI as a superpower. I don't see them as humans. We are humans.

There are good and bad things with technology. We just need to have the knowledge to distinguish them.

And about US and Europe. I still believe, that Europe can really step up their game and become a huge player in innovation.

## tech talk with Nancy Brito

“ In the tech industry, we are already trained to think about global solutions. But in all the other industries, people are not trained to think that way. ”

We have so much to give the world. We just have to want to do it, we have to stop with the bureaucracy and just do it, you know, not think about it.

We're amazing thinkers. We'll write about everything, but we never want to do it. And that's what we need to change.

I see the *do it* attitude in the new generation, in Europe and in the younger start-ups. So hopefully in a few years we'll see a lot of change in Europe.

**Brunno:** Technology is constantly evolving and creating new possibilities and solutions for various problems and needs. **What are some of the areas or domains that you are most excited about right now? What are the technologies or innovations that you think will have the most impact in the near future?**

**Nancy:** Well, there are two areas that I'm getting excited:

One is hardware. Finally, everyone is realizing that the hardware that we use, the computers that we have, the phones that we have, are not enough.

Then the other area that I'm really excited about is space. We only have a mobile phone today because there was a need for communication to talk to the rocket ship many years ago. That's how the (mobile) phone was invented.

So today, by having all this technology that's being invented for the space industry, I think there's going to be many things here on Earth that are going to be used.

**Brunno:** You have seen many pitches and proposals from different founders and entrepreneurs over the years. **What are the key factors that make you decide to invest in a company or a project? What are the qualities or skills that you look for in a founder or a team?**

**Nancy:** When I started as business angel, I would get excited about the project itself. The idea, the solution and how it would impact the world. And that was it. I would even get more excited than the team.

With time, I realized that the solution didn't matter, and the problem that they were solving didn't matter either.

What really matters is the team. The energy level that they have. The way they thought about the solutions, how they deal with difficult situations. And that's my number one. That's what I look for.

So, this change really made me grow a bit, because when I look at any pitch, it doesn't matter. I usually I don't even want to look at the pitch deck.

I prefer to meet the founders first, talk to them first, and I'll know right away if they are going to be a team that I would like to put money in.

I learned so much from all these start-ups I work with, my team and everyone around me. So hopefully I'll keep this attitude and keep on learning. So, thank you for inviting me.

“ What really matters is the team. The energy level that they have. The way they think about the solutions. ”



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# POLAND

## Poland's Tech Sector Thriving

Poland stands out as a remarkable success story in the tech industry. In comparing the first quarter of 2022 with the same period in 2023, it boasts the highest employment growth among countries.

What's even more noteworthy is that the growth in the number of managers and professionals in Poland's tech sector surpasses the overall employment growth rate, highlighting a promising trend.

**Year-to-Year Employment growth (managers)**

**25.0%**

**Year-to-Year Employment growth (professionals)**

**23.5%**

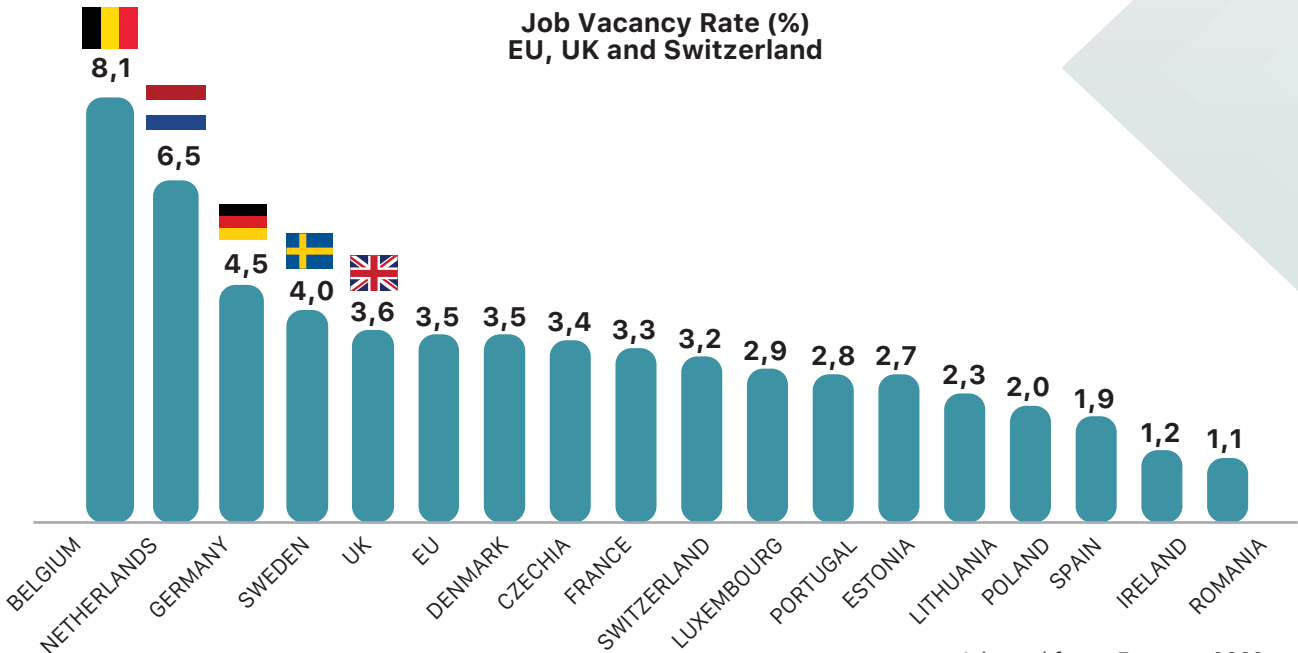
**Year-to-Year Employment growth (total)**

**21.4%**



# EU

## Job Vacancy Rate



Adapted from: Eurostat 2023

Job vacancy rates represent the proportion of open positions to the total number of filled and unfilled job positions. Essentially, it measures the demand for labor that is yet to be met in an economy.

Within the EU, the Information and Communication sector encompasses a range of activities, including publishing, broadcasting, telecommunications, computer programming, and information services.



To better understand the data, we can categorize EU countries, plus Switzerland and the UK, into three groups based on their job vacancy rates within this sector:

**High (> 4%) ▲**

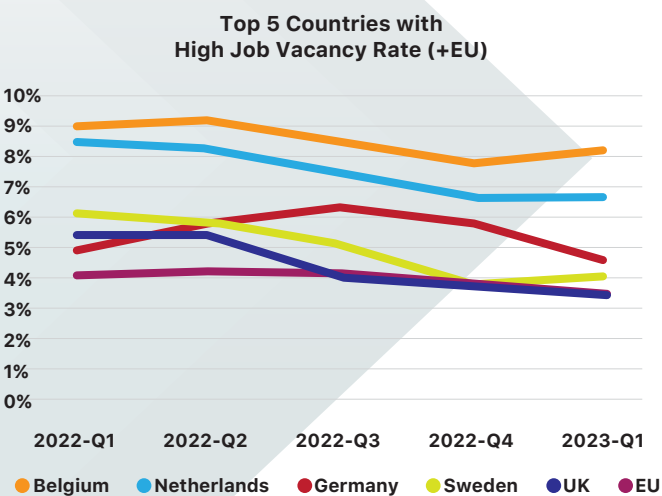
These countries have a strong demand for workers in the information and communication sector, and face challenges in filling the vacancies.

**Medium (2% - 4%) ●**

These countries have a moderate demand for workers in the information and communication sector, and may experience some difficulties in finding qualified candidates.

**Low (< 2%) ▼**

These countries have a low demand for workers in the information and communication sector, and/or have a sufficient supply of labour to meet their needs.



Adapted from: Eurostat and Office for National Statistics UK (2023)

The image above spotlights European countries characterized by elevated job vacancy rates. This metric points to the presence of a substantial number of unoccupied positions relative to the total workforce.

Consistently high job vacancy rates offer insightful interpretations. Such patterns may indicate that employers are encountering difficulties in filling these roles, or they may reflect the dynamic nature of the labor market, necessitating a constant influx of skilled personnel.

## Highlights

As a whole, the European Union showed a slight decrease in its job vacancy rates after reaching a peak in the second quarter of 2022.

Among the current 27 EU countries, Germany displays the 3rd highest job vacancy rate. The country reached its vacancy rate peak in the third quarter of 2022.

Belgium and the Netherlands are the European countries with the highest vacancy rates in the last year and first quarter of 2023.

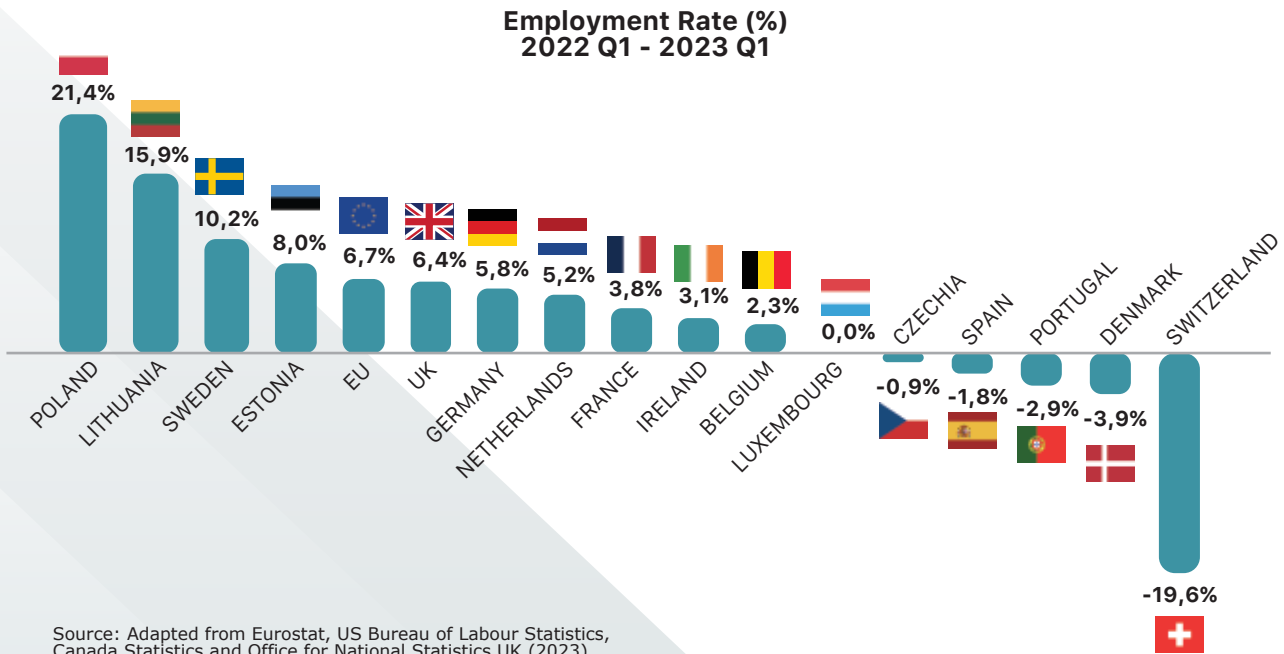
As per Job Vacancy Rate chart (page 5), both countries follow similar trends, where the rates vary negatively, on average, 2 p.p. over the year, increasing later again, in the Q1 2023.

These two countries, together with Austria, show consistently very high job vacancy rates in the last 3 years.

Sweden follows a similar trend, when compared to both Belgium and Netherlands. However, Sweden shows lower job vacancy rates, varying from 6% to 4%.

As for the UK, which is no longer a member of the European Union, it is possible to observe an overlap with European Union's average rate, however, its vacancy rates are decreasing since the third quarter of 2022. ▲

## Employment Rate

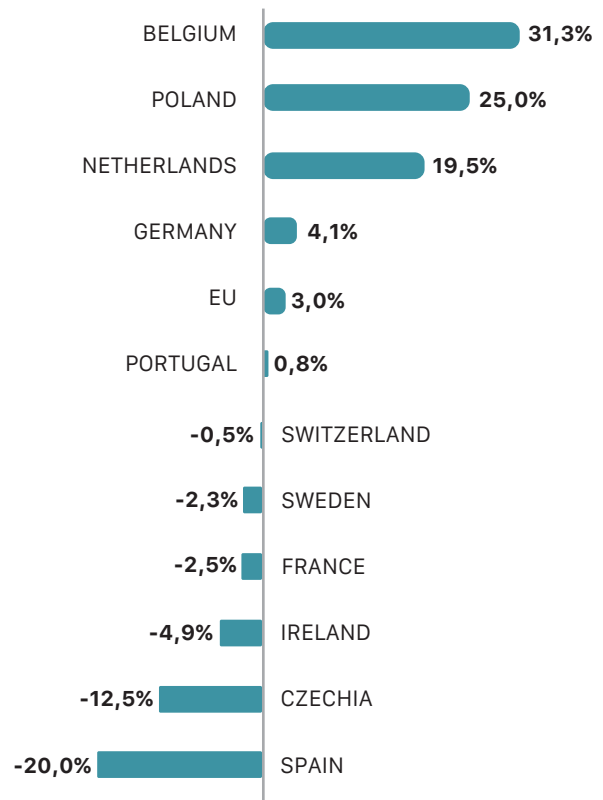


During last year, employment in Poland grew 21,4%, showing progressive growth through the 5 periods analyzed. At the same time, the job vacancy rates, revealed an inverse trend (decreasing) which might be an indicator that the labor market is successfully absorbing new workers, at least in the short-term.

In Sweden, the employment seemed to have grown 10% in one year, while the job vacancy rates are also high and relatively stable. This might indicate that the employers are actively looking to expand their workforce, which is normally associated with economic growth.

On the other hand, Switzerland shows slowly decreasing job vacancy rates on the analyzed period, and a sharp decrease on the levels of employment when comparing with 2022 (nearly 20%). From a long-term perspective, in the last 6 years, the employment peaked in 2020, and since then, has been showing decreasing trends, while the job vacancy rate was the highest (when comparing Q1 2018-2023) in 2022.

**Year-to-Year Employment Variation (managers)**  
2022 Q1 - 2023 Q1



Belgium and the Netherlands, the two countries with the highest job vacancy rates, seem to be hiring at great speed, where the number of managers grew 31,2% and 19,5%, respectively, from 2022 Q1 to 2023 Q1.

At the same time, Poland, the country where the employment varied the most, shows that the number of managers increased 25%. One might be able to infer that, a significant part of the growth in the total employment can be explained by the increase of the number of managers.

Similarly, in Spain, the total employment has decreased almost 2% and the number of managers has fell in 20%, adding to very low job vacancy rates – one can suppose that this labor market is facing some challenges that do not incentive hiring.

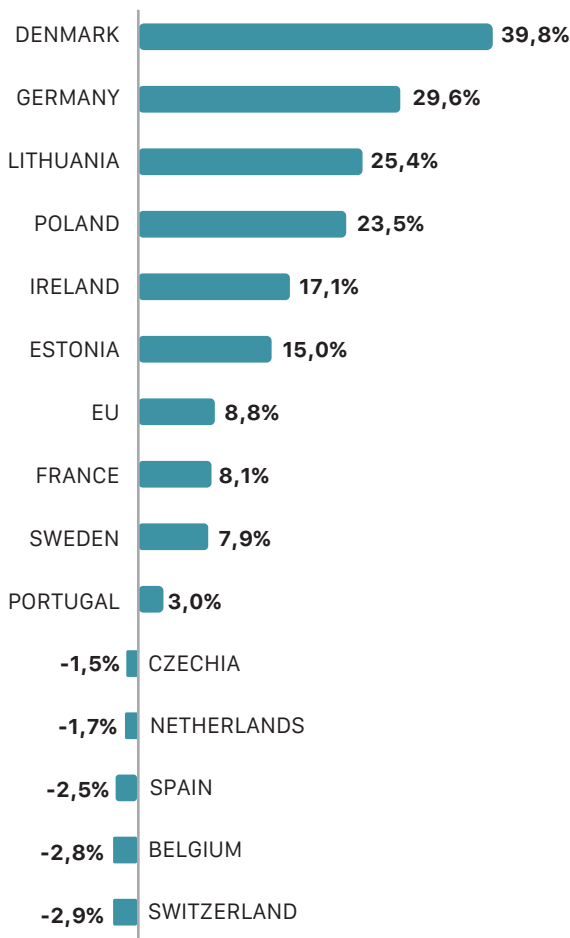
Germany, Denmark, Lithuania, and Poland: the countries where the year-on-year employment grew over 20%

Once again, Spain and Switzerland show a decrease on the number of employees, when comparing 2022 Q1 and 2023 Q1

The EU27 rate, indicates that, on average the employment in ICT, for job positions that are included in the “Professionals” classification, increased almost 10%, from the first quarter of 2022 to the same quarter in the current year. ▲

EUROPE

**Year-to-Year Employment Variation (professionals) 2022 Q1 - 2023 Q1**



Adapted from: Eurostat 2023

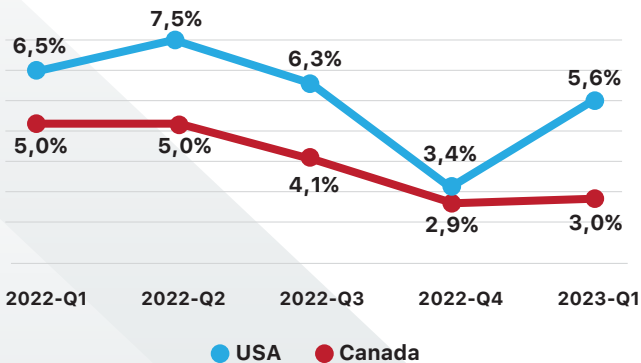
# THE AMERICAS





# USA and CANADA

## Job Vacancy Rate



Source: Adapted from US Bureau of Labour Statistics (2023) and Statistics Canada (2023), Information and Cultural Industries

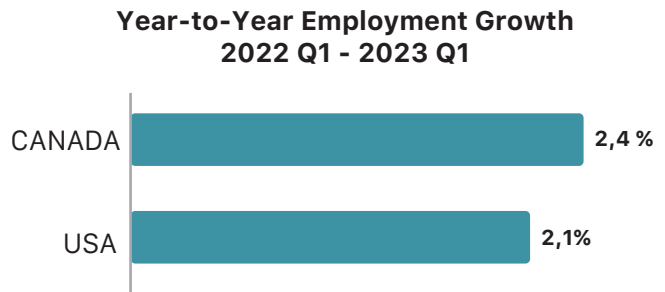
The job vacancy rates have reached a peak in the second quarter of 2022, both in the USA and Canada. However, in the following quarters of the year, job vacancy rates from both North American nations decreased.

In the first quarter of 2023, the Job vacancy rate in the USA rose 5.6%, which is still lower than the homologous quarter, but might indicate that there is a tendency for more hires in the beginning of the year.

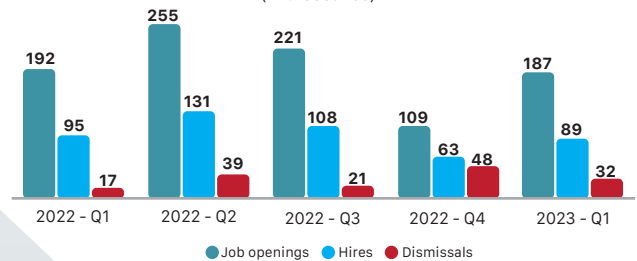
As for Canada, a similar decreasing trend can be noticed. Job vacancy rates vary between 5% and 3% during 2022 and seem to follow that trend on the first quarter of the year.

Additionally, it is observed that comparatively to Q1 2022, both countries employed more people in the ICT sector.

## Employment Growth



### Job Openings, Hires and Dismissals in the USA (in thousands)



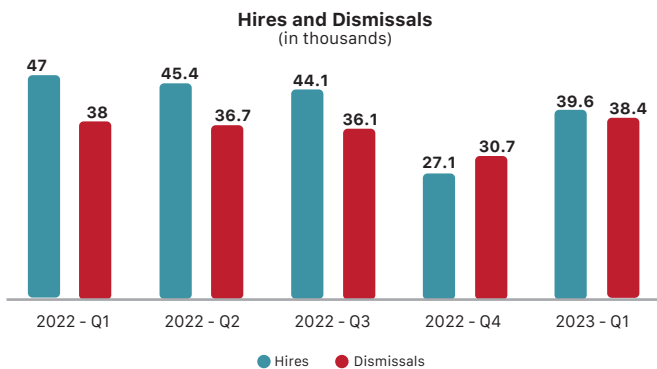
When it comes to Job Openings (Vacancies), Hires and Dismissals in the USA, the number of job openings is consecutively two times higher than the number of hires, it suggests that there might be a skills gap or the difficulty in finding suitable candidates for the available positions.

On the analyzed time frame, the hires are always significantly higher than the discharges, except for the last quarter of 2022, when companies like Meta Group (11,000 Layoffs), Amazon (10,000 Layoffs) and Cisco (4,100 Layoffs) announced a large number of dismissals, according to layoffs.fyi.



# BRAZIL

## Hires and Dismissals



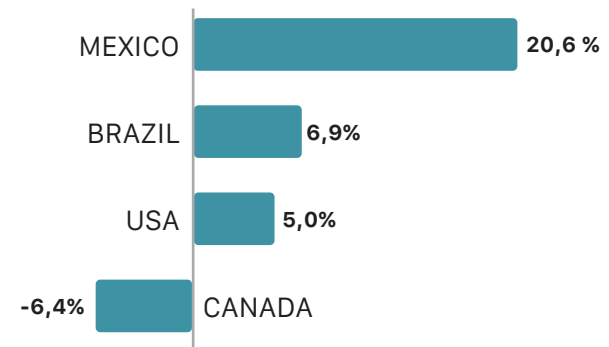
In Brazil, the number of hires and dismissals is relatively more balanced than in the USA. This indicates that the Brazilian labor market appears to be a stable and well-functioning one.

However, it is possible to observe that in the last quarter of 2022 the number of dismissals surpassed the number of hires.

As also noted in the US market, there seems to be a slowdown on the number of hires during Q4, followed by an increase on the number of dismissals.

## Salaries

### Year-to-Year Salaries Growth 2022 Q1 - 2023 Q1



Source: Adapted from ILOSTAT Explorer (2023), Canada Statistics (2023) and Office for National Statistics (2023)

When it comes to salary growth in The Americas, Mexico seems to be the country where the wages in Information and Communication are growing at the fastest rate.

The data also indicates that the hourly wage in Canada for employees in data processing, hosting and related services, telecommunications and other information services, decreased 5% compared to the first quarter of 2022. ▲

THE AMERICAS

# THE AMERICAS

## DATA SOURCES

Eurostat - <https://ec.europa.eu/eurostat>

ILOSTAT - International Labour Organisation -  
<https://ilostat.ilo.org/data/>

Layoffs.fyi - <https://layoffs.fyi/>

Office for National Statistics - <https://www.ons.gov.uk/>

Statistics Canada - <https://www.statcan.gc.ca/>

US Bureau of Labour Statistics - <https://www.bls.gov/>

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