



COE HOTSPOTS OF THE WORLD 2021

APRIL 2022



ABOUT THE REPORT



IMPORTANT NOTE

COE Hotspots of the World report is an annual Zinnov report that explores geographical locations based on their potential to build Centers of Excellence that can build and scale complete software engineering teams.

Across multiple discussions with our customers and industry leaders, we have identified countries that were of great interest for setting up GCOEs. This year's report is an update to last year's report on these countries. Our data has been modified in light of the recent global events and their impact on the following levers: Talent, Cost, Ease of Business, Software Engineering Ecosystem.

TARGET AUDIENCE

CXOs; Strategy, Operations and HR leadership from Global MNCs; Private Equity firms

DISCLAIMER

By no means this is an exhaustive list of countries where companies can set up software engineering teams. The study is a Zinnov point of view on potential locations for building global software engineering teams. The analysis is based on Zinnov's database of information, primary research, as well as secondary research.

SCOPE

The report contains a deep-dive on software engineering capability of the countries below:
Eastern and Central Europe - Poland, Czechia, Bulgaria, Romania, Lithuania, Estonia and Belarus
North America - Canada and USA
APAC - India, China, Philippines, and Vietnam
LATAM - Mexico, Brazil, and Costa Rica

Ukraine has been excluded from this report as the recent geopolitical tension in the region has led to it losing its attractiveness as a COE Hotspot

Where are the top CoE hotspots of the world?

OBJECTIVE

TO IDENTIFY CENTERS OF EXCELLENCE HOTSPOTS
IN THE WORLD WHERE COMPANIES CAN:

**BUILD SCALABLE
AND FULL
SOFTWARE
PRODUCT
ENGINEERING
TEAMS**

TALENT

**LEVERAGE A
MATURE
ECOSYSTEM**

ECOSYSTEM

**HAVE HIGH
EASE OF DOING
BUSINESS**

EASE OF BUSINESS

**BUILD TEAMS
AT AFFORDABLE
COSTS**

COST

TAXONOMY

- **Fortune 500:** The Fortune 500 is an annual list compiled and published by Fortune magazine that ranks 500 of the largest United States corporations by total revenue for their respective fiscal years
- **Z1000 Companies Database:** A database of top 1000 global Engineering R&D (ER&D) spenders across 20+ verticals. The cumulative list has a coverage of 80% of all the global companies investing in ER&D across industry verticals
- **Zinnov Service Provider Database:** A database of 600+ ER&D(Engineering R&D) Service Providers tracked across the globe
- **Start-ups:** Companies established in the last 5 years with core tech offerings and have reached a prototype stage/have an MVP
- **Unicorns:** Privately held start-ups with a current valuation of over USD 1 Bn (as of December 2021)
- **Software Engineering Talent:** The talent pool employed in global product companies primarily responsible for building computer system software and application software
- **Time to Offer:** The total time spent (in weeks) from the time of posting the job description regarding a role till the time of extension of the first offer
- **Time to Join:** The total time spent (in weeks) from the time of posting the job description regarding a role till the time taken for the candidate to join (time to offer + notice period)
- **Attrition rate:** Rate of employee turnover in a year across software engineering companies
- **Salary growth:** Year on year growth rate in average salaries (across roles and years of experience) for software engineering companies
- **Higher educational institutions:** Top tier engineering schools based out of that location

SOFTWARE ENGINEERING JOB ROLES

- **Software Development Engineer:** Software Developer, Front-End Developer, Application Developer, Software Engineer, Web Developer, Mobile Application Developer, IT Developer
- **QA Engineer:** Quality Assurance Engineer, QA Manual Engineer, QA Automation Engineer, Test Automation Engineer
- **Database Administrator:** Database Engineer, Database Specialist, Database Developer, SQL Server Database Administrator
- **DevOps Engineer:** DevOps Developer, DevOps Specialist, Platform Engineer, Reliability Engineer
- **Architect:** Software Architect, Application Architect, Enterprise Architect, Infrastructure Architect

MAJOR TRENDS



GEOPOLITICAL TENSION

Geopolitical stresses have impacted the market demand and supply gap

Trade agreements between US and China have been hindered due to trade sanctions

Geographical issues between countries like Israel and Palestine or Russia and Ukraine have had a spillover effect on bordering countries and led to exploration of alternate business markets



GREAT RESIGNATION

Post the onset of COVID in 2020, several trends like pent up talent demand, more remote opportunities, focus on employee wellness led to higher attrition across countries



TALENT WARS

On an average there has been a salary growth of over 20% for an average software engineer in 2021 across all the COE hotspots

This is due to supply-demand gap across global markets



FUTURE OF WORK

The global ER&D spend of over USD 1200 Bn in technology businesses has led to strong digital transformation across industries

Strong global fiscal stimulus from governments followed by widescale vaccination drives has shot up the global talent demand

Other trends showcase the rise of tele-work (telemedicine, tele-education, etc) and growth of remote/hybrid job openings (eg: around 5X increase in remote job openings in India in 2021 from 2020)



RAMIFICATIONS



RISE OF NEW EMERGING MARKETS

A global talent shortage, accelerated digital transformation and rise in remote work have caused Vietnam and Costa Rica to show great potential to become COE Hotspots of the future



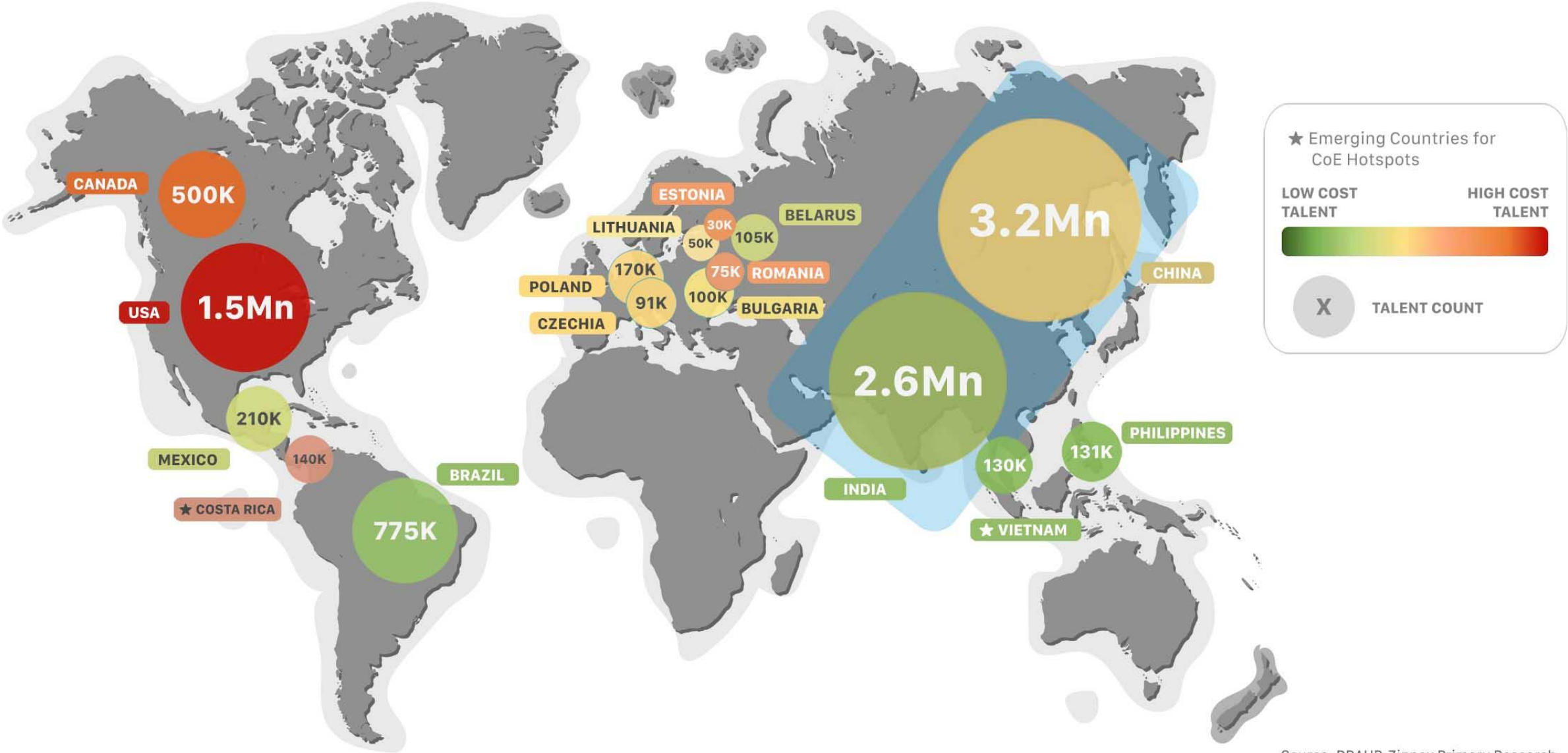
COE HOTSPOTS FOR BUSINESS CONTINUITY

Global companies continue to leverage major COE hotspots for business continuity and de-risking

Eg: India has seen a growth(7%) in GCOEs from 1250 in 2019 to over 1430 in 2021

Global software engineering talent availability and cost

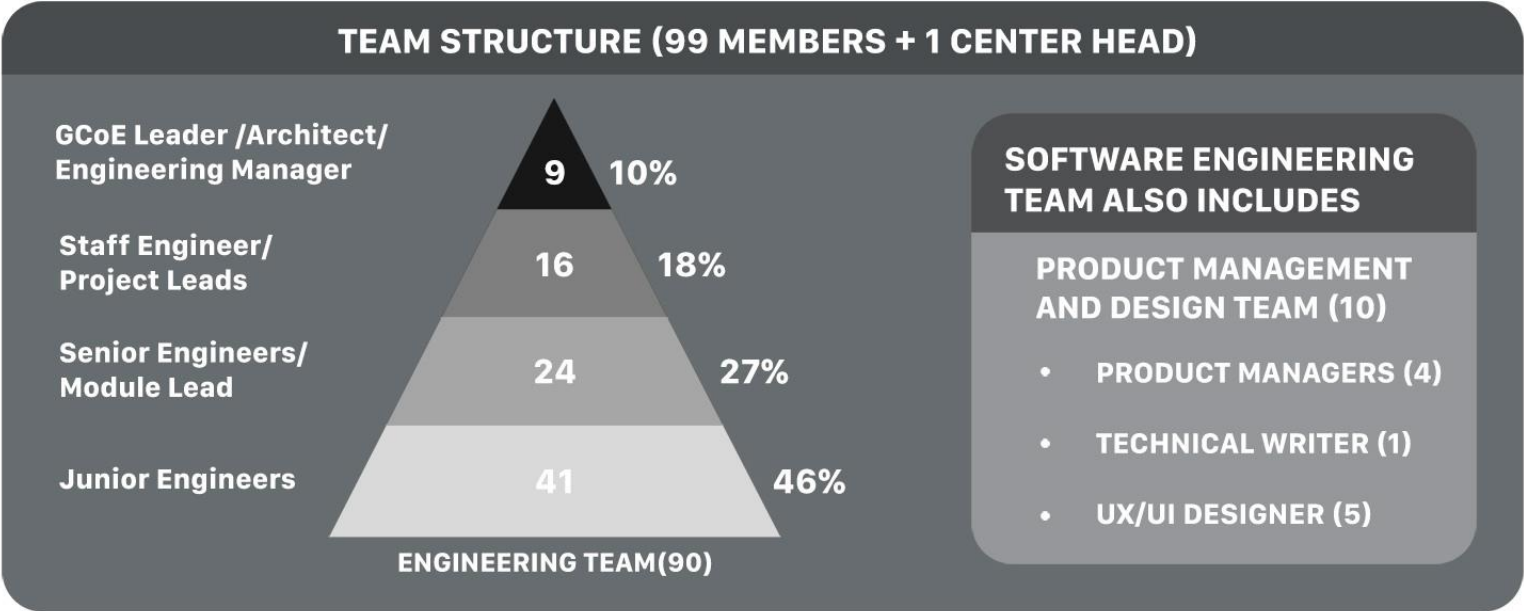
Key Insight: Talent pool size in Canada has increased by 35% in 2021 due to rapid talent migration from US and lenient immigration laws for expatriate workers



Assumed Talent Pyramid for a 100-member Software Engineering team to build a CoE

As part of this analysis, we have assumed a software engineering team size of 100.

We have divided the software engineering team into 2 different functions: engineering team and product management & design team.



ENGINEERING TEAM	HEADCOUNT	1-4 YoE	3-6 YoE	5-8 YoE	8+ YoE
Software Development Engineer	57	33	16	8	
Quality Engineer	14	8	4	2	
DevOps Engineer	8		3	5	
Database Administrator	2		1	1	
Engineering Manager/Architect	8				8
Center Head	1				1
TOTAL	90	41	24	16	9

PRODUCT MANAGEMENT AND DESIGN TEAM	HEADCOUNT	1-4 YoE	3-6 YoE	5-8 YoE	8+ YoE
Product Manager	4				4
Technical Writer	1		1		
UX/UI Designer	5		2	3	
TOTAL	10	0	3	3	4



Team scalability analysis –100-member team: Software Engineering talent availability as a function of 'number to hire' in comparison with the US

Emerging Countries
for CoE Hotspots

JOB ROLE	NUMBER TO HIRE	INDIA	CHINA	PHILIPPINES	POLAND	CZECHIA	BULGARIA	ESTONIA	LITHUANIA	ROMANIA	BELARUS	BRAZIL	MEXICO	CANADA	UNITED STATES	VIETNAM	COSTA RICA
Software Development Engineer	57	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Quality Engineer	14	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DevOps Engineer	8	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Database Administrator	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Architect	2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Engineering Manager	6	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Product Manager	4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
UX/UI Designer	5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Technical Writer	1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

*Availability is for all level of experiences



<100X
AVAILABILITY



100-499X
AVAILABILITY



>=500X
AVAILABILITY

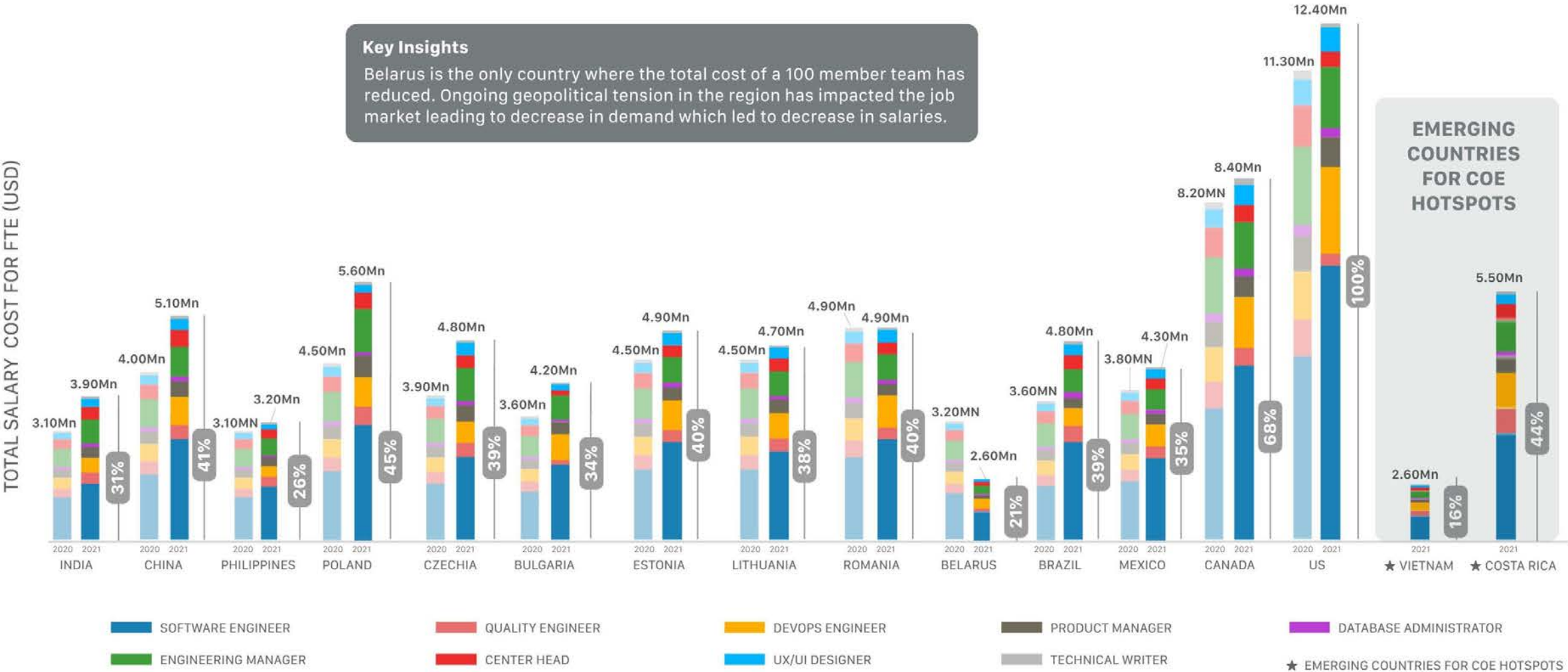


DENOTES THE CHANGE IN
AVAILABILITY (2020 TO 2021)

Salary costs for a 100-member Software Engineering team in each country relative to costs in the USA



Key Insights
Belarus is the only country where the total cost of a 100 member team has reduced. Ongoing geopolitical tension in the region has impacted the job market leading to decrease in demand which led to decrease in salaries.



Please note: Average salaries numbers across YoE have been used in this analysis, however when setting up engineering teams in a new location it is recommended to adjust salary percentile suitable to attract top local talent

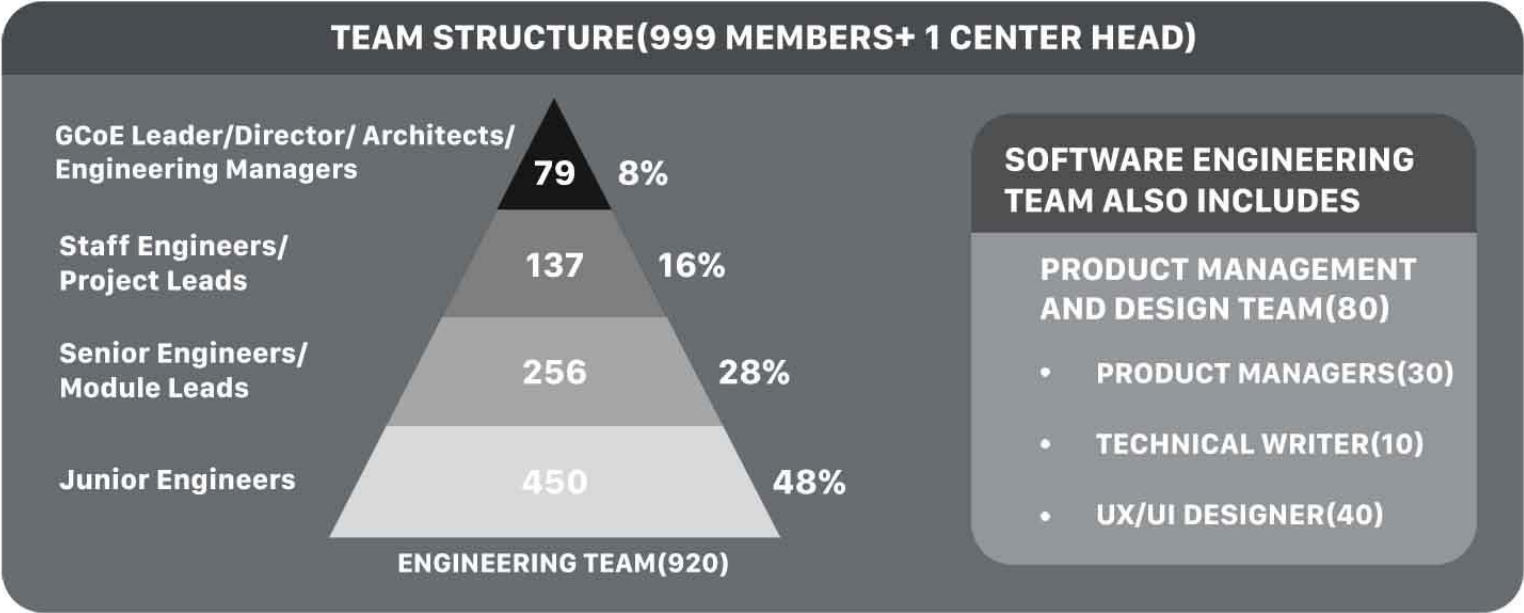
Assumed Talent Pyramid for a 1000-member Software Engineering team to build a CoE



To determine the scalability potential and cost, we also looked at a talent pyramid of 1000-member software engineering team.

We have divided the software engineering team into 2 different functions: Engineering Team and Product Management & Design Team

The 1000-member pyramid is relatively flatter at the bottom and the functional roles like DevOps and QA are not increased proportionally as we scale from 100 to a 1000-member team



ENGINEERING TEAM	HEADCOUNT	1-4 YoE	3-6 YoE	5-8 YoE	8+ YoE
Software Development Engineer	616	330	188	100	
Quality Engineer	155	83	47	25	
DevOps Engineer	60	32	18	10	
Database Administrator	10	5	3	2	
Engineering Manager	63				63
Solutions Architect	10				10
Director	5				5
Center Head	1				1
TOTAL	920	450	256	137	79

PRODUCT MANAGEMENT AND DESIGN TEAM	HEADCOUNT	1-4 YoE	3-6 YoE	5-8 YoE	8+ YoE
Product Manager	30				30
Technical Writer	10		10		
UX/UI Designer	40		20	20	
TOTAL	80		30	20	30



Team Scalability Analysis - 1000-member team: Software engineering talent availability as a function of 'number to hire' in comparison with USA

Emerging Countries
for CoE Hotspots

JOB ROLE	NUMBER TO HIRE	INDIA	CHINA	PHILIPPINES	POLAND	CZECHIA	BULGARIA	ESTONIA	LITHUANIA	ROMANIA	BELARUS	BRAZIL	MEXICO	CANADA	UNITED STATES	VIETNAM	COSTA RICA
Software Development Engineer	616	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Quality Engineer	155	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DevOps Engineer	60	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Database Administrator	10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Architect	10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Engineering Manager	63	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Product Manager	30	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
UX/UI Designer	40	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Technical Writer	10	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

*Availability is for all level of experiences

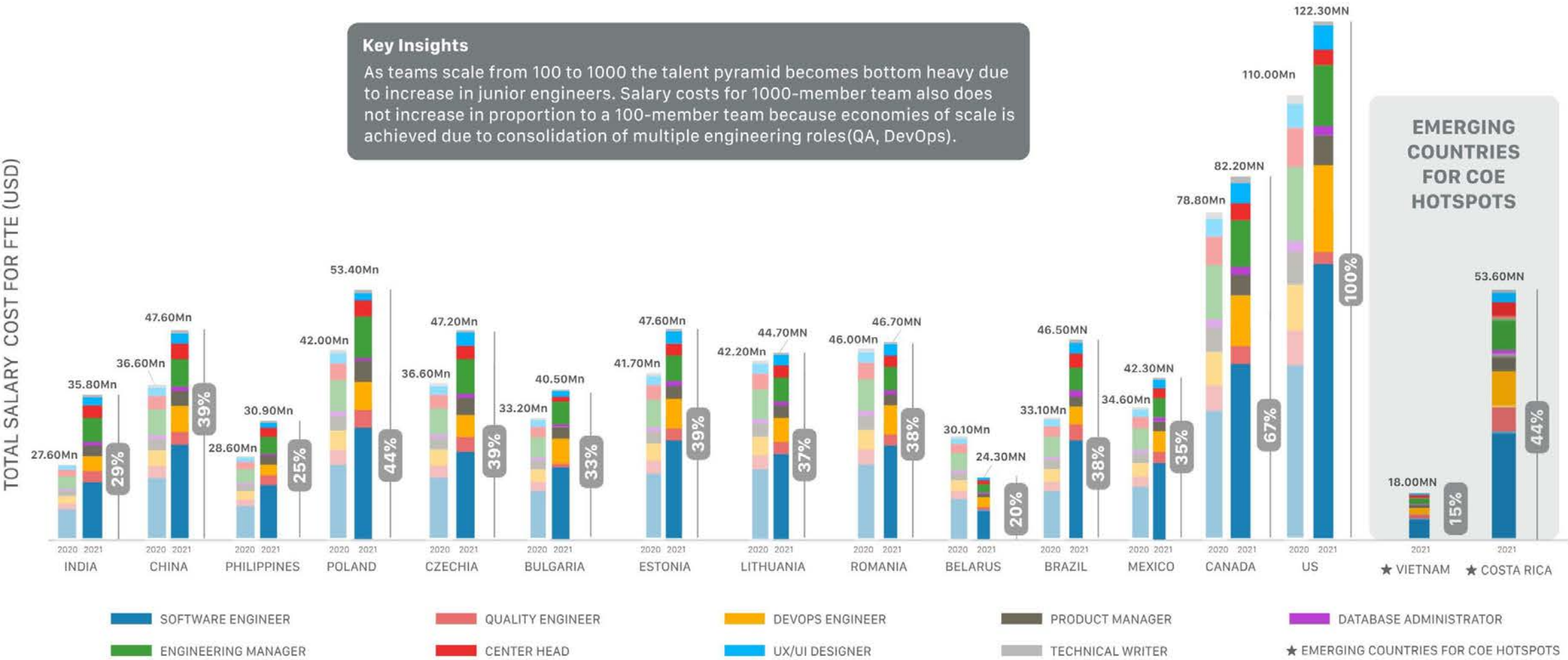
● <100X
AVAILABILITY

● 100X
AVAILABILITY

● 500X
AVAILABILITY

● SHOWS THE CHANGE IN
AVAILABILITY (2020 TO 2021)

Salary Costs for a 1000-member Software Engineering team in each country, relative to cost in USA



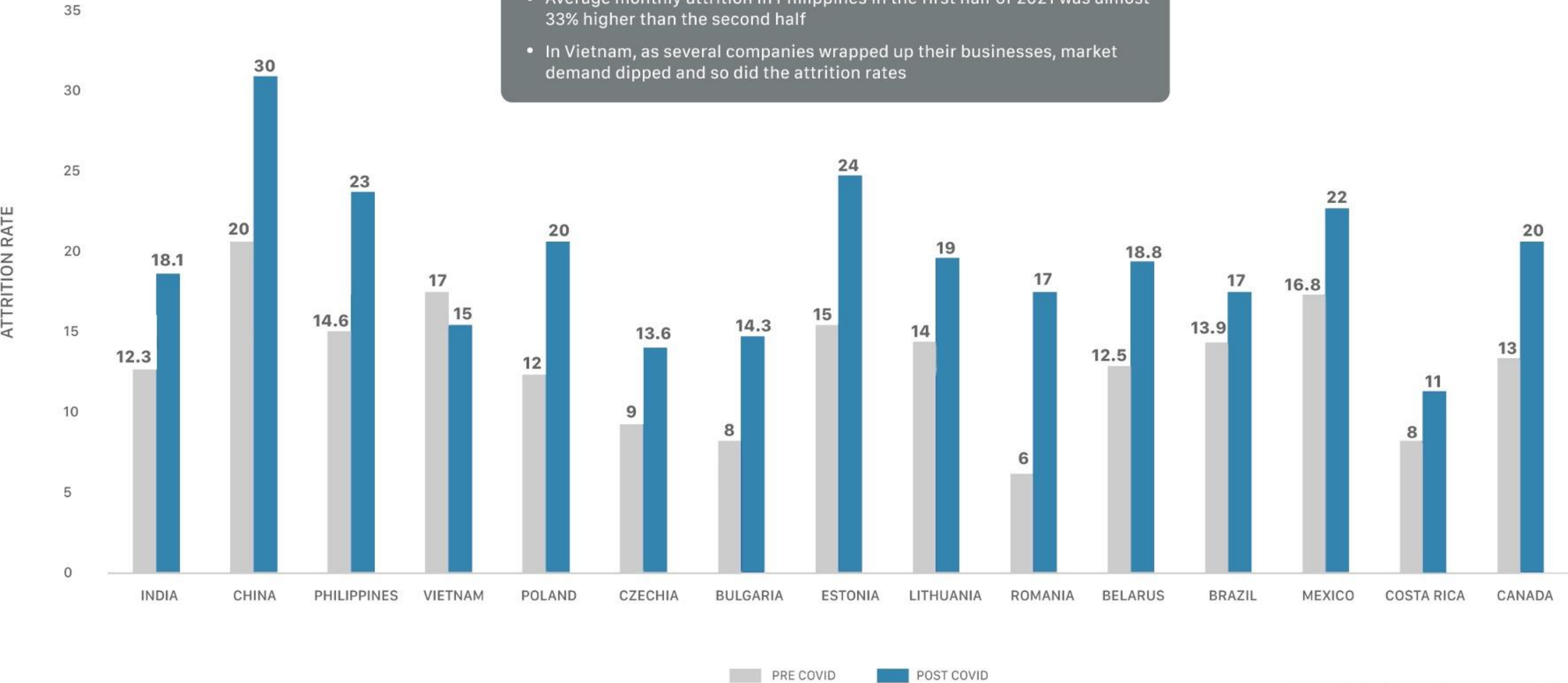
Please note: Average salaries numbers across YoE have been used in this analysis, however when setting up engineering teams in a new location it is recommended to adjust salary percentile suitable to attract top local talent

Attrition trends pre and post COVID across countries



Key Insights

- Average monthly attrition in Philippines in the first half of 2021 was almost 33% higher than the second half
- In Vietnam, as several companies wrapped up their businesses, market demand dipped and so did the attrition rates



SOFTWARE ENGINEERING: TALENT POOL AND COST ANALYSIS

IN THIS SECTION, WE DELVE INTO THE FOLLOWING ANALYSES

- TALENT AVAILABILITY ANALYSIS FOR SOFTWARE ENGINEERING ROLES
- SALARY COST ANALYSIS

Comparative salary cost analysis across shortlisted countries 1/8



SOFTWARE ENGINEER 2021

Key Insights

On an average, most of the countries saw an increase in cost of Software Engineer by 20%+ in 2021, compared to 2020.

In Belarus, the average salary across junior roles decreased, whereas senior roles increased in 2021, compared to 2020.



SOFTWARE ENGINEER 2020



Note: Average years of experience for Software Engineer has been considered between 4-7 years

Source: DRAUP, Zinnov Primary Research

Comparative salary cost analysis across shortlisted countries 2/8

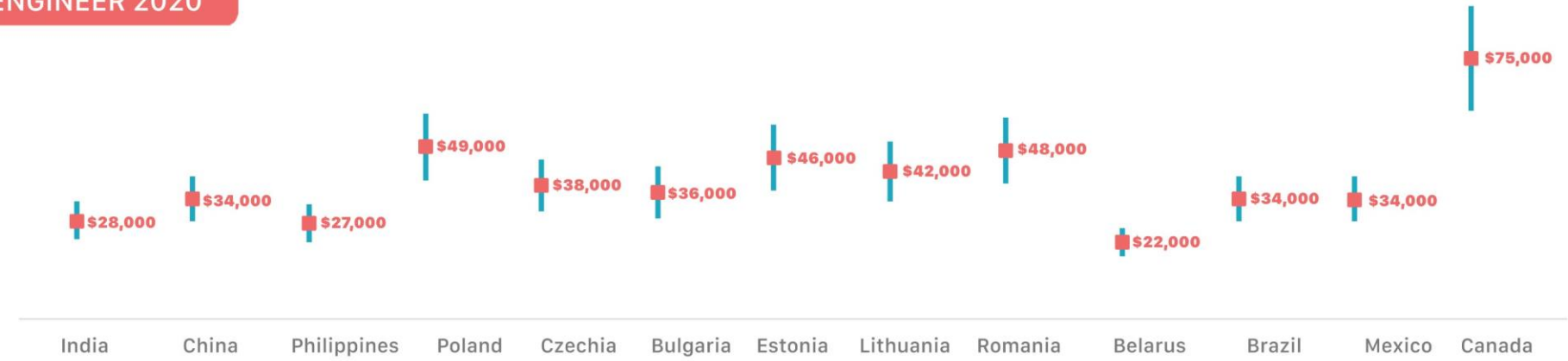


QUALITY ENGINEER 2021

Key Insights
Quality Engineer cost across majority of the countries saw an increase of 15%+ in 2021 compared to 2020



QUALITY ENGINEER 2020



Note: Average years of experience for Quality Engineer has been considered between 4-7 years

Source: DRAUP, Zinnov Primary Research

Comparative salary cost analysis across shortlisted countries 3/8



DEVOPS ENGINEER 2021

Key Insights
DevOps Engineer cost across majority of the countries saw an increase of 12%+ in 2021 compared to 2020



DEVOPS ENGINEER 2020



Note: Average years of experience for Devops Engineer has been considered between 4-7 years

Source: DRAUP, Zinnov Primary Research

Comparative salary cost analysis across shortlisted countries 4/8



Key Insights

On an average, most of the countries saw an increase in cost of Product Manager by 30%+ with certain countries reaching almost double the cost in 2021, as compared to 2020

PRODUCT MANAGER 2021



PRODUCT MANAGER 2020



Note: Average years of experience for Product Manager has been considered beyond 7+ years

Source: DRAUP, Zinnov Primary Research

Comparative salary cost analysis across shortlisted countries 5/8



Key Insights

APAC and LATAM saw an increase by at least 30% in most of the countries for Database Admin in 2021 compared to 2020. However, Eastern & Central Europe, and North America saw a varying trend.

DATABASE ADMIN 2021



DATABASE ADMIN 2020



Note: Average years of experience for Database Admin has been considered between 4-7 years

Source: DRAUP, Zinnov Primary Research

Comparative salary cost analysis across shortlisted countries 6/8



Key Insights

Solutions Architect cost followed a varying trend in 2021 with APAC and North America seeing an increase of ~20%+

SOLUTIONS ARCHITECT 2021



SOLUTIONS ARCHITECT 2020



Note: Average years of experience for Solutions Architect has been considered beyond 7+ years

Source: DRAUP, Zinnov Primary Research

Comparative salary cost analysis across shortlisted countries 7/8



UX/UI DESIGNER 2021

Key Insights

On an average, most of the countries saw a decrease in cost of UX/UI Designer by 10%+ in 2021 compared to 2020



Emerging Countries for COE Hotspots

UX/UI DESIGNER 2020



Note: Average years of experience for UX/UI Designer has been considered between 3-6 years

Source: DRAUP, Zinnov Primary Research

Comparative salary cost analysis across shortlisted countries 8/8



TECHNICAL WRITER 2021

Key Insights
On an average, most of the countries saw a decrease in cost of Technical Writer by ~10%+ in 2021 compared to 2020



TECHNICAL WRITER 2020



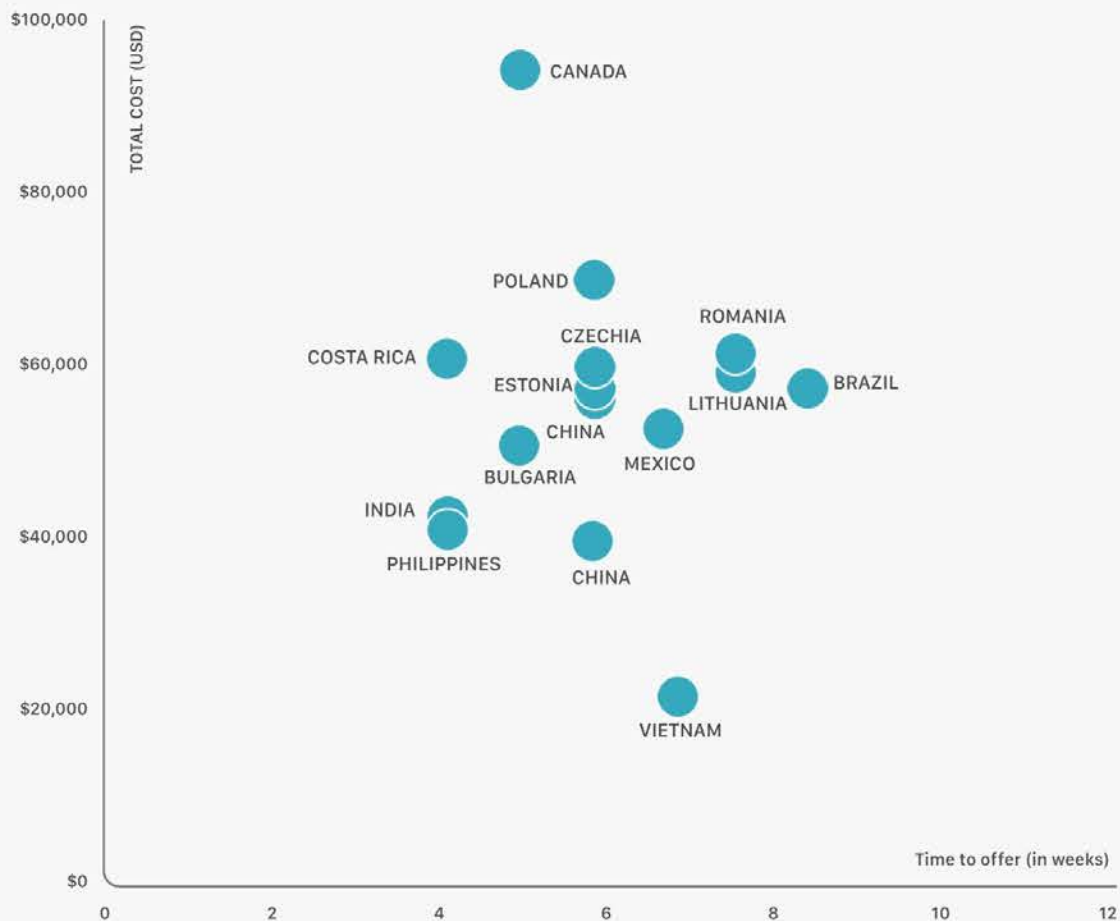
Note: Average years of experience for Technical Writer has been considered between 3-6 years

Source: DRAUP, Zinnov Primary Research

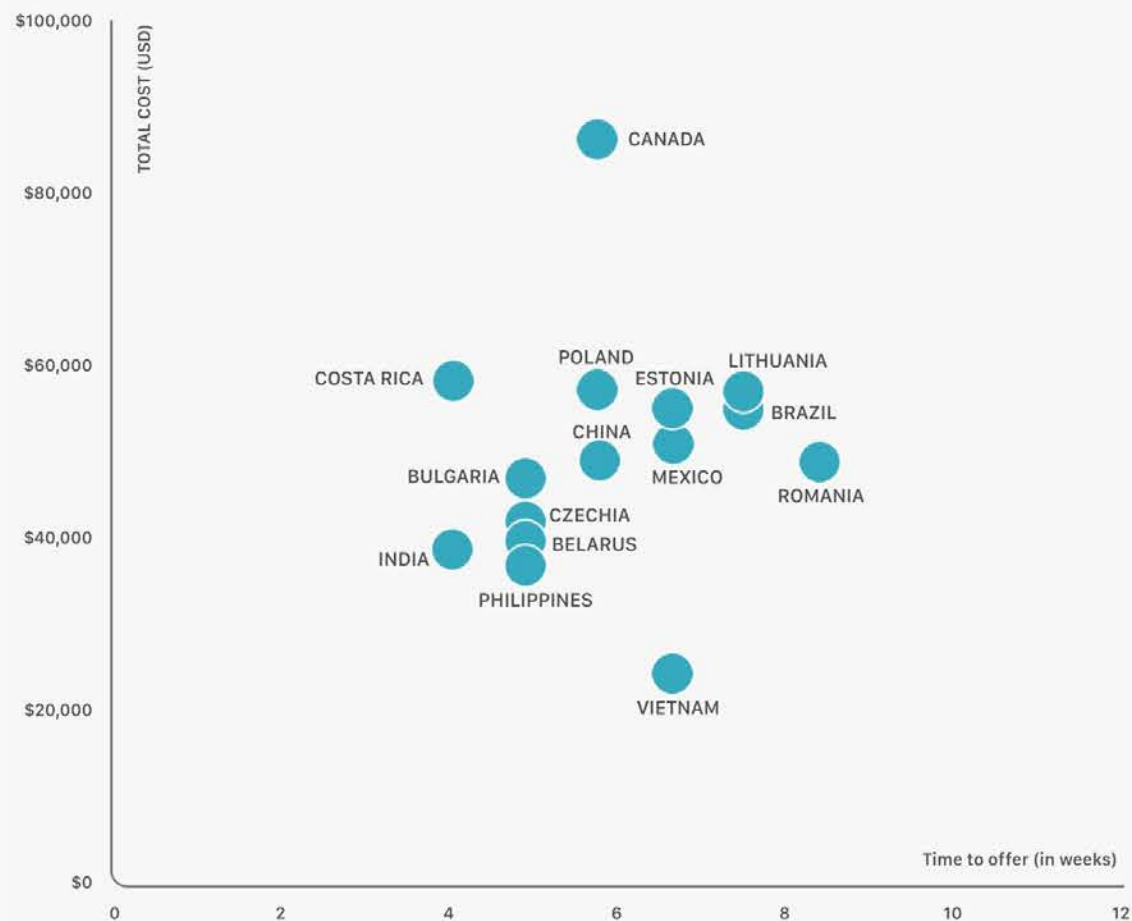
Salary Cost vs Time to Offer analysis across roles

1/4

SOFTWARE ENGINEER: SALARY COST VS TIME TO OFFER



QUALITY ENGINEER: SALARY COST VS TIME TO OFFER



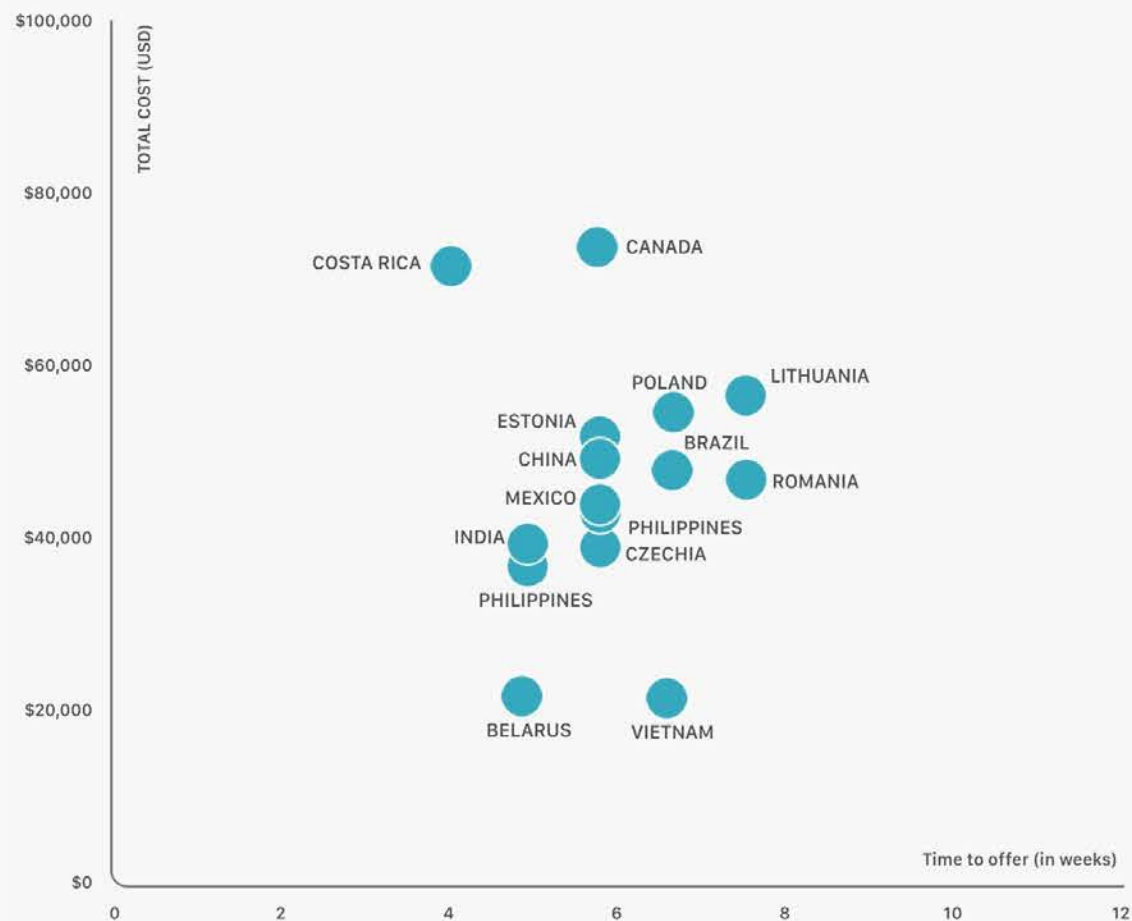
Salary Cost vs Time to Offer analysis across roles

2/4

DEVOPS ENGINEER: SALARY COST VS TIME TO OFFER



DATABASE ENGINEER: SALARY COST VS TIME TO OFFER



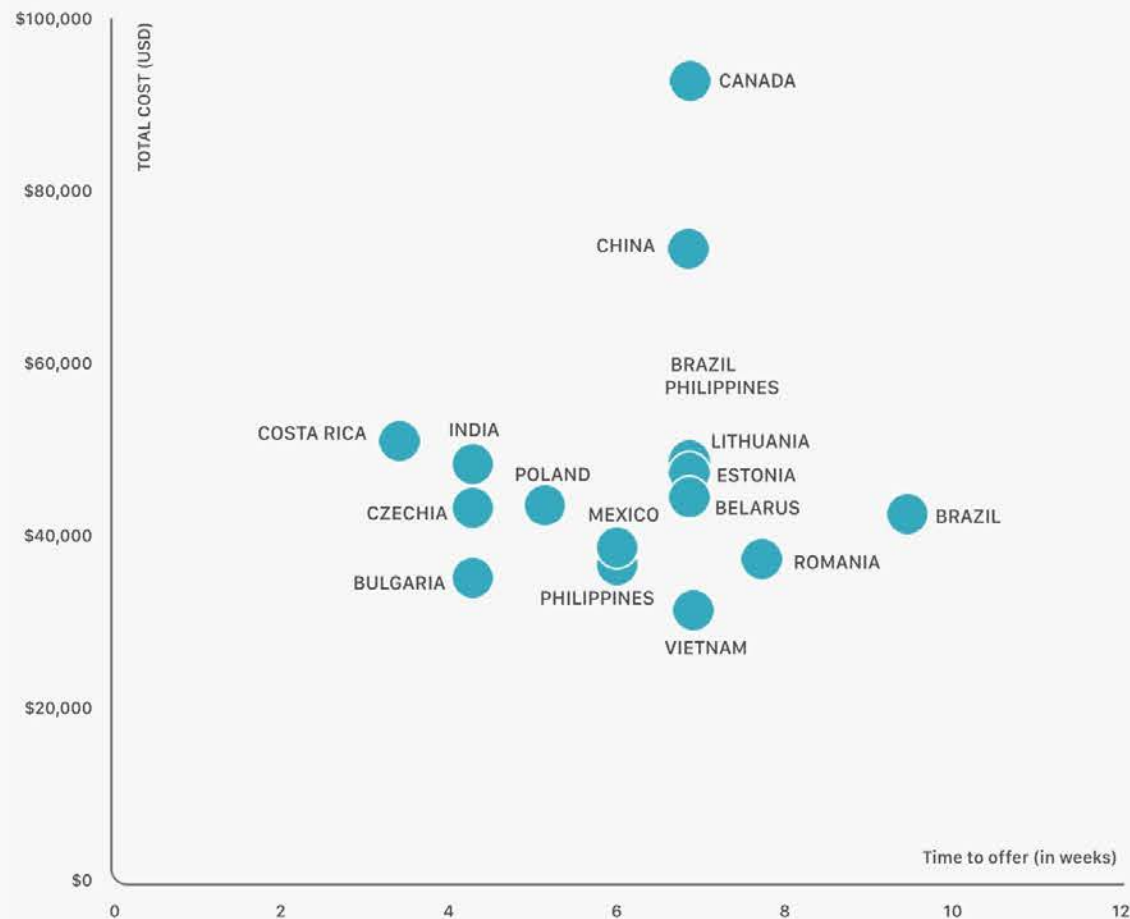
Salary Cost vs Time to Offer analysis across roles

3/4

PRODUCT MANAGER: SALARY COST VS TIME TO OFFER



SOLUTIONS ARCHITECT: SALARY COST VS TIME TO OFFER



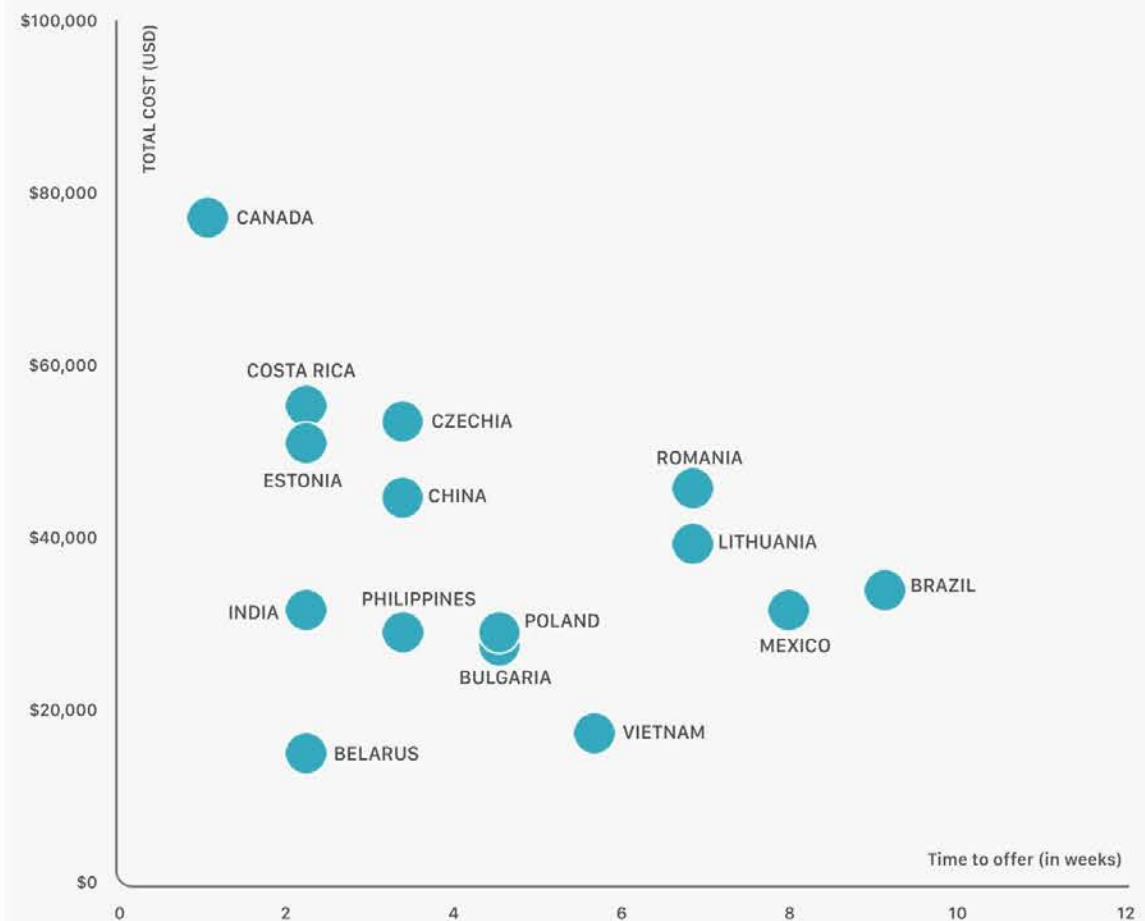
Salary Cost vs Time to Offer analysis across roles

4/4

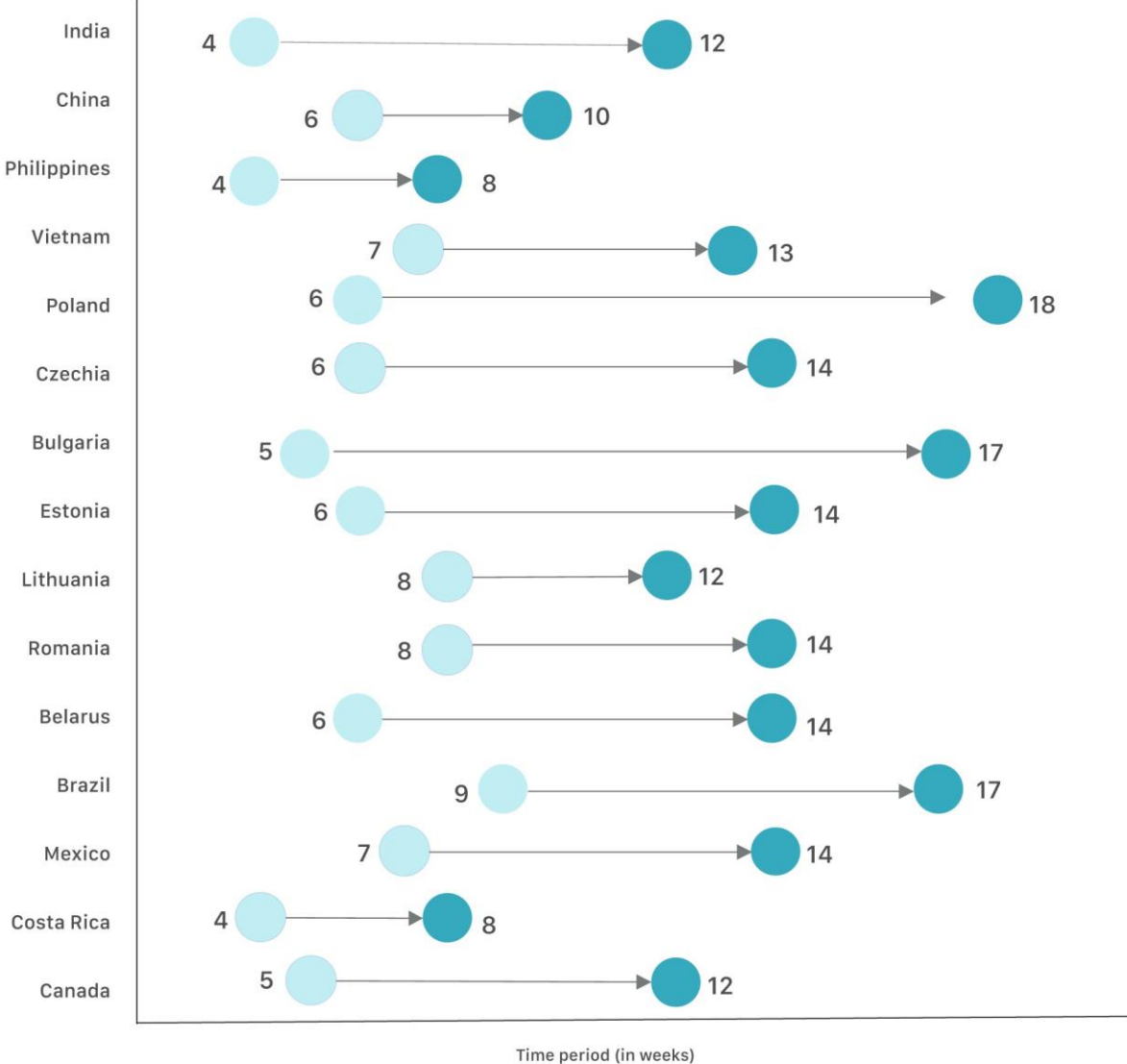
UX/UI DESIGNER: SALARY COST VS TIME TO OFFER



TECHNICAL WRITER: SALARY COST VS TIME TO OFFER



Average Time to Offer v/s Time to Join across countries



- In APAC, talent availability is higher and hence it takes lesser time to find a candidate (avg. of 4-5 weeks in most of the countries)
- However, the Notice Period in India is longer, leading to a higher avg. Time to Join

- Countries such as Lithuania, Romania etc. in Eastern and Central Europe are slightly saturated markets leading to lesser talent availability
- This makes finding the right candidate take longer, which increases the avg. Time to Join

- In LATAM, since employment laws are stringent in general, global companies build contractual relationships with employees, leading to higher Notice Period timelines

Legend



Average Time to Offer



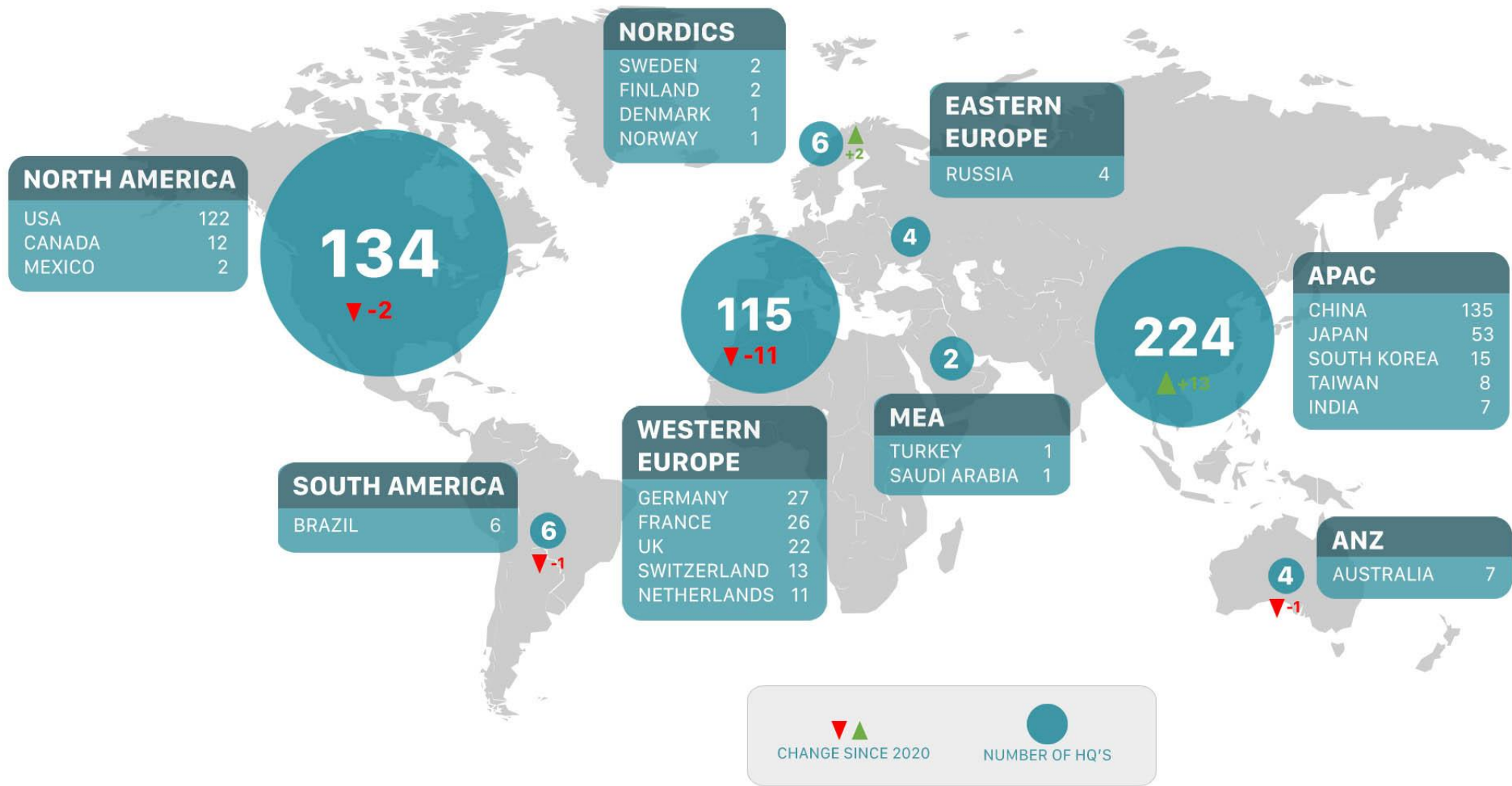
Average Time to Join = Average Time to Offer + Average Notice Period

ECOSYSTEM MATURITY AND EASE OF DOING BUSINESS

THIS SECTION LOOKS AT A COMPARATIVE ANALYSIS OF COUNTRIES FROM A POINT OF VIEW OF

- SOFTWARE ECOSYSTEM MATURITY (FORTUNE 500 COMPANIES' GLOBAL CENTERS, TECH START-UP ECOSYSTEM, IT SERVICE PROVIDERS REVENUE GENERATION, ENGINEERING SCHOOLS' AVAILABILITY)
- EASE OF DOING BUSINESS (GEOPOLITICAL STABILITY, IP AND DATA PRIVACY, SPOKEN ENGLISH CAPABILITY)

Fortune 500 global companies' headquarters



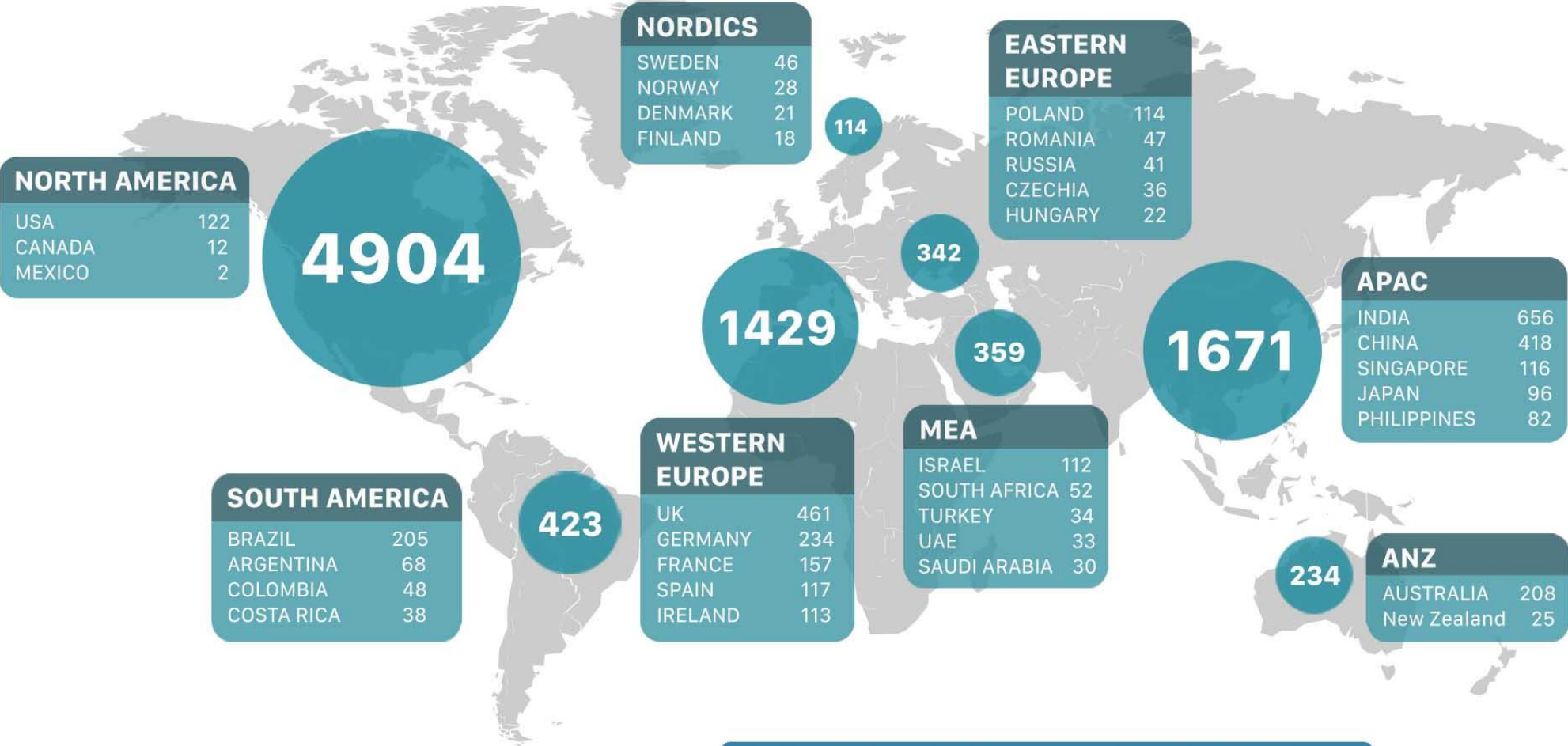
KEY INSIGHTS

Top 5 countries where Fortune 500 companies' headquarters are present in 2021 have remained consistent from 2020.

Several Western European companies from aviation and automotive industry saw a dip in 2021 ranking due to market volatility caused due to global pandemic.

2020	2021
China	China
USA	USA
Japan	Japan
France	Germany
Germany	France

Fortune 500 companies have over 9,500 centers* across the world supporting R&D, Engineering and IT functions



Top 5 countries with the presence of Fortune 500 companies' centres

2021

USA
India
UK
China
Canada

Map shows major countries in a particular region with maximum centers

* Excludes centers with headcounts less than 50, focussing on sales, business development and support activities : Also excludes BPO and related centers. Source: DRAUP, Zinnov Primary Research

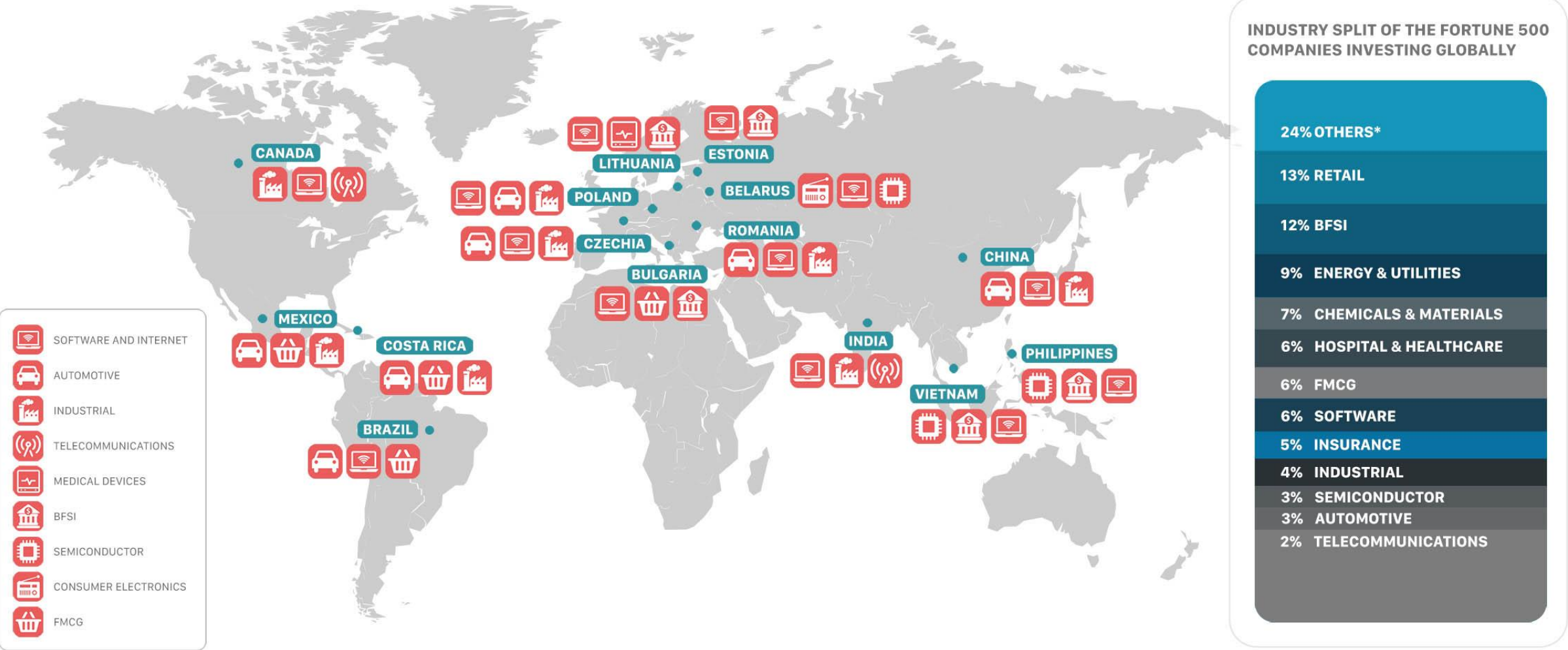
Presence of Fortune 500 companies' global centers across shortlisted countries

Countries like India, China, Mexico, Canada, Brazil and Poland have attracted more Fortune 500 companies than other CoE hotspots



* Excludes centers with headcounts less than 50, focussing on sales, business development and support activities : Also excludes BPO and related centers.

Major industries in which Fortune 500 companies are investing across shortlisted countries



*Others include Travel, Aerospace, Real Estate, Metals, Transportation and Mining

Preferred countries for building COEs across industries

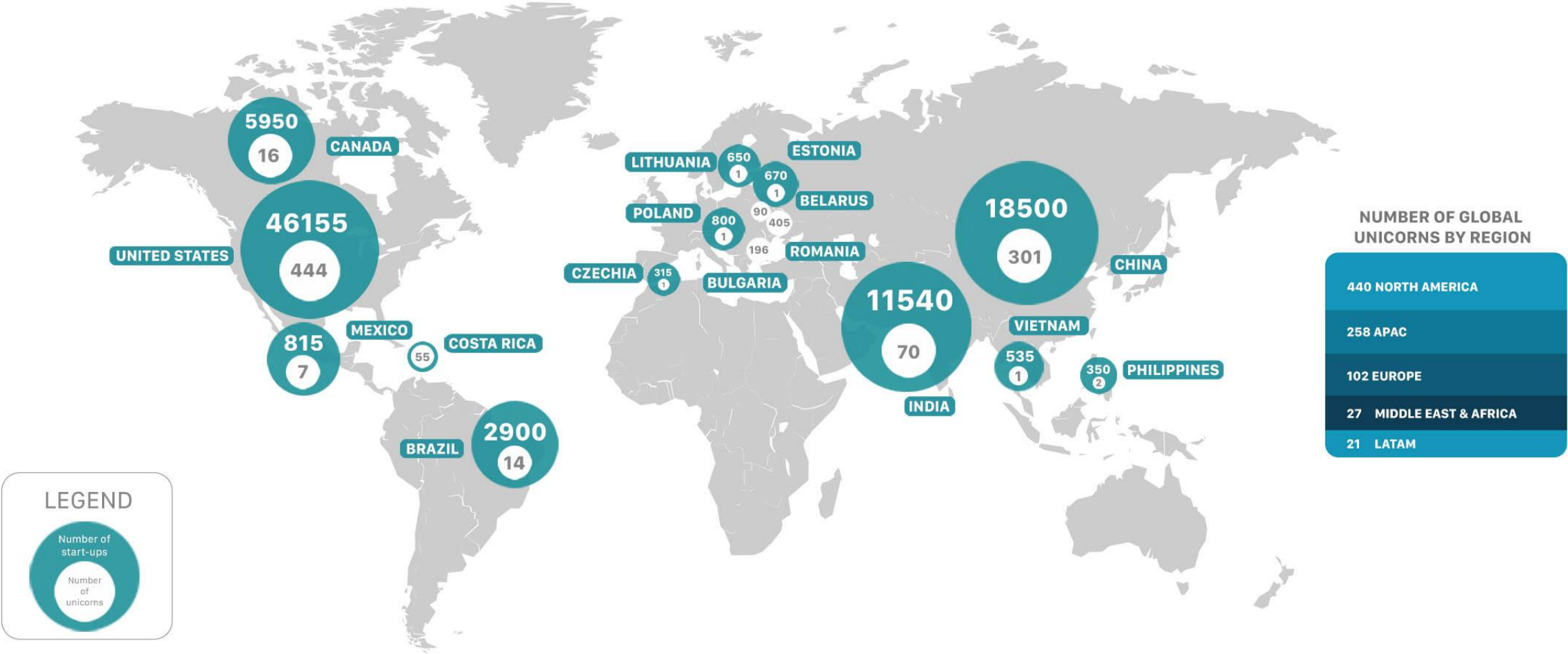


INDIA, CHINA, AND CANADA SEEM TO BE AMONGST THE TOP 5 COUNTRIES OF CHOICE BY FORTUNE 500 COMPANIES ACROSS ALL THE INDUSTRIES.

The Vibrant Tech start-up ecosystem

Major domains for unicorns

2020	2021
Internet Software(18%)	Fintech(30%)
E-Commerce(15%)	Software and Internet(21%)
Fintech(14%)	E-Commerce(8%), Healthcare(8%), Artificial Intelligence(8%)



Global IT Service Providers' revenue landscape for GCoEs

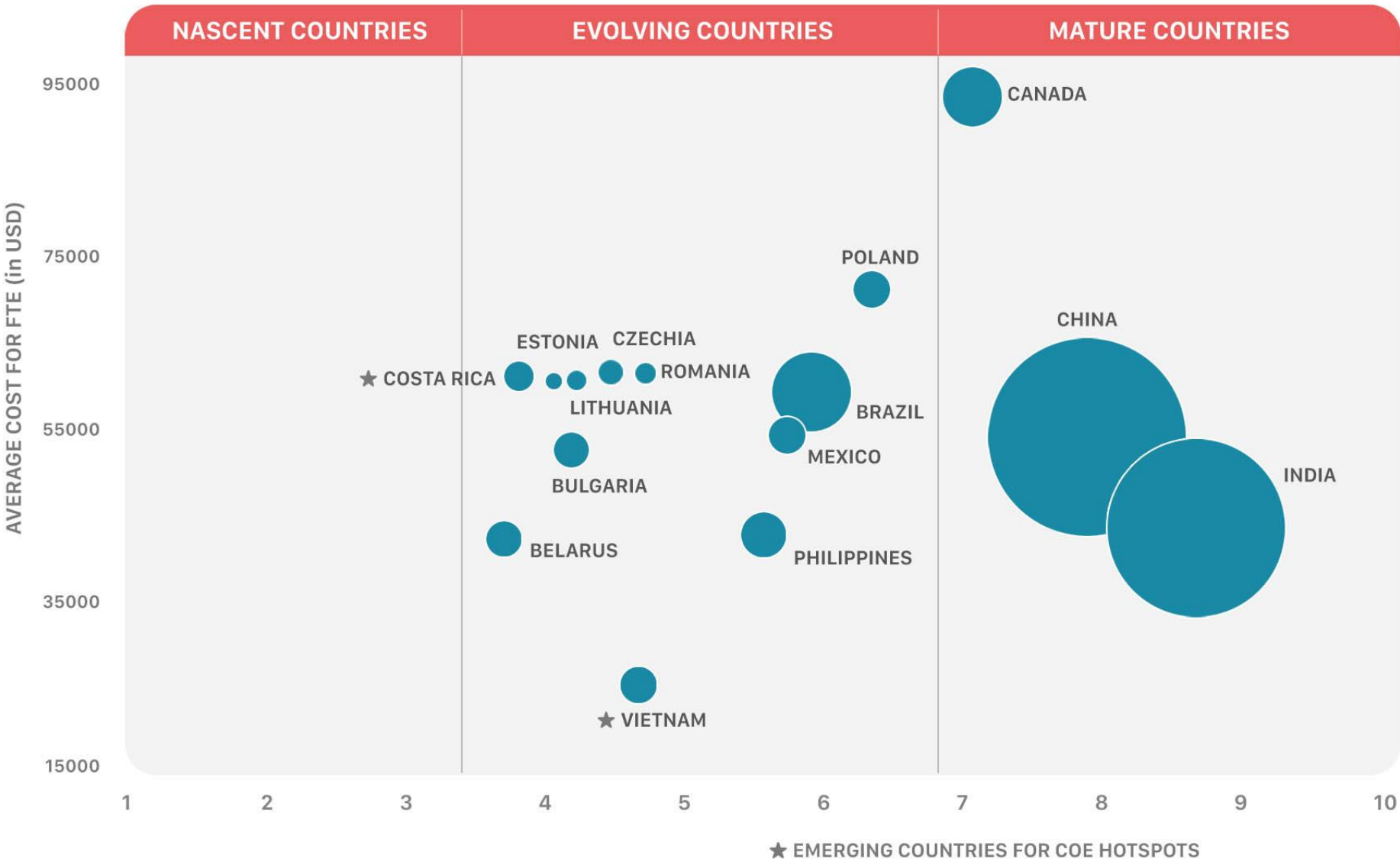


Note: Service Providers have been classified based on HQ as well as dominant delivery location. For instance, though EPAM's HQ is in North America, it has been considered in Eastern Europe for the analysis.

COUNTRY CoE POTENTIAL RANKING

THIS SECTION LOOKS AT A COMPARATIVE ANALYSIS OF
COUNTRIES FROM THEIR POTENTIAL TO BUILD CoEs

Software Engineering Ecosystem Maturity Analysis



1.Ecosystem maturity for countries like Estonia and Lithuania increased due to growth in the number of technology start-ups by over 2.5X in 2021 compared to 2020

By virtue of a huge number of tech-start-ups and Service Providers that employ a bigger talent pool, Vietnam has showcased high maturity compared to several Eastern European countries. But, its industry is not as evolved as these countries and there is a dearth of senior talent

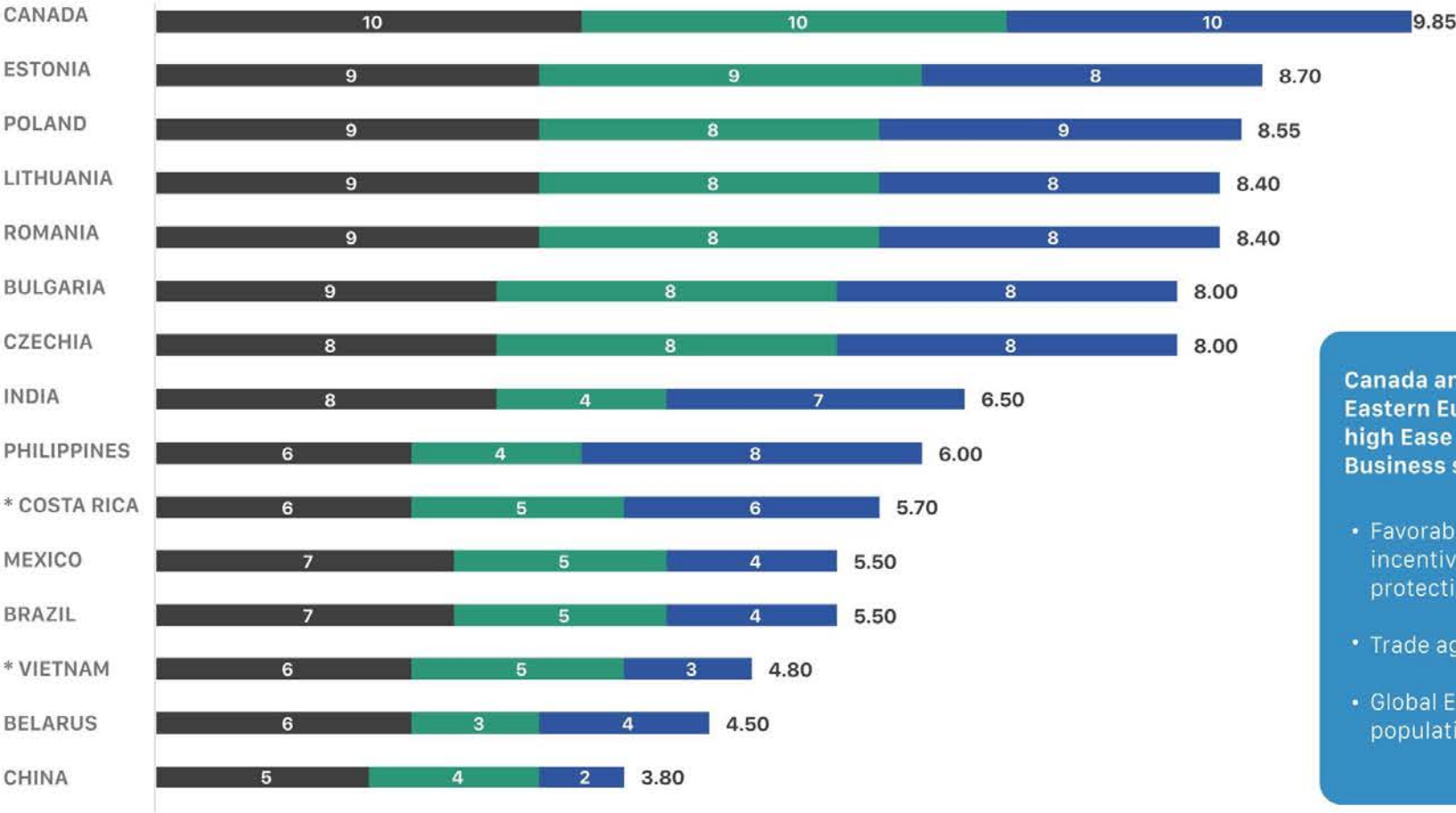
LEGEND

The maturity analysis is generated by scoring the countries on the following parameters

- Number of Fortune 500 companies (on a scale of 1-10) (Weightage: 45%)
- Number of Tech Start-ups (on a scale of 1-10) (Weightage: 25%)
- Service Provider Industry Revenue (on a scale of 1-10) (Weightage: 20%)
- Number of Engineering schools (on a scale of 1-10) (weightage: 10%)

Size of the bubble indicates the talent pool size

Ease of Doing Business Ranking



Canada and Central and Eastern European have a high Ease of Doing Business scores due to:

- Favorable government incentives and data protection
- Trade agreements
- Global English-speaking population

FACTORS TAKEN INTO CONSIDERATION

1. Geo-Political stability index(40%)

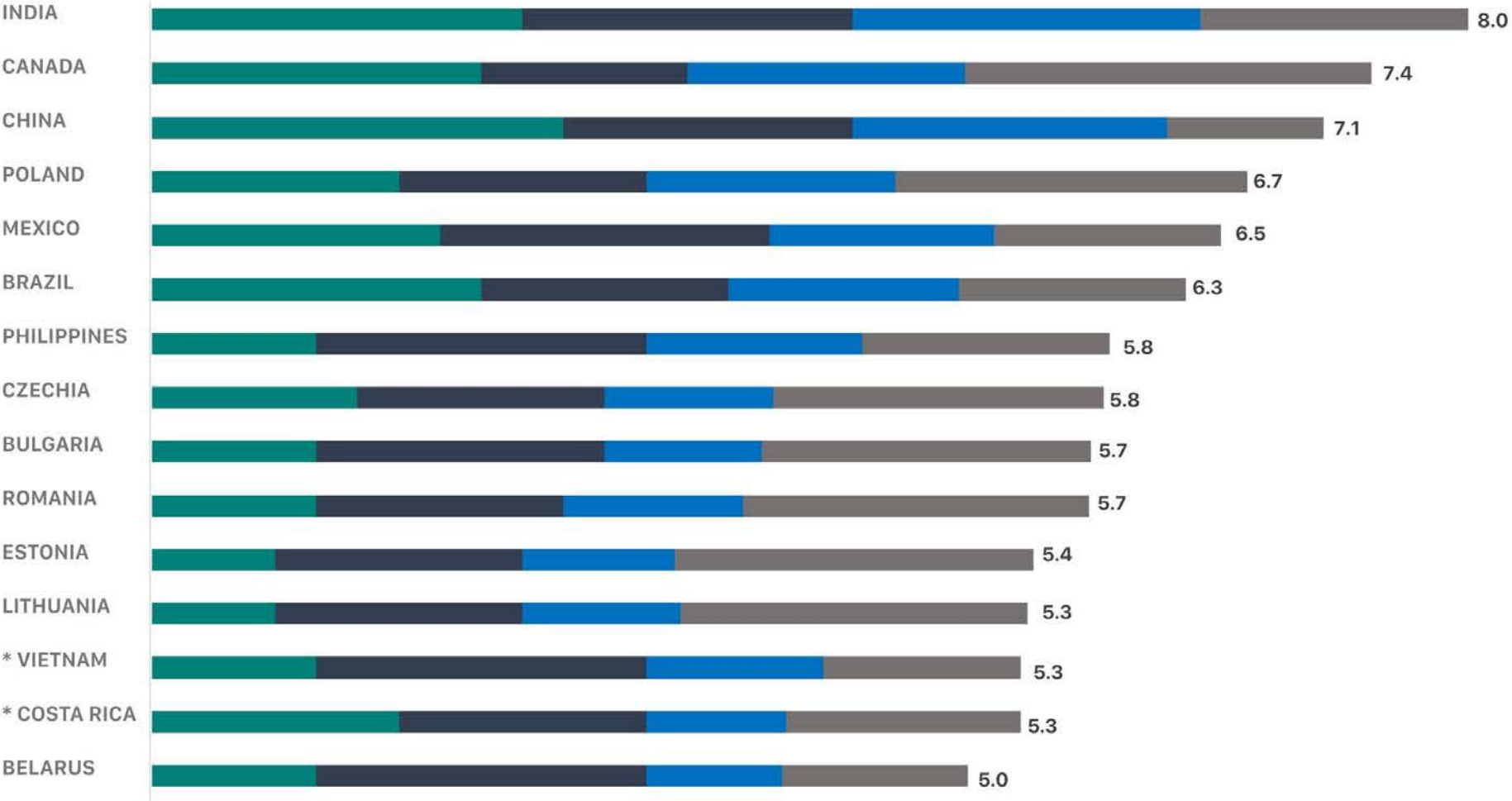
- Governmental political stability index
- Trade balance as a percentage of GDP
- Regional trade agreements
- Security threat index (both internal and external)
- International corruption perception index

2. IP and Data Privacy Index(30%)

- IP rights global index
- Cybersecurity index

3. Spoken English language index(30%)

Overall Ranking of COE Hotspots



The list of top 5 COE hotspots in the world continues to remain the same.

In the light of changing world order due to the pandemic, Canada has surpassed China in the overall ranking and is at 2nd position this year

Software Engineering Maturity: A higher maturity accounts for a higher score

Cost Index: A lower cost accounts for a higher score

Tech Talent Pool: A higher pool size accounts for a higher score

Ease of Doing Business: A greater ease of doing business accounts for a higher score

* Emerging Countries for COE Hotspots

COUNTRY DEEP DIVES

CLICK ON ANY COUNTRY TO NAVIGATE TO ITS DEEP DIVE REPORT

EASTERN AND CENTRAL EUROPE



NORTH AMERICA



APAC



LATAM





ROMANIA



Romania: Country Overview



zinnoV

COUNTRY

- ✓ Ranks 11th as the fastest growing economies of the EU in 2021
- ✓ The GDPR law of the EU is applicable in Romania making it compliant with the toughest privacy law in the world
- ✗ Ranks 66th out of 180 countries as per Corruption Perception Index 2021

INFRASTRUCTURE & LABOR MARKET

- ✓ Ranks 58th out of 176 countries as per ICT Development Index 2017
- ✓ 97 industrial parks are spread across the country, with a total area of 3339 hectares
- ✗ Poor Public Transport Infrastructure – needs ~EUR 70Bn investment for development of Infrastructural facilities

TAXATION & GOVERNMENT REGULATIONS

- ✓ The corporate income tax rate is 16%, which is medium when compared to other EU countries and 3rd lowest, when compared to all 13 countries in the study. The R&D tax incentive allows for tax savings of 8% of the costs
- ✗ The Schrems II verdict invalidates the EU-US data protection shield, requiring individual assessment for data transfer to a non-EU country and more investment in Data Security
- ✓ The country has the lowest personal income tax rate at 10% in the EU, the EU average being 37.87%
- ✓ 0% Income Tax for employees hired as Software Developers or hired in Research and Development companies (for companies with annual turnover less than USD 10,000/employee)
- ✓ The average cost for registering a private company in Romania is lowest in comparison is lower than EU average



TOP LANGUAGES

Romanian, Hungarian, French, English

45% Gender Diversity in Software Engineering Companies

TECH NUGGET

UiPath recorded a staggering growth of 690% in its annual recurring revenue in 2017 and grew from an employee strength of 400 (2017) to 3000 (2020)

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN ROMANIA

AUTOMOTIVE



SOFTWARE & INTERNET



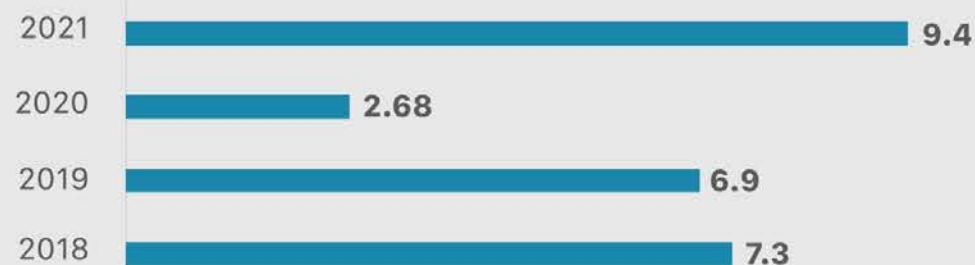
INDUSTRIAL



A quick glance into the impact of COVID-19 on Romania



FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



*VENTURE CAPITAL BASED

44% OF START-UP INVESTMENT IN 2021 IS FOR THE FINTECH FIRM 'FINTECHOS' (i.e. USD 56 MN)

FINTECH & HEALTH
MOST ATTRACTIVE SECTORS POST PANDEMIC

75% COMPANIES USED COMPLEX AUTOMATION SOLUTIONS IN 2021 – MUCH HIGHER THAN 2020

USD 58 MN PROJECTED AI INVESTMENTS PER YEAR BY 2025 (2X FROM CURRENT)

0.8%-68%
RANGE OF REMOTE WORKING PRE AND POST COVID RESPECTIVELY

~50% EMPLOYEES PREFER REMOTE/HYBRID MODE OF WORKING POST PANDEMIC

Romania: Talent & Innovation Ecosystem



zinnoV

TALENT POOL

~75,000

SALARY GROWTH (YOY)

7%

ATTRITION RATE (ANNUAL)

17%

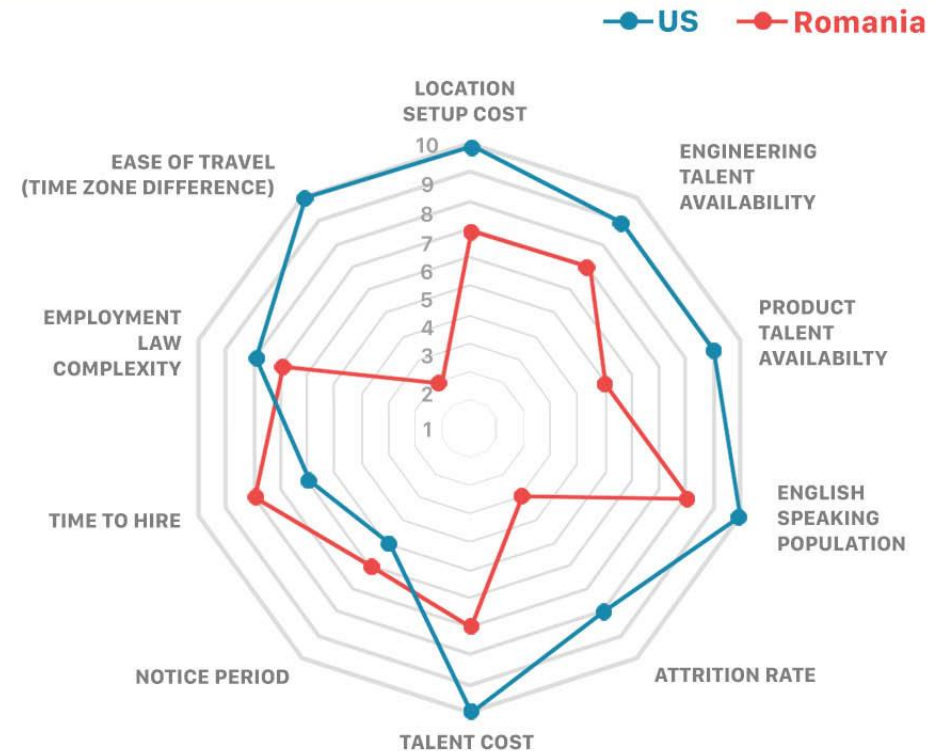
AVERAGE NOTICE PERIOD

2-6 WEEKS

INSIGHTS

- Scaling teams beyond 100+ within a year is a challenge due to limited talent availability
- With almost 60% lower talent cost than US, Romania has a mature tech pool of niche skills like AI/ML, Neural Networks, 3D printing, AR/VR. JAVA/Linux stack talent is widely available
- Fresh graduates usually intern for 2-3 years. The salaries are relatively low and increase significantly after 3+ years when the candidates have gained enough on job experience
- Ranks 14th in Europe as per EF's English Proficiency Index
- Romanian talent is attracted to companies with strong leaders. Technology to be worked on is an important criteria for Romanian tech talent in deciding on a job. There is a strong culture of referral

COMPARATIVE LOCATION INDEX US & ROMANIA



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

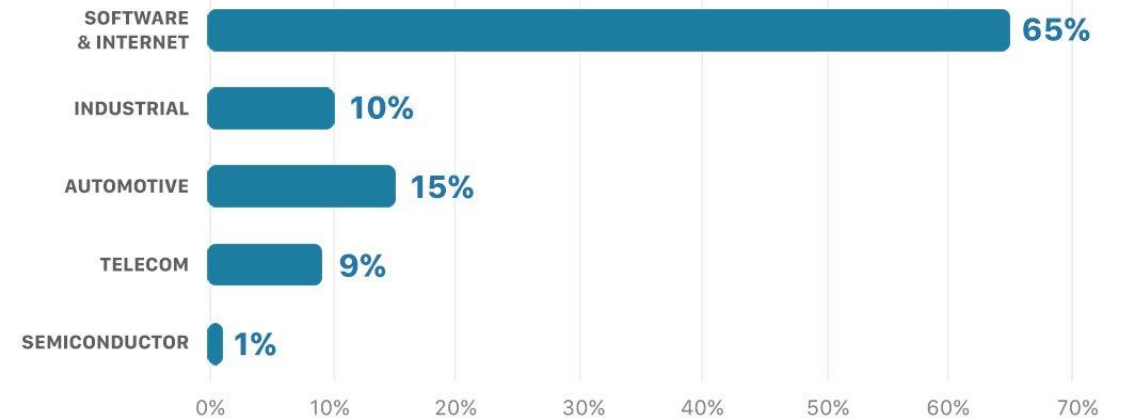
Romania: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN ROMANIA



IT AND TECH TALENT SPLIT ACROSS INDUSTRIES IN ROMANIA



- **UiPath:** Romania's first tech Unicorn that develops Enterprise RPA Platforms
- **Bitdefender:** Romania's leader in Cybersecurity, has ~800 engineers developing anti-virus software
- **Nokia, Huawei and Ericsson** together employ over 6000 employees at their Romania centers
- **Microsoft** with over 1700 employees has two Global Support centers operating since 1996 in Bucharest and Timisoara, Romania
- **Oracle** and **CGS Global** (IT outsourcing company) together employ a workforce of over 6000+ employees working out of support centers across Romania
- **Genpact** with a workforce of ~4000, is one of the biggest outsourcing service providers in Romania
- **Deutsche Bank, Electronic Arts, NTT Data, Luxsoft** also have large technology centers in Romania

Romania: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

Romania has 17 universities in top 350 EECA (Eastern Europe & Central Asia) universities (only 2 in top 50). **ANIS Scholarships program** was launched in 2018 to stimulate the efforts of teachers – lecturers and university assistants. The sponsors are **Adobe, Atos, Bitdefender, Cornerstone Technologies, Deutsche Bank, Endava, Enea, Qualitance, Wipro.**

92 HEIs Higher Education Institutions

~10K STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE *		QS EECA TOP 350 UNIVERSITIES **	
UNIVERSITY OF BUCHAREST	-	451	42	67
BABES-BOLYAI UNIVERSITY	525	454	40	43
ALEXANDRU IOAN CUZA UNIVERSITY	-	-	68	85
TECHNICAL UNIVERSITY OF CLUJ-NAPOCA	575	483	119	-

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

INSTITUTE OF COMPUTER SCIENCE BABEȘ-BOLYAI UNIVERSITY

RESEARCH FOCUS

Big Data Analytics, High Performance Computing, NLP

INDUSTRY PARTNERSHIPS

DEPARTMENT OF COMPUTER SCIENCE ALEXANDRU IOAN CUZA UNIVERSITY

RESEARCH FOCUS

Applied Distributed Systems, NLP, Evolutionary Computing, Cryptography, Combinatorial Optimization

INDUSTRY PARTNERSHIPS

THE FACULTY OF MATHEMATICS AND COMPUTER SCIENCE UNIVERSITY OF BUCHAREST

RESEARCH FOCUS

Big Data Analytics, High Performance Computing, NLP

INDUSTRY PARTNERSHIPS

400+

Technology start-ups

0

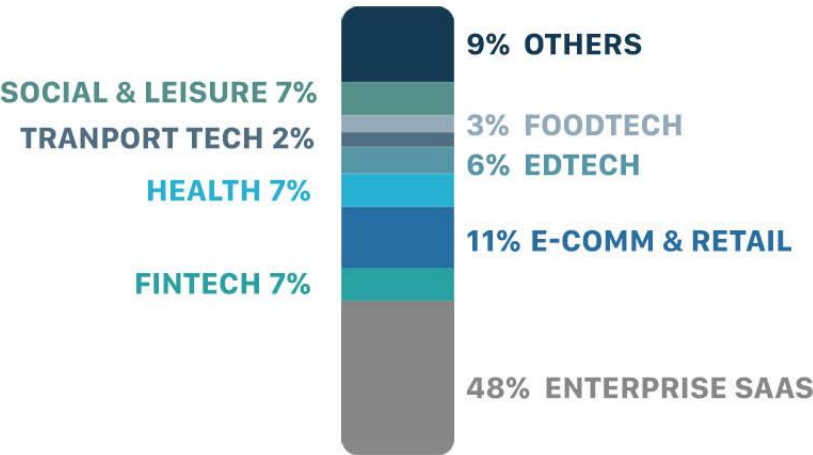
Number of Unicorns (UiPath, the biggest Romanian unicorn went public in Apr 2021)

FintechOS

Cracked the megadeal in 2021 by USD 56 Mn funding in Series B

ADVANCED TECH START-UPS IN ROMANIA 2021

SECTOR-WISE BREAKUP
OF START-UPS IN %



FLOWX.AI - Enables enterprises to create digital apps for mission-critical flows by orchestrating legacy systems

FUNDING TILL
DEC'21

USD 8.5 Mn



SeedBlink - Investing platform specialized in sourcing, financing, and scaling tech start-ups

USD 3.8 Mn



Bunnysell - Cloud-agnostic DevOps Automation platform to deploy, scale, and optimize your applications

USD 2.3 Mn



Bright Spaces - Provides end to end solution to real estate for leasing of properties through a digital medium

USD 1.9 Mn

Romania: Illustrative Compensation Structure




	(IN USD)
TOTAL GROSS INCOME (A)	100,000
1. Social (pension) Insurance (25% of gross income)	25,000
2. Health Insurance (10% of gross income)	10,000
3. Income tax (10% of gross income)	10,000
TOTAL EMPLOYEE CONTRIBUTION (1 + 2 + 3) (B)	45,000
NET SALARY (A-B)	55,000
4. Work Insurance Contribution (2.25% of gross pay)	2,250
5. Disability Fund (4% of gross pay)	4,000
TOTAL EMPLOYER CONTRIBUTION (4 + 5) (C)	6,250
TOTAL EMPLOYMENT COST (A + C)	106,250

EMPLOYMENT TERMINATION LAW

HIGHLY EMPLOYEE FAVORING

NEUTRAL



HIGHLY EMPLOYER FAVORING

There is no statutory severance pay in Romania unless conditions have been set in a collective agreement.

The termination ground can either be based on subjective grounds, such as repeated disciplinary offences, poor performance, professional unfitness or economic grounds.

When an employee is dismissed on economic grounds, they are entitled to benefit from active measures designed to limit unemployment.



ESTONIA



Estonia: Country Overview



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COUNTRY

- ✓ Estonia ranks 1st in Europe for start-ups per capita in 2021, has produced 6 unicorns, and is recognized as a leader in Digital Identity, Cybersecurity, and Blockchain
- ✓ The GDPR law of the EU is applicable in Estonia making it compliant with the toughest privacy law in the world
- ✓ Ranks 13th out of 180 countries as per Corruption Perception Index 2021

INFRASTRUCTURE & LABOR MARKET

- ✓ Low unionization because the government provides required benefits and services
- ✓ Estonia has a high English proficiency and ranked 22nd in the global EP English Proficiency Index 2021
- ✓ 99.9% bank transactions are online; 98% of companies are established online
- ✓ Estonia boasts of strong digital infrastructure. As per the global Cybersecurity Index, Estonia ranks 4th in Europe and 5th globally in 2021. As per ICT Development Index 2017, Estonia is 17th out of 176 countries

TAXATION & GOVERNMENT REGULATIONS

- ✓ e-Tax is an electronic tax filing system set up by the Estonian Tax and Customs Board, 95% of taxes declared online in Estonia. It takes around 5 hrs/year to comply with corporate taxes as compared to 42 hrs/year in OECD countries
- ✗ The Schrems II verdict invalidates the EU-US data protection shield, requiring individual assessment for data transfer to a non-EU country and more investment in Data Security
- ✓ Corporate Tax - As a government initiative there is 0% Income Tax for retained and reinvested profits, 20% tax on distributed profits



TOP LANGUAGES

Estonian, English, Russian

40% Gender Diversity in Software Engineering Companies

TECH NUGGET

As a completely paperless country, Estonia allows anyone in the world to apply for its e-Residency program and start a business completely fully online.

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN ESTONIA

BFSI



SOFTWARE & INTERNET



CYBERSECURITY

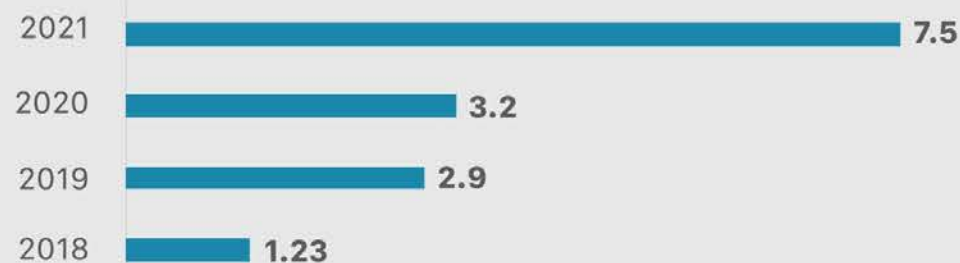


A quick glance into the impact of COVID-19 on Estonia



zinno**v**

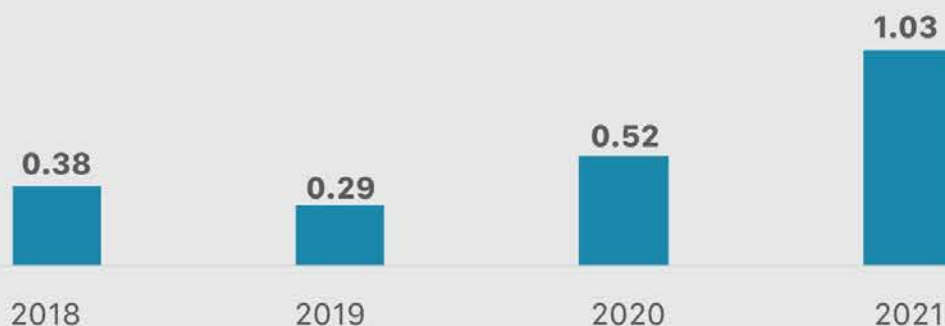
FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



*VENTURE CAPITAL BASED

USD 1.5 BN TURNOVER BY
START-UPS IN 2021 i.e. UP BY
77% FROM 2020

FINTECH & E-COMM
MOST ATTRACTIVE SECTORS
POST PANDEMIC

FOCUS OF FDI DURING
PANDEMIC – R&D,
AUTOMATIZATION, AND
DIGITALIZATION

USD 1 BN TURNOVER BY TECH
FIRMS IN 2020 : 30% GDP BY IT
FIRMS PROJECTED (USD 10 BN
EVERY YEAR)

USD 12 MN PLANNED
INVESTMENT BY GOVERNMENT
FOR NATIONAL AI STRATEGY IN
2019-2021

6.6 – 70% RANGE OF REMOTE
WORKING PRE AND POST COVID
RESPECTIVELY

ALREADY HAD A HIGHER PERCENTAGE BEFORE
COVID DUE TO DIGITALIZATION

Estonia: Talent & Innovation Ecosystem

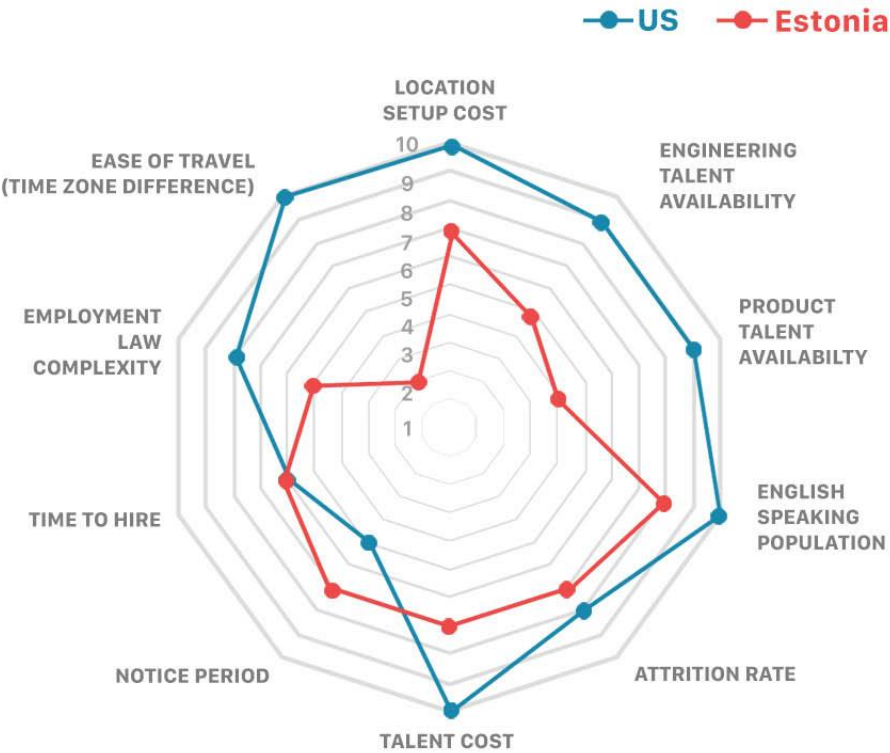


TALENT POOL ~30,000	SALARY GROWTH (YOY) 8.8%
ATTRITION RATE (ANNUAL) 24%	AVERAGE NOTICE PERIOD 2-12 WEEKS <small>(HIGHER THE TENURE, HIGHER THE NOTICE PERIOD)</small>

INSIGHTS

- Scaling teams beyond 100+ within a year is a challenge due to shortage of talent.
- High availability of Product Managers, Business Analysts, Database administrators.
- Multi-lingual workforce : Russian, English, and Estonian are commonly spoken languages. 88% of adult population knows at least 1 foreign language, making the country conducive for services industry.
- Foreign recruitment grant worth € 3,000 is setup to support recruitment of foreign tech specialists to solve for the country's shortage of talent.
- Investment aid setup to support international shared service and R&D centers to increase their international competitiveness.
- Strong tech ecosystem. Start-ups such as Skype, Hotmail, Transferwise, Playtech, and Bolt have been pioneers of this ecosystem.

COMPARATIVE LOCATION INDEX US & ESTONIA



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Estonia: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN ESTONIA



INSIGHTS

- **Microsoft, Twilio, Fujitsu, CGI, and Ericsson** are some global companies which have setup their technology centers in Estonia.
- Estonia is recognised as Innovation and R&D hub by global companies with its Technology Incubators and Accelerators, Private Equity & Venture Capital Association, and a tech savvy government which supports the vibrant start-up ecosystem.
- Based on the demographics of the workforce, Software Development roles within Estonian start-ups are dominated by millennials with less than 10 years of experience.
- **Arvato Financial Solutions** center was opened in 2015 in Estonia, it works on payment, risk management, debt collection and security operations solutions
- Global transport and logistics company Kuehne + Nagel has an IT center in Tallinn, Estonia employing around 480 people

Estonia: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

Estonia has only 3 Universities in Top 350 EECA university and 1 University in top 600 University for computer science.... 2019/20'

20 HEIs Higher Education Institutions

~14K STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS EECA TOP 350 UNIVERSITIES**	
UNIVERSITY OF TARTU	351	259	4	
TALLINN UNIVERSITY OF TECHNOLOGY	-		22	38
TALLINN UNIVERSITY	-		71	72

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

COMPUTER AND SYSTEM ENGINEERING TALLINN UNIVERSITY OF TECHNOLOGY

RESEARCH FOCUS

Graph Theory, Image Processing, NLP,
Cyber Security, Space Technology

INDUSTRY PARTNERSHIPS

ERICSSON CGI SIEMENS SAMSUNG systemair

START-UP INCUBATION

EXCITE, MEKTORY

SCHOOL OF DIGITAL TECHNOLOGIES TALLINN UNIVERSITY

RESEARCH FOCUS

Gamification Design, Interaction Design,
Human-Computer Interaction

INSTITUTE OF COMPUTER SCIENCE UNIVERSITY OF TARTU

RESEARCH FOCUS

AI/ML, NLP, CGI, Big Data,
IOT, CRYPTO, Computational
Neuroscience

INDUSTRY PARTNERSHIPS

HUAWEI FUJITSU fortumo

670

Technology start-ups

1

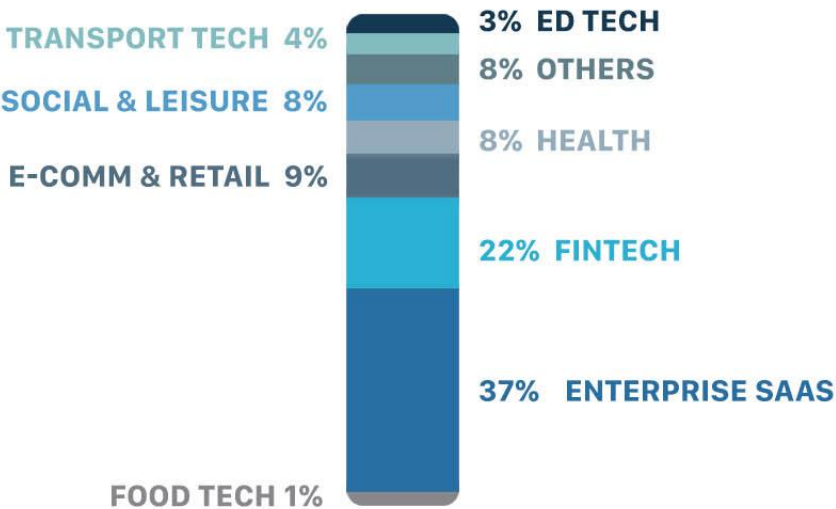
Number of Unicorns





Highest

Start-up density in Eastern & Central Europe

ADVANCED TECH START-UPS IN ESTONIA 2021

SECTOR-WISE BREAK UP
OF START-UPS (IN %)



		FUNDING TILL DEC'21
	Ready Player Me - A gaming platform used by 1000+ developers to create avatars for games	USD 29.5 Mn
	Minterest - Cross-chain decentralized money market lending protocol that provides generated surplus to users	USD 12 Mn
	Single.Earth - A Fintech start-up that tokenizes the world's nature to make it the new gold	USD 7.9 Mn
	Primex Finance - A platform for decentralized prime brokerage, for cross decentralized exchange margin trading	USD 5.7 Mn

Estonia: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (A)	100,000
1. Pension (usually 2% of gross pay, some cases 3%)	2,000
2. Unemployment tax (employee part: 1.6% of gross pay)	1,600
3. Income tax (20% of gross pay)	20,000
TOTAL EMPLOYEE CONTRIBUTION (1 + 2 + 3) (B)	23,600
NET SALARY (A-B)	76,400
4. Unemployment tax (employer part: 0.8% of A)	800
5. Social Tax(33% of A)	33,000
TOTAL EMPLOYER CONTRIBUTION (4 + 5) (C)	33,800
TOTAL EMPLOYMENT COST (A+C)	133,800

EMPLOYMENT TERMINATION LAW

HIGHLY EMPLOYEE FAVORING

NEUTRAL

HIGHLY EMPLOYER FAVORING

The severance pay is one month's average salary of the employee. If tenure is more than five years, insurance benefit that can amount to maximum of two months' average salary.

Employers in Estonia need to justify termination in writing as per Employment Contracts Act.

The employer needs to inform in advance about the termination in case of unsuitability wherein, the notice period depends upon the tenure of employment with the company.

BACK TO ALL COUNTRIES



LITHUANIA



Lithuania: Country Overview



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COUNTRY

- ✓ Vilnius, capital of Lithuania, is ranked 1st in the Tech Start-up FDI Attraction Index 2019 and attracted 1.006 greenfield FDI projects per 100,000 inhabitants
- ✓ Ranks 34th out of 180 countries as per Corruption Perception Index 2021

INFRASTRUCTURE & LABOR MARKET

- ✓ Lithuania has a strong e-infrastructure, ranks 3rd in Europe and 6th globally in the Cybersecurity Index 2020
- ✓ Lithuania is a regional leader in Fibre-Optic and Wi-Fi bandwidth infrastructure
- ✓ The Fintech industry grew 18% in Lithuania in 2020 and there are now 200 Fintechs operating, making it the 2nd largest Fintech hub in Europe
- ✓ Ranks 9th globally for 4G service coverage and availability across the country
- ✓ Ranks 41st out of 176 countries as per ICT Development Index 2017 prepared by ITU

TAXATION & GOVERNMENT REGULATIONS

- ✓ i.MAS: IT-based Tax administrative system. Among top 10 EU countries for ease of paying taxes
- ✓ MSMEs (<10 employees; <USD300,000 gross revenue) can avail 0% corporate tax in 1st year
- ✗ The Schrems II verdict invalidates the EU-US data protection shield, requires individual assessment for data transfer to a non-EU country and more investment in Data Security
- ✓ For the first 6 years, the corporate income tax is 0% in Free Economic Zones
- ✓ Average time for Entity Registration is 2-3 weeks and the average cost is lower than the EU average



TOP LANGUAGES

English, Polish, German

35% Gender Diversity in Software Engineering Companies

TECH NUGGET

35% of Global Business Services companies in Lithuania are using advanced process automation. One of the success stories, WesternUnion, has currently deployed over 100 robots that have completed over 2 million tasks.

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN LITHUANIA



SOFTWARE & INTERNET



BFSI



LIFE SCIENCES



A quick glance into the impact of COVID-19 on Lithuania



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FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



192% INCREASE IN EXPORTS OF HIGHER VALUE ADDED GOODS & SERVICES OF STARTUPS IN 2021 VS FIRST HALF OF 2020

E-COMMERCE & FINTECH
MOST ATTRACTIVE SECTORS POST PANDEMIC

~12% INCREASE IN FOREIGN INVESTMENTS IN 2021 COMPARED TO 2020

51% EMPLOYED IN FINANCIAL SERVICES MAKING IT THE LARGEST EMPLOYEE BASE (AS IN 2020)

82% OF BUSINESS CENTERS ARE FOCUSED ON PROVIDING PRIVATE HEALTH INSURANCE DURING THE PANDEMIC

2.4 – 60% RANGE OF REMOTE WORKING PRE AND POST COVID RESPECTIVELY

Lithuania: Talent & Innovation Ecosystem



TALENT POOL

~50,000

SALARY GROWTH (YOY)

4.4%

ATTRITION RATE (ANNUAL)

19%

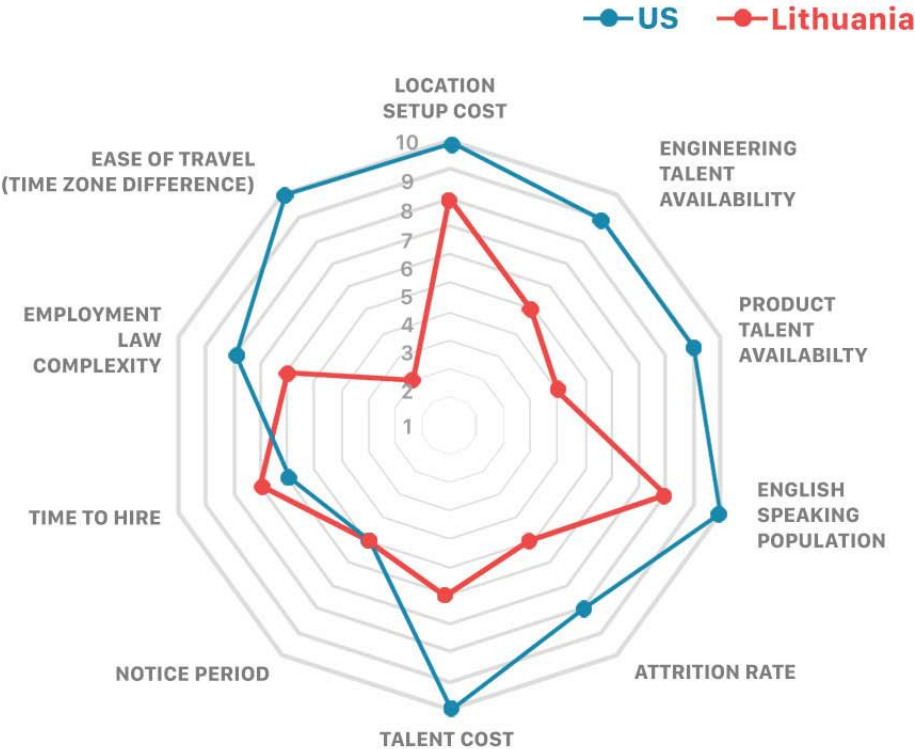
AVERAGE NOTICE PERIOD

2-4 WEEKS

INSIGHTS

- 50.2% of ICT (Information and Communication Technology) specialists in Lithuania are younger than 35 years of age.
- Highly multi-lingual working population, with almost 97% of the population well-versed in more than one foreign language.
- Lithuania hosts 13 of the top 20 ICT companies of Baltic States.
- Lithuania ranks 29th in Global Entrepreneurship index of 2018, only Canada and Estonia rank higher than Lithuania amongst the studied countries in the report.
- 1st in the CEE (Central & Eastern Europe) region for maximum university-business collaborations for Innovation and R&D as one-fourth of students are enrolled in STEM courses.
- 65% increase in R&D spend by Lithuanian government from 2006-13 (\$483 Mn) to 2014-20 (\$798 Mn).

COMPARATIVE LOCATION INDEX US & LITHUANIA

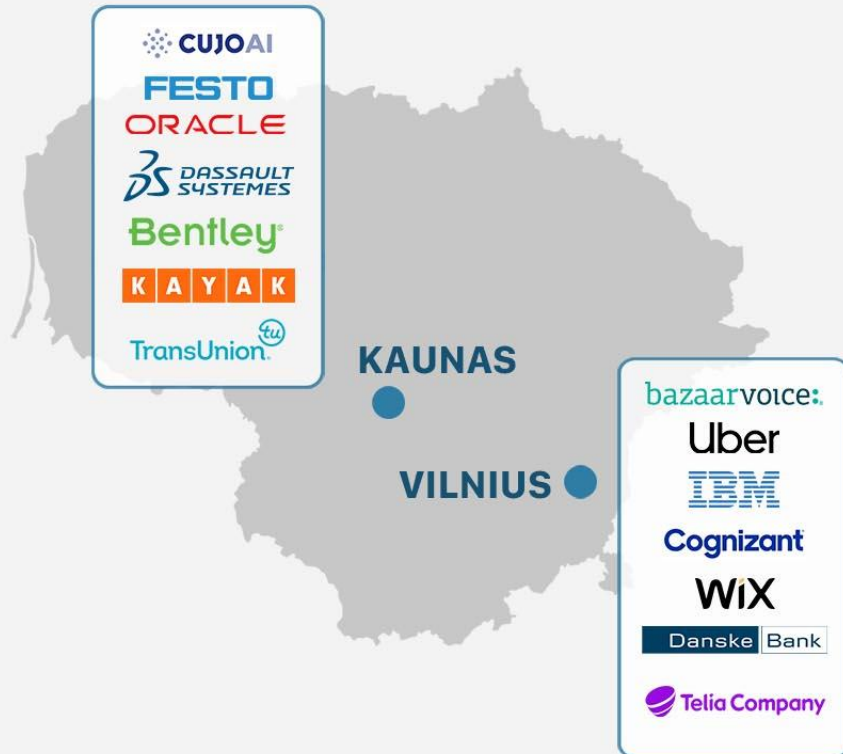


A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Lithuania: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN LITHUANIA



INSIGHTS

- **Oracle** has been operating in Lithuania since 2002, employing highly skilled IT professionals for their Strategic Security Solution division
- **Danske Bank & Western Union Bank** employ ~6000 people working across IT Software & Development, Product Management, Business Development, Finance & Accounting, Customer Support. However, the majority of the workforce are IT specialists developing FinTech applications. Western Union also has Center of Excellence for RPA and Customer Experience Center in Lithuania
- **Telia Lietuva**, with ~650 employees, is the only GBS competency center within the parent company **Telia Company** and it is also the only telecommunications competency center within the region
- Lithuania is a leader in continental Europe by the number of licensed e-money and payment institutions, and is ranked in the TOP10 of the **Global Fintech Index**
- **Cognizant, HCL, Bazaarvoice, DXC Technologies, Festo, CGI, Nasdaq, Swedbank, SEB, Transunion** together employ around ~4500 IT and Software talent in Lithuania
- Cybersecurity company **Arxan** and leading Artificial Intelligence company **CujoAI** opened their development centers in Lithuania for testing and improving their technology as well as to expand their software testing, system operations, and support workforce

Lithuania: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

Lithuania has 8 universities in the top 350 EECA universities (2 in top 50) and is 3rd highest in the EU in terms of share of youth (25-34 years) with tertiary education : 56% (Eurostat 2018)

47 HEIs Higher Education Institutions

~9.5K STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS EECA TOP 350 UNIVERSITIES**	
VILNIUS UNIVERSITY	551	459	18	19
VILNIUS GEDIMINAS TECHNICAL UNIVERSITY	501	562	32	56
KAUNAS UNIVERSITY OF TECHNOLOGY	-	-	53	54
VYTAUTAS MAGNUS UNIVERSITY	-	-	61	-

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

FACULTY OF INFORMATICS KAUNAS TECHNOLOGY UNIVERSITY

RESEARCH FOCUS

Big Data Analytics, neural networks

INDUSTRY PARTNERSHIPS



START-UP INCUBATION

National Innovation & Entrepreneurship Centre

FACULTY OF INFORMATICS VYTAUTAS MAGNUS UNIVERSITY

RESEARCH FOCUS

AI, Computational Linguistic, Applied Informatics

START-UP INCUBATION

Centre for Enterprise Practices (CEP)

KAUNAS

VILNIUS

DEPARTMENT OF COMPUTER SCIENCE VILNIUS UNIVERSITY

RESEARCH FOCUS

Big Data Analytics, ML, Cyber-Crime

INDUSTRY PARTNERSHIPS



START-UP INCUBATION

Vilnius University Tech Hub

INSTITUTE OF COMPUTER SCIENCE VILNIUS GEDIMINAS TECHNICAL UNIVERSITY

RESEARCH FOCUS

Mobile Applications, Unmanned Aerial Vehicles, AI, Big Data

INDUSTRY PARTNERSHIPS



START-UP INCUBATION

LinkMenų fabrikas

Lithuania: Start-up Ecosystem



650

Technology start-ups

1

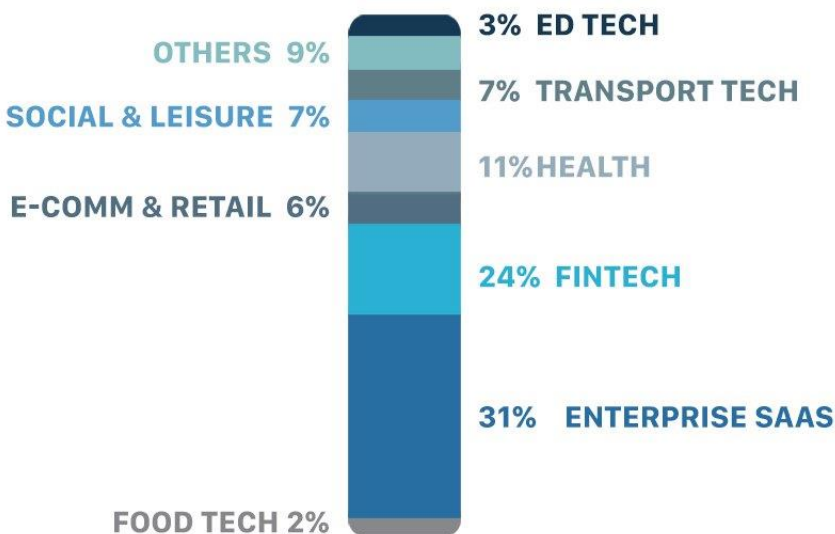
Number of Unicorns

3.9x

Increase in fintech funding in 2021
(i.e. USD 20 Mn to USD 78 Mn)

ADVANCED TECH START-UPS IN LITHUANIA 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



Inbalance Grid - Develops smart electric vehicle (EV) charging solutions for business and network operators

FUNDING TILL
DEC'21

USD 2.7 Mn



Zenith Chain - Decentralizes hybrid Blockchain to transact directly and privately for customers

USD 1.3 Mn



HeavyFinance - Fintech marketplace, that connects a global investor community with European farmers

USD 1.3 Mn



Aeroclass - Offers advanced online training courses for an array of aviation specialists

USD 1.2 Mn

Lithuania: Illustrative Compensation Structure



(IN USD)		
GROSS PAY (A)		
100,000		
TAXES PAID BY THE EMPLOYEE(B)(1+2)		
39,500		
1. Personal Income Tax (from Gross Salary)	20%	20,000
2. Social Security and Health Insurance (from Gross Salary)	19.50%	19,500
NET SALARY (A-B)		
60,500		
TAXES PAID BY THE EMPLOYER (C)		
1,770		
Employers Social Security contribution (incl. Guarantee fund, Long-term unemployment fund)	1.77%	1,770
TOTAL EMPLOYMENT COST (A+C)		
101,770		

EMPLOYMENT TERMINATION LAW

HIGHLY
EMPLOYEE
FAVORING

NEUTRAL

HIGHLY
EMPLOYER
FAVORING

- The severance pay amounts to two times the employee's average remuneration (avg. calculated on the basis of their salary over the three calendar months prior to termination month) if tenure was more than 1 year.
- Employers in Lithuania need to justify termination reason in writing.
- Employee's unsatisfactory performance can be used as a reason to terminate given an improvement plan was drafted for at least two months and the performance in that period was also unsatisfactory.
- The employment contract shall be terminated by giving the employee notice of one month in advance.

- Maximum earnings taxable by social insurance equal to €136,344 of annual income
- If annual income exceeds €136,344, Personal Income Tax increases to 27%
- Mandatory social insurance contribution varies from 21.29% to 24.29%



BULGARIA



Bulgaria: Country Overview



COUNTRY

- ✓ Bulgaria continues to be seen as an attractive low-cost investment destination, offering least expensive labor in the European Union (EU) and low and flat corporate and income taxes
- ✓ 60% of the working population (25-64 years) is fluent in at least one foreign language, however the English proficiency is low as around only a quarter of the population speaks English
- ✓ The GDPR law of the EU is applicable in Bulgaria making it compliant with the toughest privacy law in the world
- ✗ Ranks 78th out of 180 countries as per Corruption Perception Index 2021
- ✓ Bulgaria has experienced political instability in the past as it has a multi-party system, such that no single party can be in power alone. The situation has improved since 2015

INFRASTRUCTURE & LABOR MARKET

- ✓ Bulgaria has a cost-effective commercial real-estate sector as property tax rates are relatively lower as compared to other European countries, varying between 0.1% to 0.45%
- ✓ Ranks 50th out of 176 countries as per ICT Development Index 2017 prepared by ITU

TAXATION & GOVERNMENT REGULATIONS

- ✓ Bulgaria has the lowest tax rate in the EU for both personal and corporate businesses, at a flat 10%
- ✗ The Schrems II verdict invalidates the EU-US data protection shield, requiring individual assessment for data transfer to a non-EU country and more investment in Data Security
- ✓ Bulgaria provides relaxations in corporate taxes upto 100% on taxable profits from investments in high unemployment or less industrialized regions



TOP LANGUAGES

Bulgarian, English, German, French

39% Gender Diversity in Software Engineering Companies

TECH NUGGET

Under the Investment Promotion Act, the State defines the targeted sectors, and companies can set up tech centers with lowered financial requirements for investment.

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN BULGARIA

BFSI



SOFTWARE & INTERNET



FMCG

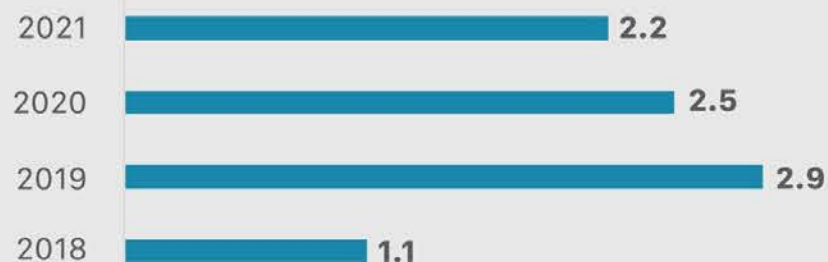


A quick glance into the impact of COVID-19 on Bulgaria



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FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS* (IN USD BN)



*VENTURE CAPITAL BASED

**ELEVEN VENTURES,
LAUNCHHUB VENTURES**
TOP BULGARIAN VC'S SUPPORTING
START-UPS DURING PANDEMIC

FINTECH & HEALTHTECH
MOST ATTRACTIVE SECTORS
POST PANDEMIC

**10% Y-O-Y REVENUE GROWTH IN
SOFTWARE IN 2020, DESPITE 5%
DECREASE IN ECONOMY**

**14.3% INCREASE IN OVERALL
SOFTWARE SECTOR EMPLOYEES
IN 2020 COMPARED TO 2019**

**~60% SERVICE FIRMS HAVE
ADOPTED DIGITAL
TECHNOLOGIES IN WHICH 1% IS
IN BIG DATA/AI(AS PER 2020)**

**0.5 – 35% RANGE OF REMOTE
WORKING PRE AND POST COVID
RESPECTIVELY**

Bulgaria: Talent & Innovation Ecosystem



TALENT POOL

~100,000

SALARY GROWTH (YOY)

16.6%

ATTRITION RATE (ANNUAL)

14.3%

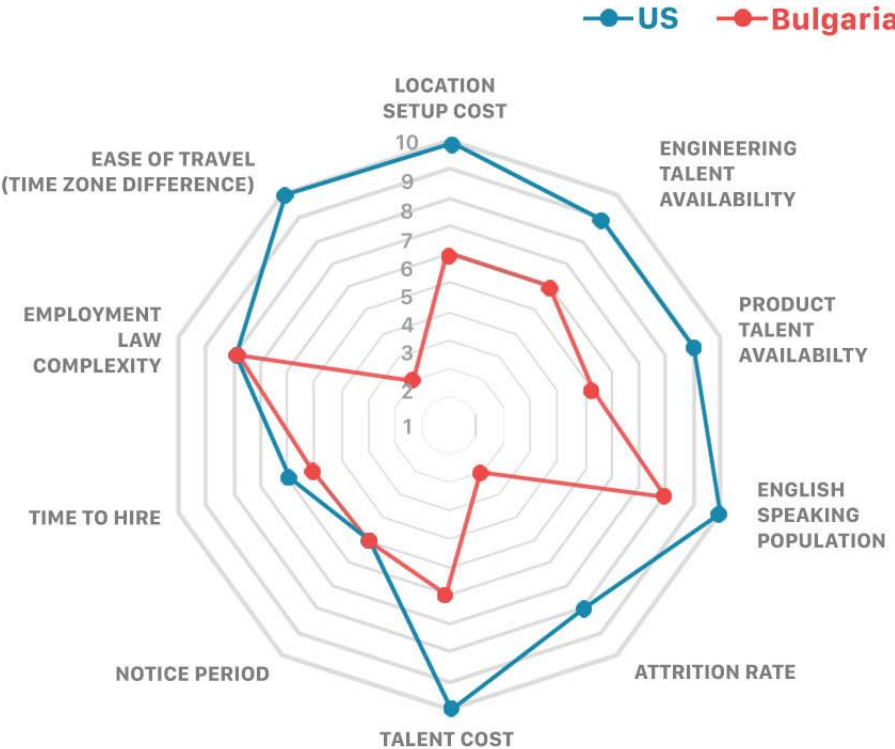
AVERAGE NOTICE PERIOD

4-12 WEEKS

INSIGHTS

- Bulgaria gets high customer support talent from surrounding countries such as Romania, Serbia, Macedonia, Greece, and Turkey
- 90% of the outsourcing work / contracts are catered to local / regional customers, which are mainly driven by regional common languages or local native languages. This has given Bulgaria a strong regional presence in the outsourcing landscape
- 80% of the working age population have secondary or tertiary higher education
- Bulgaria ranks 47th out of 194 countries in AI readiness
- Bulgaria ranks amongst the lowest in EU in terms of R&D spending
- Bulgaria is 3rd in Europe and 10th worldwide with certified IT specialists (as per certifications) per capita
- Software market is changing from outsourcing viewpoint to partnering with local companies for product developments

COMPARATIVE LOCATION INDEX US & BULGARIA

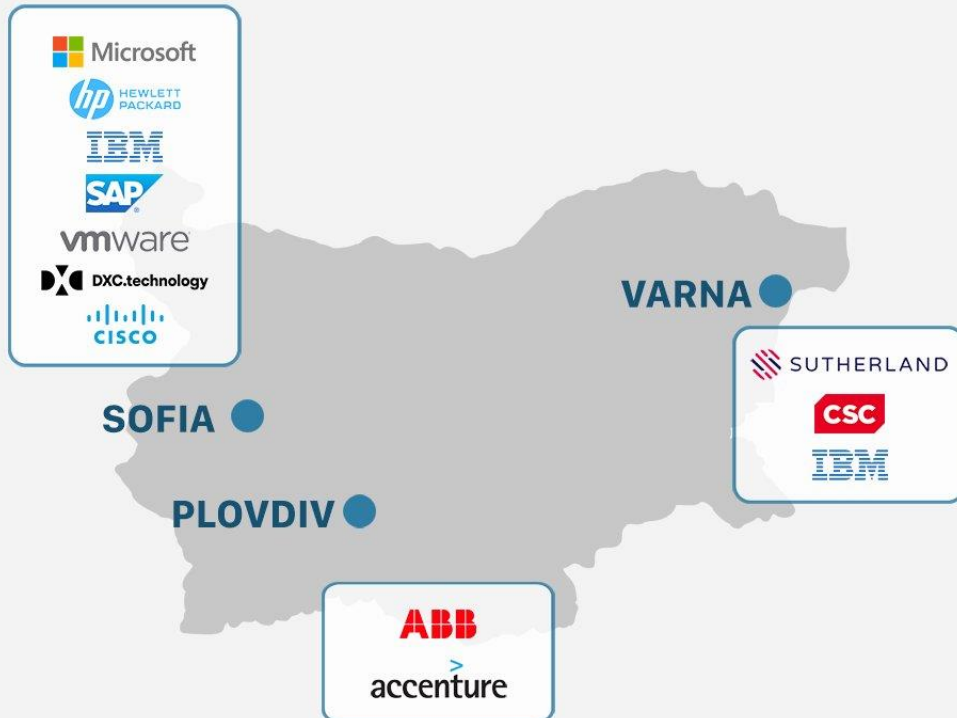


A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Bulgaria: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN BULGARIA



INSIGHTS

- **VMware's** Global Development center was set up in 2007, and is the largest R&D site for VMware in EMEA, employing 1300+ professionals
- **SAP** Labs Technology center in Bulgaria is responsible for developing SAP Business Technology Platform. More than 1100 employees work on Lifecycle Management, User Interface, and Experience Development across the broader portfolio of SAP products
- **IBM, Bosch, ATOS, HP, Software AG** have their R&D centers in Bulgaria employing more than 2000 professionals who deliver cost-efficient, scalable solutions to business problems
- **Visteon Electronics Bulgaria** is a technical center with over ~900 employees with expertise in software, hardware, and mechanics. It is Visteon's largest global development center, focused on the design and development of platforms and custom solutions. The overall number of active projects it executes exceeds 280

Bulgaria: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

Only 2 universities feature in the top 350 universities of EECA.
There are no universities featured in the top 600 world universities for computer science.

51 HEIs

Higher Education
Institutions

~10.5K

STEM graduates
per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*	QS EECA TOP 350 UNIVERSITIES**	
SOFIA UNIVERSITY ST. KLIMENT OHRIDSKI	-	49	44
AMERICAN UNIVERSITY IN BULGARIA	-	170	156

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

FACULTY OF COMPUTER SYSTEMS AND TECHNOLOGIES TECHNICAL UNIVERSITY OF SOFIA

RESEARCH FOCUS

Smart Grid Technologies, Computer
Visualization, Graphic Design

INDUSTRY PARTNERSHIPS



FACULTY OF MATHEMATICS AND INFORMATICS SOFIA UNIVERSITY ST. KLIMENT OHRIDSKI

RESEARCH FOCUS

Computer Networks

INDUSTRY PARTNERSHIPS



RESEARCH CENTER

Centre for Information Society
Technologies (CIST)

SOFIA

STARA ZAGORA

BLAGOEVGRAD

AMERICAN UNIVERSITY IN BULGARIA

RESEARCH FOCUS

network systems and data communications,
Web designing, database designing, AI, ML

INDUSTRY PARTNERSHIPS



FACULTY OF ENGINEERING AND TECHNOLOGIES TRAKIA UNIVERSITY

RESEARCH CENTER

Information and Computer
Security

Bulgaria: Start-up Ecosystem



zinnov

190+

Technology start-ups

0

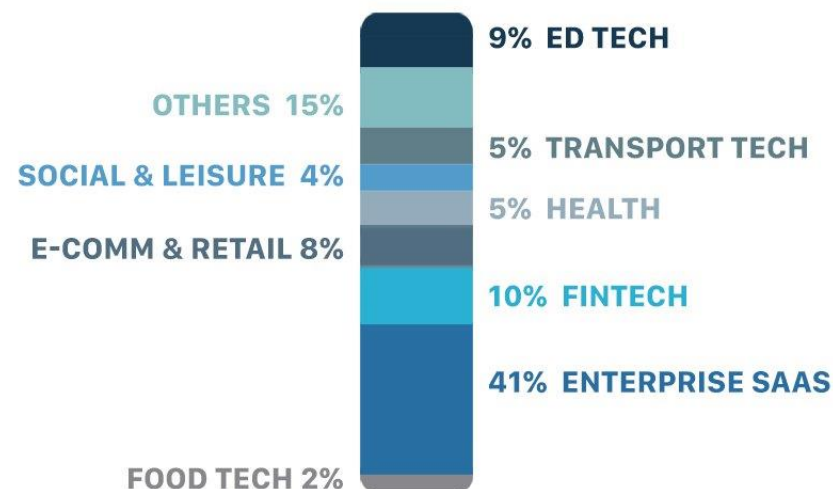
Number of Unicorns

89%

Funding in 2021 for 2 start-ups – Gtmhub and Payhawk

ADVANCED TECH START-UPS IN BULGARIA 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



Ondo - Develops state-of-the-art Automation solutions for greenhouses and open fields

FUNDING TILL DEC'21

USD 1.4 Mn



3Veta - Online digital platform which unifies scheduling, client bookings, video calls/ workshops, payments with SaaS solutions, etc.

USD 273 K



Tavan - A fitness-based platform (mobile app) that employs Machine Learning

USD 100 K



SeaScout - A single point ecosystem for marine operators and Service Providers to close deals

USD 35 K

Bulgaria: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (A)	100,000
1. Insurance sum (paid by employee) (13.78% of gross pay)	13,780
2. Income tax (10% of gross pay)	10,000
TOTAL EMPLOYEE CONTRIBUTION (1 +2) (B)	23,780
NET SALARY (A-B)	76,220
Insurance sum (paid by employer) (18.92% of gross pay) (C)	18,920
TOTAL EXPENSES FOR THE EMPLOYER (A + C)	118,920

INSIGHT

Income exceeding € 1,533.51 per month or € 18,402.11 per year is the maximum cap for social security tax (18.92%).

EMPLOYMENT TERMINATION LAW



The severance pay is as per agreed-upon terms and should not be less than four months' salary.

An employer may terminate an employment contract by giving the employee and labor Union 30 days' prior written notice or no longer than 3 months notice.

There are special groups of employees under protection, and in this case, the dismissal requires consent from the labor inspectorate.



BELARUS



Belarus: Country Overview



COUNTRY

- ✓ Belarus allows for property to be registered in ~9 days as compared to the OECD average of 22 days.
- ✗ Belarus is currently going through internal political unrest with protests against the current president for assuming an authoritarian rule for past 26 years
- ✗ Ranks 82nd out of 180 countries as per Corruption Perception Index 2021

INFRASTRUCTURE & LABOR MARKET

- ✓ Infrastructure: It ranks 32nd out of 176 countries as per ICT Development Index 2017
- ✓ Belarus has preferential tax benefits and special investor incentives provided in six export-oriented regional free economic zones, the Hi-Tech Park (HTP), and the joint Belarus-China Great Stone Industrial Park

TAXATION & GOVERNMENT REGULATIONS

- ✓ Hi-Tech Parks (HTP): Belarus has HTPs with a special tax regime that provides benefits and preferences for IT companies based in HTPs
- ✓ Individual Income Tax is fixed at 9% for Hi-Tech Park company employees (vs 15% income tax outside)
- ✓ Belarusian government's initiatives exempt any company setup in FEZ from corporate taxes, profit tax (vs 18% in General) and customs duties. They are charged 10% VAT (vs 20% in General)
- ✓ Software is protected by copyright in Belarus. A computer program is automatically protected by copyright as soon as it is created, and no formalities are required



TOP LANGUAGES

Belarusian, Russian, English

38% Gender Diversity in Software Engineering Companies

TECH NUGGET

CBIP (China-Belarus Industrial Park) developed with help from China, helps IT companies with tax and other benefits, special rules for use of land and natural resources

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN BELARUS

ELECTRONICS & SEMICONDUCTORS

SOFTWARE & INTERNET

TELECOMMUNICATIONS & SECURITY

A quick glance into the impact of COVID-19 on Belarus



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FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



32% OF START-UPS IN THE COUNTRY WERE LAUNCHED DURING PANDEMIC

HEALTHTECH & E-COMMERCE MOST ATTRACTIVE SECTORS POST PANDEMIC

42% ENTERPRISES FOUND THEIR PRODUCTS MORE COMPETITIVE IN 2020

~10% START-UPS LEVERAGED SHARED/ COWORKING SPACES DURING PANDEMIC

POLITICAL CRISIS AND THE EFFECT OF THE PANDEMIC JOINTLY IMPACTED GROWTH IN THE COUNTRY

64%+ FIRMS MOVED TO REMOTE WORKING DURING PANDEMIC

Belarus: Talent & Innovation Ecosystem

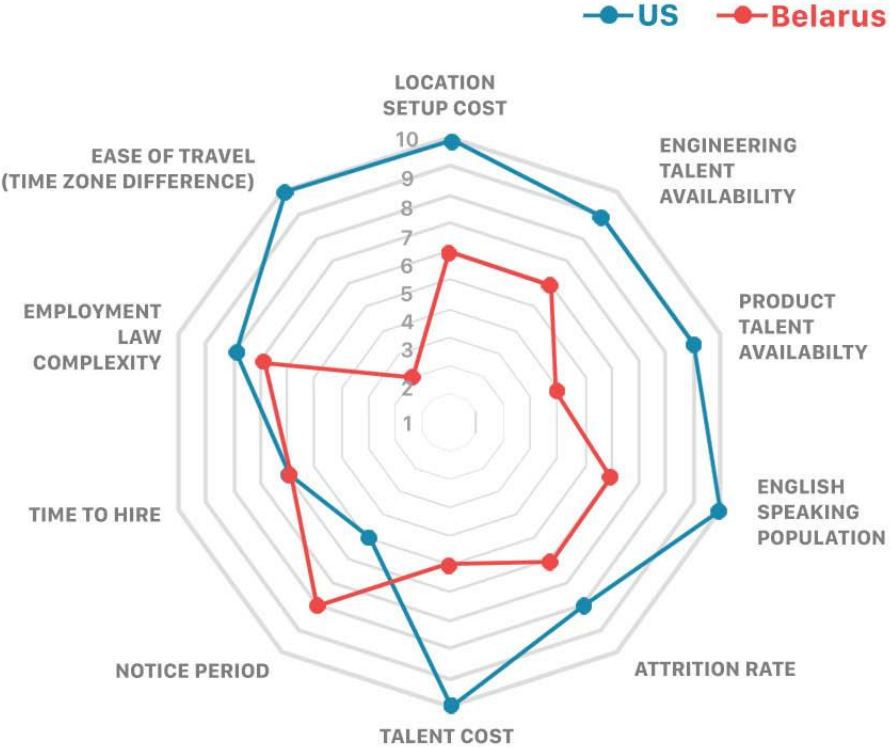


TALENT POOL ~105,000	SALARY GROWTH (YOY) - (23%)
ATTRITION RATE (ANNUAL) 18.8%	AVERAGE NOTICE PERIOD 4-8 WEEKS

INSIGHTS

- Scaling teams beyond 100+ in a year is a challenge due to shortage of talent.
- Belarus has a young tech talent workforce. 67% of IT specialists are between the age of 21-30.
- Belarusians are multi-lingual and can speak English, Russian, and German as the main business languages, forming a potential workforce for professional services teams.
- 91.9% of the software developed in the HTP account for exports.

COMPARATIVE LOCATION INDEX US & BELARUS



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Belarus: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN BELARUS



MINSK

INSIGHTS

- The EPAM center in Belarus is one of the largest companies in the IT Products and Services segment. EPAM employs close to ~8,000 employees in Belarus
- Yandex: Employees in the Minsk office are involved in creating, developing, and testing YANDEX Search and YANDEX . YANDEX has ~150 employees in Belarus
- RAKUTEN VIBER: The Minsk Development Center is responsible for the client parts of an application for iPhone, Android, and Windows Phone as well as for the development of a desktop version and billing and sticker-market web development. RAKUTEN VIBER has ~100 employees in Belarus

Belarus: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

Belarus has only 4 universities in top 350 EECA universities (only 1 in top 50) and no university in top 600 universities for Computer Science. This has led to a critical shortage of qualified workers.

48 HEIs Higher Education Institutions

~16K STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*	QS EECA TOP 350 UNIVERSITIES**	
BELARUSIAN STATE UNIVERSITY	-	25	22
BELARUSIAN NATIONAL TECHNICAL UNIVERSITY	-	103	82
BELARUSIAN STATE UNIVERSITY OF INFORMATICS AND RADIO ELECTRONICS	-	158	129

INFORMATION TECHNOLOGIES AND ROBOTICS FACULTY

BELARUSIAN NATIONAL TECHNICAL UNIVERSITY

RESEARCH FOCUS

Databases Design, Computer Integration into Networks, Information Security

RESEARCH CENTER

Research and Innovation Laboratory of Production Automation

FACULTY OF APPLIED MATHEMATICS AND COMPUTER SCIENCE

BELARUSIAN STATE UNIVERSITY

RESEARCH FOCUS

Geoinformatics, Computer Physics

INDUSTRY PARTNERSHIPS



RESEARCH CENTER

Innovation laboratory SAP
Next-Gen Lab

MINSK

BELARUS STATE UNIVERSITY OF INFORMATICS AND RADIOELECTRONICS

RESEARCH FOCUS

Semiconductors, Micro & Nano-electronics, Coding and Digital Information Processing

INDUSTRY PARTNERSHIPS



*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

Belarus: Start-up Ecosystem



90

Technology start-ups

0

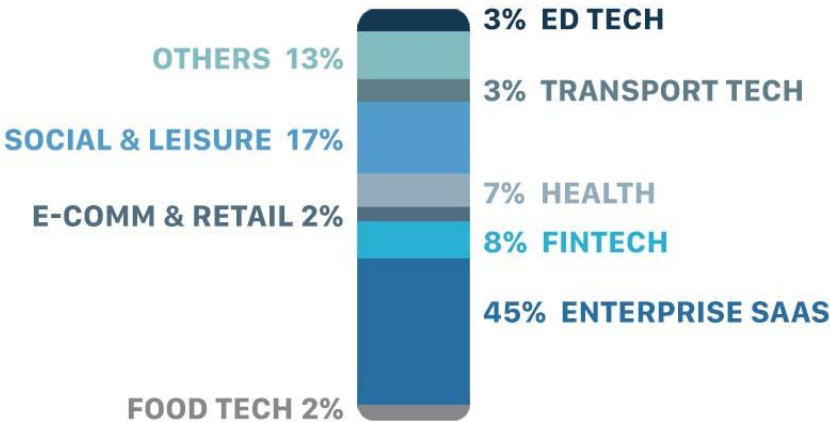
Number of Unicorns

67th

Rank in Global start-up Ecosystem Index in 2021 (a drop of 12 ranks from 2019)

ADVANCED TECH START-UPS IN BELARUS 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



banuba

Banuba - Develops Augmented Reality enabled mobile applications and technologies

FUNDING TILL DEC'21

USD 12 Mn



Synesis Group - Builds services for governments and consumers using state-of-the-art technologies

USD 11.4 Mn



Lungpass - A health start-up developing automatic diagnostics systems of lungs

USD 2.4 Mn

WANNA

Wanna - Develops revolutionary AR solutions for the fashion industry

USD 2 Mn

Belarus: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (A)	100,000
1. Employee Expense: Compulsory social security contributions (1% of gross pay)	1,000
2. Income tax (13% of gross pay)	13,000
TOTAL EMPLOYEE CONTRIBUTION (1 +2) (B)	14,000
NET ANNUAL INCOME PER EMPLOYEE (A-B)	86,000
3. Employer Expense: Social Security Contribution (34% of gross pay)	34,000
4. Employer Expense: Professional Pension insurance contribution (9% of gross pay)	9,000
5. Employer Expense: Insurance of Work-related accident and occupational illness (0.6% of gross pay)	600
TOTAL EMPLOYER CONTRIBUTION (3 + 4 + 5) (C)	43,600
TOTAL EMPLOYMENT COST (A+C)	143,600

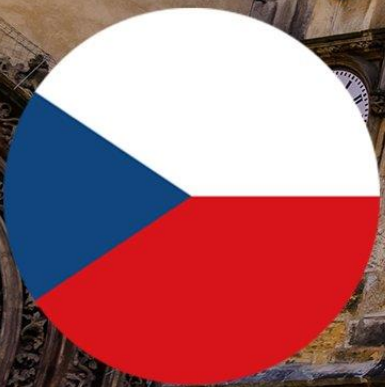
EMPLOYMENT TERMINATION LAW

HIGHLY EMPLOYEE FAVORING

NEUTRAL

HIGHLY EMPLOYER FAVORING

- The severance pay can be a minimum of two weeks to a maximum of three months w.r.t. tenure with the employer.
- Employment law protects employees in Belarus by restricting the grounds on which an employer can dismiss staff.
- Employer Expense: Social Security Contribution - The contribution is calculated at 34% of the gross monthly salary, but of no more than \$ 2,582 (average salary in Belarus multiplied by five).
- Employer Expense: Professional Pension insurance contribution - The contribution is calculated at a maximum rate of 9% of the gross monthly salary, but of no more than \$ 1,549 (the average salary in Belarus multiplied by three) Employee Expense: Compulsory social security contributions - The contribution is calculated at 1% of the gross monthly salary, but of no more than \$ 2,582 (the average salary in Belarus multiplied by five).



CZECHIA

Czechia: Country Overview



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COUNTRY

- ✓ The first country to prepare and sign the Memorandum of Understanding on Cyber Defense in NATO
- ✓ Prague is centrally located in Europe and most European capitals can be reached within a 2-hour flight
- ✓ Ranks 49th out of 180 countries as per Corruption Perception Index 2021
- ✓ The GDPR law of the EU is applicable in Czechia making it compliant with the toughest privacy law in the world

INFRASTRUCTURE & LABOR MARKET

- ✓ Czechia is 43rd out of 176 countries as per ICT Development Index 2017 prepared by International Telecommunication Union
- ✓ Czechia is among the world's most advanced countries in terms of transport infrastructure and as a transit hub covers an area of 28 nations in Europe serving more than 500 million customers

TAXATION & GOVERNMENT REGULATIONS

- ✓ Personal income is subject to a flat tax rate of 15%
- ✓ The government provides a special tax allowance of up to 100% of specific R&D expenses (or costs). These R&D costs are claimed twice – first as a normal tax-deductible cost and second as a special tax allowance
- ✗ The Schrems II verdict invalidates the EU-US data protection shield, requiring individual assessment for data transfer to a non-EU country and more investment in data security
- ✗ Higher corporate tax rate (19%) than other countries in Eastern Europe such as Lithuania (15%), Bulgaria (10%)



TOP LANGUAGES

Czech, English

29% Gender Diversity in Software Engineering Companies

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN CZECHIA

AUTOMOTIVE



INDUSTRIAL



SOFTWARE & INTERNET



TECH NUGGET

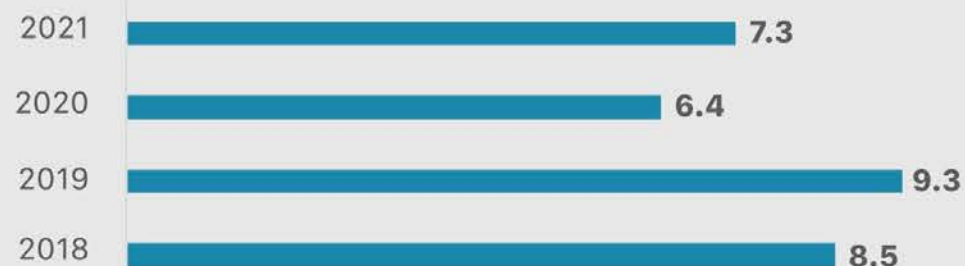
Czechia is the first country in the European Union to draft a legal framework that protect Critical Information Infrastructure (CII)

A quick glance into the impact of COVID-19 on Czechia



zinnoV

FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



hedepy MEDEVIO

NEW HEALTHCARE START-UP
ENTRANTS INTO MARKET POST
COVID

HEALTHTECH & E-COMMERCE
MOST ATTRACTIVE SECTORS
POST PANDEMIC

30% GROWTH IN SPENDING IN
INFRASTRUCTURE-AS-A-SERVICE
(IaaS) IN 2020 - MAINLY CLOUD,
NOTEBOOKS, AND TABS

~3/4TH SERVICE FIRMS HAVE BUILT
ROBOTICS AND AUTOMATION
CAPABILITIES INHOUSE (AS ON 2021)

18-82%
RANGE OF REMOTE WORKING PRE
AND POST COVID RESPECTIVELY

61% OF SERVICE FIRMS PLAN TO
INCREASE DESK-SHARING
WORKSTATIONS (11% HIGHER THAN
PROJECTED IN 2020)

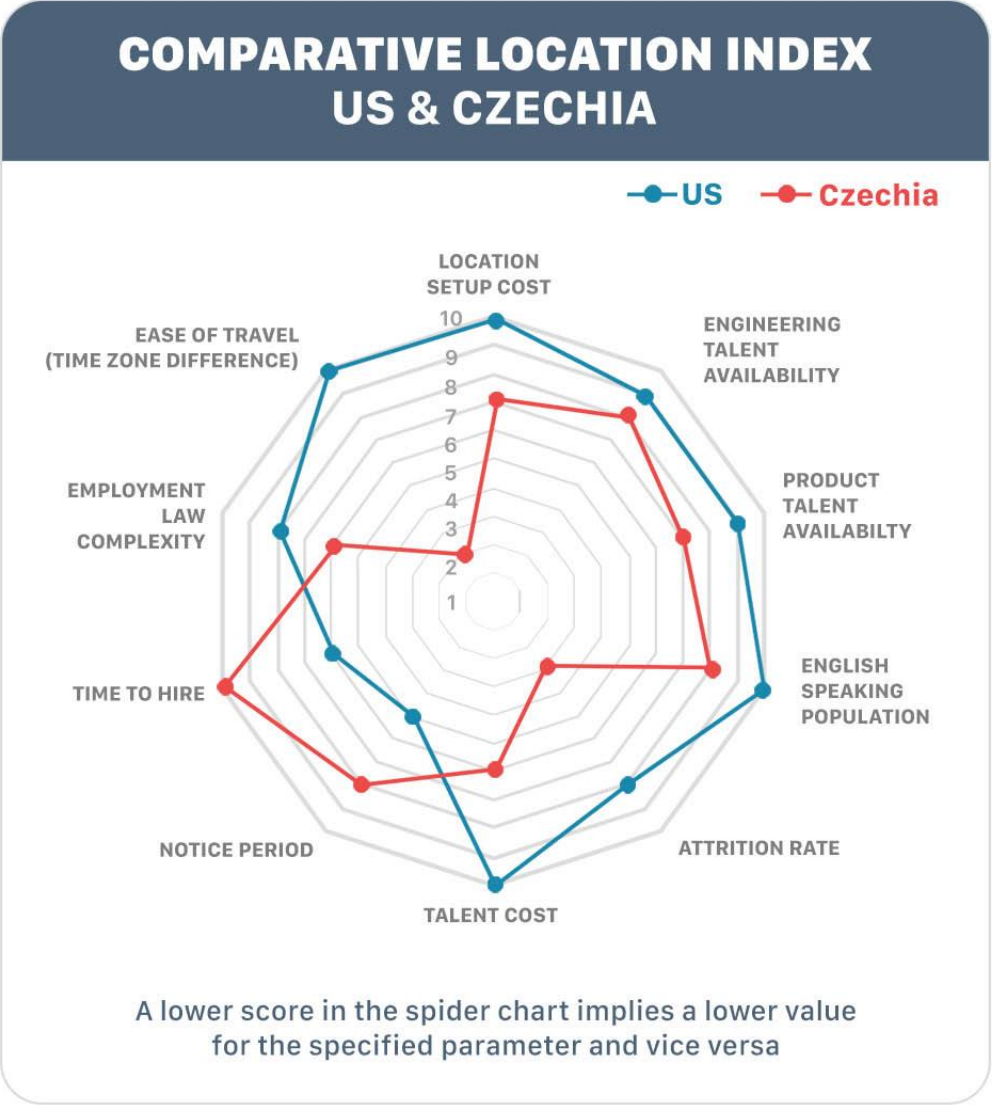
Czechia: Talent & Innovation Ecosystem



TALENT POOL ~91,000	SALARY GROWTH (YOY) 23%
ATTRITION RATE (ANNUAL) 13.6%	AVERAGE NOTICE PERIOD 8 WEEKS

INSIGHTS

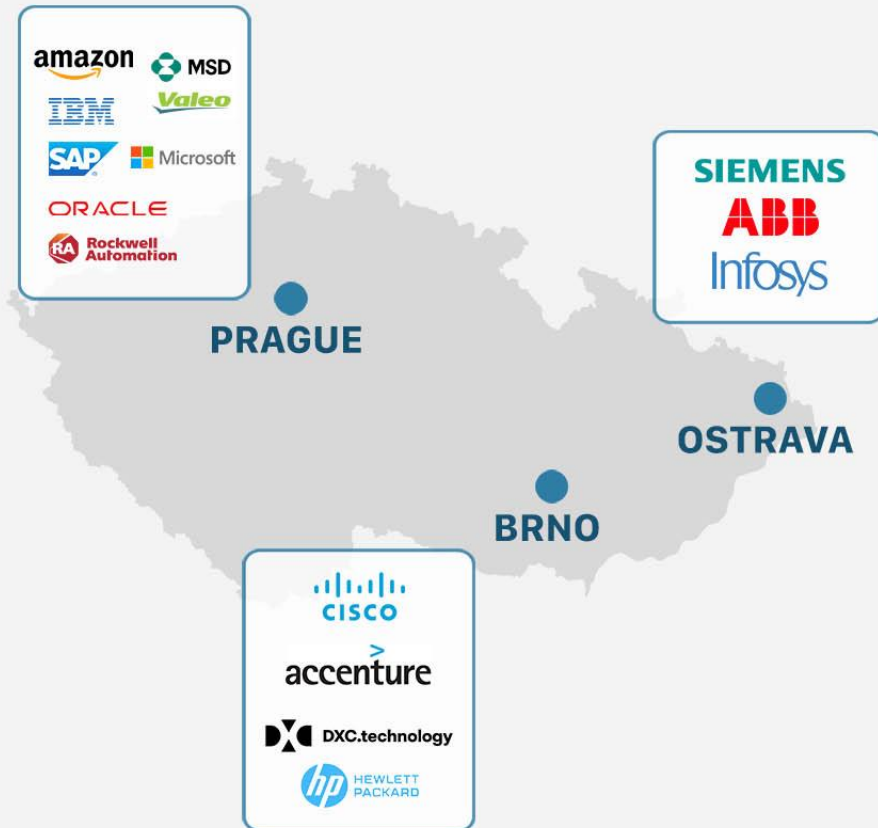
- One of the best start-up ecosystems in Eastern and Central Europe captured €3.4B of the EU's Horizon 2020 R&D fund.
- Czechia is ranked 29th in Global Competition index and 27th in Global Innovation index.
- According to Eurostat, 42% of Czech companies are Innovative (Moderate Innovators), below Europe's average of around 49%.
- Due to a mature cyber security talent, the country acts as a strong cybersecurity hub in Eastern Europe.
- Czechia is a very competitive market for hiring/retaining IT talent. For every 1 talent there are around 10 possible opportunities in the market.
 - This high demand of Software Engineers has led to a steady salary growth and higher additional benefit expectations.



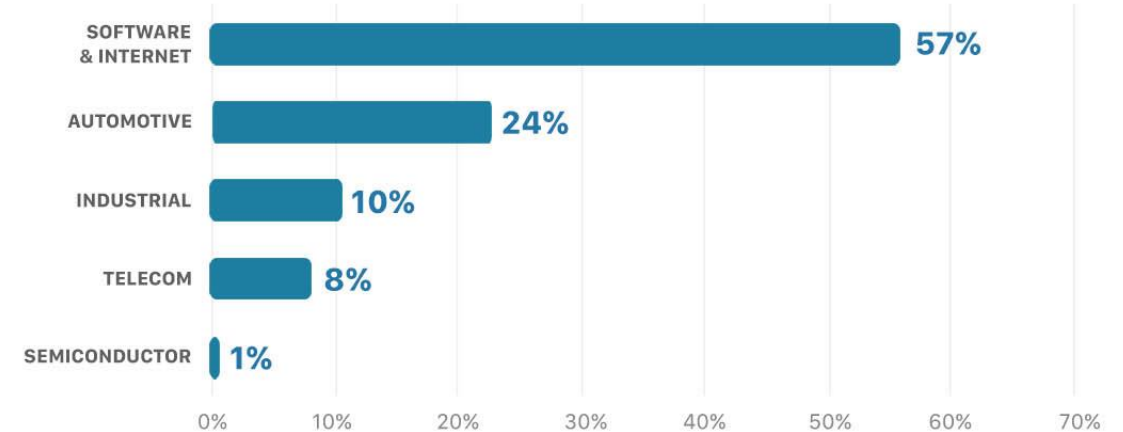
Czechia: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN CZECHIA



IT AND TECH TALENT SPLIT ACROSS INDUSTRIES IN CZECHIA



- SAP, Microsoft, IBM, Oracle, Red Hat, Honeywell, Valeo are some global companies with Engineering centers in Czechia with teams working on areas such as Cloud, IoT, Blockchain Applications, autonomous driving, parking assistance, and active safety systems
- American Pharma company **MSD/ Merck & Co., Inc.**, has an IT hub operating in Prague since 2014. The hub covers a full range of technical and scientific disciplines and provides MSD support across the company, such as Software Engineering, Data Analysis and Big Data, infrastructure supporting research, development, manufacturing, and logistics
- Cisco has a Cognitive Intelligence R&D team in Czechia along with other development teams. Cisco had acquired a company **Cognitive Security** in 2013, focused on applying Artificial Intelligence techniques to detect advanced cyber threats
- **Siemens Mobility** in Czechia works on complete development of Automation products including software, hardware, mechanical design, verification and validation, Intelligent Traffic Systems, Software Development for Rolling Stock, etc.
- **NXP Semiconductor's** Czechia center employs around 300 experts working on application development and customer support for Electrical Motor Control, Wireless Charging, Internet of Things, Smart Home, Artificial Intelligence, and Image Processing

Czechia: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

Czechia has 18 universities in top 350 EECA universities (5 in top 50). Major universities like Czech Technical University have adjunct professors from global companies like Rockwell Automation. This collaboration creates a strong brand attraction for companies that students want to join post graduation

68 HEIs Higher Education Institutions

5K+ STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS EECA TOP 350 UNIVERSITIES**	
CHARLES UNIVERSITY	251	129	5	2
CZECH TECHNICAL UNIVERSITY IN PRAGUE	201	214	9	12
MASARYK UNIVERSITY	401	451	10	7
BRNO UNIVERSITY OF TECHNOLOGY	400	459	23	

FACULTY OF MATHEMATICS & PHYSICS CHARLES UNIVERSITY

RESEARCH FOCUS

Intelligent Systems and Computing, Theoretical Computer Science, and Combinatorics

INDUSTRY PARTNERSHIPS



RESEARCH CENTER

Centre for Knowledge and Technology Transfer

PRAGUE

FACULTY OF INFORMATION TECHNOLOGY CZECH TECHNICAL UNIVERSITY IN PRAGUE

RESEARCH FOCUS

Artificial Intelligence, Computer Graphics, Computer Vision, and ML

INDUSTRY PARTNERSHIPS



RESEARCH CENTER

Czech Institute Of Informatics, Robotics And Cybernetics

FACULTY OF INFORMATION TECHNOLOGY BRNO UNIVERSITY OF TECHNOLOGY

RESEARCH FOCUS

Supercomputing, Automatic Speech and Language Processing, AI, ML

INDUSTRY PARTNERSHIPS



RESEARCH CENTER

National Supercomputer Centre

BRNO

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

310+

Technology start-ups

1

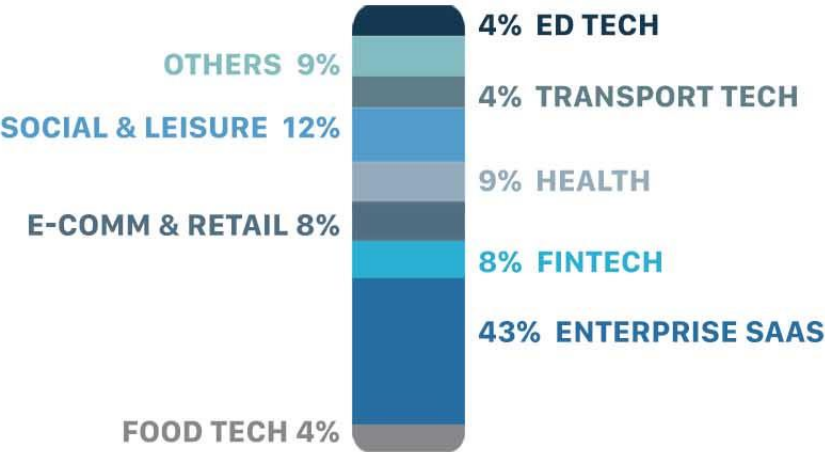
Number of Unicorns (s)

3rd

Highest in funding rounds in Q3 2021 in Eastern and Central Europe

ADVANCED TECH START-UPS IN CZECHIA 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



RESISTANT.AI

Resistant AI - Protects AI systems from targeted manipulation, adversarial ML attacks, and frauds

FUNDING TILL DEC'21

USD 19.4 Mn



Accomango - SaaS-enabled B2B marketplace between companies and worker accommodation providers

USD 2.3 Mn



Superface - Provides successor to API protocol for businesses to consume digital capability autonomously

USD 1.5 Mn



VOS.health - Provides with customers a mental well being app

USD 1.3 Mn


Czechia: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (A)	100,000
1. Employee Contribution: Health Insurance Contribution (4.5% of gross pay)	4,500
2. Employee Contribution: Pension Insurance (6.5% of gross pay)	6,500
TOTAL EMPLOYEE CONTRIBUTION (1 +2) (B)	11,000
NET ANNUAL INCOME PER EMPLOYEE (A-B)	89,000
3. Employer Contribution: Health Insurance Contribution (25% of gross pay)	25,000
4. Employer Contribution: Pension Insurance (9% of gross pay)	9,000
5. Employer Contribution: Sickness Insurance (2.3% of gross pay)	2,300
6. Employer Contribution: Unemployment Insurance (1.2% of gross pay)	1,200
TOTAL EMPLOYER CONTRIBUTION (3 + 4 + 5 + 6) (C)	37,500
TOTAL EMPLOYMENT COST (A+C)	137,500

EMPLOYMENT TERMINATION LAW

HIGHLY
EMPLOYEE
FAVORING



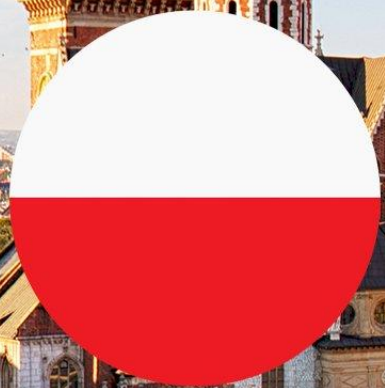
HIGHLY
EMPLOYER
FAVORING

Severance pay depends on the duration of full-time employment with the employer, therefore, can range from a month to three months pay.

Employers need to give a two-month notice period to the employee and trade union body, after an initial warning has been issued for termination of employment in Czechia.

Termination shall be done in consultation with trade union. As per the Labor Code, the consultation must be concluded before the dismissal notification is handed to the employee.

The length of trial period after termination if challenged by an employee is around 6 months for Manager level while 3 months for other workers.



POLAND

Poland: Country Overview



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COUNTRY

- ✓ FDI worth USD 27 Bn makes Poland the third biggest destination in Europe and a top destination in the Eastern and Central Europe region
- ✓ Ranks 7th globally as the most start-up friendly countries in the world by CEO World Magazine in 2019
- ✓ Ranks 42nd out of 180 countries as per Corruption Perception Index 2021
- ✓ The GDPR law of the EU is applicable in Poland making it compliant with the toughest privacy law in the world

INFRASTRUCTURE & LABOR MARKET

- ✓ Ranks 49th out of 176 countries as per ICT Development Index 2017 prepared by International Telecommunication Union
- ✓ Poland has a high English proficiency and ranked 16th in the global EP English Proficiency Index 2021

TAXATION & GOVERNMENT REGULATIONS

- ✓ Full exemption to the 19% corporate income tax for IT projects and R&D Centers for 10-15 years
- ✓ Poland allows B2B contracts between employers and employees resulting in higher in-hand-salary for engineers
- ✗ The Schrems II verdict invalidates the EU-US data protection shield, requiring individual assessment for data transfer to a non-EU country and more investment in data security
- ✗ Long average time to start a business and lengthy procedure to enforce a contract (can take ~685 days)
- ✗ Minimum paid-in capital requirement in Poland is quite high (10.7% of income per capita)
- ✗ Higher corporate tax rate (19%) than other countries in Eastern Europe such as Lithuania (15%), Bulgaria (10%)



TOP LANGUAGES

Polish, German, English

32% Gender Diversity in Software Engineering Companies

TECH NUGGET

As per Bloomberg 2018 report, Poland is the 25th most innovative economy of the world. Its revenue has grown beyond 25% since the 2008 recession period.

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN POLAND

AUTOMOTIVE



SOFTWARE & INTERNET



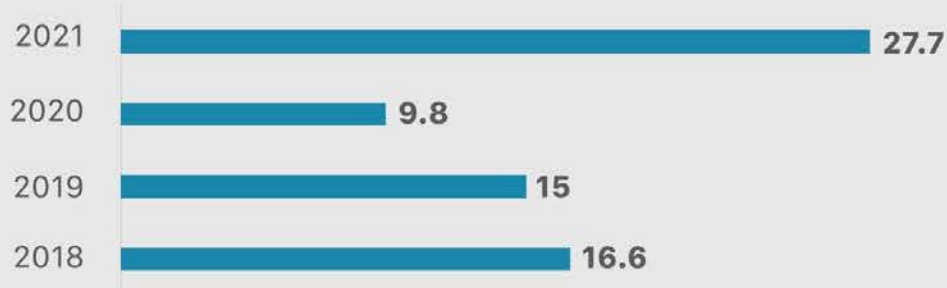
INDUSTRIAL



A quick glance into the impact of COVID-19 on Poland



FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS* (IN USD BN)



*VENTURE CAPITAL BASED

2020 WITNESSED HISTORIC 66% GROWTH IN INVESTMENTS MAINLY IN Q4

HEALTHTECH & FINTECH MOST ATTRACTIVE SECTORS POST PANDEMIC

USD 3.97 BN 'GREENFIELD FDI' IN 2021(30% INCREASE FROM 2020) PROJECTED TO GENERATE 18K JOBS

USD 1 BN INVESTMENT BY MICROSOFT ANNOUNCED AMIDST PANDEMIC FOR 'POLISH DIGITAL VALLEY' (CREATING 1.5 LAKH JOBS)

5%-58% RANGE OF REMOTE WORKING PRE AND POST COVID RESPECTIVELY

~80%+ EMPLOYEES PREFER HYBRID/REMOTE MODE OF WORKING POST PANDEMIC

Poland: Talent & Innovation Ecosystem

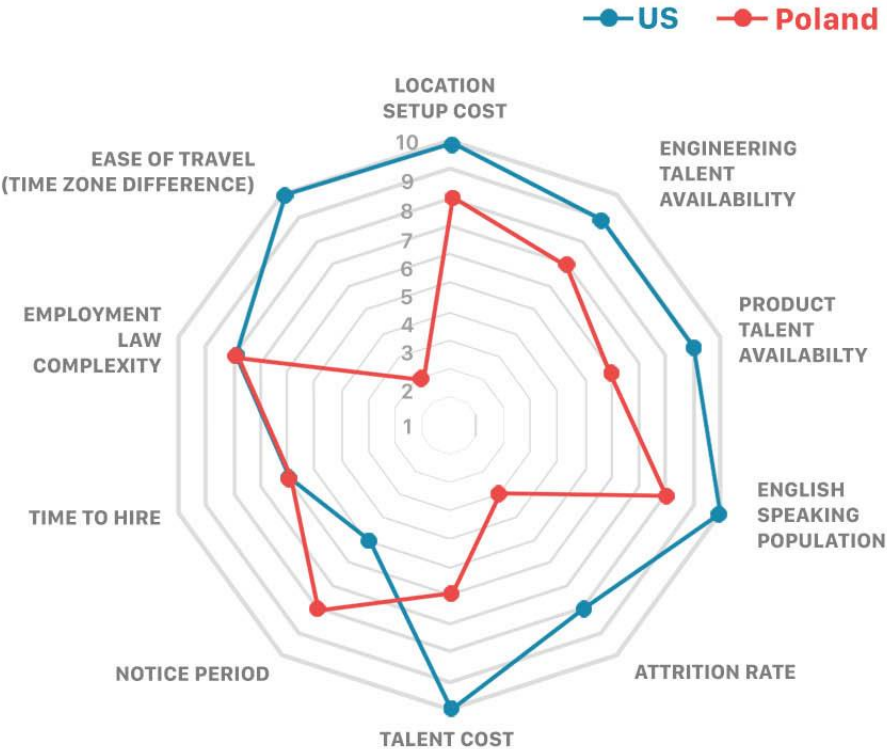


TALENT POOL ~170,000	SALARY GROWTH (YOY) 24.4%
ATTRITION RATE (ANNUAL) 20%	AVERAGE NOTICE PERIOD 2-12 WEEKS

INSIGHTS

- Developers of Poland are ranked the 3rd best by HackerRank (China is 1st, Russia is 2nd).
- Warsaw and Krakow are the top locations employing ~55% of the total technology talent pool in Poland.
- Almost 600 Centers of Excellence in Poland provide software development processes and IT support services, of these 35% of the centers handle processes in more than five foreign languages. Therefore, the talent in Poland is well-educated, highly skilled, and multi-lingual.
- Poland ranked as the 3rd best start-up hub in the globe by the World Bank.
- Start-ups in Poland are focused on tech, including Big Data (15%), Internet of Things (14%), analytics (13%) and developer's tools (9%).

COMPARATIVE LOCATION INDEX US & POLAND



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Poland: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN POLAND



IT AND TECH TALENT SPLIT ACROSS INDUSTRIES IN POLAND



- Global companies such as IBM, Nokia, Intel, Motorola, Citi, GE, Samsung, are some top companies in Poland which together employ over 16,000 engineers
- Sii, Luxoft, Intive, GlobalLogic and EPAM are some of the top service providers in Poland, together employing ~14000 people
- Amazon, TCL, Harman, and Graphcore have also setup their R&D centers in Poland.
- Harman's center in Poland works on developing advanced automotive solutions including the company's summit car audio platform, HARMAN's award-winning Ignite platform, HARMAN OTA software management and maps services. The company has also signed separate agreements with two of the top Universities of Poland - University of Lodz/ Faculty of Physics and Applied Informatics and Lodz University of Technology/Faculty of Electrical, Electronic, Computer and Control Engineering, to collaborate towards developing the finest IT talent in the country

Poland: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

Poland has 25 universities in top 350 EECA universities (4 in top 50). Almost 50% of STEM graduates in the CEE (Central & Eastern Europe) region are from Poland.

428 HEIs Higher Education Institutions

94K STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS EECA TOP 350 UNIVERSITIES**	
UNIVERSITY OF WARSAW	251	129	7	6
WARSAW UNIVERSITY OF TECHNOLOGY	251	222	14	
JAGIELLONIAN UNIVERSITY	501	400	6	5
AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY	551	462	52	

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

FACULTY OF MATHEMATICS, COMPUTER SCIENCE AND MECHANICS

UNIVERSITY OF WARSAW

RESEARCH FOCUS

Supercomputing calculations,
Computational complexity,
Distributed systems

RESEARCH CENTER

Interdisciplinary Centre for
Mathematical and Computational
Modelling

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE JAGIELLONIAN UNIVERSITY

RESEARCH FOCUS

Bioinformatics, Software Engineering,
3D Modelling, Artificial Intelligence,
ML, Analytical Computer Science

RESEARCH CENTER

Jagiellonian Center of Innovation

FACULTY OF MATHEMATICS AND INFORMATION SCIENCE WARSAW UNIVERSITY OF TECHNOLOGY

RESEARCH FOCUS

Geometrical modelling, parallel
calculations, neural networks,
Artificial Intelligence,
decision-making facilitation

RESEARCH CENTER

Center for Innovation and
Technology Transfer Management

WARSAW

KRAKOW

Poland: Start-up Ecosystem



zinnov

800

Technology start-ups

1

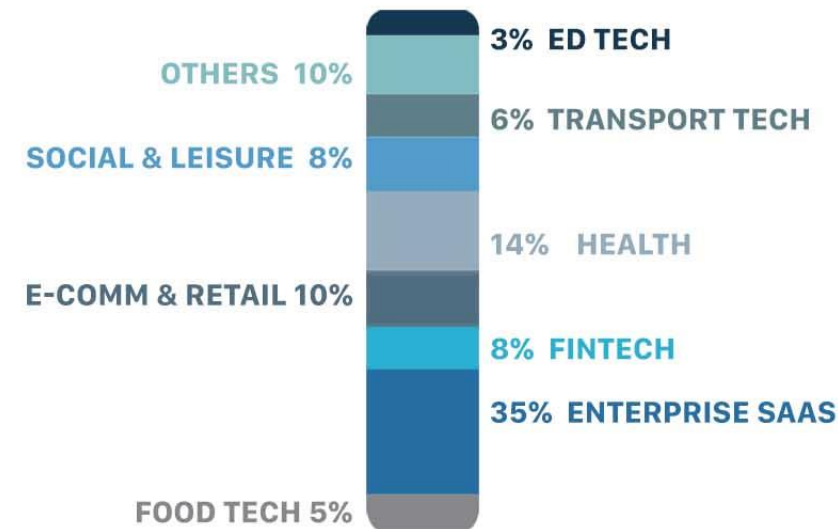
Number of Unicorns (s)

38.5%

of foreign investments in 2021 was from Belarus as part of Poland Business Harbour program (for supporting tech entrepreneurs)

ADVANCED TECH START-UPS IN POLAND 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



Booste - A Fintech firm which provides revenue-based financing to e-Commerce companies

FUNDING TILL DEC'21

USD 14.6 Mn



Formation.Fi - Combines cross-chain risk parity smart farming and decentralized finance

USD 3.3 Mn



Mindgram - A science-based platform with a mobile app for complete mental wellness

USD 1.9 Mn



Upmedic - A Medtech SaaS firm providing a web-based platform for medical documentation

USD 273 K


Poland: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (A)	100,000
EMPLOYEE EXPENSES:	
1. Pension (9.7% of gross pay)	9,700
2. Disability (1.5% of gross pay)	1,500
3. Sickness (2.4% of gross pay)	2,400
4. Health NFZ (7.7% of gross pay)	7,700
5. Income tax (6.6% of gross pay)	6,600
TOTAL EMPLOYEE CONTRIBUTION (1 + 2 + 3 + 4 + 5) (B)	27,900
EMPLOYEE NET SALARY (A - 1 - 2 - 3 - 4 - 5)	72,100
EMPLOYER CONTRIBUTIONS:	
6. Pension (9.7% of gross pay)	9,700
7. Disability (6.5% of gross pay)	6,500
8. Accident (1.8% of gross pay)	1,800
9. Labor Fund (2.4% of gross pay)	2,400
TOTAL EMPLOYER CONTRIBUTION (6 + 7 + 8 + 9) (C)	20,400
TOTAL EMPLOYMENT COST (A+C)	120,400

EMPLOYMENT TERMINATION LAW

HIGHLY EMPLOYEE FAVORING



HIGHLY EMPLOYER FAVORING

Severance pay depends on the duration of employment with the employer, therefore can range from a month to even 3 months pay.

Employers in Poland need to inform the trade union, which represents the employee, of the intention to terminate, including reasons for dismissal. The written notice needs to be given to the employee personally.



CANADA



Canada: Country Overview



COUNTRY

- ✓ Canada is 2nd only to Japan among G7 countries in terms of political stability
- ✓ Canada ranks 3rd in the G7 and 13th globally on the Corruption Perceptions Index 2021
- ✓ Canada is the most attractive OECD country for entrepreneurs

INFRASTRUCTURE & LABOR MARKET

- ✓ Canada has three of the world's 10 Most Livable Cities - Calgary(#5), Vancouver(#6), Toronto(#7)
- ✓ The saturation of commercial downtown office market and low vacancy rates in Toronto, Vancouver, Ottawa, Montreal is impacting a company's ability to attract talent with its captivating and amenity-rich office offerings within the city

TAXATION & GOVERNMENT REGULATIONS

- ✓ Canada's R&D tax credit program allows companies to deduct eligible expenditures and claim a 15% non-refundable tax credit
- ✓ The Canadian marginal effective tax rate (METR) now stands at 13.7 per cent, which is the lowest in the G7 and below the OECD average
- ✓ Canada has the soundest banking system among G7 countries and ranks 6th in the world
- ✓ Immigrant worker applications post employer approval can be accelerated to receive work permits within two weeks



TOP LANGUAGES

English, French

35% Gender Diversity in Software Engineering Companies

TECH NUGGET

Canada is a lucrative market for US Tech companies in terms of nearshoring and minimal time zone differences

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN CANADA

SOFTWARE & INTERNET



INDUSTRIAL



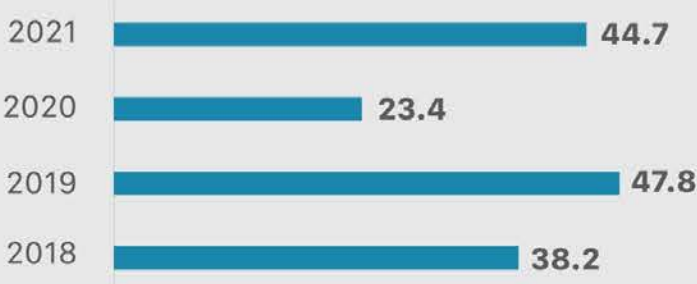
TELECOMMUNICATIONS



A quick glance into the impact of COVID-19 on Canada...



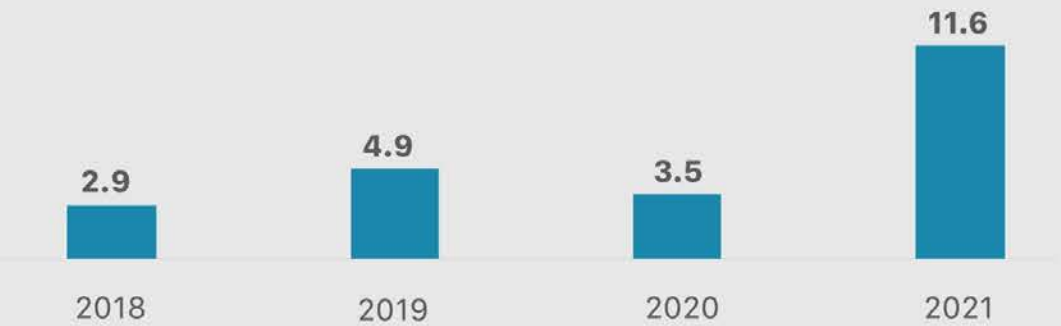
FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



72%
INVESTMENTS IN 2021 WERE
MEGA DEALS* (HIGHEST EVER)

HEALTHTECH & E-COMMERCE
MOST ATTRACTIVE SECTORS POST
PANDEMIC

ONLY 2% DECREASE ONLY IN
TERMS OF IT SPENDING
PROJECTED IN 2021 COMPARED TO
THE PRE PANDEMIC TIMES

2.5X INCREASED AI INVESTMENTS
(IN VALUE) PLANNED IN PAN
CANADA AI STRATEGY (FROM PRE
COVID)

~9-50%
RANGE OF REMOTE WORKING PRE
AND POST COVID RESPECTIVELY

75%+ EMPLOYEES PREFER A
HYBRID/REMOTE MODE OF WORKING
POST PANDEMIC

*DEAL VALUE OF CAD 50 MN+ i.e. USD 39 MN

Canada: Talent & Innovation Ecosystem

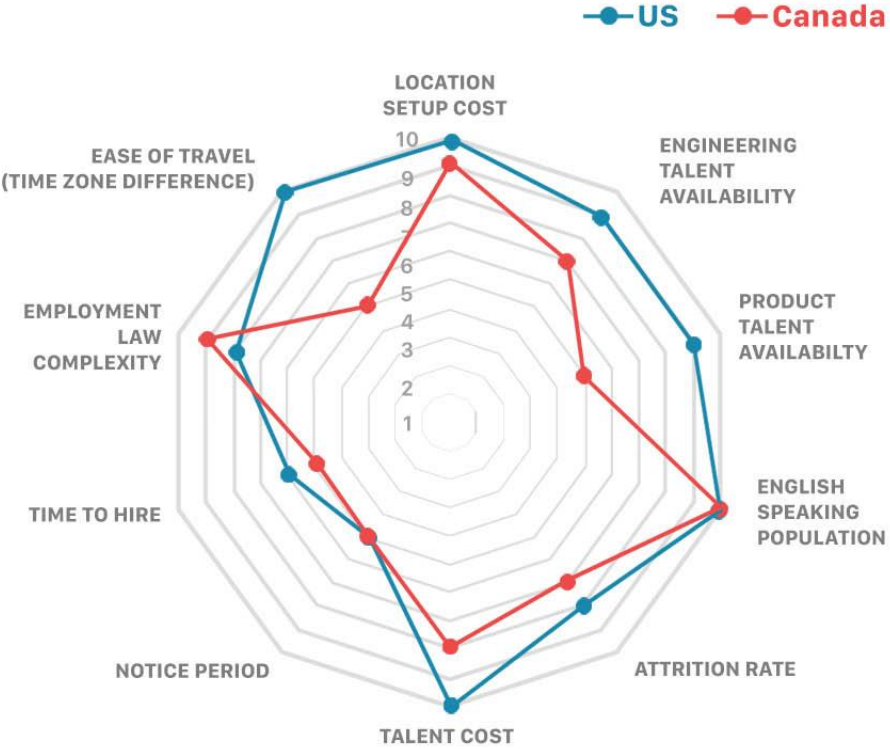


TALENT POOL ~500,000	SALARY GROWTH (YOY) 2.4%
ATTRITION RATE (ANNUAL) 20%	AVERAGE NOTICE PERIOD 1-12 WEEKS <small>(DEPENDS ON DURATION OF SERVICE)</small>

INSIGHTS

- Software companies in Canada benefit from a strong market growth; latest numbers show a 5.9% increase in revenues for Canadian software and computer industries.
- Canada is 3rd after US and Switzerland as per Global Entrepreneurship index 2018.
- Canada is now the 6th largest cyber security innovation hub in the world by venture capital deals (2016-2019) and has taken key steps to recognize the importance of cyber security.
- Canada continues to attract global talent and capital, with over 800 AI companies and some of the world's brightest minds in the field.
- Toronto, Vancouver, Montreal and Ottawa all rank in CBRE's top 20 tech talent markets in North America.
- Canada is 29th out of 176 countries as per ICT development index 2017, prepared by the International Telecommunication Union
- 40% of all Canadian R&D scientists work in the information and communication technologies (ICT) sector.

COMPARATIVE LOCATION INDEX US & CANADA



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Canada: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN CANADA



INSIGHTS

- **Google** plans to triple its workforce in Canada over next 3 years to as many as 5000 employees across the Toronto, Montreal, and Ontario region. Currently, it has around ~2500 employees
- **Uber** opened its new engineering hub in Toronto which is part of the company's investment of more than CAD 200 Mn over 5 years in Toronto, along with its R&D facility for self-driving vehicles
- **HSBC** has a Global Data & Innovation Lab in Toronto related to investment and development of AI & ML. HSBC signed up with the Canadian software company **Element AI** as an AI partner to co-develop new products for their clients and the broader financial services industry. The deal is one of the several planned AI partnerships in Canada
- **Ernst & Young Global Limited** setup a technology center in Vancouver. This is part of the firm's two-year commitment to invest USD 1 Bn in new technology solutions, client services, innovation, and its ecosystems
- **Mastercard** has setup a global intelligence and cyber centre in Vancouver which is an innovation hub for digital and cybersecurity, AI and IoT. Mastercard is investing \$510 Mn for the center, which came from the acquisition of NuData Security. The center will become one of six global technology centers for Mastercard and will develop cyber solutions for the Payments ecosystem globally

Canada: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

There are 26 universities featuring in top 1000 Universities of the world (3 in top 100) and 22 universities in top 600 universities for Computer Science (5 in top 100). Canadian universities have strong industry partnerships, such as University of Toronto and Fujitsu. Fujitsu launched the co-creation research lab in 2018 and the partnership has led to 10 patents, 30 joint research papers, and \$7.5 Mn in funding towards research in just 2 years.

100 HEIs

Higher Education Institutions

90K+

STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS WORLD UNIVERSITY RANKINGS**	
UNIVERSITY OF TORONTO	11	10	25	26
UNIVERSITY OF WATERLOO	23	24	166	149
UNIVERSITY OF BRITISH COLUMBIA		25	45	46
MCGILL UNIVERSITY	49	50-100	31	27

UNIVERSITY OF BRITISH COLUMBIA

RESEARCH FOCUS

Development of 5G Hubs with Rogers

INDUSTRY PARTNERSHIPS

ROGERS

MCGILL UNIVERSITY

RESEARCH FOCUS

Telecom data analysis using AI/ML technology

INDUSTRY PARTNERSHIPS

ERICSSON

UNIVERSITY OF WATERLOO

RESEARCH FOCUS

Distributed memory management for fast data processing

INDUSTRY PARTNERSHIPS

blink AI

UNIVERSITY OF TORONTO

RESEARCH FOCUS

Co-creation research laboratory on Quantum Computing, Machine Learning, and smart cities

INDUSTRY PARTNERSHIPS

FUJITSU

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

Canada: Start-up Ecosystem



5900+

Technology start-ups

16

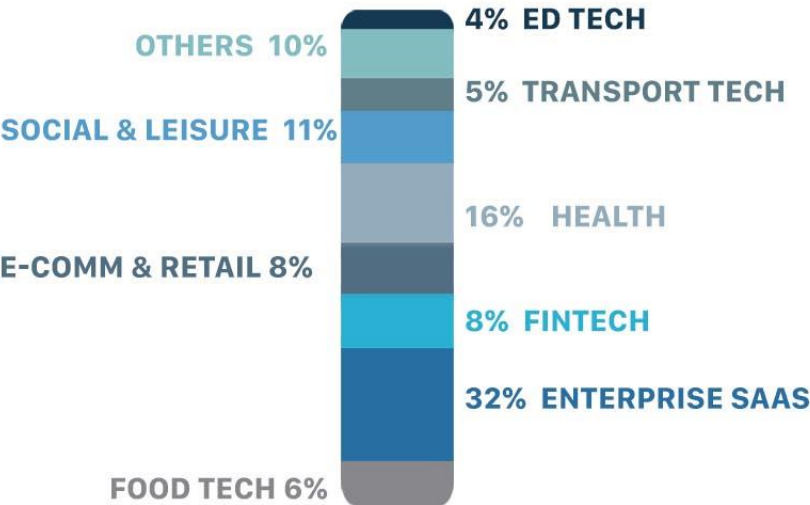
Number of Unicorns

72

Mega deals recorded
(Highest ever across the years was in 2021)

ADVANCED TECH START-UPS IN CANADA 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



Buf - Builds tools that enable companies to change the way they work with APIs throughout their lifecycle

FUNDING TILL DEC'21

USD 93.5 Mn



Wrk - Leverages automation using bots, APIs, RPA and people on an easy to use platform

USD 43 Mn



Gadget - Helps developers build apps faster

USD 8.5 Mn



GoodGood - Creates better local commerce, helping neighborhoods discover specialty treats and niche beverages

USD 5 Mn

Canada: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (A)	100,000
1. Canada Pension Plan (4.95% of gross pay)	4,950
2. Employment Insurance (2.12% of gross pay)	2,120
3. Health Tax (1.95% of gross pay)	1,950
4. Medical Insurance (1.56% of gross pay)	1,560
TOTAL EMPLOYMENT COST (A + 1 +2 + 3 + 4)	1,10,580

EMPLOYMENT TERMINATION LAW

HIGHLY
EMPLOYEE
FAVORING

NEUTRAL

HIGHLY
EMPLOYER
FAVORING

Severance pay depends on the duration of employment with the employer. **If employment is for less than a year, no severance to be paid by employer, else calculated at 2 days for each year if tenure is greater than a year.** However, in such cases, minimum entitlement is 5 days per year of employment.

Termination laws change based on territories such that depending on jurisdiction in some regions, no notice of termination is required if the employee has been dismissed for just cause.

Termination notification can either be given in writing or or verbal is also acceptable (termination without a reason).



PHILIPPINES

Philippines: Country Overview

COUNTRY

- ✓ Philippines is ranked 18th globally in the EP English Proficiency Rankings 2021 with a median age of 25.7 years
- ✗ Ranks 117th out of 180 countries as per Corruption Perception Index 2021

INFRASTRUCTURE & LABOR MARKET

- ✓ 296 IT Parks and Business process outsourcing centers across Philippines
- ✓ 'Build, Build, Build' program is the centerpiece program of the Duterte administration to revamp the infrastructure of Philippines
- ✓ Ranks 101st out of 176 countries as per ICT Development Index 2017 prepared by International Telecommunication Union

TAXATION & GOVERNMENT REGULATIONS

- ✓ Zero-contact policy" prevent government officials from interfering with business requests. "One-stop shop" pushes automation of permits and licenses. Both are aimed at promoting ease of doing business
- ✓ Launched "Project Repeal: The Philippine Red Tape Challenge" to remove regulations that are detrimental to the economy
- ✓ Recently passed a tax reform legislation that will reduce the corporate income tax from ASEAN's highest rate of 30 percent to 25 percent in 2020 and eventually to 20 percent by 2025

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN PHILIPPINES

SOFTWARE & INTERNET



SEMICONDUCTOR



BFSI



zinnoV



TOP LANGUAGES
Filipino, English

41% Gender Diversity in Software Engineering Companies

TECH NUGGET
The IT BPO sector is responsible for 60% contribution to GDP as more than 92% of Filipinos speak fluent English

A quick glance into the impact of COVID-19 on Philippines



zinnoV

FDI INVESTMENTS (IN USD BN)



GENERAL REOPENING OF GLOBAL ECONOMY & LOWER COVID CASES IN Q4 2021 LED TO INCREASED FDI

ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



5000% SURGE IN DIGITAL PAYMENTS DURING PANDEMIC IMPACTING FINTECH SECTOR

FINTECH & E-COMMERCE
MOST ATTRACTIVE SECTORS POST PANDEMIC

33% TECH INVESTMENTS BY SMALL & MEDIUM SIZE BUSINESSES IN AI/ANALYTICS & CX* SOLUTIONS (AS PER 2020)

NATIONAL AI STRATEGY
ROADMAP LAUNCHED TO POSITION THE COUNTRY AS AI COE IN MAY 2021

33% HIGHER AVG MONTHLY ATTRITION IN THE FIRST HALF OF 2021, COMPARED TO THE SECOND HALF

FASTEST GROWING GIG ECONOMY (6TH IN THE WORLD AS PER GLOBAL GIG ECONOMY INDEX REPORT)

* DIGITAL CUSTOMER EXPERIENCE

Philippines: Talent & Innovation Ecosystem



TALENT POOL

~131,000

SALARY GROWTH (YOY)

3.2%

ATTRITION RATE (ANNUAL)

23%

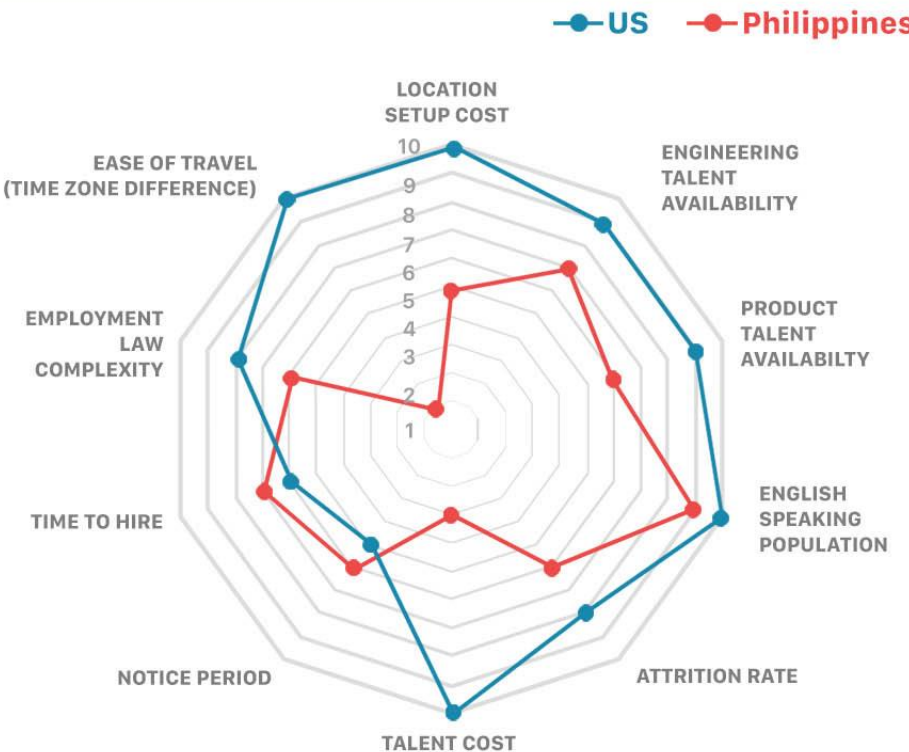
AVERAGE NOTICE PERIOD

4 WEEKS

INSIGHTS

- The median age of working population is 23 years that is younger than that of major European countries, USA, Thailand and Vietnam
- Philippines is rapidly becoming a FinTech, Blockchain, and Cryptocurrency hub
- The majority of tech talent based out of Philippines works in Professional Services as Customer Support Representative

COMPARATIVE LOCATION INDEX US & PHILIPPINES



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Philippines: Presence of Global Companies



zinno

SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN PHILIPPINES



INSIGHTS

- **Accenture & Concentrix** currently employ more than 130,000 Filipinos working out of combined 50 delivery centers across Philippines
- Cost-competitiveness, skilled IT workforce, western accent and culture similarities has attracted international firms such as **Google, Amazon, SAP, CSC** etc to establish centers in Philippines

Philippines: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

Philippines has 7 universities in the top 550 Asian universities (only 1 in top 100). Also, there is only 1 university featuring in the top 600 universities for Computer Science. As of 2016, only 53% of full-time faculty staff in HEI have postgraduate degrees.¹

500+ HEIs

Higher Education Institutions

86K

STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS ASIA TOP 550 UNIVERSITIES**	
UNIVERSITY OF PHILIPPINES	551	469	72	77
ATENEO DE MANILA UNIVERSITY	-	-	124	-
DE LA SALLE UNIVERSITY	-	-	156	160
UNIVERSITY OF SANTO TOMAS	-	-	179	177

DEPARTMENT OF INFORMATION SYSTEMS AND COMPUTER SCIENCE

ATENEO DE MANILA UNIVERSITY

RESEARCH FOCUS

Mobile Computing, Social Computing, Pedestrian and Traffic Computing, Management Information Systems

INDUSTRY PARTNERSHIPS

ERICSSON

RESEARCH CENTER

Ateneo Java Wireless Competency Center

INSTITUTE OF INFORMATION AND COMPUTING SCIENCES UNIVERSITY OF SANTO TOMAS

RESEARCH FOCUS

Data Science, Game Development, Network and Security, Web and Mobile App Development, Robotics

INDUSTRY PARTNERSHIPS

HUAWEI

RESEARCH CENTER

Thomas Aquinas Research Complex

COLLEGE OF COMPUTER STUDIES DE LA SALLE UNIVERSITY

RESEARCH FOCUS

Automation Research, AI/ML, Networking & Information Security, Game Development

INDUSTRY PARTNERSHIPS

accenture **SIEMENS**

RESEARCH CENTER

Advanced Research Institute for Informatics, Computing and Networking

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

Philippines: Start-up Ecosystem



zinnoV

350

Technology start-ups

2

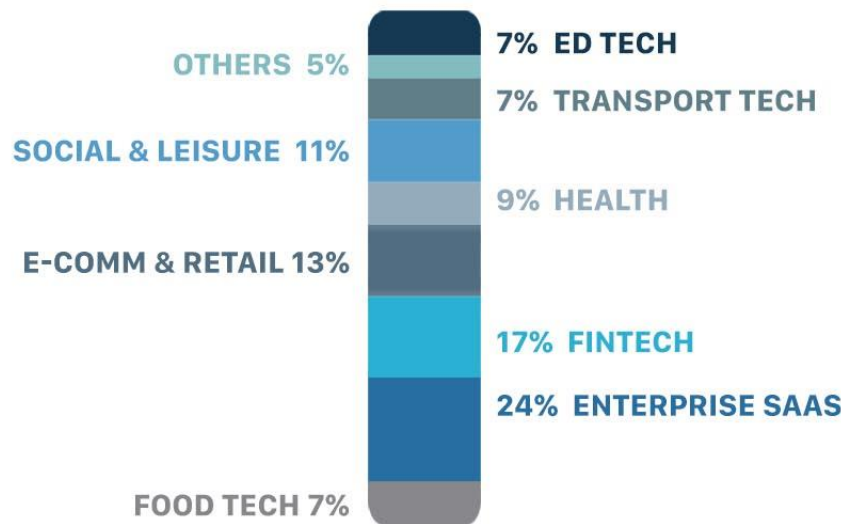
Number of Unicorns

93rd

in Top 100 Emerging Ecosystem Ranking by start-up Genome in 2021 (a drop of 63 ranks from 31 in 2019)

ADVANCED TECH START-UPS IN PHILIPPINES 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



plentina

Plentina - Creates alternative credit scores and an app that provides store credit financing to buy essentials

FUNDING TILL DEC'21

USD 5.1 Mn



AcadArena - Empowers gaming for student growth offering scholarships, tournaments, and play to earn opportunities

USD 3.7 Mn



Kraver's Canteen - Multi-brand cloud kitchen operator

USD 1.4 Mn

Prosperna

Prosperna - Simple and affordable e-Commerce software to empower SMEs

USD 555 K

Philippines: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (A)	100,000
EMPLOYEE EXPENSES:	
1. SSS contribution (3.7% of Gross pay)	3,700
2. Philhealth premium contribution (1.25% of Gross pay)	1,250
3. GSIS Contribution (9% of Gross pay)	9,000
TOTAL EMPLOYEE CONTRIBUTION (1 + 2 + 3) (B)	13,950
EMPLOYEE NET SALARY (A - B)	86,050
EMPLOYER CONTRIBUTIONS:	
4. SSS contribution (7.6% of Gross pay)	760
5. Philhealth premium contribution (1.25% of Gross pay)	1,250
6. GSIS Contribution (12% of Gross pay)	12,000
TOTAL EMPLOYER CONTRIBUTION (4 + 5 + 6) (C)	14,010
TOTAL EMPLOYMENT COST (A+C)	114,010

EMPLOYMENT TERMINATION LAW



Severance pay depends on the tenure at the organization. Minimum is one month.

Termination in Philippines is as per Philippines' Labor Code, it is more beneficial for the employees as it is a complex process as per the law to terminate an employee.

Employers in Philippines need to justify the reason for termination in writing whether it's a **Just Cause** or **Authorized Cause**.



CHINA

China: Country Overview



COUNTRY

- ✓ As the world's second-largest economy, with a large consumer base and integrated supply chains, China is the top global Foreign Direct Investment (FDI) destination
- ✓ China is a global technology superpower with "Made in China 2025" plans to become most the dominant global Technology Manufacturing hub
- ✓ Ranks 66th out of 180 countries as per Corruption Perception Index 2021
- ✓ Approx. 400 Mn people in China are proficient in English, of which approx. 10 Mn (less than 3%) are fluent in the language

INFRASTRUCTURE & LABOR MARKET

- ✓ China scores 8/8 on the reliability of Infrastructure Index by World Banks

TAXATION & GOVERNMENT REGULATIONS

- ✓ A Whole Foreign-Owned Enterprise (WFOE) in China is regarded as the most effective business structure apart from JVs and Partnerships as it allows complete ownership of company shares to the foreign investor. Also, it provides absolute protection to trademarks and patents which comply with the international laws
- ✓ China's Corporate Income tax is at 25%. However, it provides tax-exemptions for companies operating from the Special Economic zones
- ✓ Hong Kong offers the lowest corporate tax rate in Asia Pacific (8.25% for first HKD 2 million profits; 16.5% on remainder of profits)



TOP LANGUAGES

Mandarin, English

37% Gender Diversity in Software Engineering Companies

TECH NUGGET

With over 583 Mn fintech users, China has the world's highest mobile payment penetration

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN CHINA

SOFTWARE & INTERNET



INDUSTRIAL



AUTOMOTIVE

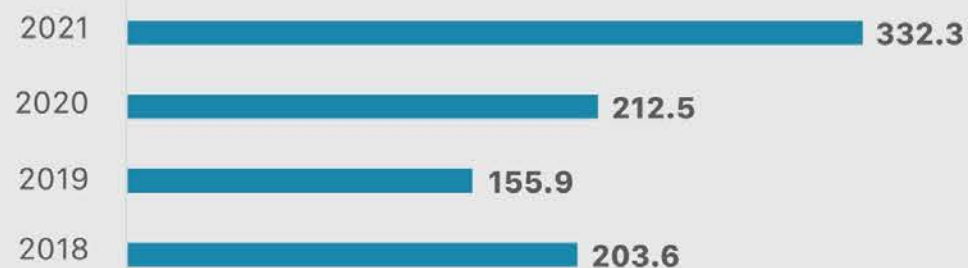


A quick glance into the impact of COVID-19 on China



zinnov

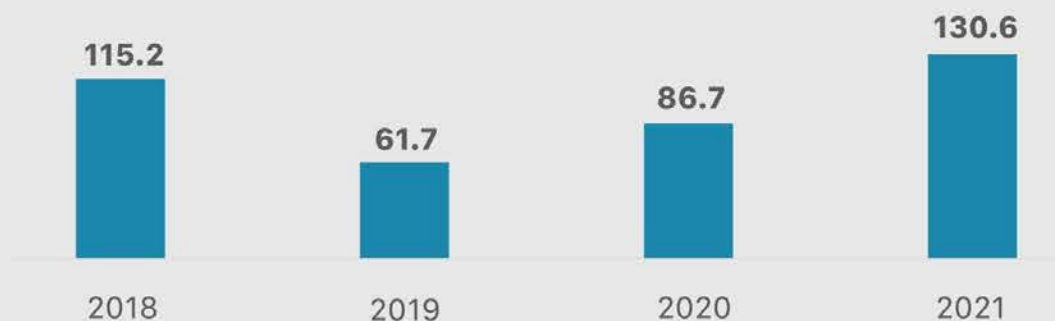
FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



*MOSTLY FOCUSED ON VENTURE CAPITAL

HIGHEST MARKET SHARE OF VC FUNDING IN APAC (70% BY VALUE) WITH YOY DEAL ACTIVITIES UP BY ~50% DESPITE PANDEMIC

HEALTHTECH & E-COMMERCE MOST ATTRACTIVE SECTORS POST PANDEMIC

INVESTMENT SHIFTS FROM CONSUMER INTERNET PLATFORMS TO CONTINUE AS PART OF DIVERSIFYING TECH ECOSYSTEM

73% INCREASE IN AI INVESTMENTS FROM 2019 TO 2020

20.6-73% RANGE OF REMOTE WORKING PRE AND POST COVID RESPECTIVELY

72%+ EMPLOYEES PREFER A HYBRID MODEL OF WORKING POST PANDEMIC

China: Talent & Innovation Ecosystem

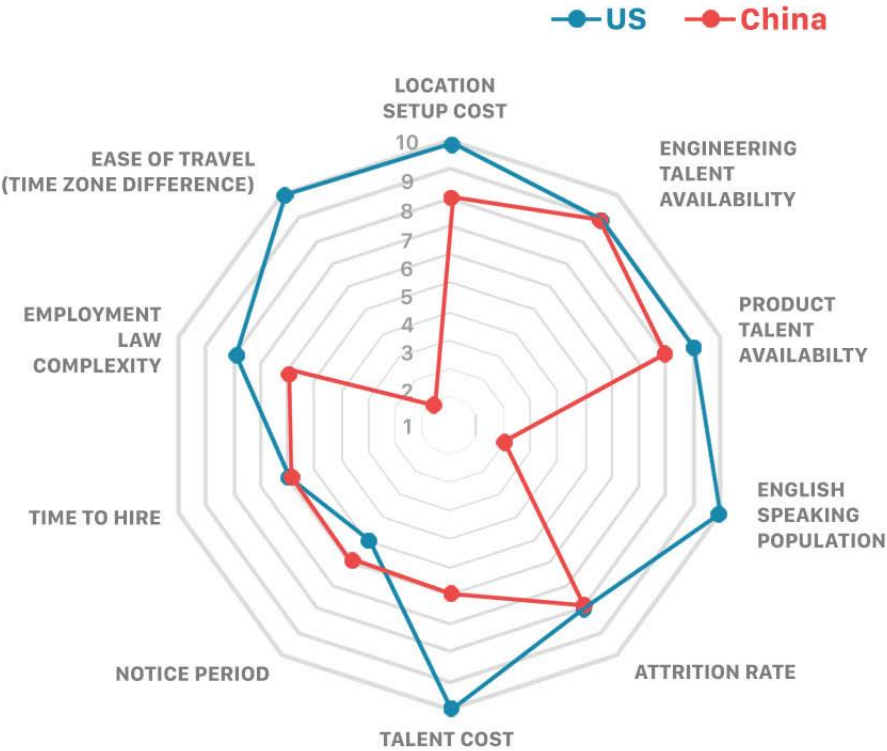


TALENT POOL ~3,200,000	SALARY GROWTH (YOY) 27.5%
ATTRITION RATE (ANNUAL) 30%	AVERAGE NOTICE PERIOD 4 WEEKS

INSIGHTS

- Beijing and Shanghai collectively employ ~37% of the total SDE talent of China.
- Attributes to attract top Chinese talent:
 - Higher salary
 - Accelerated Career Growth
 - Acceptance of resumes in Chinese
- Key initiatives have been undertaken such as Project 211, which aims to bring 100 Chinese universities up to a world-class standard, and Project 985, which aims to create **C9 league**, which has ambitions of becoming something like the US Ivy League.
- Zhangjiang Hi-tech Park in **Pudong** (Shanghai) has more than 400 research and development centers with around 50K researchers.

COMPARATIVE LOCATION INDEX US & CHINA



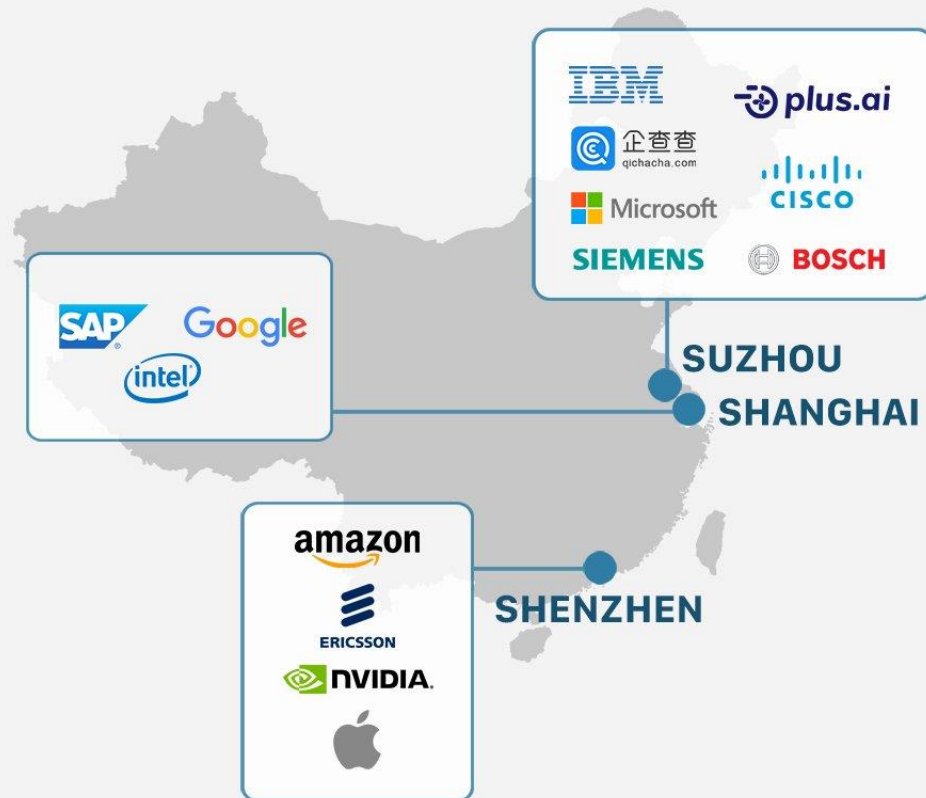
A lower score in the spider chart implies a lower value for the specified parameter and vice versa

China: Presence of Global Companies



zinnoV

SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN CHINA



INSIGHTS

- In China, **Intel** has two R&D institutions, Intel China Research Institute and Intel Asia Pacific R&D Center, working in the fields of Artificial Intelligence, 5G, and autonomous driving
- Global Tech giants such as **Microsoft, Bosch, Amazon, Intel, Siemens** have Research and Development teams in China working on technologies such as AI/ML, Cloud, Quantum Computing, IoT, Electric Mobility and so on. These companies together employ more than 12000 employees in China
- **Samsung** has its R&D centers in Beijing and Nanjing working on Software development for Smart Phones, TVs, Refrigerators, other electronic products, AI, and 4G/5G/next generation telecommunications - from speech interaction and computer vision to 3GPP standardization
- The **Bosch** Shanghai center works on a wide range of topics including electric mobility, fuel cells, Internet of Things, Industry 4.0, smart manufacturing, computer vision, and power electronics

China: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

China has one of the strongest education systems in Asia, with 118 universities in top 550 Asia university (24 in top 100). There 33 universities in top 600 university (7 in top 100) for Computer Science.

2663 HEIs

Higher Education Institutions

4.7Mn

STEM graduates per year

SCHOOL OF ELECTRONICS ENGINEERING & COMPUTER SCIENCE PEKING UNIVERSITY

RESEARCH FOCUS

Computer architecture, computer applications, computer software and theory

INDUSTRY PARTNERSHIPS



RESEARCH CENTER

National Engineering Research Center for Software Engineering

SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY UNIVERSITY OF SCIENCE AND TECHNOLOGY OF CHINA

RESEARCH FOCUS

High Performance Computing, Intelligent Science and Technology, Network and Security Computing

INDUSTRY PARTNERSHIPS



RESEARCH CENTER

National High Performance Computing Center (NHPCC)

SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY TSINGHUA UNIVERSITY

RESEARCH CENTER

Research Institute of Information Technology

INDUSTRY PARTNERSHIPS



BEIJING

HEFEI

SHANGHAI

SCHOOL OF ELECTRONIC INFORMATION AND ELECTRICAL ENGINEERING SHANGHAI JIAO TONG UNIVERSITY

RESEARCH FOCUS

Cyberspace Security, Advanced Computer Architecture, and Chip Technology

INDUSTRY PARTNERSHIPS



RESEARCH CENTER

National Engineering Laboratory for Information Content Analysis Technology

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS ASIA TOP 550 UNIVERSITIES**	
TSINGHUA UNIVERSITY	13	21	4	5
PEKING UNIVERSITY	20	29	5	2
SHANGHAI JIAO TONG UNIVERSITY	29	46	17	10
UNIVERSITY OF SCIENCE & TECHNOLOGY OF CHINA	82		-	

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

China: Start-up Ecosystem



18500

Technology start-ups

301

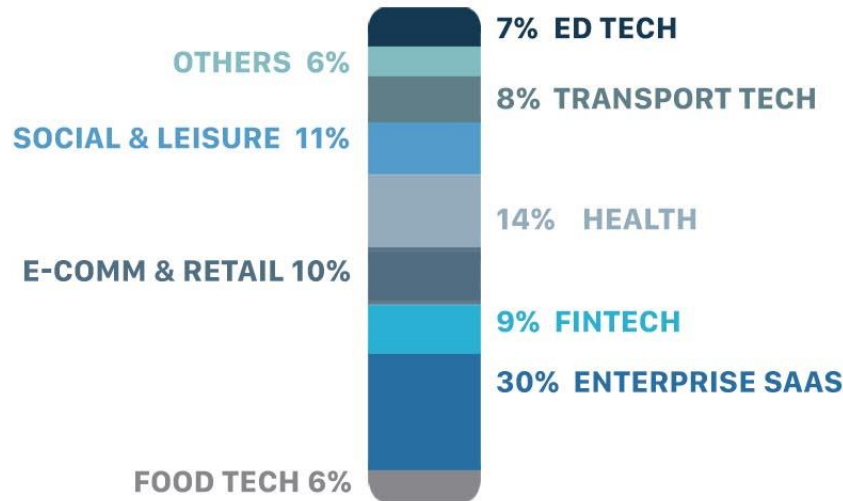
Number of Unicorns

40

Cities in China ranked in Top 1000 cities as per Global start-up Ecosystem Index n 2021

ADVANCED TECH START-UPS IN CHINA 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



Fiture - A smart household fitness equipment brand

FUNDING TILL DEC'21

USD 392 Mn



SmartMore - Works with Intelligent Manufacturing technology creating integrated hardware and software products

USD 300 Mn



Qcraft - Automobile start-up company developing AV simulation solutions to deal with traffic scenarios

USD 124 Mn



Bota - A Biotechnology firm with a vision to program systems for clean and efficient **bio-manufacturing**

USD 137 Mn


China: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (IN CONTRACT) (A)	100,000
EMPLOYER CONTRIBUTIONS:	
1. Pension (19% of gross pay)	19,000
2. Unemployment (0.80% of gross pay)	800
3. Work Related (0.20% of gross pay)	200
4. Maternity (0.80% of gross pay)	800
5. Medical (10% of gross pay)	10,000
6. Housing Fund (12% of gross pay)	12,000
TOTAL EMPLOYEE CONTRIBUTION (1 + 2 + 3 + 4 + 5 + 6) (B)	42,800
TOTAL COMPANY COST (A+B)	142,800
EMPLOYEE EXPENSES:	
7. Pension (8% of gross pay)	8,000
8. Unemployment (0.50% of gross pay)	500
9. Medical (2% of gross pay)	2,000
10. Housing Fund (7% of gross pay)	7,000
EMPLOYEE NET SALARY (A - 7 - 8 - 9 - 10)	82,500

EMPLOYMENT TERMINATION LAW

HIGHLY
EMPLOYEE
FAVORING



HIGHLY
EMPLOYER
FAVORING

- Severance pay depends on the duration of employment with the employer and shall be paid at the rate of one month's salary for every full year of service.
- For a period of service of less than six months, a worker shall be paid half a month's salary as severance pay.
- An employer may terminate an employment contract by giving the employee and labour union 30 days' prior written notice or giving them one month's salary in lieu of notice.
- Termination laws change based on province.
- Employee's unsatisfactory performance can be used as a reason to terminate only if, even after employee had undergone training or was transferred to a different position within the company yet, his performance was still unsatisfactory.

INSIGHT

Employees in China receive an additional 13th month salary in addition to the usual salary per annum.



INDIA

India: Country Overview



COUNTRY

- ✓ India's economy is projected to grow at 6.7% in 2022, the fastest in the world during the year
- ✗ Ranks 85th out of 180 countries as per Corruption Perception Index 2021

INFRASTRUCTURE & LABOR MARKET

- ✓ By 2025, 69 cities in India will have a population of over one million each. This is going to translate into a greater need for businesses to support livelihoods
- ✓ India is among the top three countries to produce maximum number of STEM graduates every year
- ✓ India is the second highest English-speaking country in the world with a median age of 28 years
- ✓ The Indian Government plans to invest USD 1.5 Tn to develop infrastructure of Tier-II* cities

TAXATION & GOVERNMENT REGULATIONS

- ✓ Start-ups in India are eligible for getting 100% tax rebate on profit for a period of three years in a block of seven years provided that annual turnover does not exceed Rs 25 crores in any financial year
- ✓ Corporate tax has been cut to 25% favoring more investment and expansion from foreign companies



TOP LANGUAGES
English, Hindi

26% Gender Diversity in Software Engineering Companies

TECH NUGGET
India has the cheapest tariff for Internet data (\$ 0.26/GB) compared to the world average of USD 8/GB

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN INDIA

SOFTWARE & INTERNET



INDUSTRIAL



AUTOMOTIVE



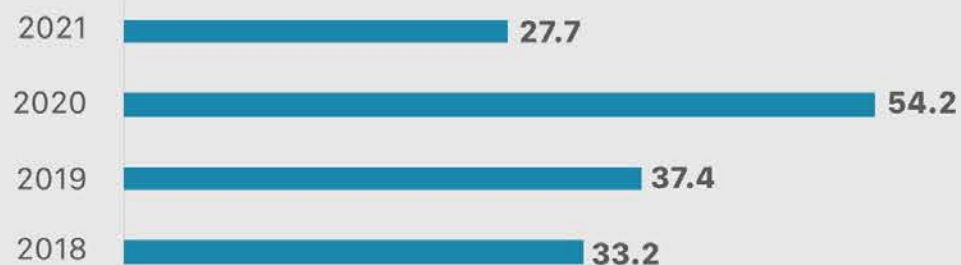
*Tier II defined as a city with a population ranging from 2 million to 5 million inhabitants

A quick glance into the impact of COVID-19 on India



zinnoV

FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



*EXCLUDING ~USD 20 BN SUPPOSEDLY RAISED BY JIO PLATFORMS

HIGHEST EVER FUNDING RECEIVED BY INDIAN START-UPS WAS IN 2021

FINTECH, EDTECH MOST ATTRACTIVE SECTORS POST PANDEMIC

HIGHER FDI IN 2020 DUE TO ACQUISITIONS IN ICT BOOSTED BY THE PANDEMIC

22% INCREASE IN AI MARKET SIZE IN 2021 COMPARED TO 2020

USD 455 BN MARKET SIZE BY 2024 AND **350 MN** JOBS BY 2025 PROJECTED IN THE GIG SECTOR

65%+ EMPLOYEES PREFER WORKING FROM OFFICE/IN A HYBRID MODEL POST COVID

India: Talent & Innovation Ecosystem

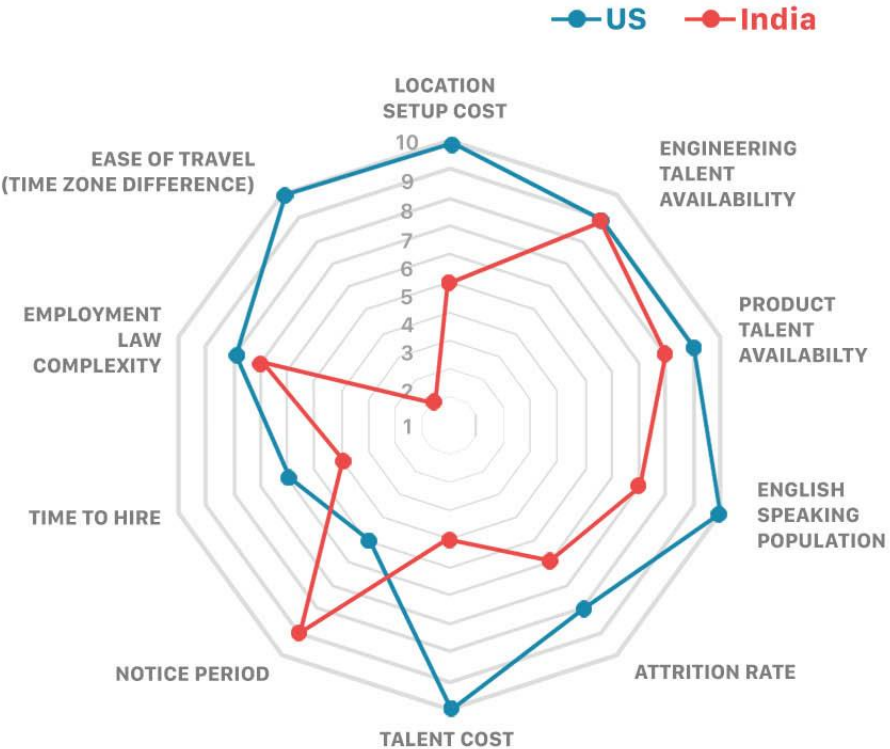


TALENT POOL ~2,600,000	SALARY GROWTH (YOY) 25.8%
ATTRITION RATE (ANNUAL) 18.1%	AVERAGE NOTICE PERIOD 8-12 WEEKS

INSIGHTS

- India has the 2nd highest talent pool after China, but has a better English-speaking population than China.
- Bangalore and Hyderabad cumulatively have 70% of Indian tech talent. They are also the fastest growing AI talent ecosystems in India.
- AI/ML, IoT, Data Analytics, and Cloud Computing are key digital focus areas for GCoEs in India.
- India's start-up ecosystem received the largest VC funding in 2021. It attracted over USD 42Bn across 1583 deals.
- Emerging Tier-II locations like Coimbatore and Vadodara offer cost optimization of upto 60% compared to Tier-I cities for certain job roles, making them ideal for building small teams.

COMPARATIVE LOCATION INDEX US & INDIA



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

India: New Age Skillset Talent Analysis



zinnoV

100K+

GCoE Talent Pool with New Age Tech Skills

1.5Mn

Fresh Graduates every year from colleges

\$40K

Fully Loaded Average FTE Cost at Global Centers

18.1%

Annual voluntary attrition in GCoEs

TALENT FOOTPRINT AT GCoEs IN INDIA

~35K
ANALYTICS

~20K
BIG DATA

~10K
MACHINE
LEARNING

~50K
MOBILE

~21K
UI / UX

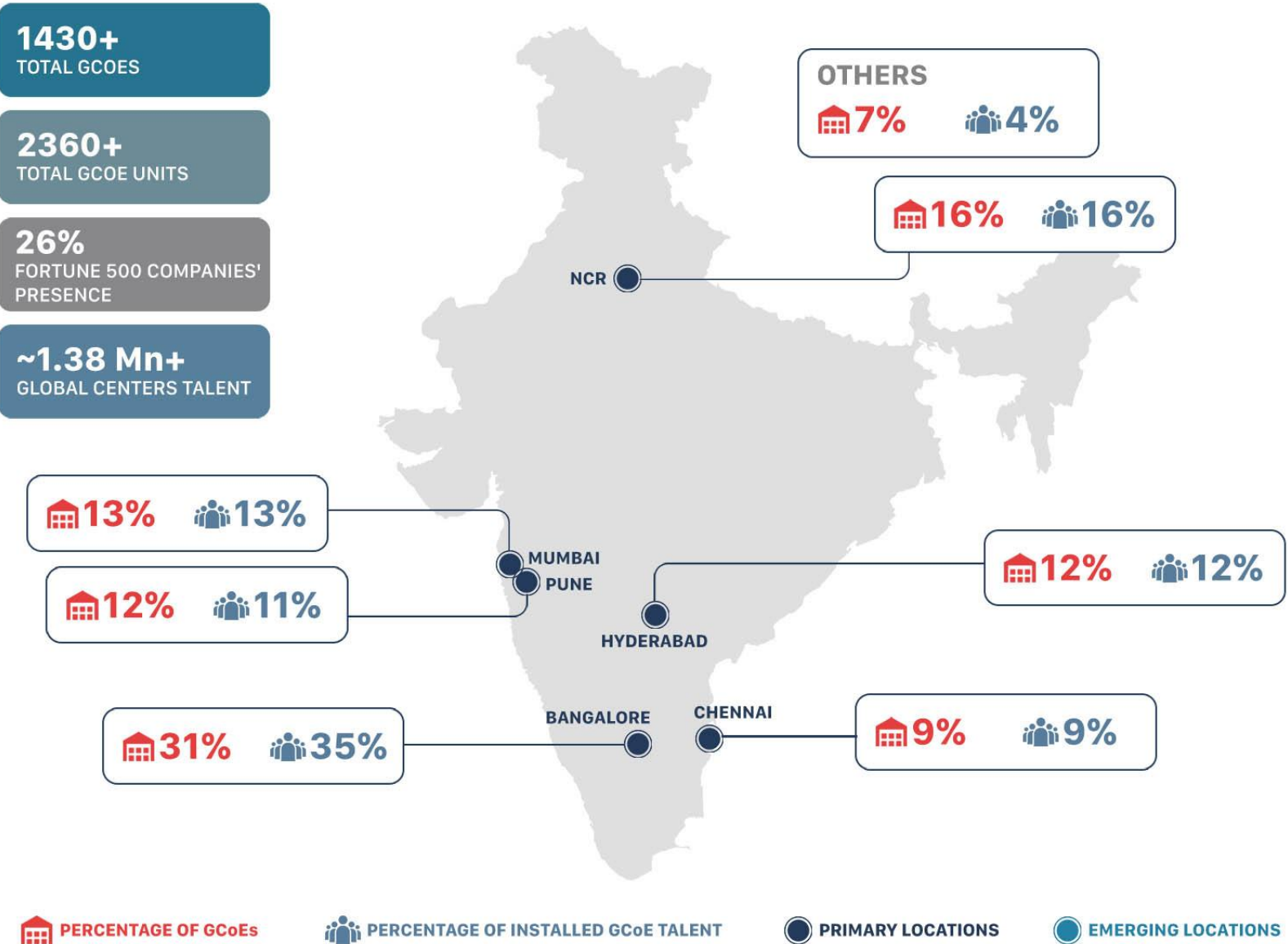
~20K
SECURITY

~25K
IoT

~50K
AUTOMATION/
RPA

~4K
ROBOTICS
(HW)

India: Presence of Global Companies – Tier-I cities



KEY INSIGHTS

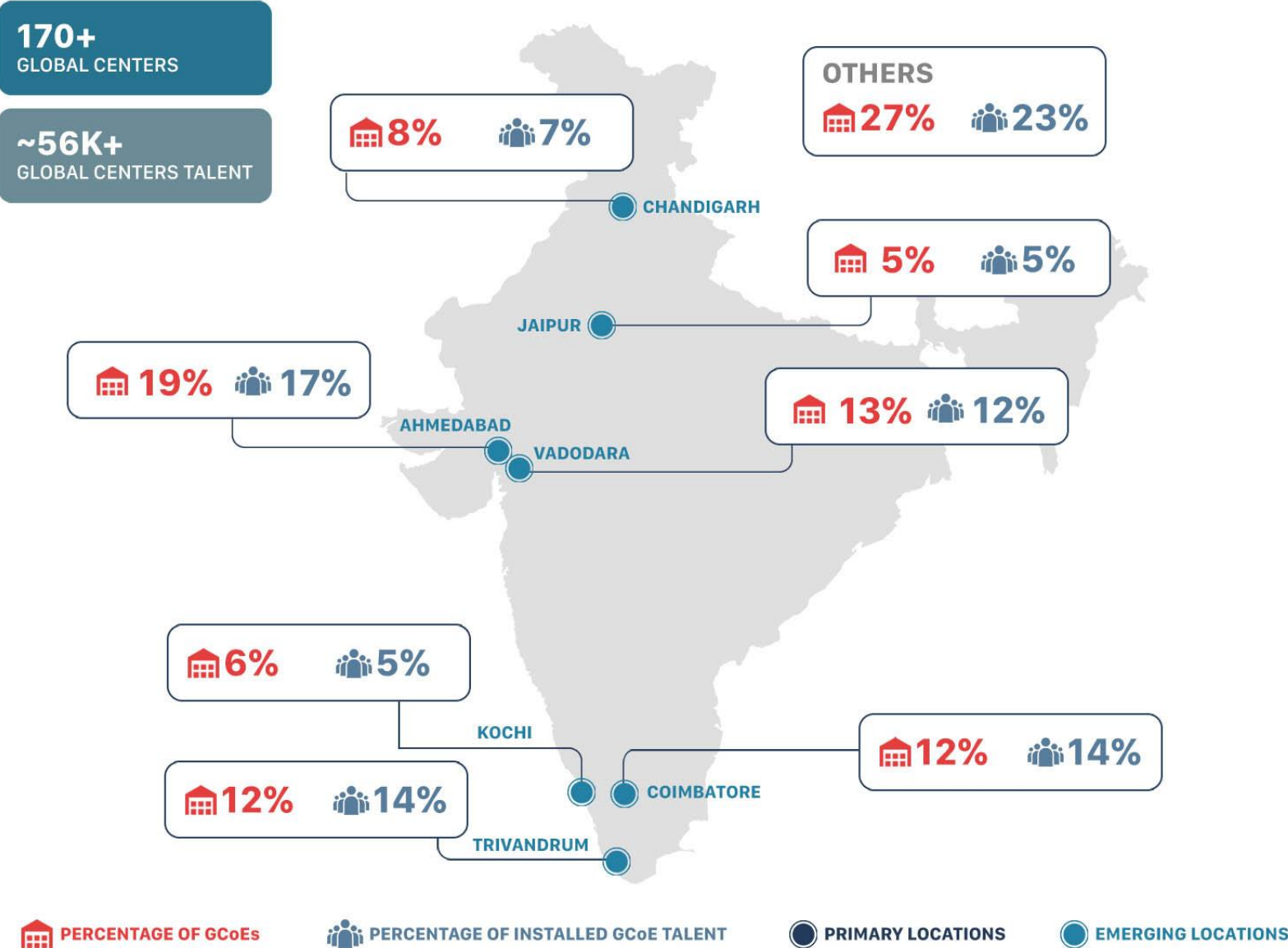
Talent availability, Industry ecosystem, and digital skills have maintained Bengaluru as the most attractive hub for Global centers' talent in India

Hyderabad is now attracting talent for specialized centers as Data Centers and Analytics COEs are on the rise

The NCR region is transitioning from being meant for the back-office work into a hub for the R&D talent landscape

Mumbai traditionally has been a hub for BFSI companies. However, recently it has started to host a number of GCoEs from fintech space.

India: Presence of Global Companies – Tier-II cities



KEY INSIGHTS

The Smart Cities initiatives by the government has attracted setting up of new GCCs

Tier-II cities offer attractive value proposition for cost savings

The talent pool in Tier-II cities is growing as a result of setting up of new GCOEs and increase in the number of higher education institutes

Work portfolio of GCoEs in India



VERTICAL	ER&D	IT	F&A	PROCUREMENT & LOGISTICS	SALES & MARKETING	TECHNICAL SUPPORT	KNOWLEDGE-BASED SERVICES	OTHERS
SOFTWARE	HIGH	MEDIUM	HIGH	LOW	LOW	HIGH	MEDIUM	LOW
AUTOMOTIVE	HIGH	MEDIUM	HIGH	HIGH	LOW	LOW	MEDIUM	LOW
PHARMACEUTICAL	HIGH	MEDIUM	HIGH	LOW	MEDIUM	LOW	MEDIUM	MEDIUM
BFSI	LOW	HIGH	HIGH	LOW	LOW	MEDIUM	MEDIUM	LOW
RETAIL	MEDIUM	HIGH	MEDIUM	MEDIUM	MEDIUM	LOW	HIGH	LOW
INDUSTRIAL	HIGH	LOW	HIGH	MEDIUM	LOW	MEDIUM	LOW	LOW

HIGH MEDIUM LOW

KEY INSIGHTS

Media & Entertainment, Chemical and Materials, and Fintech are slowly increasing their presence in Mumbai

Bengaluru has the highest share of GCoE talent across verticals with the highest concentration in Software and Internet, Telecom, and Semiconductor verticals

Chemical & Material, Media & Entertainment, BFSI have a high presence in NCR

Pune is a hub for Automotive and Industrial GCoEs. However, the presence of Software and Internet GCoEs has also been increasing consistently

India: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

India's higher education system was ranked 26th in the world in the QS Higher education system Strength Rankings 2018. India has the 2nd strongest education system in Asia with 98 of top 550 Asian universities. There are 14 more Indian universities featuring in the top 600 Universities in Computer Science ranking. There is a strong focus around AI/ML.

3,400+ HEIs
Higher Education Institutions

1.5 Mn
STEM Graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS ASIA TOP 550 UNIVERSITIES**	
IIT BOMBAY	67	63	34	42
IIT DELHI	70	73	43	45
IIT MADRAS	114	102	50	54
IISc BANGALORE	151	117	51	56

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

AI RESEARCH LAB IIT BOMBAY

RESEARCH FOCUS

AI Applications, AI Agents, NLP, ML

INDUSTRY PARTNERSHIPS

accenture > NEC IBM

DOCTORATE IN RELEVANT STREAMS – PURSUING

815

MACHINE AND LANGUAGE LEARNING LAB IISc BENGALURU

RESEARCH FOCUS

Graph Theory, Image Processing,
NLP, Fiber Optics, Mathematical
Finance, Mechatronics

INDUSTRY PARTNERSHIPS

accenture > BOSCH ERICSSON NVIDIA

START-UP INCUBATION

Lab2Market

DOCTORATE IN RELEVANT STREAMS – PURSUING*

712

COE-AI IIT DELHI

RESEARCH FOCUS

Text and image comprehension,
knowledge representation and
reasoning

INDUSTRY PARTNERSHIPS

Google IBM Microsoft

DOCTORATE IN RELEVANT STREAMS – PURSUING

800

ROBERT BOSCH CENTRE FOR DATA SCIENCE AND AI IIT MADRAS

RESEARCH FOCUS

Deep learning, Reinforcement
learning, Network analytics,
Interpretable Machine Learning.

INDUSTRY PARTNERSHIPS

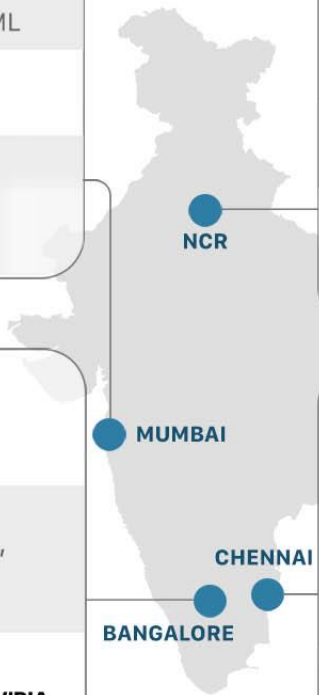
BOSCH

START-UP INCUBATION

DocsApp

DOCTORATE IN RELEVANT STREAMS – PURSUING

536



India: Start-up Ecosystem



zinno

11,500+

Technology start-ups

70

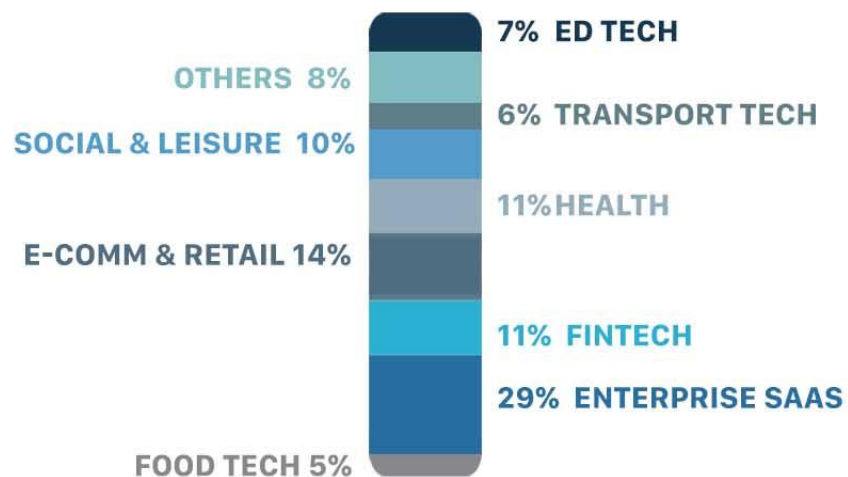
Number of Unicorns

1.1x

Record Increase in unicorns in 2021 compared to 2020

ADVANCED TECH START-UPS IN INDIA 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



Mensa Brands - Investment firm that partners with entrepreneurs to build digital brands and scale them

FUNDING TILL DEC'21

\$35.3 K



CityMall - Community commerce platform targeted at new internet users in Tier-II, Tier-III cities and villages in India

\$2.34 Mn



Zolve - Fintech firm that offers fair access to global financial products

\$823.02 K



FloBiz - India's first neo-business mobile billing and inventory management app for small and medium

\$37 Mn

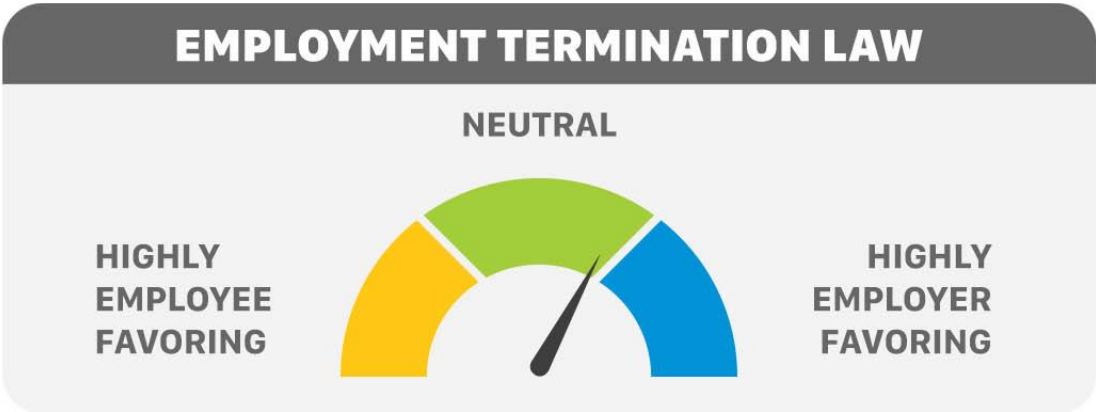
India: Illustrative Compensation Structure



TOTAL GUARANTEED CASH (TGC)		\$ 100,000
Basic	45%	\$ 45,000
Cash Allowances	55%	\$ 55,000
Retirals (as a % of Basic)		\$ 7,565
Provident Fund	12%	\$ 5,400
Gratuity	4.8%	\$ 2,165
LTI (Long Term Incentives)(as a % of TGC)		\$ 8,000
Bonus	4%	\$ 4,000
RSUs (Restricted Stock Unit)	4%	\$ 4,000
Payroll Costs (TGC+Retirals+LTI)	88%	\$ 115,565
Total CTC (TGC + Retirals + Bonus)		\$ 115,565
Discretionary spend (as a % of Total People cost)	12%	\$ 15,759
Total Cost to Employer (CTC+ Discretionary spend)		\$ 131,323

The TGC section is divided between Basic and Cash Allowance. According to New Wage Code of FY 22-23 Basic to Cash Allowance percentage breakup ratio will be 50:50.

As part of LTI, companies can give either Bonus(4-15%) or a combination of Bonus and RSUs. Additionally, companies can give fixed amount in Bonus instead of a percentage of the TGC.



S. NO.	SALARY COMPONENTS	NICE TO HAVE	MUST HAVE	MANDATORY
1	BASIC			Y
2	CASH ALLOWANCES			
2.a	House Rent Allowance (max 40% of basic salary)			Y
2.b	Telephone & internet Reimbursement	Y		
2.c	Leave Travel Allowance		Y	
2.d	Conveyance Allowance		Y	
2.e	Children Education Allowance	Y		
3	PROVIDENT FUND			Y
4	GRATUITY			Y
5	VARIABLE PAY (LTI)		Y	
6	BENEFITS (DISCRETIONARY SPEND)			
6.a	Food		Y	
6.b	Bus Pass, Parking		Y	
6.c	Vehicle, housing and personal loans	Y		
6.d	Medical insurance (Employee)			Y
6.e	Medical insurance (Employee Family plus coverage for dependent Parents)	Y		



MEXICO



Mexico: Country Overview



COUNTRY

- ✓ Mexico has the 15th largest economy in the world
- ✗ Slow average economic growth between 1980-2020 and GDP growth estimations of 2% till 2025
- ✗ Ranks 124th out of 180 countries as per Corruption Perception Index 2021

INFRASTRUCTURE & LABOR MARKET

- ✓ Under the USMCA deal 2020, Mexico has agreed to increase worker protection. The laws will also help Mexican workforce to unionize easily
- ✗ Mexico ranks 87th out of 176 countries as per ICT Development Index 2017

TAXATION & GOVERNMENT REGULATIONS

- ✓ Mexico passed a Fintech Law, the first of its kind in Latin America, in March 2018, that is aimed at providing Fintech companies licenses to operate as financial institutions
- ✓ The USMCA deal of 2020 will boost businesses in some sectors such as Automotive
- ✓ Benefits of SEZ:
 - Income tax for the first 10 years is exempt. A discount of 50% on income tax is applicable for the next five years
 - 0% value-added tax (VAT) for providing service to the investor and acquiring goods to use in SEZ



TOP LANGUAGES

English, Spanish, French

28% Gender Diversity in Software Engineering Companies

TECH NUGGET

Setting up large engineering teams in Mexico in comparison to US provides over 60% cost savings for global companies

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN MEXICO

AUTOMOTIVE



FMCG



INDUSTRIAL

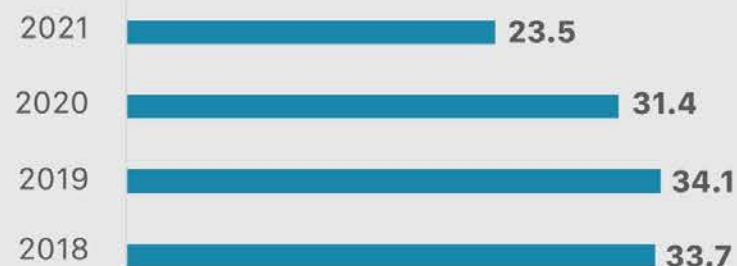


A quick glance into the impact of COVID-19 on Mexico



zinnoV

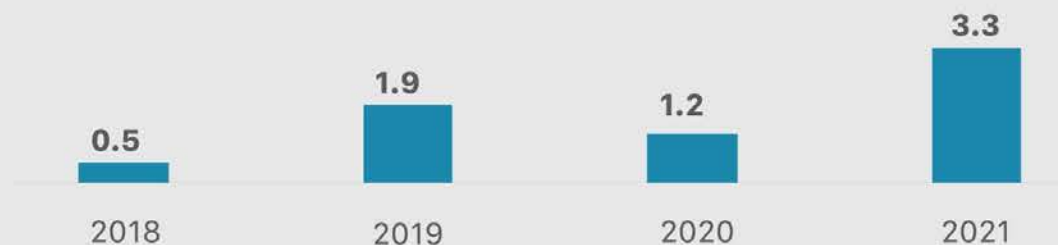
FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



~60% INCREASE IN DEALS IN 2021
COMPARED TO 2020, WITH 43% OF
INVESTMENTS IN E-COMMERCE

E-COMMERCE & FINTECH
MOST ATTRACTIVE SECTORS
POST PANDEMIC

SUDDEN DROP IN FDI IN 2021
WAS DUE TO ECONOMIC
DOWNTURN BY COVID

75% OF ENTERPRISES WILL
PRIORITIZE IT RESILIENCY AND
CYBERSECURITY IN THE NEXT 2
YEARS

39-80%
RANGE OF REMOTE WORKING PRE
AND POST COVID RESPECTIVELY

60%+ EMPLOYEES PREFER
HYBRID/REMOTE MODE OF WORKING
POST PANDEMIC

Mexico: Talent & Innovation Ecosystem



TALENT POOL

~210,000

SALARY GROWTH (YOY)

13.2%

ATTRITION RATE (ANNUAL)

22%

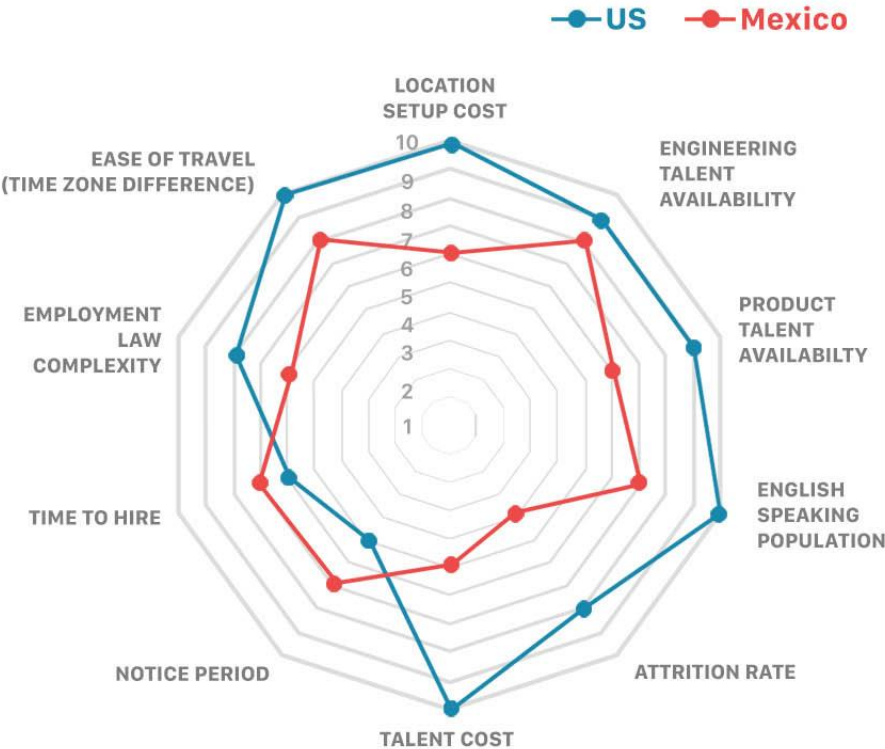
AVERAGE NOTICE PERIOD

2-12 WEEKS

INSIGHTS

- Mexico City, Guadalajara, and Monterrey collectively employ ~35% of SDE talent pool of Mexico.
- City-wise tech talent concentration:
 - Guadalajara: Mobile Developers, Back End Developers, and UX / UI Designers
 - Monterrey: Full Stack Developers, Back End Developers, and Project Managers
 - Mexico City: Full Stack Developers, Tech Supports, and System Admins
- Important attributes for career decisions by Mexicans:
 - Professional training & development
 - Secure employment
 - High Future Earnings
- Mexican start-ups received the second highest investment in Latin America.

COMPARATIVE LOCATION INDEX US & MEXICO



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Mexico: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN MEXICO



TOP INDUSTRIES IN MEXICO EMPLOYING IT AND TECH TALENT

- **Continental's** R&D center in Mexico focuses on areas such as software, algorithms, tests & mechanics, and autonomous driving technology such as detection of blind spots, pedestrians, potential danger of crossroads and alerts of objects around the vehicle, among others
- The Guadalajara Design Center (GDC) is **Intel's** largest Engineering center in the Latin America Region, responsible for software development, advanced research in autonomous systems, and Neuromorphic and Quantum Computing. ~1600 talented and innovative engineers work at the GDC
- **Oracle, Lyft, and Microsoft** also have their Engineering centers in Mexico
- **Faurecia** has 2 R&D centers in Mexico work on developing solutions such as the Cockpit of the Future and Sustainable Mobility innovations with a focus on providing a safer, more comfortable and personalized journey and helping ensure cleaner, more environmentally-responsible transportation

Mexico: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

Mexico has 63 universities out of the 400 top universities in the LATAM region, making it a strong education hub.

1250 HEIs

Higher Education Institutions

110K+

STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS LATIN AMERICA TOP 400 UNIVERSITIES**	
UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO	94	139	-	6
TECNOLÓGICO DE MONTERREY	114	189	3	4
INSTITUTO POLITÉCNICO NACIONAL (IPN)	201	400	25	
UNIVERSITY OF GUADALAJARA	551	516	46	30

SCHOOL OF ENGINEERING AND SCIENCES TECNOLÓGICO DE MONTERREY

RESEARCH FOCUS

Bio-inspired Algorithms, Machine Learning models, Data & Computational Science

RESEARCH CENTER

Tecnológico de Monterrey Network of Business Incubators

GUADALAJARA

MONTERREY

MEXICO CITY

UNIVERSITY CENTRE OF EXACT SCIENCE AND ENGINEERING UNIVERSITY OF GUADALAJARA

RESEARCH FOCUS

Computational Mathematics,
Electronic Circuit Design,
Telecommunication

INDUSTRY PARTNERSHIPS

IBM Continental ORACLE a-amdocs

SCHOOL OF ENGINEERING NATIONAL AUTONOMOUS UNIVERSITY OF MEXICO

RESEARCH FOCUS

Industrial Automation, Biomedical
Engineering, Imaging, AI & Robotics

INDUSTRY PARTNERSHIPS

Continental BOSCH Ford GE

RESEARCH CENTER

Mechanical Design and Technological
Innovation Centre

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

Mexico: Start-up Ecosystem



800+

Technology start-ups

7

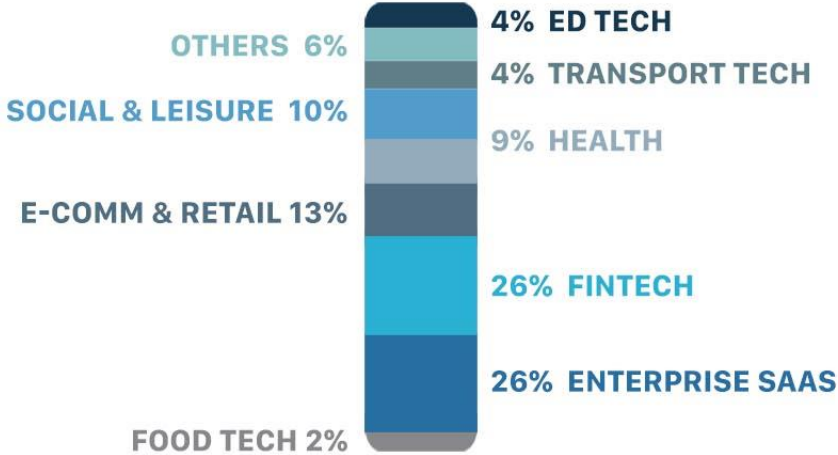
Number of Unicorns

Clara

Fastest fintech to achieve unicorn in 2021 just 8 months post launch

ADVANCED TECH START-UPS IN MEXICO 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



Merama - e-Commerce platform that partners with product sellers to drive brand growth

FUNDING TILL DEC'21

USD 447 Mn



Valoreo - Acquires, operates, and scales e-Commerce partners

USD 160 Mn



Justo - Online delivery-only grocery and house supplies supermarket chain

USD 92 Mn



Casai - Hospitality firm for the traveler community with premium accommodations, locally sourced designs, and smart home technologies

USD 137 Mn

Mexico: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (A)	100,000
1. Social Security (26.35% of gross pay)	26,350
2. Retirement Fund (2% of gross pay)	2,000
3. Local Payroll Tax (3% of gross pay)	3,000
4. Health Insurance (0.9% of gross pay)	900
5. Meal Vouchers (0.9% of gross pay)	900
4. Housing Fund (0.5% of gross pay)	900
TOTAL EMPLOYER CONTRIBUTION (1 +2 + 3 + 4 + 5)(B)	34,050
TOTAL COMPANY COST (A+B)	134,050

EMPLOYMENT TERMINATION LAW

HIGHLY
EMPLOYEE
FAVORING

NEUTRAL

HIGHLY
EMPLOYER
FAVORING

Upon termination of employment without “Just Cause”, employees are entitled to severance pay calculated at 3 months’ salary plus 20 days of pay for every year the employee was employed, plus a seniority bonus.

Dismissals are justified only if the worker in the course of their employment is guilty of a dishonest or dishonorable act; date-wise actual proofs of the committed act are required.

A written notice with a specific reason as outlined in the labor code is required for termination.



BRAZIL



Brazil: Country Overview



zinnoV

COUNTRY

- ✓ Brazil is the 9th largest economy in the world according to the World Bank. The UNCTAD named Brazil the 6th largest destination for global Foreign Direct Investment (FDI) flows in 2019
- ✗ Ranks 96th out of 180 countries as per Corruption Perception Index 2021

INFRASTRUCTURE & LABOR MARKET

- ✓ More than 70% of country's population is connected over the internet, 13 percent above the global average
- ✗ Brazil has only invested around 2% of its GDP in developing its public infrastructure over the last two decades, while average spend on Infrastructure by rest of Latin America is around 5%

TAXATION & GOVERNMENT REGULATIONS

- ✓ The free trade zones may provide 88% to 100% reduction in import duty, 75% reduction on corporate income tax and 10 years of exemption from paying business license fees
- ✓ The Brazilian government is expected to enact the General Data Protection Law (LGPD) in August to strengthen its digital economy, the Law will provide a Data governance framework and improve information security management
- ✗ Brazil has the most time-consuming regime in the world due to high levels of bureaucracy that make the process of incorporating a business difficult. This makes it time-consuming and tedious
- ✗ Long process of starting up a business – 11 procedures which take around 4 months to complete



TOP LANGUAGES

Portuguese, English, Spanish, French

28% Gender Diversity in Software Engineering Companies

TECH NUGGET

Brazil leads the LATAM region in terms of AI adoption. By 2035, AI is forecasted to contribute upto 0.9% to Brazil's overall GDP.

TOP INDUSTRIES OF Z1000 COMPANIES INVESTING IN BRAZIL

AUTOMOTIVE



SOFTWARE & INTERNET



FMCG



A quick glance into the impact of COVID-19 on Brazil



zinnoV

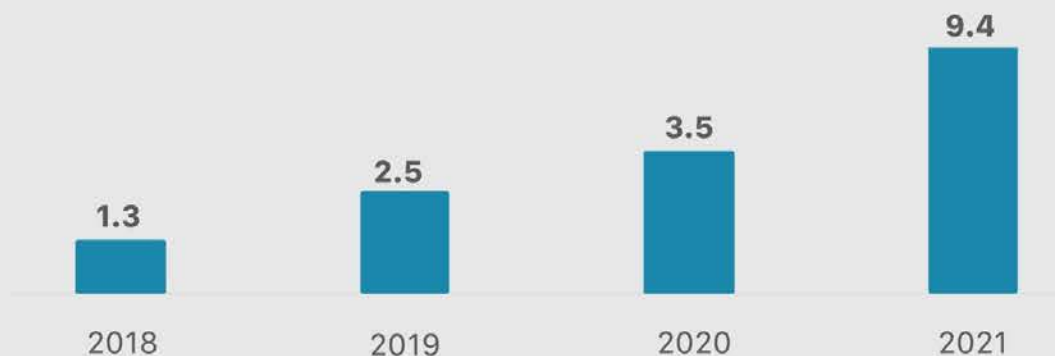
FDI INVESTMENTS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS (IN USD BN)



39%
INVESTMENTS IN 2021 BY
FINTECH SECTOR ALONE
i.e. USD 3.7 BN

E-COMM & FINTECH MOST
MOST ATTRACTIVE SECTORS
POST PANDEMIC

LOWER FDI POST PANDEMIC
DUE TO DELAYED PLANNED
PRIVATIZATION EFFORTS*

USD 464 MN PROJECTED AI
SPENDING IN 2021 : HIGHER THAN
AT LEAST BY 30% FROM 2020

22-64%
RANGE OF REMOTE WORKING
PRE AND POST COVID
RESPECTIVELY

70% EMPLOYEES PREFER
WORKING FROM OFFICE POST
PANDEMIC

* 2018 AND 2019 ATTRACTED HIGHER FDI FOR
PRIVATIZATION EFFORTS IN ENERGY AND INFRASTRUCTURE

Brazil: Talent & Innovation Ecosystem

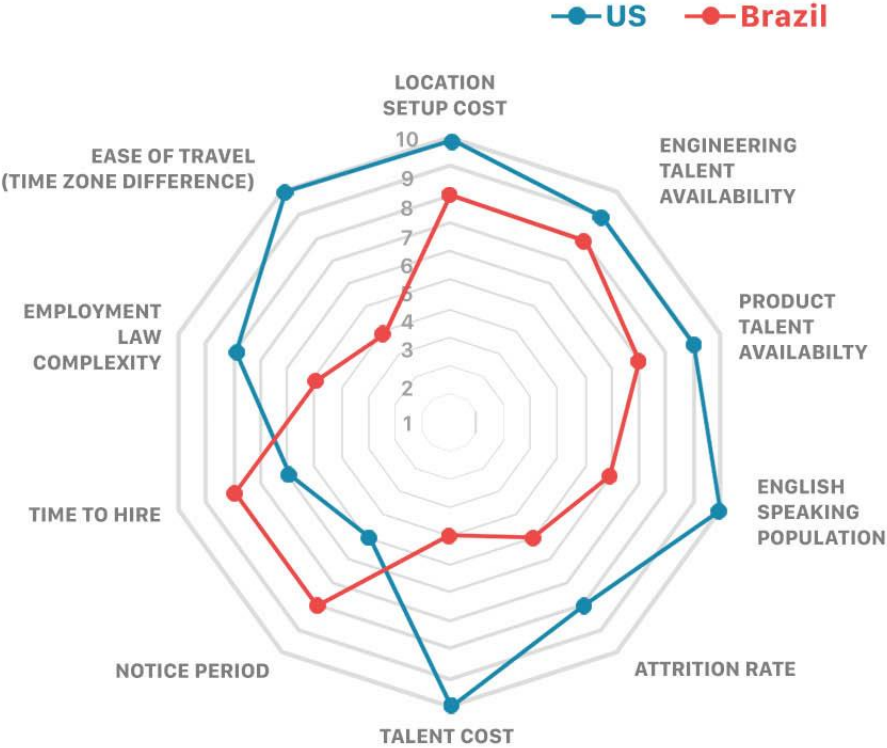


TALENT POOL ~775,000	SALARY GROWTH (YOY) 33.3%
ATTRITION RATE (ANNUAL) 17%	AVERAGE NOTICE PERIOD 4-12 WEEKS

INSIGHTS

- Companies can save 40%-60% of cost by setting up a team, when compared with prices in USA.
- The English proficiency is relatively low as compared to other countries in the report, as only 5% of the population is proficient in English.
- The investments received for new technologies in Artificial Intelligence (46.2% annual growth in AI) and Cloud Computing will be the key growth drivers for Brazil in 2020.
- The General Data Protection Law (LGPD) will create opportunities and requirements for cyber security and information security experts.
- Brazil ranks among the top 10 largest markets for IT investments, while number one in LATAM.
- The investments in IT sector increased by 9.8%, reaching \$47 Bn, such that the collective investment in ICT sector reached approximately \$105 Bn in 2017.
- Booming Fintech ecosystem: Brazil with almost 377 Fintech Start-ups in 2018 and a consumer adoption rate of 40% which is 7% higher than global average, has created opportunities for talent with experience in niche digital technologies and Information Security.

COMPARATIVE LOCATION INDEX US & BRAZIL



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Brazil: Presence of Global Companies



SOME INTERNATIONAL COMPANIES WITH SOFTWARE ENGINEERING CENTERS IN BRAZIL



INSIGHTS

- **Uber's** Sao Paulo tech team focuses on developing services and systems to improve safety on the Uber platform in markets across the globe by leveraging advanced Telematics, Machine Learning, real-time data processing, and mobile tools
- **T-Systems, Capgemini, Accenture** and **Wipro** have acquired and invested in Brazilian IT companies to gain access into the Brazilian IT market
- **IBM Research** in Brazil was established in 2010, in Sao Paulo and Rio de Janeiro. Engineers at these labs work on advanced Artificial Intelligence, Hybrid Cloud, Security, and Quantum Computing
- **Samsung** has an R&D center in Brazil that works on areas such as Artificial Intelligence, Security, media standards, software solutions

Brazil: Tier-1 Academic Institutions and Industry Relationships



KEY INSIGHT

With 83 spots in the 400 top universities of LATAM region, Brazil has a strong education system

2300 HEIs

Higher Education Institutions

46K

STEM graduates per year

	QS WORLD TOP 600 UNIVERSITIES IN COMPUTER SCIENCE*		QS LATIN AMERICA TOP 400 UNIVERSITIES**	
UNIVERSITY OF SAO PAULO	79	120	2	
UNIVERSIDADE ESTADUAL DE CAMPINAS	113	122	5	7
PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO DE JANEIRO	151	129	15	17
UNIVERSIDADE FEDERAL DO RIO DE JANEIRO	175	146	9	

INSTITUTE OF EXACT SCIENCES FEDERAL UNIVERSITY OF MINAS GERAIS

RESEARCH FOCUS

Artificial Intelligence, Optimization in Networks, Mobile Robotics

RESEARCH CENTERS

Technological Transfer and Innovation Coordination CTIT

CENTER FOR SCIENCE AND TECHNOLOGY PONTIFICAL CATHOLIC UNIVERSITY OF RIO DE JANEIRO

RESEARCH FOCUS

Hypertext & Multimedia, Human-Computer Interaction, Theory of Computing, Computer Networks

RESEARCH CENTERS

Institute of Software Technology

MINAS GERAIS

SAO PAULO

RIO DE JANEIRO

FACULTY OF ELECTRICAL AND COMPUTER ENGINEERING UNIVERSIDADE ESTADUAL DE CAMPINAS

RESEARCH FOCUS

Automation, Computer Graphics, Digital Speech Processing, Intelligent Systems

INDUSTRY PARTNERSHIPS

Google Microsoft

INSTITUTE OF MATHEMATICS AND STATISTICS UNIVERSITY OF SAO PAULO

RESEARCH FOCUS

Data Science, Algorithms, Computer Theory, Machine Learning, AI, Computational Methods, Data Security

RESEARCH CENTERS

Research Center for Mathematics Applied to Industry

*Comparison of QS World rankings 2021 vs 2020

**Comparison of QS World rankings 2022 vs 2020

Brazil: Start-up Ecosystem



2900

Technology start-ups

14

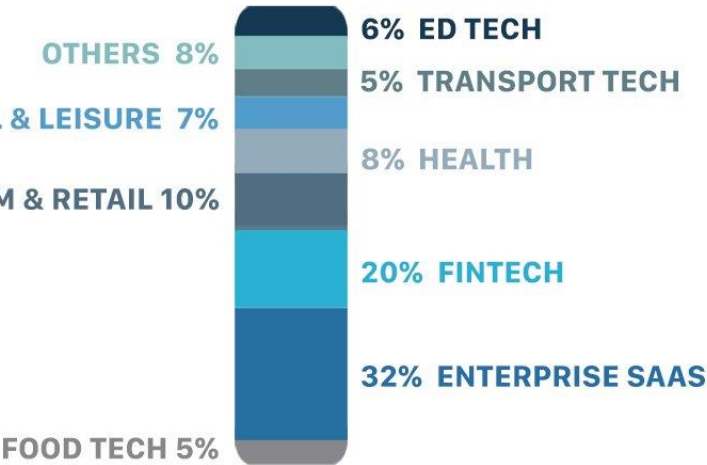
Number of Unicorns

1st

In LATAM to attract most capital
(48% of overall region) in 2021

ADVANCED TECH START-UPS IN BRAZIL 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



180° Insurance - InsurTech firm that provides an insurance-as-a-service business model

FUNDING TILL
DEC'21

USD 39.6 Mn



Agrolend - Provides farmers access to sustainable credit for financing via a simple digital process

USD 24.6 Mn



Tabas - Real estate platform which provides fully furnished apartments for a comfortable stay

USD 16.1 Mn



Galena - Educational platform which trains and develops young individuals for jobs of the future

USD 7.5 Mn


Brazil: Illustrative Compensation Structure



	(IN USD)
GROSS PAY (A)	100,000
EMPLOYER CONTRIBUTIONS:	
1. Vacations (30 Days) (8.33% of gross pay)	8,330
2. 13th-month salary (8.33% of gross pay)	8,330
3. Transportation (6% of gross pay)	6,000
4. Holidays (9.44% of gross pay)	9,440
5. Vacation Bonus (Gratuity) (2.78% of gross pay)	2,780
6. FGTS (Fundo de Garantia po Tempo de Servico) (11% of gross pay)	11,000
7. INSS (20% of gross pay)	20,000
8. ISR (15% of gross pay)	15,000
9. Liability Insurance (ARL) (3% of gross pay)	3,000
TOTAL EMPLOYER CONTRIBUTION SUMΣ(1 to 9)(B)	83,880
TOTAL COMPANY COST (A + B)	183,880

EMPLOYMENT TERMINATION LAW

HIGHLY
EMPLOYEE
FAVORING



HIGHLY
EMPLOYER
FAVORING

Terminating employment in Brazil is a difficult and an expensive process when compared to other countries.

Employer will be required to pay high financial penalties for terminating an employee without a cause.

Upon termination of employment, employees are entitled to Unpaid Salaries, unused vacation days, 13th-month salary or Christmas bonus, access to a severance fund FGTS.

In case of com justa causa (dismissal with justified reason of employee misconduct) no severance pay is needed to be paid by the employer. However if the dismissal is com justa causa (dismissal not due to misconduct), the employer needs to pay 8% of worker's monthly earning as employer deposit to FGTS fund plus an additional 40% indemnity contribution plus another additional 10% of social security contribution to employee's FGTS Fund. A total contribution calculated at 40%*8%*10*number of months of employment.



VIETNAM

Vietnam: Country Overview

COUNTRY

- ✓ Ranked 7th in U.S. News & World Report on 'Best countries to start a business in 2020'
- ✓ Ranked 67th in WEF(World Economic Forum) Competitiveness Report 2019
- ✗ Ranks 104 out of 180 countries as per Corruption Perception Index 2020

INFRASTRUCTURE & LABOR LAW

- ✓ 3 major Tech-Parks for Software Companies: Hoa Lac Hi-tech Park, Danang Hi-tech Park, and Saigon Hi-Tech Park
- ✗ Ranks 108 out of 176 countries as per ICT(Information and Communication Technologies) Development Index 2017 prepared by International Telecommunication Union

TAXATION & GOVERNMENT REGULATIONS

- ✓ IT companies are eligible for a corporate income tax exemption for up to 4 years, followed by a 50% tax reduction for up to 9 years
- ✓ Exports of software products and related services are subject to 0% value added tax (VAT), not subject to export duty. There is also an import duty exemption on materials used in software production
- ✗ From July 2022, global digital companies will need to pay tax on income made within the nation's borders even if the business was conducted abroad

TOP GLOBAL Z1000 COMPANIES FROM INDUSTRIES INVESTING IN VIETNAM TALENT

BFSI

HITACHI
Inspire the Next



AUTOMOTIVE



BOSCH

DAIMLER

INDUSTRIAL



Life Is On



HITACHI
Inspire the Next



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2.9% Expansion in economy in 2020

Japan, China and South Korea

Heavy investment in Vietnam technology sector

0.2%

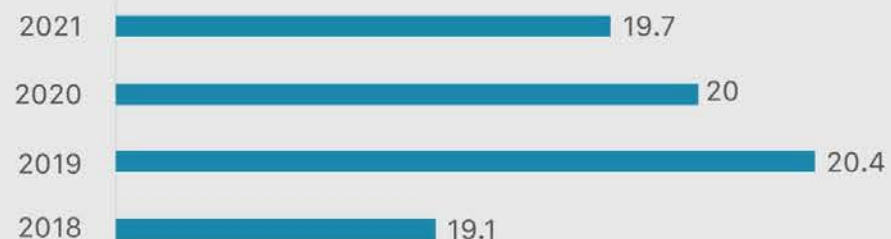
Increase in unemployment from '2020 to '2021

A quick glance into the impact of COVID-19 on Vietnam



zinnoV

FDI INFLOWS (IN USD BN)



ATTRITION (IN%)



START-UP INVESTMENTS (IN USD BN)



USD 5 BN

SOFTWARE INDUSTRY REVENUE
IN 2020 (WAS UP BY USD 500 MN
IN 2019)

FINTECH & E-COMM

MOST ATTRACTIVE SECTORS
POST PANDEMIC



NEW AI START-UPS ENTRANTS
INTO MARKET POST COVID

66%

COMPANIES ARE OPEN TO HIRING
REMOTE TALENTS ABROAD

1/3RD EMPLOYEES PREFERRED
STARTING OWN VENTURES PRE
COVID (HENCE HIGHER ATTRITION)

80%+

BELIEVE THAT WFH WILL BE
MORE WIDESPREAD POST COVID

Vietnam: Talent & Innovation Ecosystem



zinnov

TALENT POOL ~130,000	SALARY GROWTH (YOY) 15% (AVG) 27.5% FOR JUNIOR ENGINEERS
ATTRITION RATE (ANNUAL) 15% (AVERAGE) 7.5% IN PRODUCT COMPANIES	AVERAGE NOTICE PERIOD 4-6 WEEKS
	AVERAGE TIME TO HIRE 6-8 WEEKS

KEY INSIGHTS

- With a growing and evolving software industry, Vietnam's engineering maturity is scaling up. Teams can easily build modules of product, or part of workload. However, it is yet to reach a stage where we can see end to end ownership, from design to implementation of a product. This is compounded by a relative shortage of availability of senior talent in the country : which makes it challenging to build full product engineering teams who can take end to end ownership.
- 23rd in worldwide and 2nd in ASEAN group on developer skills – HackerRank survey 2016
- Break up of tech talent : ~40% at 0-3 years, ~30% at 2-4 years, 18-20% at 5-10 years and ~10-12% at 10+ years of experience(yoe)
- High demand for Web/Mobile developers, Data engineer/Scientist(ML & AI), Cloud engineers/Architects, IT security engineers
- Average tenure of software engineer(within 4-7 yoe) is 20 months in a company

COMPARATIVE LOCATION INDEX US & VIETNAM



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Vietnam: Presence of Global Companies



zinnoV

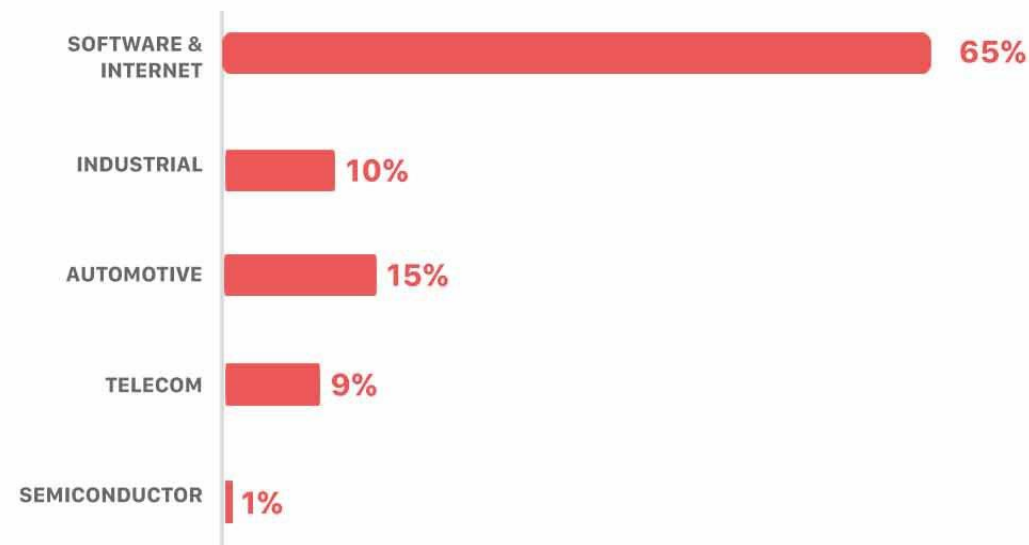
GLOBAL COMPANIES' PRESENCE IN VIETNAM



KEY SERVICE PROVIDERS' PRESENCE IN VIETNAM



IT AND TECH TALENT SPLIT ACROSS INDUSTRIES IN VIETNAM



Key Insights

- Vietnam is being considered an alternative to China, owing to recent geopolitical developments during COVID
- Most companies present in Vietnam have originated from APAC such as
 - Bosch : Currently employs 3000+ in Automotive & Software R&D
 - Microsoft : Established in 2009, employs around 600 people
 - Intel : Investing \$20 Mn since 2009, employing 1500 people

Vietnam: Tier-I Academic institution and Industry relationships



zinnoV

KEY INSIGHTS

2 universities in Vietnam are in QS top 1000 World University ranking for Computer Science

Vietnam's level of research (number of citations) and technology transfer (number of patents) are lower compared to regional peers Philippines, Indonesia, Thailand, Malaysia, India and China

130 HEIs

Higher Education Institutions

55K

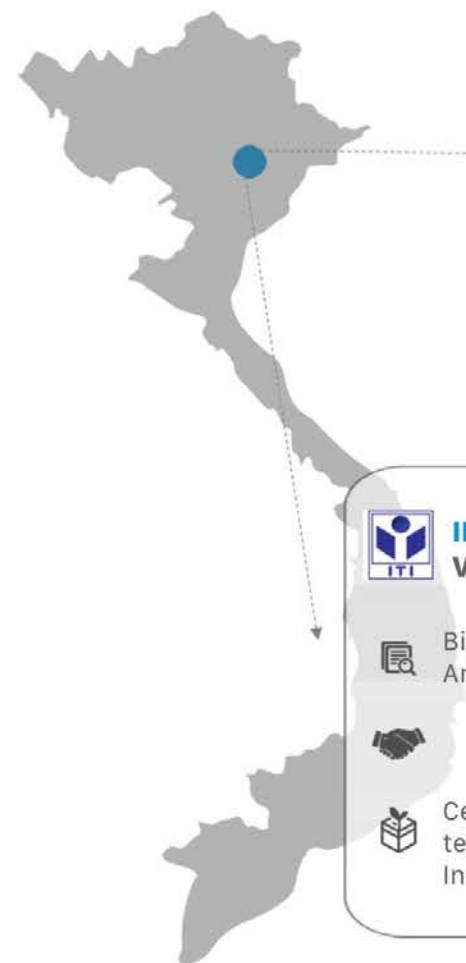
10%

Increase in STEM graduates per year compared to 2020

	QS ASIA TOP 300 UNIVERSITIES (2020)	QS ASIA TOP 350 UNIVERSITIES (2021)	
VIETNAM NATIONAL UNIVERSITY HO CHI MINH CITY (VNU-HCM)	143	158	↓
VIETNAM NATIONAL UNIVERSITY	147	160	↓
TON DUC THANG UNIVERSITY	207	163	↑
HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY	261	301	↓

↓ Decrease in ranking in 2021 in comparison to 2020

↑ Increase in ranking in 2021 in comparison to 2020



SCHOOL OF INFORMATION AND COMMUNICATION TECHNOLOGY
HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY



Data technology & Intelligent systems – Mathematical Statistics, Data Science, AI/ML



SAMSUNG SIEMENS VINACOMIN



International Research Institute MICA - Multimedia, Information, Communication and Applications (MICA)



INFORMATION TECHNOLOGY INSTITUTE
VIETNAM NATIONAL UNIVERSITY HANOI



Big data & Cloud Computing, Enterprise Architecture, Artificial Intelligence



MICROSOFT CISCO KT



Center of consulting and information technology transfer, Center for applied Information Technology

Industry Partnerships

Research Center

Research Focus

Vietnam Start-up Ecosystem



zinnov

530+

Technology start-ups

1

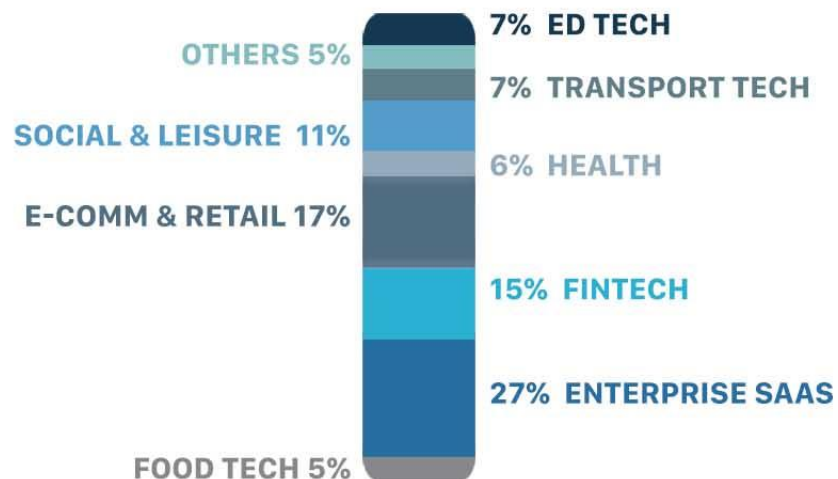
Number of Unicorns (s)

3rd

In Southeast Asia in terms of investment volume

ADVANCED TECH START-UPS IN VIETNAM 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



Sky Mavis - Video game developer combining the benefits of blockchain with fun and practical applications

FUNDING TILL DEC'21

USD 161 Mn



Axie Infinity - Gaming platform which encourages raising fantasy creatures called Axie, based on blockchain

USD 9 Mn



Nano Technologies - Finances wellness solutions for employees and employers through a tech platform

USD 3 Mn



Selly - Platform for supplying goods from manufacturers to people who want to sell without spending capital

USD 2.6 Mn

Vietnam: Illustrative Compensation Structure



PARTICULARS	(IN USD)
GROSS PAY (A)	100,000
EMPLOYEE EXPENSES:	
1. Social Insurance contribution (8% of Gross pay)	8,000
2. Health Insurance contribution (1.5% of Gross pay)	1,500
3. Unemployment Insurance (1% of Gross pay)	1,000
TOTAL EMPLOYEE CONTRIBUTION (1 +2 + 3) (B)	10,500
EMPLOYEE NET SALARY (A- B)	89,500
EMPLOYER CONTRIBUTIONS:	
4. Social Insurance contribution (17.5% of Gross pay)	17,500
5. Health Insurance contribution (3% of Gross pay)	3,000
6. Unemployment Insurance (1% of Gross pay)	1,000
7. Labor union fund contribution (2% of Gross pay)	2,000
8. Mandatory Health Check up (1% of Gross pay)	1,000
TOTAL EMPLOYER CONTRIBUTION (4 + 5 + 6 + 7 + 8) (C)	24,500
TOTAL EMPLOYMENT COST (A+C)	124,500

EMPLOYMENT TERMINATION LAW

HIGHLY
EMPLOYEE
FAVORING



HIGHLY
EMPLOYER
FAVORING

Employees can terminate their employment over written advance notice : notice period is 30 days within 2 years of tenure, and 45 days for 2+ years tenured employee.

Severance pay depends on the tenure at the organization : it's half a month's salary per year of service.

Companies are allowed to sign a contract for 1 year, extendable by another one year : post 2 years, a permanent life-time contract is to be signed and termination at this phase is difficult (except in case of mutual agreement).

An additional job loss allowance is given if termination of contract is due to changes in company re-structuring/ technology/economic reasons. In such a case, employers must pay 1 month salary for each year of work (at least equal to 2 months' salary).

Unilateral termination by employer is restricted, except in case of expiry of the labor contract or if the employee reaches retirement age and applies for a pension.



COSTA RICA

Costa Rica: Country Overview



COUNTRY

- ✓ Ranked 39th in U.S. News & World Report on 'Best countries to invest in 2019'
- ✓ Favored nearshoring destination, owing to proximity to United States and overlapping time zones (CST)

INFRASTRUCTURE & LABOR LAW

- ✓ Ranks 2nd in LATAM and 37th in the world on INSEAD's Talent Competitiveness Index 2020
- ✓ There is no upper limit on number of foreigners that can be employed by local companies
- ✗ Poverty levels has not improved for about 20 years now : constant at ~21%

TAXATION & GOVERNMENT REGULATIONS

- ✓ Income tax on profit corporations is at a general rate of 30%. Companies officially registered as micro or small, can apply a progressive scale depending on net income tax rates of 5% - 20%
- ✓ Under the Free/Special Economic Zone, companies can enjoy 0% tax rate in Income tax, VAT and all other taxes. The percentage of exemption is dependent upon the level of investment & employment of the company
- ✓ 16 of the top 100 global IT companies are based out of Costa Rica



TOP GLOBAL Z1000 COMPANIES FROM INDUSTRIES INVESTING IN COSTA RICA TALENT

TELECOM



SOFTWARE & INTERNET



MEDICAL DEVICES



Focus of Global companies in Costa Rica:

- 62% - F&A services
- 56% - IT support & development
- 53% - Contact Center
- 34% - HR
- 11% - Engineering

A quick glance into the impact of COVID-19 on Costa Rica



zinno**v**

FDI INFLOWS (IN USD BN)



ATTRITION (IN %)



START-UP INVESTMENTS* (IN USD BN)



*VENTURE CAPITAL BASED

30% MORE INVESTMENT PROJECTS IN 2021 (103 IN NUMBER) THAN 2020

EDTECH & E-COMMERCE
MOST ATTRACTIVE SECTORS POST PANDEMIC

1ST
IN FDI FOR GREENFIELD PROJECTS 2020, AMONG 84 COUNTRIES

32 NEW FIRMS ESTABLISHING OPERATIONS INCLUDING AMAZON, INTEL, CONCENTRIX, AND BAYER DURING PANDEMIC

8-50%
RANGE OF REMOTE WORKING PRE AND POST COVID RESPECTIVELY

70%+ EMPLOYEES PREFER WORKING FROM OFFICE POST PANDEMIC

Costa Rica: Talent & Innovation Ecosystem



TALENT POOL ~144,000	SALARY GROWTH (YOY) 3.5%	ATTRITION RATE (ANNUAL) 11%
AVERAGE NOTICE PERIOD 1 DAY-4 WEEKS (DEPENDS ON TENURE OF EMPLOYMENT)	AVERAGE TIME TO HIRE 4 WEEKS	

KEY INSIGHTS

- **Average software engineer salary** is \$60,000 per year
- **High literacy rate** of 97.9% in 15+ years population
- While high quality of talent is available in Costa Rica, **scaling beyond 50 FTEs per year is a challenge**, depending upon the area of specialization and the desired experience
- **Ranks 2nd in English proficiency, and 1st in digital skills** in LATAM (Rank 33 globally as per World Economic Forum, 2019)
- **Candidate referrals** are highly common across companies in regards to sourcing candidates for open positions

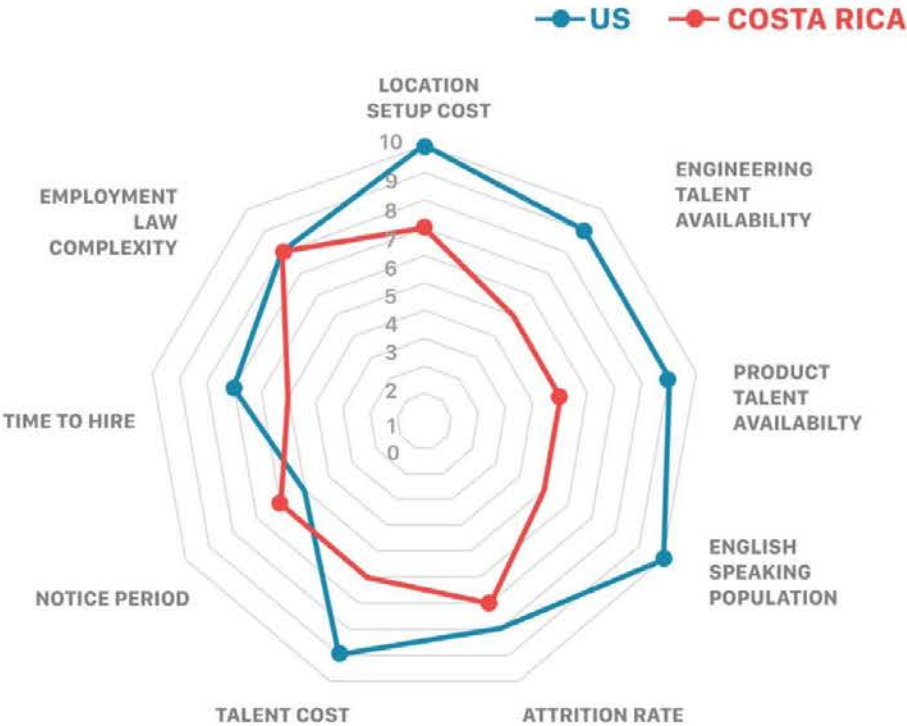
Top Languages

English, Spanish, Portuguese, French German

31%

Population in 15-34 age group

COMPARATIVE LOCATION INDEX US & COSTA RICA



A lower score in the spider chart implies a lower value for the specified parameter and vice versa

Costa Rica: Presence of Global Companies



zinnoV

GLOBAL COMPANIES' PRESENCE IN COSTA RICA



KEY SERVICE PROVIDERS' PRESENCE IN COSTA RICA



KEY INSIGHTS

- 300+ high-tech companies, 41 of Fortune 500 companies have established successful operations in the country
- Software, Cloud & Digital Marketing - fastest growing sectors in 2020
- Reported 22000+ jobs in 2020
- Western Union: Established regional center in 1998 with 1300 employees part of GCoE. 10 Western Union sites in Costa Rica serve the Americas, Europe, Middle East and Africa in 10 different languages
- 3M: Established in 2015, the center supports 35+ countries, engaging 1200+ FTEs providing services in 3 languages. Operations include data analytics, IT help desk, cybersecurity, etc.
- AstraZeneca: Integrated Finance Solutions America Center was inaugurated in 2017; now also support COVID-19 vaccine and US Oncology

Costa Rica: Tier I Academic Institutions and Industry Relationships



KEY INSIGHTS

- 3 universities from Costa Rica are in top 100 of QS LATAM Rankings
- Costa Rican universities are steadily rising in the QS rankings
- 156 STEM graduates per 100,000 people, compared to 172 in USA

63 HEIs

Higher
Education
Institutions

5K

Graduates per year post Intermediate
education (High School Diploma degree)

7K

Graduates per year post STEM degree
programs from tech universities

	QS LATAM RANKINGS (2020)	QS LATAM RANKINGS (2021)
UNIVERSIDAD DE COSTA RICA	19	19
UNIVERSIDAD NACIONAL COSTA RICA	61	54 ↑
TECNOLÓGICO DE COSTA RICA (TEC)	70	62 ↑

↓ Decrease in ranking in 2021 in comparison to 2020

↑ Increase in ranking in 2021 in comparison to 2020

UNIVERSITY OF COSTA RICA : AKAMAI & BOSTON SCIENTIFIC PARTNERSHIPS



Collaboration initiative of University of Costa Rica with Akamai Technologies and Boston Scientific to 3D print facial protection masks for Covid frontline workers

HP LIFE PROGRAM ACROSS MULTIPLE UNIVERSITIES IN COSTA RICA



36 weeks program in HP Innovation Lab to understand computer skills and work on business projects around design thinking

Successful candidates are awarded by the Science, Technology and Telecommunications Ministry of Costa Rica

Costa Rica: Start-up Ecosystem



50+

Technology start-ups

0

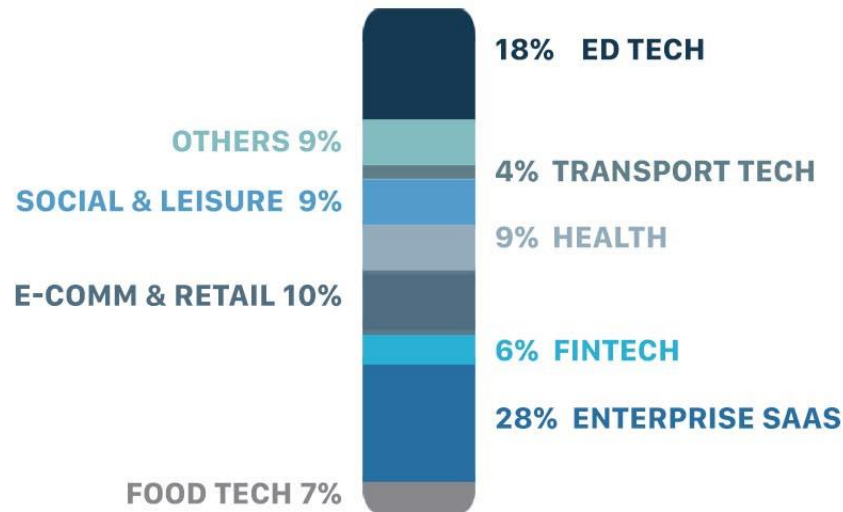
Number of Unicorns (s)

15%

Average annual increase of greenfield projects

ADVANCED TECH START-UPS IN COSTA RICA 2021

SECTOR-WISE BREAK UP OF START-UPS (IN %)



Onda - Hospitality start-up aiming to bridge the gap between hostels, hotels, and co-living

FUNDING TILL DEC'21

USD 1.1 Mn



Zunify - Payment network which provides a unified and fair financial system

USD 855 K



Elytron - Provides an innovative approach to the production of biopesticides

USD 200 K



Smatter - Biotech start-up which helps in achieving sustainable crop production

USD 49 K

Costa Rica: Illustrative Compensation Structure



PARTICULARS	(IN USD)
GROSS PAY (A)	100,000
EMPLOYEE EXPENSES:	
1. Basic Pension scheme (4% of Gross pay)	4,000
2. Health and Maternity insurance (5.5% of Gross pay)	5,500
3. BANCO Popular worker contribution (1% of Gross pay)	1,000
TOTAL EMPLOYEE CONTRIBUTION (1 + 2 + 3) (B)	10,500
EMPLOYEE NET SALARY (A- B)	89,500
EMPLOYER CONTRIBUTIONS:	
4. Social security (26% of Gross pay) (includes multiple security benefits)	26,000
5. Workers' compensation Insurance (1.5% of Gross pay)	1,500
6. 13th month salary benefit (8.33% of Gross pay)	8,333
TOTAL EMPLOYER CONTRIBUTION (4 + 5 + 6) (C)	35,833
TOTAL EMPLOYMENT COST (A+C)	135,833

EMPLOYMENT TERMINATION LAWS

HIGHLY
EMPLOYEE
FAVORING

NEUTRAL

HIGHLY
EMPLOYER
FAVORING

Employers are expected to pay an additional 1-month salary (13th month) every year before December 20th.

Severance pay in the country has a maximum limit of up to 8 years : some companies decide to pay more as an added benefit, especially when they have a workers' association

Employer-sponsored workers' association operates as a credit union, providing multiple employee benefits.

Both Employer and Employee contribute to the fund.

Notice Period is stipulated by law and depends on the duration of employee in the organization:

- 1 day, if duration is less than 3 months
- 7 days, if duration is between 3-6 months
- 15 days, if duration is between 6-12 months
- 30 days, if duration is 12+ months

BACK TO ALL COUNTRIES

**SPECIAL MENTION
TO ORGANISATIONS
WE INTERVIEWED
FOR THIS REPORT**

vmware®

 **CINDE**
INVEST IN COSTA RICA


WIDE WISE

 **TA** TALENT
ADVISORS

 antal
THE VALUE OF
SPECIALIZED TALENTS

CONNECT WITH US



NILESH THAKKER
MANAGING PARTNER & CTO



Nilesh has over two decades of Executive leadership experience in technology companies and has led operations in enterprise and consumer software, Cloud Computing and Product Management.



AMITA GOYAL
PARTNER & HEAD OF GCOE PRACTICE



Amita has over 12 years of experience in New Product Development, R&D, Strategy, Innovation Management, and Project Management. Prior to Zinnov she worked at R&D HQ of Canon Inc, Tokyo and comes with a strong global experience in managing cross-cultural teams.

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