

# Automation will disproportionally impact low-wage workers

What can state governments do about it?

# What can state governments do to protect low income workers?

Twenty percent of Texans earning under \$65,000 are likely to experience job loss in the next five years due to automating technologies. That represents two million jobs lost, or one out of every six jobs in Texas. Faethm's predictive AI engine analyzed the Texan workforce to determine how technology will impact different sectors of the workforce across the state. Learn how companies, governments, and educators can understand and prepare for the future state of the workforce and the impending influx of automating technologies.

Emerging technologies are reshaping the world of work across industries. Business process automation has already begun to eliminate many jobs while augmenting technologies are transforming others dramatically. These digital impacts will leave some workers struggling to find a new place in the workforce and many workers will require extensive reskilling to maintain their positions.

Our analysis of the Texas workforce showed that low-wage workers are most at danger of being forced out of the workforce by automation. Low-wage workers tend to work in roles that involve many repetitive, procedural tasks. Tasks of this kind are most likely to be taken over by automating technologies, leading to a reduction of workers in these types of roles.

Low-wage workers will require reskilling and education in order to acquire the necessary skills to move into the new roles that will be needed in the workforce of the future. However, with planning and forethought, emerging technology can be an opportunity for growth, not crisis.

## Defining low-wage workers

United For ALICE is a research and advocacy project that assesses the cost of living in every US county and provides a comprehensive look at financial hardship across the United States<sup>1</sup>. ALICE is an acronym for Asset Limited, Income Constrained, Employed. The ALICE threshold is widely used in place of the Federal Poverty Level, which many consider outdated and too broad to be meaningful. In Texas, the ALICE threshold for a family of four is \$64,512. The average Texan family has 3.5 members. The Bureau of Labor Statistics indicates that one in three Texan households with a child under the age of six operates with a single income<sup>i</sup>.

There are over 9.7 million Texans earning less than \$65,000 for full-time work. Of those, more than five million are earning less than \$35,000, meaning that even in a dual-income household, two such workers would still be unlikely to meet the ALICE threshold. We will refer to workers earning less than \$65,000 as low-wage workers.



#### Texas full-time equivalent by salary band

1. https://www.unitedforalice.org/overview

i. Julie Sullivan, "Comparing characteristics and selected expenditures of dual- and single-income households with children," Monthly Labor Review, U.S. Bureau of Labor Statistics, September 2020, https://doi.org/10.21916/mlr.2020.19.

## The specter of automation

Our analysis indicates that automation will impact low-wage workers more heavily than other groups. Nearly two million workers in this group are likely to experience job loss in the next five years due to automating technologies.



#### Automation and augmentation by salary band

The largest contingent of workers in this low-wage group are Fast Food and Counter Workers, followed by Retail Salespersons and Office Clerks. These roles consist mainly of repetitive, procedural tasks that are low-hanging fruit for automating technologies.



## A closer look

Texas is divided into 28 Workforce Development Areas (WDAs). By analyzing the workforce of just one of these areas, we can capture a more localized view of the impacts of technology on the workforce. In our modeling, we chose to focus on the Borderplex WDA, which is the area around El Paso, in the westernmost wing of the state.

In this area, the jobs that are most vulnerable to automation are also the most populated jobs earning under \$65,000.



#### Top roles earning <\$65K, Borderplex WDA



#### Jobs most vulnerable to automation, Borderplex WDA

**Customer Service Representatives Retail Salespersons** Cashiers Office Clerks, General Fast Food and Counter Workers Stockers and Order Fillers Bookkeeping, Accounting, and Auditing Clerks Secretaries and Administrative Assistants, Heavy and Tractor-Trailer Truck Drivers Laborers and Freight, Stock, and Material Movers, Hand Waiters and Waitresses Shipping, Receiving, and Inventory Clerks Medical Secretaries and Administrative Assistants First-Line Supervisors of Retail Sales Workers Receptionists and Information Clerks Billing and Posting Clerks Miscellaneous Assemblers and Fabricators Food Preparation Workers Bill and Account Collectors Inspectors, Testers, Sorters, Samplers, and Weighers



In the Borderplex WDA, Customer Service Representatives are the most vulnerable to automation. To understand why, we examine the tasks performed by Customer Service Representatives and identify the types of technology that are likely to impact those tasks.

#### Customer service representative tasks by time spent

Check to ensure that appropriate changes were made to resolve customers' problems.		Determine charges for services requested, collect deposits or payments, or arrange for billing.	Complete contract forms, prepare change of address records, or issue service.	Solicit sales of new or additional services or products.	
Keeps records of customer interactions or transactions, recording details of inquiries, complaints, or comments, as well as actions taken.		Order tests that could determine the causes of product malfunctions.		Review insurance policy terms to determine whether a particular loss is	
Confer with customers by telephone or in person to provide information about products or services, take or enter orders, cancel accounts, or obtain details of complaints.	Contact customers to respond to inquiries or to notify them of claim investigation results or any planned adjustments.		Refer unresolved customer grievances to designated departments for further investigation.	Obtain and examine all relevant information to assess validity of complaints and to determine possible causes, such as extreme weather conditions that could increase utility bills.	
	Resolve customers' service or billing complaints by performing activities such as exchanging merchandise, refunding money, or adjusting bills.				

Impacting technology

Decision Generation Predictive Analysis Process Automation Suggestion Provision

Our analysis shows that the technology types most likely to impact the tasks on which Customer Service Representatives spend the most time are Process Automation and Suggestion Provision. These two categories of technology are already widely adopted, with adoption expected to accelerate in the coming years. As these technologies become more advanced, more Customer Service Representatives will lose job opportunities.

## What can be done?

Understanding the impact of technology is critical to preparing for the future. It's no longer sufficient to consider the current state of the workforce when planning education and employment initiatives. State governments and other entities must envision and anticipate the future state of work in order to effectively strategize. Faethm's predictive analytics can enable data-driven decisions about this future state.

Faethm's Job Corridor tool exposes the pathways for workers to move from roles that are at high risk of automation into roles with in-demand skills. Often these roles also provide a path out of poverty as they come with higher salaries and more room for advancement and growth. The Job Corridor assigns a job fit score from 1–100 for each transition. The score indicates the amount of reskilling needed to make the transition, as well as the overlap of skills, knowledge, personal attributes, and context needed for each role. The higher the job fit score, the easier the potential transition will be.

To the right, we can see potential transitions for a Customer Service Representative into future roles. These roles generally earn salaries that are above the ALICE threshold and have opportunities for advancement.

### Job transitions for Customer Service Representatives into high-paying roles



## The good news

While technology will lead to certain jobs becoming scarce, it will also create demand for new jobs. Faethm analysis indicates that, in the Borderplex WDA alone, there will be 11,500 new roles in technology that will need to be filled in the next five years. This represents five percent of all roles in the area.

Knowing that these roles are coming, educational institutions can take action now to ensure they are preparing students for the jobs of the future. Workers in vulnerable roles may be encouraged to pursue educational opportunities to prepare for these roles. In addition, state and local governments can leverage policy and investment that promotes retraining and redeployment.

#### Growth in technology jobs by 2026

Software Application Developers Systems Software Developers Data Engineers Data Analysts Data Integration Specialists Database Architects Data Warehousing Specialists Computer and Information Systems Manager IT Infrastructure Services Managers Product Owners Software Quality Assurance Engineers and Testers Data Scientists Software Testers Test Coaches Test Coordinators Test Automation Engineers **Penetration Testers** Test Managers Agile Coaches IT Infrastructure Services Analysts Data Governance Analysts Information Security Analysts Computer Systems Engineers/Architects Data Governance Managers Application Services Managers



## Technology impacts everyone

Those workers whose jobs will not be impacted by automation will also need to prepare for the future of work. Many roles will be transformed by augmenting technologies which will make certain tasks more efficient. These technologies will allow workers to take on either a higher volume of work or engage in high-value tasks. For example, 40 percent of tasks performed by Network and Computer Systems Administrators will be made more efficient by technology by 2026. Workers in these roles, and the educators who build their skills, would be well advised to prepare for the influx of new technologies and to examine how their work will be augmented and transformed.

### Jobs that will be transformed by technology

Network and Computer Systems Administrators **Budget Analysts** Self-Enrichment Teachers Market Research Analysts and Marketing Specialists Tutors and Teachers and Instructors, All Other Instructional Coordinators Computer and Information Systems Managers Adult Basic Education, Adult Secondary Education Anthropologists and Archaeologists Information and Security Analysts **Financial Examiners** Tailors, Dressmakers, and Custom Sewers Career/Technical Education Teachers, Postsecondary Nursing Instructors and Teachers, Postsecondary Computer Network Support Specialists Miscellaneous Entertainers and Performers, Sports Compensation, Benefits, and Job Analysis Specialists Actuaries Financial and Investment Analysts, Financial Risk Sales Engineers Property Appraisers and Assessors Medical Appliance Technicians Claims Adjusters, Examiners, and Investigators Exercise Trainers and Group Fitness Instructors Art Directors



## Conclusions

Emerging technologies will impact workers of every level. Low-wage workers will bear the brunt of job losses, but much can be done to prepare for these changes. It's imperative that lawmakers, employers, educators, and workers understand the future state of the workforce and identify critical skill gaps. With forethought and planning, it's possible to prepare everyone for the future of work.

To learn more about Faethm's workforce economics tool and how it might support your organization, we invite you to get in touch. **Click here** to book a demo of Faethm's AI-powered predictive analytics platform or **click here** to contact our team.

