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United Airlines Innovate Program, A Career Pathway

A framework for embracing skills-based hiring to drive innovation and increase the technology talent pipeline

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Executive Summary

A new model for attracting and developing early-career technical talent – the United Airlines Innovate Program, a career pathway.

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The Innovate Program is a career pathway designed to empower individuals from non-traditional backgrounds to become trailblazers in the aviation technology space. Through its structured framework, abundant learning resources, and inclusive conversion pathways, United is dedicated to empowering these individuals to excel in a career in technology, thereby enriching both their lives and the communities they serve. With this program, we not only cultivate the next generation of tech leaders but also foster a culture of inclusion and innovation that benefits us all.

Jason Birnbaum
CIO, United Airlines

United Airlines, recognized for its dedication to inclusion and innovation, established Innovate to address the shortage of technology talent and provide an attainable career pathway for individuals from non-traditional backgrounds.

With the increasing demand for technology expertise, Innovate aims to attract and nurture technical talent, providing the necessary tools required for a successful and fulfilling career in digital technology.

Notably, Innovate has received funding through the Good Jobs Challenge and has attained formal recognition as a registered apprenticeship program by the Department of Labor.

Careers In Digital Technology at United Airlines

Innovate offers a diverse array of technical skill focus areas designed to empower individuals in their professional development journey. Participants have the opportunity to explore programming languages like Python, Java, and JavaScript, gaining proficiency in both front-end and back-end development. Additionally, the program provides hands-on experience, equipping learners with practical expertise in building scalable and efficient software solutions.

Through seven specialized tracks, Innovate enables participants to deepen their knowledge in cutting-edge technologies and address the evolving demands of the digital landscape.

Software development   **Analytics**   **Cybersecurity**   **Systems Analyst**   **Project Management**   **Business Analyst**   **UX/UI**

Formally launched in February 2023, Innovate has quickly gained recognition as a leading program within the Chicago Apprentice Network and among Fortune 500 companies.

The Innovate model emphasizes cross-functional collaboration and support, offering valuable insights for organizations seeking to replicate its achievements.

Members of the Chicago Apprentice Network

Recognized by the Department of Labor

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An Increasing Need for Innovative Talent Acquisition

National Skills Shortage in Technology Profession

One of the biggest challenges facing the technology industry is a shortage of skilled professionals and a widening skills gap. Rapid technological advancements, increasing competition, and a limited technology talent pool contribute to these challenges.

Talent & Rapid Innovation

In recent years, research studies have highlighted the need for innovative talent acquisition strategies to address the technology skills shortage.

- More than half of global technology leaders express concerns about a general shortage of candidates for their roles, with **64%** indicating that the available candidates "lack the necessary skills or experience."[1]

- In the United States, the economy could suffer a loss of **$162 billion** yearly income as a result of shortages in technical expertise.

- There is a projected deficit of **3.4 million** professionals on a global scale.

- The last decade has seen a **10x** enrollment in non-traditional adult learning programs, like boot camp programs, meaning colleges are no longer the only source of technology talent.[3]

This data underscores the urgency for organizations to adopt creative approaches to attract and retain technical talent, which include building strong employer branding, developing partnerships with educational institutions, fostering diversity and inclusion, and establishing talent development programs like Innovate. However, there is still a long way to go to close the skills gap, especially in underrepresented communities.
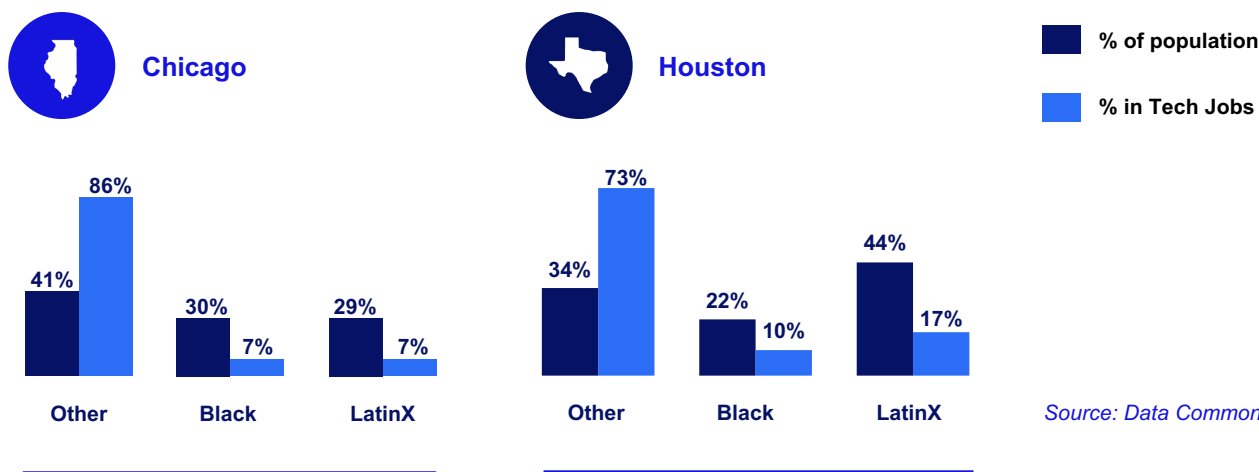
Our Communities Are Untapped Talent Sources

Headquartered in Chicago, United recognized a significant untapped market in its own backyard. Chicago stands out for its diverse economy among major metropolitan areas in the U.S., with a projected increase of +2,128 STEM jobs in 2023.[4] The Windy City was a natural choice to launch the Innovate Program, followed closely by another United hub: Houston. As one of America's most ethnically diverse cities, Houston, anticipated a surge of over 3,369 STEM job openings in 2023.[4] These numbers underscore the clear need for a focus on individuals from non-traditional backgrounds to address the shortage of STEM-trained professionals in the industry.

1. *New approaches to the tech talent shortage | MIT Technology Review*

2. *Navigating The Tech Talent Exodus: Empowering IT With Hyperautomation (forbes.com)*

3. *Coding Bootcamps in 2021*

4. *CompTIA State of the Tech Workforce 2023 v3 (cyberstates.org)*

5. *CompTIA State of the Tech Workforce 2023 v3 (cyberstates.org)*

Addressing the disparities in representation, particularly in the technology sector, is crucial for promoting diversity and inclusion. Take cities like Chicago and Houston, where more than half the population comprises people of color. Despite this, the technology industry still struggles with low representation from these communities.

Chicago / Houston % of POC in communities vs % of POC in technology

Chicago

Houston

■ **% of population**

■ **% in Tech Jobs**

	Other	Black	LatinX
Chicago % of population	41%	30%	29%
Chicago % in Tech Jobs	86%	7%	7%

	Other	Black	LatinX
Houston % of population	34%	22%	44%
Houston % in Tech Jobs	73%	10%	17%

Source: Data Commons 2022

Chicago unemployment rate (as of December 2023) is **3.9%**.[5]

Houston unemployment rate (as of December 2023) is **3.8%**[6]

A Retention Success Story

As companies navigate the nationwide skills shortage in the technology sector, they must recognize the untapped potential in their local communities. Investing in apprenticeships and embracing the diversity of local communities is not just a business strategy—it's the right thing to do.

91%

Nationally, Apprentices have a 91% retention rate with their first company (data commons 2022).[7]

5. *Economy at a Glance: Chicago-Joliet-Naperville, IL (U.S. Bureau of Labor Statistics)*

6. *Houston Area Economic Summary (U.S. Bureau of Labor Statistics)*

7. *Making Registered Apprenticeship Work for the Public Workforce System: Performance Outcomes (U.S. Department of Labor)*

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Impact of hiring, retention, & conversion

Hiring, Retention, and Conversion

In 2023, the technology industry saw its highest turnover rate yet reaching 13.2 percent. United measure the success of its Innovate career pathway by its capacity to attract and support individuals who are committed to both the company and their own professional growth. Teaming up with local partners, including i.c.stars, P33, and Year Up, United seeks outstanding talent, jointly paving the way for a successful career in technology.

50
New apprentices

Innovate formally launched in February 2023, and since our formal launch we've hired more than **50** new apprentices (FY 2023 and 1Q2024)

92%
Apprentices still with the company

United knows the Innovate program is successful, as 92% of apprentices hired are still with the company

National, State, and Local Recognition

United has built strong connections with partners on a local and national level to fortify its technology talent pipeline. These partnerships play a pivotal roll in the success of the program and the individuals it supports. By prioritizing skills-first hiring, United positions itself as a trailblazer in the industry, leveraging the expertise and resources of our partners to nurture a diverse and skilled workforce.

Talent Provider Partnerships

Year Up and i.c.stars have both partnered with United for more than five years. Both organizations recruit and train talent from their local communities.

i.c.stars has two locations: Chicago and Kansas City. The organization trains its cohorts in all facets of technology. It partners with a local company that sponsors a hands-on action learning project.

Year Up has locations across the nation. The organization trains talent based on roles. Year Up has additional training services for talent during their first 6 months on the job.

Intermediaries

Intermediaries support United in many capacities.

P33 is a Chicago-based organization dedicated to connecting training providers to employers. It was also awarded Good Jobs Challenge grant funding for Chicago-based organizations.

BuildWithin is a software service to help companies certify their programs with the Department of Labor. Program leaders, apprentice managers, and apprentices use the tool to capture all relevant information

Coalition of Leaders

United is dedicated to helping other organizations develop apprentice programs.

Chicago Apprentice Network is a coalition of businesses with apprentice programs. They share best practices for companies eager to create a similar program

United's CEO, Scott Kirby, chairs the **Business Roundtable** workforce development committee promoting skills-based hiring.

Government

United partnered with the **Department of Labor** to become a registered apprentice program.

Long-term Value for Apprentices

Department of Labor (DOL) registration is critical to ensure talent has a credential that is recognized nationally by the Technology Industry. This will ensure all talent has access to long-term quality careers without having the burden of getting a college degree.

Today, when apprentices join Innovate from a community partner, they complete 6-months of employment as a contractor to give them ample time to get familiar with the culture and expectations. Once they meet the necessary competency measures, they are converted to a full-time associate for 18-months. To transition to a structure required of a DOL Registered Apprenticeship Program, United is taking the following actions:

- Evaluating Apprenticeship Intermediaries to partner with and support sourcing/recruiting.

- Organizing the Related Technical Instruction.

- Reporting compliance with the DOL.

- Re-evaluating Innovate program structure.

- DOL Registered Apprenticeship Program requires apprentices to be full-time employees

- Leveraging the knowledge and experience of other organizations via the Chicago Apprenticeship Network.

BuildWithin was an instrumental partner in helping United become a registered Apprentice Program. Their software seamlessly captures all information the Department of Labor requires to ensure every apprentice receives their certification upon graduation.

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Participating in United's innovate program has been instrumental in shaping my career, facilitating a smooth transition into a full-time position as a project manager in biometrics. It provided me with invaluable technical skills and hands-on experience, transforming my professional trajectory.

Darrell Blue
Project Manager - Biometrics
(i.c.stars graduate)

Implementing Innovate's Methodology to Broaden the Technology Talent Pipeline

Elements of the Apprentice Program

Following their full-time training with one of United's technical training partners, apprentices join United as a contractor for six months to gain valuable on-the-job learning experiences. Similar to the internship program, this give apprentices time to understand the culture and leaders to determine if it's the right fit. Leaders across the Digital Technology team submit roles that meet a business need and are designed to develop technical skills.

Throughout the experience, apprentices undergo regular check-ins with their leader to ensure they are developing the necessary skills for a successful career in technology. While regular (1x per week) informal check-ins and ongoing feedback are recommended, United has also developed a comprehensive milestone review to track and formalize their development.
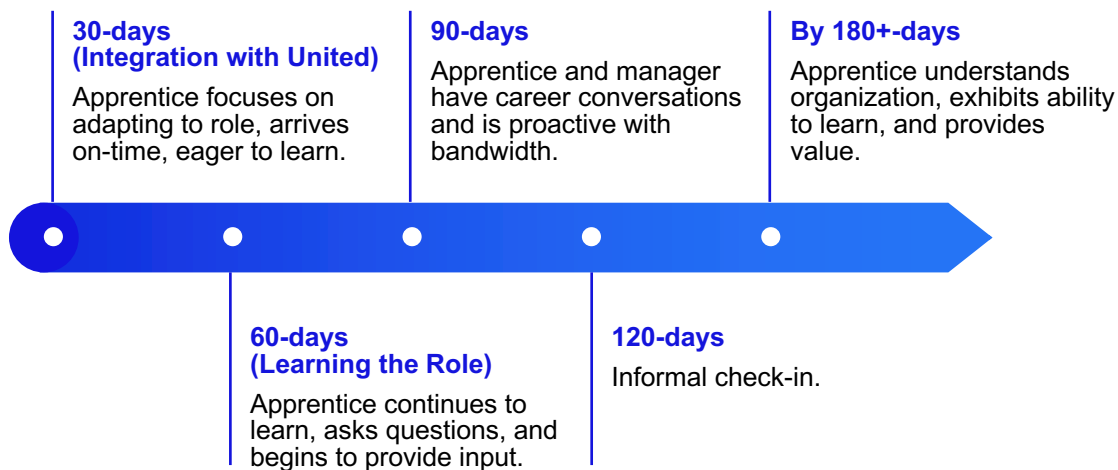
Milestone Check-in Process (MCP)

The goal of the MCP is to prepare apprentices to be proficient in necessary soft and technical skills. As an organization, United identified six key competencies of soft and technical skills for an entry-level role in Digital Technology at United

Engagement & Development	Attention to Detail & Execution	Role-specific Understanding
Communication & Collaboration	Problem Solving	Technical Understanding & Expertise

Recognizing that apprentices will be in different developmental phases throughout their six months, United mapped behaviors to 30, 60, 90, and 180-day milestones. Each of the six competencies has different set of expectations at every milestone and aligns with the apprentice's stage of development.

The Milestone Check-in Process creates structure for apprentice and leader across six **key competencies**

Weekly Check-ins With Leader to Discuss Performance

**30-days
(Integration with United)**

Apprentice focuses on adapting to role, arrives on-time, eager to learn.

90-days

Apprentice and manager have career conversations and is proactive with bandwidth.

By 180+-days

Apprentice understands organization, exhibits ability to learn, and provides value.

**60-days
(Learning the Role)**

Apprentice continues to learn, asks questions, and begins to provide input.

120-days

Informal check-in.

During each check-in, the apprentice and their leader discuss strengths, development areas, and next steps, which also serves as opportunity to assess the apprentice's performance and ensure that they are on track with their learning and skill development. Human Resources leads this process to ensure progress aligns with expectations, and that apprentices are set up for success throughout their journey.

1 Transparent and consistent expectations

2 Creates path for leaders and HR to follow up on performance concerns

3 Improves communication between leaders and apprentices

4 Provides clarity on important soft and technical skills for a career at United

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Replicating the Innovate foundation

Innovate is formally advised by a team of leaders, known as the Board of Directors, who act as a steering committee. They provide input, feedback, and support at a higher level within the organization. Innovate's day-to-day decisions depend on cross-functional collaboration with leaders from various departments, including human resources, global learning, and finance. Most importantly, a dedicated program management team oversees Innovate's strategy, programming and participant support.

Program Strategy and Management

Lead strategic planning and program design, operational policies and processes, oversee curriculum development, internal and external marketing, and reporting.

Technical Curriculum Lead

A dedicated curriculum lead with a strong technical background to build and update the program's curriculum, ensuring learning experiences help close the technical skills gap and meet the needs of the business.

Talent Pipeline Partnerships Coordinator

Assess and identify partners based on factors like curriculum, post-graduation support for learners, cost, and learner demographics.

Events Coordinator

Manage and organize various events for the program participants, including networking events, workshops, guest speaker sessions, and hackathons, as well as support recruitment efforts in collaboration with campus recruiting.

Data Analyst

Track engagement across various training platforms and activities for both Innovate members and managers. This role also reports necessary data to the Department of Labor to comply with standards of a registered apprenticeship program.

Lessons Learned Along the Way

United constructed a scalable apprenticeship program with robust structural foundations. The company streamlined its program to grow alongside its business, garnering crucial internal support from key stakeholders like executives and human resources. Through consolidating talent resources and simplifying financial processes, United enhanced the efficiency of budgeting and headcount allocation.

Furthermore, United concentrated on aligning talent roles with business objectives and fostering collaboration across teams, thereby enhancing skill sets and fostering innovation. This comprehensive approach enabled United to navigate common barriers found in large corporations while effectively expanding the program.

As the company continues to refine its talent development strategies, these elements serve as guiding principles. With a firm commitment to nurturing talent and facilitating growth, United is poised to elevate both its workforce and the aviation and technology industries.

Engaging the Right Strategic Partners

United's Innovate program has established partnerships with i.c.stars and YearUp, which provide non-degree training for individuals from underserved communities and non-traditional education backgrounds

When evaluating future partners, United takes the following factors into consideration:

- **Location:** Some partners operate their programs 100% in-person; however, since the COVID-19 pandemic, an increasing number of programs also offer a hybrid and/or virtual learning experience. United requires its apprentices to operate on a hybrid model, with a designated number of in-office days per week to help facilitate relationship development.

- **Cost:** Until 2025, companies are eligible for federal grant funding through the Good Jobs Challenge to reduce RTI sponsorship costs. However, it is important to note that each talent partner structures overall costs and fees differently.

- **Technical Training:** Bootcamp-style program curriculums are typically in narrowly focused technical areas like software development, cybersecurity, or data analytics. Based on the business need to fill technology roles, United will evaluate and target specific programs that align to the skills needed for those areas.

- **Instructor Quality/Experience:** Technical experience alone does not make someone a good instructor. In fact, experience can be a detriment if the individual does not understand basic instructional design, learning theory, and possess a high degree of empathy; therefore, having insight into instructor quality and experience is crucial.

- **Professional Development:** Innovate is focused on developing the next generation of technology talent, and being successful in those roles requires more than technical skills alone. In fact, United has seen strong success and conversion with candidates from programs with a strong professional development emphasis.

Partnerships

i.c.stars |*

United Airlines' Innovate program currently partners with i.c.stars and YearUp

Conclusion

United Airlines prioritizes preparing apprentices for success, recognizing their value to the organization. Through the Innovate career pathway, United provides a structured and supportive environment, comprehensive learning resources, and clear conversion pathways, ensuring that apprentices have the necessary tools and opportunities to thrive and contribute to the company's continued success. This commitment to innovation and talent development underscores our dedication to shaping the future of both our workforce and the industry.

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Data from CompTIA, a nonprofit association for the IT industry and workforce, shows the best states for knowledge workers.

CompTIA bases its data on the monthly US Bureau of Labor Statistics (BLS) employment reports.