



In-Demand Jobs Survey and Interactive Dashboard

**Category:** Cross-Boundary Collaboration & Partnerships

**State:** Ohio

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**Project Initiation and End Dates:** August 2019 - December 2019

## Executive Summary

The In-Demand Jobs Survey and Interactive Dashboard project is a best-in-class example of multiple state agencies partnering with private sector collaborators in order to achieve impactful results on behalf of Ohio's workforce.

The In-Demand Jobs Survey and Interactive Dashboard project addressed a need identified by the DeWine-Husted administration to create a better data collection and reporting system for Ohio's In Demand Jobs List, which contains a catalog of the most in-demand jobs throughout the state. This list also informs the spending of 85% of the Workforce Innovation and Opportunity Act (WIOA) federal training funds, which are used to properly prepare employees to enter the workforce. Ohio is required to maintain an up-to-date In-Demand Jobs List via the Governor's Office of Workforce Transformation (OWT).

Previous processes to populate this list included inefficient information gathering and outdated IT infrastructure. In order to better direct federal funding and improve Ohio's workforce planning, the In-Demand Jobs project accomplished:

**Collaboration across the state.** OWT is directly responsible for the bi-annual survey and In-Demand Jobs List. OWT partnered with the Department of Administrative Services (DAS) and its InnovateOhio Platform (IOP); Department of Job and Family Services (JFS); and private-sector entities across the state of Ohio to successfully complete the project.

**Innovative and integrated technologies.** Outdated platforms and manual data entry were removed in favor of IOP's innovative processes to increase effective data sharing and analytical insight. IOP capabilities deployed for this project include data preparation and onboarding; visual and embedded data analytics capabilities, portal and website toolkits, using advanced technologies available on the IOP, such as: Alteryx and Tableau.

**Increased Value for Ohio.** The In-Demand Jobs and Interactive Dashboard project delivered a new, easy-to-use survey tool, increasing the access and participation to businesses across the state. This led to a comprehensive, 360° snapshot of Ohio industries' needs and an interactive, visual way to publish these insights for mass consumption and a better customer experience.

### PHASE 1 ACCOMPLISHMENTS

- Collaboration across 4 state agencies and offices, and unique engagement of private sector industry partnerships
- Development of new, easy-to-use In-Demand Jobs survey tool open to all businesses across the state, resulting in an 88% increase in business participation
- A more comprehensive snapshot of Ohio's training and workforce needs, increasing efficacy of WIOA funds
- Use of advanced embedded and visual analytics to collect, prepare and publish insights
- Use of IOP portal builder and digital toolkits to allow for rapid development of new TopJobs and In-Demand websites, with over 53,000 views since publication

## Project Concept

The In-Demand Jobs Survey and Interactive Dashboard project is a strategic outcome of the OWT's priority to "connect Ohio's business, training, and education communities to build a dynamically skilled, productive, and purposeful workforce."<sup>1</sup>

Ohio is required to maintain an up-to-date In-Demand Jobs List; the results are combined with labor market information and trends to direct the spending of 85% of the Workforce Innovation and Opportunity Act (WIOA) federal training funds. OWT surveys the business community on a bi-annual basis to identify in-demand jobs and develop a workforce plan based on the results. These results are made available to employers and the Ohio workforce via the public website, [topjobs.ohio.gov](http://topjobs.ohio.gov).

In Spring 2019, the DeWine-Husted Administration and OWT partnered and spent time gathering feedback on the entire In-Demand Jobs lifecycle from current business leaders across Ohio. The following were significant gaps in the previous In-Demand Jobs Survey process, In-Demand Jobs List, and online website:

- **Restrictive insights.** Only the state's largest businesses in each industry were invited to participate in the bi-annual survey, leading to fractured insights on Ohio's workforce trends and training needs.
- **Limited participation.** Of the 2,500 businesses invited to participate, only 86 had completed the survey since fall 2018.
- **Outdated technology.** The survey was hosted on an outdated platform that required a significant amount of manual data processing when results were gathered.
- **Static Information.** The In-Demand Jobs list, published bi-annually on the website, was a static, pages-long PDF document, lacking any sort of dynamic search and filter capabilities for users.
- **Negative customer experience.** The entire survey process was a bulky and frustrating experience. The survey was complicated and difficult to use, requiring a 4-page PDF manual instructing how to fill out the survey. The survey was sent from a generic marketing email with numerous attachments and links, oftentimes it was forwarded to recipients' spam folders.

The In-Demand Jobs Survey and Interactive Dashboard is comprised of two primary deliverables in response to the feedback gathered and opportunities identified: a new, easy-to-use In-Demand Jobs Survey tool for efficient data gathering and analytical insight; and a visual, interactive dashboard to depict results of the survey. Both components required significant collaborative efforts across state agencies to overhaul outdated technologies, remove siloed

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<sup>1</sup> <https://workforce.ohio.gov/wps/portal/gov/workforce/about>

processes, and leverage advanced analytics to deliver an impactful end result and subsequently push state leadership's strategic initiative to strengthen Ohio's workforce.

OWT worked with DAS and IOP teams to deliver the new survey, website and embedded data visualization. To support an agile project approach, IOP deployed their own Project Development workstream, which evaluates agency capabilities, optimizes technical solutioning, implements and monitors success in an agile manner, successfully guiding the project from ideation to execution.



Figure 1: InnovateOhio Platform's Project Development Workstream

### Significance

The In-Demand Jobs List and Interactive Dashboard project fully leverages the power of InnovateOhio Platform's technological capabilities, delivering a best-in-class example of the ability of collaboration partnered with technology to achieve a strategic goal. OWT and the DeWine-Husted Administration discussed opportunities for improvement with Ohio's business leaders across industries. This collaborative partnership allowed IOP and OWT to re-design the survey to best suit business needs in advance of 2019's In-Demand Job List.

Further recognition of this effort and push towards modern technology throughout all areas of state government will allow IOP to further its work throughout the state of Ohio.

### Leveraging IOP's Technical Capabilities for In-Demand Jobs Project

The InnovateOhio Platform is Ohio's big data platform, offering Data Analytics, User Experience and Identify capabilities. OWT leveraged many of IOP's Data Analytics and User Experience capabilities from a full product suite to deliver a comprehensive final solution for OWT and the state of Ohio.



Figure 2: InnovateOhio Platform Data Analytics Product Suite

IOP's Data Analytics product suite offers Applied Analytics, Data Integration and Data Management for a comprehensive approach for a data-centric project. Data products used on the IOP allow for full-service data approach, from data preparation and curation to query

exploration, BI reporting and embedded analytics to enable users to move from concept to results.



Figure 3: InnovateOhio Platform User Experience Product Suite

IOP's User Experience product suite offers self-service portal builder, site analytics, digital toolkits and web forms. The full range of capabilities allow for rapid prototyping and deployment of new websites and online capabilities in order for state agencies to develop a seamless user experience across state websites and portals, making it easier for Ohioans to intuitively access the critical information they need.

### Key Stakeholder Groups and Collaborative Effort across the State

Active partnerships between state leadership (DeWine-Husted Administration) and agencies (OWT, JFS and DAS), as well as private-sector business leaders, was a requirement to ensure successful execution and delivery of the project. OWT chose to collaborate with DAS and the IOP team to utilize modern-day technological solutions in order to deliver a high-value end product that strategically advanced leadership's goals.

### Data Preparation, Sharing and Applied Analytics

One of the project's most critical components of the In-Demand Jobs process is to gather and curate data from multiple sources: OWT /JFS Survey Data, JFS Labor Market Data, public Occupational Information Network (O\*NET) data, and public Bureau of Labor Statistics data. All of these datasets are required to create the 'In-Demand Jobs' list.

Prior to working with IOP, OWT manually pieced together different data elements in various formats using Excel and SQL. This process required significant amounts of resources and time for OWT employees.

Alteryx, a self-service analytics platform available on the IOP, was used to transform the process of data collection and preparation to be more efficient. The IOP was able to automate the various data sources into a single workflow, cleanse, and prepare it for insights. By leveraging this technology, the time and resources required to prepare data for the In-Demand Jobs List was streamlined.

### Using Modern Technology to Operationalize the Survey Process and Results

The original In-Demand Jobs Survey was hosted on an outdated platform which required OWT to process data collected via the survey in XLS then manually process the results for insights. By

deploying User Experience tools available on the IOP: web content management (WCM), JavaScript (JS), Java (for service implementation with JFS systems); survey results were redesigned with internal mechanisms to easily onboard onto the InnovateOhio Platform to operationalize insights.

### Embedded Visualization to build an Interactive Dashboard

To populate the survey results, OWT used IOP’s embedded visualization capability, Tableau, to power the [In-Demand Jobs interactive dashboard](#). Tableau is a technological capability which replaced the In-Demand Jobs previously static-pdf list. This data, loaded on the Tableau server via IOP, acts as an interactive jobs list that users, employers and citizens can easily search, filter results and see visual depictions in real-time as they curate results. This allows for higher engagement and a greater understanding of insights.

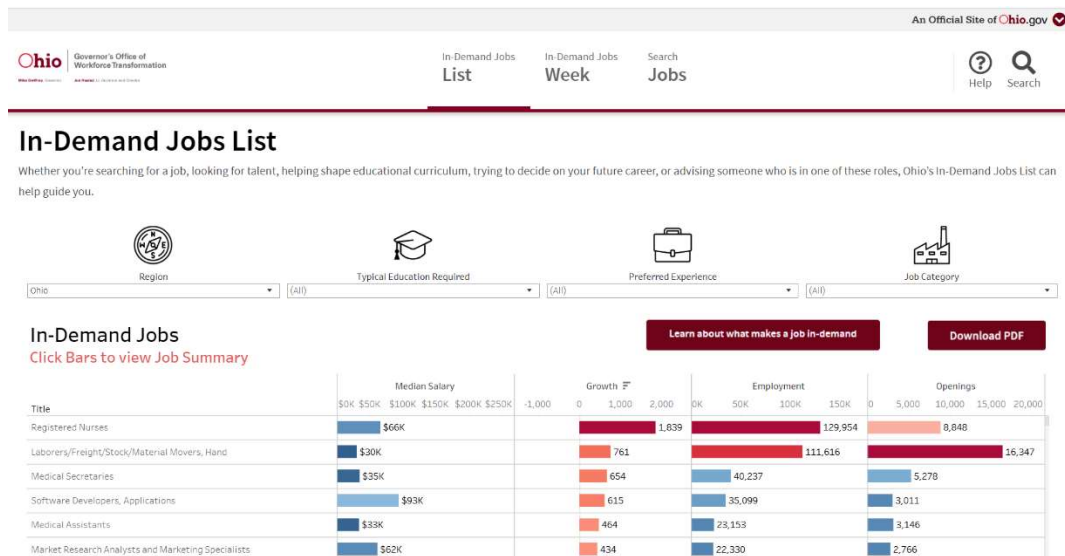


Figure 4: In-Demand Jobs List powered by Tableau

### Modern and Intuitive Experience with State Tools and Online Platforms

OWT used InnovateOhio Platform User Experience’s native technology, Portal Builder, a website template accelerator. Portal Builder creates responsive, modern, ADA-compliant sites for the InnovateOhio cloud platform, and allows agencies dynamic templates, site analytics and content management capabilities. As part of the new survey and list roll-out, OWT partnered with DAS and IOP to redesign the front-end format of the survey and stand up a new website, [topjobs.ohio.gov](http://topjobs.ohio.gov), powered on the InnovateOhio Platform.

The new website has a modern layout, intuitive navigation and ADA compliant standards, and serves as a centralized location for all resources and information related to In-Demand Jobs. The website offers direct access to the In-Demand Job Survey, as well as houses the first of its kind

interactive In-Demand Jobs List. Additionally, the survey was revised to complement the redesign efforts for survey participants.

## Impact

The completion of the In-Demand Jobs List and Interactive Dashboard strategically fulfilled leadership's priority for a stronger workforce plan and yielded an 88% increase in business participation in the survey, generating more comprehensive results for Ohio's workforce plan and training funds.

By leveraging the technology and advanced analytical capabilities of the InnovateOhio Platform, state leadership was able to:

- **Introduce new, modern technology.** The new In-Demand Jobs Survey tool offers a simple user experience and allows businesses to give input on Ohio's current and future employment market in just minutes by leveraging IOP's technology. Additionally, the new TopJobs website and In-Demand Jobs List provides interactive features for greater engagement and insight for employers and employees, with over 53,000 views on the website to-date.
- **Expand Access.** Modern technology, ease of delivery and opened access of the survey to all registered Ohio businesses gives small and large businesses alike the opportunity to have a voice in how Ohio prepares people for the workforce, using simple identification steps to gain access to the web form survey.
- **Increase federal funding efficacy.** Ensure that use of WIOA federal funds are properly allocated to guide workforce planning and better tailor training programs based on the data gathered.
- **Enhance customer experience with state agencies.** The entire project and subsequent results align with state leadership's focus to ease the interaction between Ohioans to state agencies, driving inherent value for state services.

The project and future iterative phases will continue to streamline resources, increase collaboration and leverage technology to derive valuable insights. The technology used allows agencies responsible for workforce planning to respond quickly and efficiently. This highlights the recognized value of technology and collaboration within state government.

In-Demand Jobs brought visibility to the power of technology in modern state government and is a best-in-class example of what is possible when entities and agencies collaborate to address an opportunity.