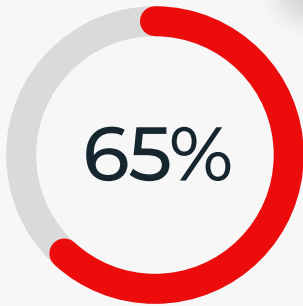


# From paper to progress: Modernizing public sector workforce management in the digital era

How innovative solutions are transforming the way the public sector works



In 2024



of respondents plan  
to increase funding  
for projects.

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# A modern approach to workforce optimization

In the public sector, the effective management of its workforce is crucial in ensuring the delivery of essential services to citizens while maintaining financial prudence. This empowers public sector organizations to optimize their human resources, making sure the right people are in the right place at the right time to deliver quality services efficiently and cost-effectively.

However, conventional approaches to workforce management, typically entrenched in manual processes and outdated technology, often struggle to address the unique complexities of the public sector.

Not only are public sector workforces expansive and diverse, but budget constraints are also ever-present. Additionally, with evolving citizen expectations, there is a pressing need for enhanced agility and responsiveness to adapt to this dynamic industry landscape.

Keeping pace with these challenges require modern solutions—which is why forward-thinking public sector organizations are turning to innovative solutions for optimizing resource allocation, improving employee productivity, and fostering engagement.

This paper explores the challenges faced by the public sector and highlights the shift from traditional approaches to modern solutions, such as cloud-based platforms and machine learning, which optimize resource allocation and enhance employee productivity.

It also considers the vast potential of workforce management technology—which includes demand forecasting, mobile tools, data analytics, and automation—and how this contributes to a more balanced work-life environment for public sector employees and improved service delivery to citizens.





## Navigating the future

Workforce management technology encompasses a comprehensive suite of tools and software applications designed to streamline various aspects of employee management. These solutions span a wide range of functionalities, from scheduling and time tracking to attendance monitoring and performance analytics.

Conventional workforce management practices are heavily reliant on paper-based systems and manual data entry, rendering it slow, inefficient, and prone to errors. With a lack of real-time insights, these traditional methods hinder informed decision-making, particularly in areas such as staffing, scheduling, and performance management.

In response to these limitations, leading public sector organizations are increasingly embracing modern solutions, such as cloud-based platforms and mobile tools, to revamp their workforce management practices.

This shift from outdated technology to innovative solutions is instrumental in modernizing workforce management in the public sector, providing the agility and efficiency needed to meet the evolving demands of today's evolving work environment.<sup>1</sup>



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<sup>1</sup> "Public Employment and Management 2021: The Future of the Public Service," Organisation for Economic Cooperation and Development (OECD) ([www.oecd-ilibrary.org/sites/1a9499ff-en/index.html?itemId=/content/component/1a9499ff-en](http://www.oecd-ilibrary.org/sites/1a9499ff-en/index.html?itemId=/content/component/1a9499ff-en)), December 8, 2021.

# Predictive precision with demand forecasting

Within the domain of managing the public sector workforce, it is important to emphasize the crucial role that demand forecasting plays. Efficient allocation of resources, reliable service delivery, and meeting citizen needs all hinge on accurate predictions of workforce requirements.

This is where demand forecasting—the process of predicting future demand for services—comes in.



While traditional forecasting methods are often reliant on historical averages or other simplistic models<sup>2</sup>, machine learning forecasting can extract valuable insights from vast and diverse data sources, while considering the complexities and unique nuances of public sector operations.

Powered by artificial intelligence (AI), machine learning offers a robust solution in enhancing demand forecasting accuracy—a game-changer in the public sector landscape.

Here is an overview of how this works:



## Historical data analysis

Machine learning forecasting algorithms, trained on historical data, juggle vast datasets while incorporating variables such as seasonal fluctuations and past trends, identifying hidden patterns that would otherwise remain obscured.



## External factor integration

Variables such as weather conditions, holidays, and public events are factored into the equation by machine learning models to predict future needs, as these can influence workforce demand in the public sector.



## Real-time data input

Unexpected and sudden events such as natural disasters or disease outbreak can have an immediate impact on workforce requirements. Machine learning models are responsive to changing conditions and can adjust predictions on the fly, ensuring that real-time changes are accounted for in demand forecasting.

# Harnessing the power of machine learning

The Infor WFM machine learning model<sup>2</sup> is a sophisticated tool that combines historical data with a comprehensive analysis of various factors to generate accurate and adaptable demand forecasts.

The model utilizes a neural network based on a multilayer perceptron (MLP) architecture, and is trained to determine the optimal weights for specific connections in its forecasting.

Its ability to consider both historical trends and recent patterns allows it to adapt to short-term fluctuations in demand. This adaptability is useful in a dynamic environment, where public sector organizations must be able to respond swiftly to changing market conditions.

In addition to historical and recent data, the model incorporates a wealth of additional data points to enhance forecasting accuracy. These include calendar events, holidays, road construction, weather conditions, location and market characteristics, and macroeconomic data.

By taking into account these diverse factors, the model generates precise forecasts that provide organizations with a clear understanding of future demand trends.



## Key highlights of Infor's WFM machine learning platform



### **Continuous evolution:**

The Infor WFM machine learning platform is committed to ongoing improvement and innovation to enhance forecast accuracy, providing organizations with reliable predictions for workforce management and access to cutting-edge insights, empowering them to stay ahead in the evolving public sector industry.



### **Advanced algorithms:**

New algorithms like recurrent neural networks (RNNs) and convolutional neural networks (CNNs) have the ability to handle complex data and patterns in a dynamic workforce environment. In an environment where variables are constantly evolving, uncovering nuanced insights from intricate workforce patterns ensures adaptability as the system can efficiently adjust to fluctuations in staffing needs and skill requirements, among other things.



### **Data-Driven optimization:**

New programming languages help enhance data visualization and accurate forecasting, which fosters informed decision-making. This leads to more efficient resource utilization and a competitive edge in adapting to dynamic market conditions.

These transformative capabilities empower strategic decision-making and resource allocation, paving the way for the public sector to thrive in navigating workforce complexities.

With a steadfast dedication to continuous improvement and the incorporation of advanced algorithms, the Infor WFM machine learning platform is an invaluable tool for public sector organizations seeking to achieve excellence in workforce management.



# The Auto Assignment Engine: Making task optimization easier

In workforce management, the Auto Assignment Engine streamlines the task allocation process, a vital factor in optimizing workforce productivity.

This intelligent system automates this step, matching tasks with the most suitable employees, considering factors such as skill sets and availability.

With this elimination of manual intervention and a reduction on time spent on task scheduling, overall workforce efficiency goes up, errors are reduced, and employees are freed up to focus on more strategic tasks instead of spending time on scheduling.



## Benefits and features of auto assignment groups

Auto assignment groups, a cornerstone of the Auto Assignment Engine, enables managers to categorize employees based on their expertise, experience, and availability.

This structured approach to task distribution ensures the optimal pairing of tasks with the most suitable employees.

When the right employees with the right skills are assigned to appropriate tasks, operational efficiency and employee satisfaction is enhanced, and outcomes are improved.



## Configuration parameters and scheduling rules

At the heart of any effective scheduling system lies a set of parameters that govern resource utilization, task assignment, and workflow optimization.

These scheduling parameters allow the organization to define and control how scheduling decisions are made.

Scheduling rules such as minimum/maximum hours per shift or minimum/maximum scheduled days per time period, can be incorporated for greater flexibility and to address precise customization needs of the organization.

Other rules include:



**Honor availability  
and honor position**



**Minimum hours  
between shifts**



**Schedule to  
budget**



**Maximum schedule  
budget**



**Minimum/maximum type X  
occurrences in block**



## **Inclusion and granular control filters**

Tight granular control enables more targeted scheduling decisions to be made.

For instance, an “age” filter allows multiple age ranges, or even specific age values, to be part of the selection criteria.

Similarly, the “team” filter allows the selection of specific teams, rather than simply assigning all employees from a department.<sup>2</sup>



# A strategic pairing

The powerful alliance of the Auto Assignment Engine and machine learning forecasting delivers flexibility and accuracy to an organization's scheduling process.

While the Auto Assignment Engine is a robust scheduling optimization tool that can function independently, its true capability is unlocked when paired with Infor's machine learning forecast model.

This synergistic partnership enables the machine learning forecast to generate precise, realistic staffing

requirements from historical and current data, complemented by the Auto Assignment Engine's seamless assigning of shifts to employees.

As technology continues to evolve, these tools will become even more adaptable and efficient in their role in shaping the future of how organizations manage their workforce.



## Some potential developments are:

**Proactive decision-making and predictive analytics:** The integrated technology facilitates predictive analytics, enabling organizations to foresee challenges and make informed scheduling decisions proactively. Anticipating future trends allows for a more agile strategy adaptation, such as scheduling additional staff in response to predicted increases in demand, thereby ensuring optimal workforce management.

**Optimized scheduling:** For organizations that face seasonal changes or fluctuating demand, staffing decisions can be enhanced by leveraging advanced algorithms and machine learning models to analyze history, current trends, external factors, and other variables.

**Seamless integration with existing systems:** The efficient integration of these tools into existing scheduling systems and workflows is crucial for widespread adoption, so organizations can leverage the power of these technologies with minimal disruption to their operations, while ensuring a smooth transition to the new technology.

# Going mobile

The integration of cloud-based, mobile-first workforce management systems is a catalyst for transforming how public sector organizations manage their workforce and provide essential services to citizens.

The concept of mobile-first technology prioritizes accessibility and flexibility for employees, offering access to a centralized workforce management platform through smartphones. This approach encourages collaboration, facilitates easy schedule management, and provides on-the-go access to critical information.

Furthermore, AI and machine learning in cloud-based solutions introduce a new dimension to workforce analytics, aiding in the identification of trends, managing sick leave and vacation time, overseeing staff supervision, and predicting future scheduling challenges to enhance workforce management efficiency.<sup>3</sup>



<sup>3</sup> "Automating Workforce Management in the Public Sector," Infor and AWS (<https://dam.infor.com/api/public/content/02204b44d556459b-8507648678d1389a?v=2520d9ff>), 2023.



## Shattering silos

The public sector is undergoing substantial transformation that is driven by a blend of external challenges and internal trends, thus requiring new approaches to workforce management.

Importantly, boundaries and silos within the public sector, as well as between the public sector and the private sector are progressively breaking down.<sup>4</sup>

This dissolution of barriers is fueled by a commitment to achieving results and fostering collaboration across traditionally segmented parties.



## Challenges that are reshaping the public sector:

**Declining public perception:** Public trust in the public sector is declining, reaching near historic lows in recent years<sup>5</sup>, making it more difficult to attract and retain top talent. Public sector organizations must focus on building a more positive workplace culture, overcome negative stereotypes, and demonstrate the value and impact of public service careers.

**Higher expectations from citizens:** Citizens increasingly expect better service from the public sector, which means there is a need for modernization and enhanced workforce productivity. New technologies and innovative approaches can be adopted to meet rising demands for more personalized and effective services.

**Skills gap:** There is overwhelming demand for digital skills in the labor market across all industries, with 92% of job ads requiring digital skills, according to a report by the National Skills Coalition.<sup>6</sup> In the public sector, there is a growing demand for digital literacy and expertise in data analysis, cybersecurity, and cloud computing. This can make it difficult for governments to recruit and retain qualified employees.

**Demographic shifts:** Aging government workforces and declining birth rates are causing talent shortages in crucial positions, with many employees nearing retirement. This demographic shift poses challenges in knowledge transfer, succession planning, and the recruitment of new talent to fill critical roles.

<sup>4</sup> William D. Eggers, Beth McGrath, and Jason Salzetti, "The Nine Trends Reshaping Government in 2023," Deloitte ([www.deloitte.com/global/en/our-thinking/insights/industry/government-public-services/government-trends/2023/cross-agency-collaboration.html](http://www.deloitte.com/global/en/our-thinking/insights/industry/government-public-services/government-trends/2023/cross-agency-collaboration.html)), March 23, 2023.

<sup>5</sup> "Public Trust in Government: 1958-2023," Pew Research Center ([www.pewresearch.org/politics/2023/09/19/public-trust-in-government-1958-2023/](http://www.pewresearch.org/politics/2023/09/19/public-trust-in-government-1958-2023/)), September 19, 2023.

<sup>6</sup> Amanda Bergson-Shilcock and Roderick Taylor, "Closing the Digital Skill Divide," National Skills Coalition ([https://nationalskillscoalition.org/wp-content/uploads/2023/02/NSC-DigitalDivide\\_report\\_Feb2023.pdf](https://nationalskillscoalition.org/wp-content/uploads/2023/02/NSC-DigitalDivide_report_Feb2023.pdf)), February 2023.



## Trends in the dynamic public sector

The landscape of public sector dynamics is undergoing a profound transformation, shaped by key trends that are influencing workforce management strategies:

### AI and automation:

AI has the potential to contribute \$13 trillion US to the global economy by 2030, according to a 2018 report by McKinsey & Company.<sup>7</sup> Many public sector organizations recognize AI as a strategic resource for enhancing competitiveness and boosting economic growth. Notably, governments in at least 50 countries have developed or are developing AI strategies for the public sector.<sup>8</sup> As AI, robotics, and data analytics become more prevalent in decision-making, employees are liberated to focus on complex and strategic work—improving efficiency and productivity in the public sector.

AI has the potential  
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### Public sector adoption of AI:

The public sector has historically trailed the commercial sector, but emerging trends indicate that it is presently ready for AI—or will be in the near future.

In a recent webinar, Dean Lachea, VP Analyst, Gartner, shared how the public sector industry is moving to adopt AI and newer technologies.<sup>9</sup>

Based on surveys conducted with over 200 government chief information officers (CIO) and executives, 72% view AI as a game-changer.

In 2024, 65% of respondents plan to increase funding for projects.

Additionally, out of the 81% either having deployed AI or planning to do so within the next three years, almost a third already have the technology in place.

Generative AI deployment is expected to reach 74% in the next three years, currently standing at 5% deployed.

7 Jacques Bughin, Jeongmin Seong, James Manyika, Michael Chui and Raoul Joshi, “Notes from the AI Frontier: Modeling the Impact of AI on the World Economy,” McKinsey & Company ([www.mckinsey.com](http://www.mckinsey.com)), September, 2018.

8 “Artificial Intelligence in the Public Sector,” The World Bank (<https://openknowledge.worldbank.org/>), 2020.

9 “The Gartner Predictions for 2024: Top Trends Impacting Government IT” (<https://webinar.gartner.com/552334/agenda/session/1247357>), Dec 11, 2023.

## Remote and hybrid work arrangements:

The COVID-19 pandemic accelerated the adoption of alternative work options across industries<sup>10</sup>, including the public sector. This trend is anticipated to persist as the public sector seeks to provide more flexible work arrangements for their employees and reduce office space costs.

## Diversity and inclusion:

Public sector organizations are prioritizing diversity, equity, and inclusion (DEI) to cultivate a more diverse and equitable workplace. According to a national online survey from MissionSquare Institute and Greenwald Research, 56% of local governments and K-12 schools consider DEI a priority.<sup>11</sup> This commitment is driving initiatives to attract and retain talent from all backgrounds, cultivating a welcoming and supportive work environment.



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<sup>10</sup> Bryan Robinson, "Remote Work Is Here To Stay And Will Increase Into 2023, Experts Say," Forbes ([www.forbes.com](http://www.forbes.com)), February 1, 2022.

<sup>11</sup> "Managing Workforce Diversity, Equity, and Inclusion in Local Government," ([https://research.missionsq.org/content/media/document/2022/04/managing-lg-workforce-dei-part1\\_survey-data.pdf](https://research.missionsq.org/content/media/document/2022/04/managing-lg-workforce-dei-part1_survey-data.pdf)), May, 2022.

# Transforming public sector operations

Public sector organizations are under increasing pressure to do more with less, with the overarching expectation to consistently deliver high-quality services to citizens while also operating efficiently and effectively.

Modernizing workforce management can help organizations achieve these goals by automating manual tasks, providing real-time insights, and empowering employee with self-service platforms.

## Five advantages of modern workforce management solutions:



### Automated scheduling

Modern workforce management systems empower public sector organizations by automatically creating schedules based on employee availability and skills, resulting in more effective scheduling.

This improvement translates to quicker response time and more efficient service delivery, as the right personnel are available at the right times to promptly meet the needs of citizens.

Also, the integration of mobile apps allows employees to easily view and amend their schedules, including requesting time off or swapping shifts.



### Streamlined messaging

Centralized communications offer a platform for employees and managers to connect, enhancing collaboration within the organization.

These systems can also help create a more nurturing workspace by promoting transparency and efficiency—for instance, through employee feedback and actionable insights.

Additionally, tools that facilitate real-time communication, project management, and document sharing, enable teams to work efficiently, both on-site and remotely.



### Data-driven decisions

Predictive analytics, integrated into modern workforce management systems, play a vital role in anticipating upcoming scheduling challenges and supporting informed decision-making.

AI and machine learning algorithms can identify trends and analyze behaviors<sup>3</sup>, providing organizations with actionable insights to proactively address potential issues and optimize workforce operations.

Furthermore, data from attendance and time-tracking features can gauge worker performance and provide organizations with the ability to forecast future staffing requirements and avoid staffing shortages or overstaffing for optimal resource utilization.



### Cloud-based flexibility

Cloud-based solutions present a versatile solution for public sector organizations, providing scalability, agility, and accessibility.

These systems can seamlessly adjust to evolving workforce demands, accommodating fluctuating needs and adopting to changing circumstances with ease.

They also ensure accessibility from any location and device, contributing to enhanced employee productivity and satisfaction.

Embracing cloud-based flexibility ensures business continuity, even in the face of unexpected challenges or remote work requirements.



### Cybersecurity Integration

In the second quarter of 2023, cyber security attacks against government agencies and public sector services surged by 40% compared to the first quarter<sup>12</sup>, underscoring the imperative for robust cybersecurity measures within modern workforce management systems.

The integration of advanced security protocols safeguards sensitive data, which enhances overall resilience, instills trust, and ensures compliance.

These measures also foster a secure digital workspace, assuring citizens that their data is handled with care.

Additionally, regular updates strengthen cybersecurity defenses, aligning workforce management practices with the highest standards of data security in the public sector.



## Cybersecurity resilience in government

Most public sector organizations subscribe to cybersecurity protocols mandated by well-established standards such as the Federal Risk and Authorization Management Program (FedRAMP), the State Risk and Authorization Management Program (StateRAMP), or the NIST 800-53 framework.

FedRAMP presents a standardized approach for security authorizations related to Cloud Service Offerings.

StateRAMP, operating as a 501(c)6 nonprofit, is dedicated to advancing cybersecurity best practices through education and policy development. The organization's mission seeks to improve the cyber posture of public institutions and the citizens they serve.

Notably, the adoption of secure cloud platforms is on the rise, with the number of state and local governments or government entities subscribing to StateRAMP increasing from 22 at the end of 2022, to 33 in 2023.<sup>13</sup>

In the context of cybersecurity, some states mandate that solutions must be FedRAMP or StateRAMP compliant. Failure to meet these standards may render vendors ineligible for application.

The NIST Special Publication 800-53, titled "Security and Privacy Controls for Information Systems and Organizations," provides a comprehensive set of recommended security and privacy controls for federal information systems and organizations. These controls play a crucial role in meeting the requirements of the Federal Information Security Management Act (FISMA).



## Balancing productivity and well-being

Modern workforce management tools serve as a powerful ally in today's demanding public sector landscape, where public sector organizations strive to deliver excellence while carefully managing resources.

While technology helps to automate, optimize, and support data-driven decisions, it also paves the groundwork for another significant achievement and crucial aspect of employee well-being—work-life balance.

By streamlining the complexities of workforce management, these solutions empower employees to efficiently manage their time and personal lives, therefore fostering a more fulfilling and balanced work experience.

As a result, the pursuit of work-life balance transforms from mere aspiration into an attainable reality, benefiting both public sector employees and the citizens they serve.

# Empowering public sector workforce with modern tools

In the public sector, addressing challenges like diverse workforces, budget constraints, and changing citizen expectations requires forward-thinking solutions for exceptional service delivery and operational efficiency. This calls for a responsive and citizen-centric public sector workforce system—adaptable, efficient, and equipped to meet the community's evolving needs.

Leading organizations are already embracing innovation, incorporating cloud-based platforms, machine learning, and automation to effectively manage their workforce and achieve excellence in workforce management.

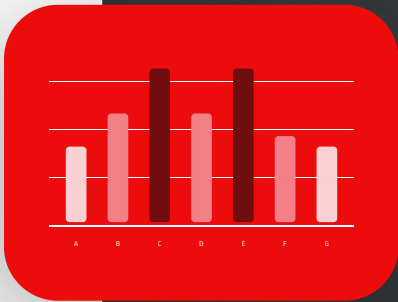
The transformative impact of modern workforce management systems reshapes public sector operations, enhancing accessibility and collaboration, and fostering a culture of continuous improvement to elevate service delivery.

Additionally, by simplifying processes and providing real-time insights, these tools enable public sector employees to focus on their core responsibilities, contributing to a more engaged and productive workforce.

The inclusion of machine learning-driven demand forecasting, exemplified by the Infor WFM model, stands out for its sophisticated approach, combining historical data analysis with various factors for precise demand forecasts. This capability empowers organizations to anticipate and proactively address needs, ensuring that the right resources are available when and where they are needed.

Beyond operational gains, these innovations contribute to a healthier work-life balance empowering employees to manage their time effectively. This holistic impact extends benefits to both public sector workers and the citizens they serve, creating a more resilient and responsive public sector committed to delivering exceptional service to the community.





## About Infor

Infor is a global leader in business cloud software products for companies in industry specific markets. Infor builds complete industry suites in the cloud and efficiently deploys technology that puts the user experience first, leverages data science, and integrates easily into existing systems. Over 67,000 organizations worldwide rely on Infor to help overcome market disruptions and achieve business-wide digital transformation.

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