

Case for **Global Audit & Consultancy Company**

# Innovative IoT Solution for Office Space Management

Enabling Efficient Workplace Utilization for a Global Audit Company

Industry: Professional Services

Location: USA

Employees: 100,000+



## Client Background

Our client, One of the Big Four consulting companies, required a scalable solution to manage workplaces on-the-go for its offices in 100+ countries. Infopulse developed a custom IoT app, which provides social connectivity management features and real-time user behavior analytics that enable predictive space utilization.

## Business Challenge

Our customer, One of the Big Four global audit and consulting companies, has thousands of consultants across the globe who frequently request the use of working spaces and meeting rooms. Thus, one of the major business challenges for the company was to conduct a full-scale optimization of office space usage. The customer requested Infopulse to develop a scalable workplace solution that would allow their employees to book and manage working spaces and meeting rooms on-the-go and with minimal effort.

**Furthermore, while developing the solution, Infopulse experts had to address a spectrum of specific technical requirements:**

- Ensure zero downtime and robust geo-redundancy to minimize system failures and deployment impact on production users;
- Implement DevOps best practices to enable faster and improved software deployments;
- Reduce the load from the components that don't support scaling-out;
- Minimize network latency during multiregional deployments;
- Integrate the solution with numerous existing heterogeneous systems.



# Solution

Infopulse developed an IoT-driven solution for office space management that leverages social connections inside the organization, and can be accessed via both web and mobile clients (iOS & Android). IoT was integrated with the customer’s systems that aggregate the data from various sensors and devices. The solution processes the data gathered from Cisco routers to track the employee’s location in the office space. Cisco Connected Mobile Experiences (CMX) API is used to gather this data, which is then displayed on the web or mobile client via heat maps.

The solution also processes the data from the customer’s security systems, namely the data that shows where and when a specific access badge was used to enter or exit the office. To receive the required data directly from the access badge databases, the solution was integrated with C•CURE ID Badging Software. The badge data is then utilized to enable automated check-in’s, and meeting room booking confirmation.

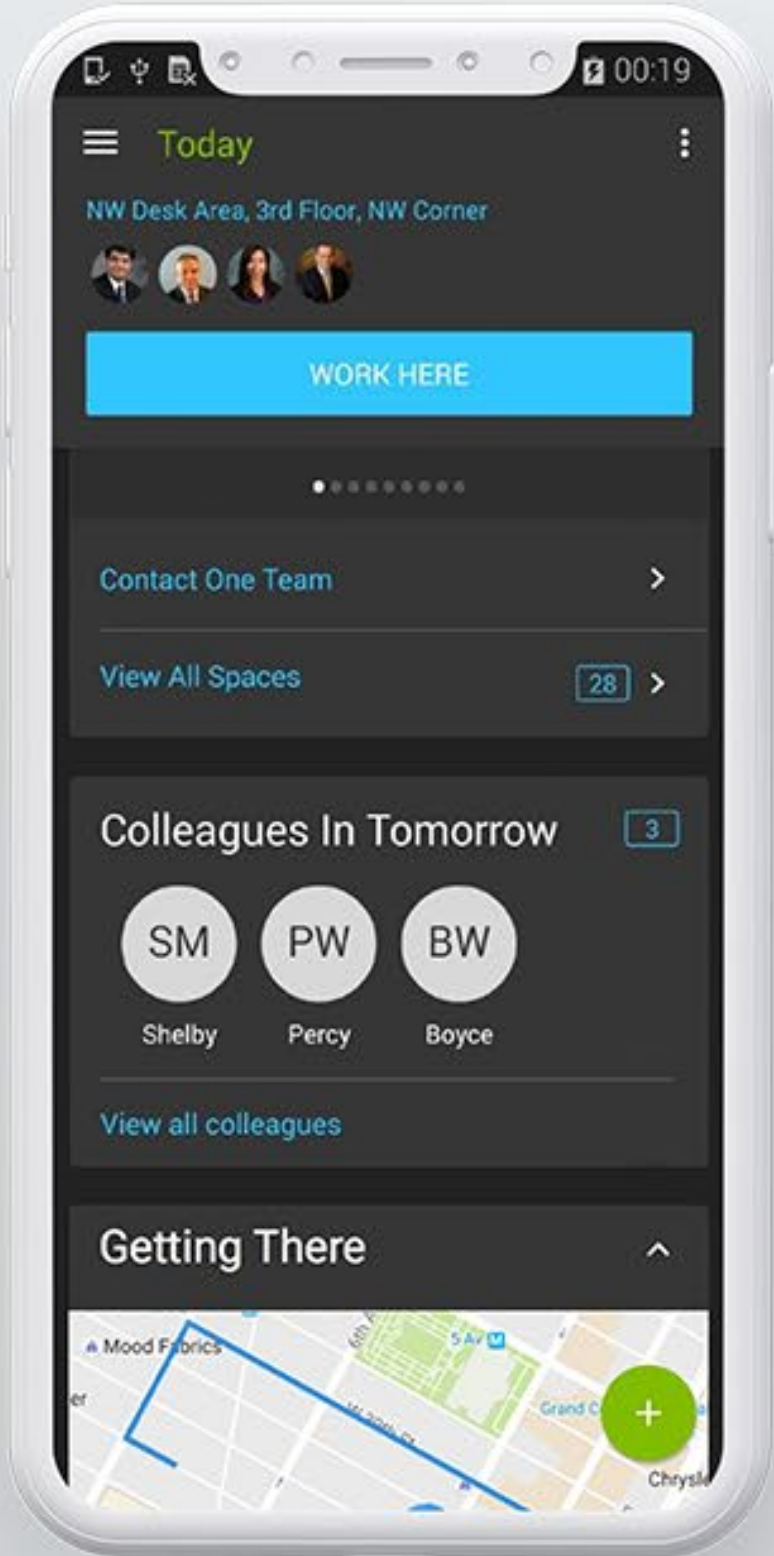
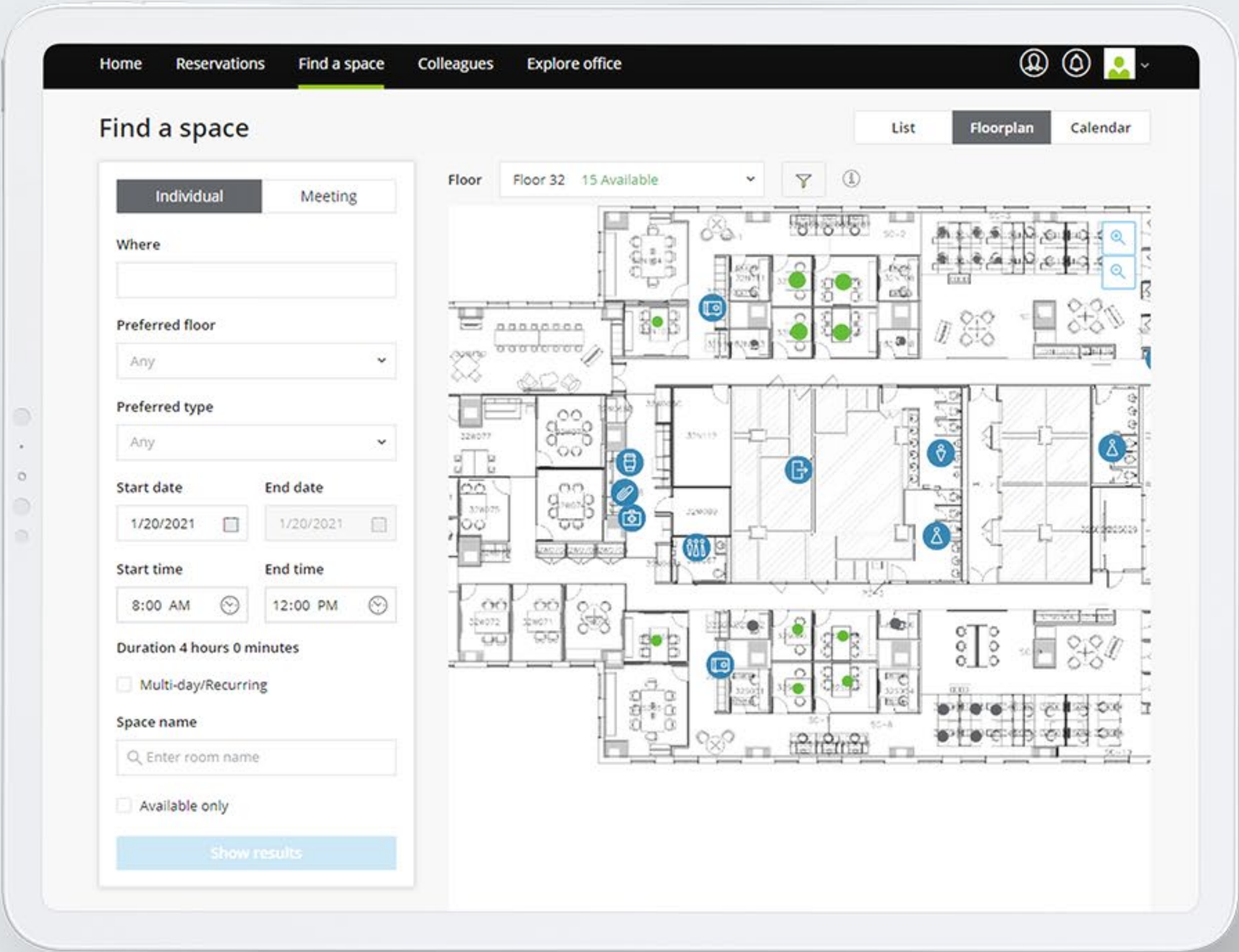
## To address the technical requirements, our experts have:

- Developed a SaaS solution hosted on Microsoft Azure to enable global 24/7 accessibility, ensure efficient multiregional deployments with minimal latency, and eliminate downtimes;
- Implemented CI/CD DevOps practices for full-scale automation of testing and deployment of infrastructure components;
- Utilized imputable infrastructure and infrastructure-as-a-code (IaC) to enable fast, risk-free and cost-effective development, deployment, and scalability of the application;
- Used event-driven IoT architecture that is based on a distributed asynchronous communication pattern that ensures high scalability of the application. The IoT architecture can analyze large volumes of data, and deliver it to the users in real-time, which significantly facilitates workplace booking and management.


- Implemented microservices to scale the development and isolate points of failure.
- Seamlessly integrated the solution with the existing systems, which enabled an effective check-in/out process, and allowed to anticipate and address the needs of end-users and support teams.

Moreover, our experts have placed a special emphasis on the mobile version. Xamarin platform was utilized to develop a performant cross-platform mobile app with native look and feel, including UI, controls, and functions that ensure enhanced user experience and convenient on-the-go access.

As a result, customer’s employees received full flexibility to find a workplace that is the most appropriate for their needs in any office and on any day.



Technologies

 C#	 F#	 .Net Core	 Asp.Net Core
 WebApi	 AngularJS	 JavaScript	 TypeScript
 Less	 CSS3	 HTML5	 Microsoft Azure Service Fabric
 Azure Service Bus	 MS SQL on Azure	 Azure Search	 Xamarin
 Swift	 Azure DevOps	 Azure App Insights	 Cisco Connected Mobile Experiences (CMX) for location services and analytics





## Business Value

The innovative IoT-driven space management solution was developed by Infopulse in full compliance with the specific customer requirements. It features an effective UX/UI with a focus on user convenience and ease of use, along with numerous advanced capabilities that enable effective utilization of the customer's office spaces.

### **As a result, our customer benefited from:**

- Accurate predictive space utilization based on real-time analysis of user behavior patterns, preferences, and actual attendance;
- Advanced travel and social connectivity management features, including location proximity to colleagues, meeting reminders, estimated arrival time, automated check-in, etc.;
- Reduced costs due to smart workplace management features that optimized office space utilization;
- Amplified employee productivity and enhanced networking.



**2**

Studio teams

**24**

People

**5+**

Years of development



## About Infopulse

Infopulse, part of the leading Nordic digital services company Tietoevry, is an international vendor of services in the areas of Software R&D, Application Management, Cloud & IT Operations, and Cybersecurity to SMEs and Fortune 100 companies across the globe. Founded in 1991, the company has a team of over 2,300 professionals and is represented in 7 countries across Europe and the Americas.

Infopulse is trusted by many established brands, such as BICS, Bosch, British American Tobacco, Credit Agricole, Delta Wilmar, ING Bank, Microsoft, Offshore Norge, OLX Group, OTP Bank, SAP, UkrSibbank BNP Paribas Group, Vodafone, Zeppelin Group, and others.

For more information, please visit **[www.infopulse.com](http://www.infopulse.com)**

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