

Technology & Innovation Outlook



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Executive Director,
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Vice President of Sales
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Tim Hebert
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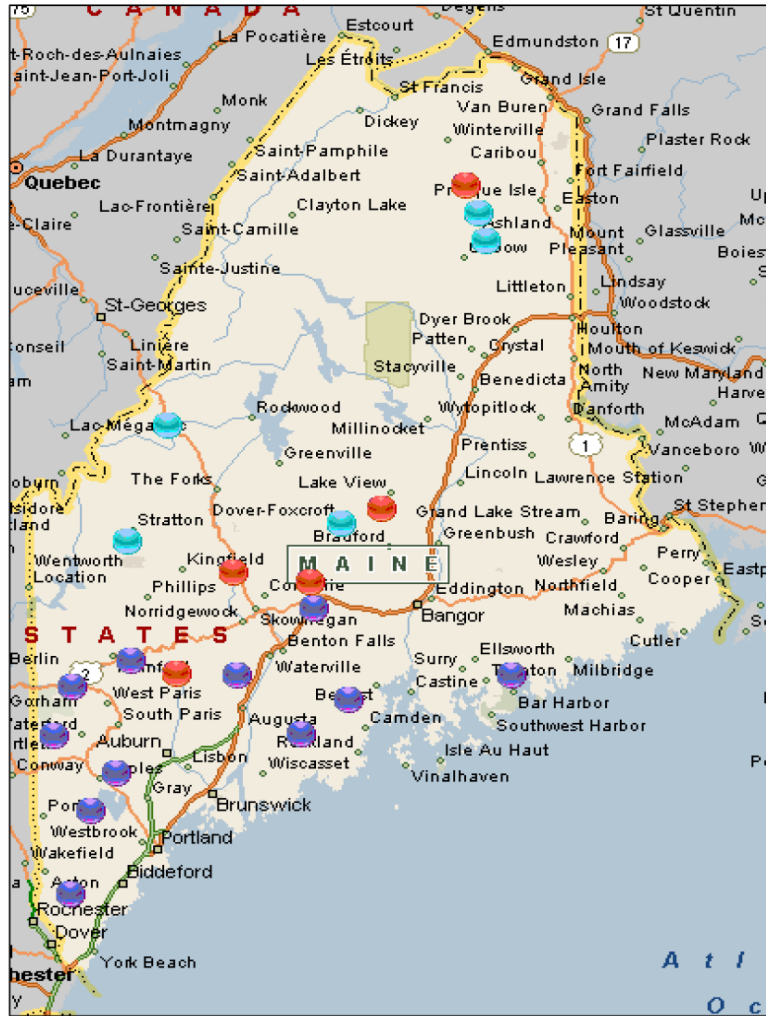
BioHome3D: Tech & Innovation Outlook

Dr. Habib Dagher, Executive Director
Advanced Structures and Composites Center, UMaine
MEREDA 2024 Annual Real Estate Forecast Conference
Portland, Maine Feb 29, 2024

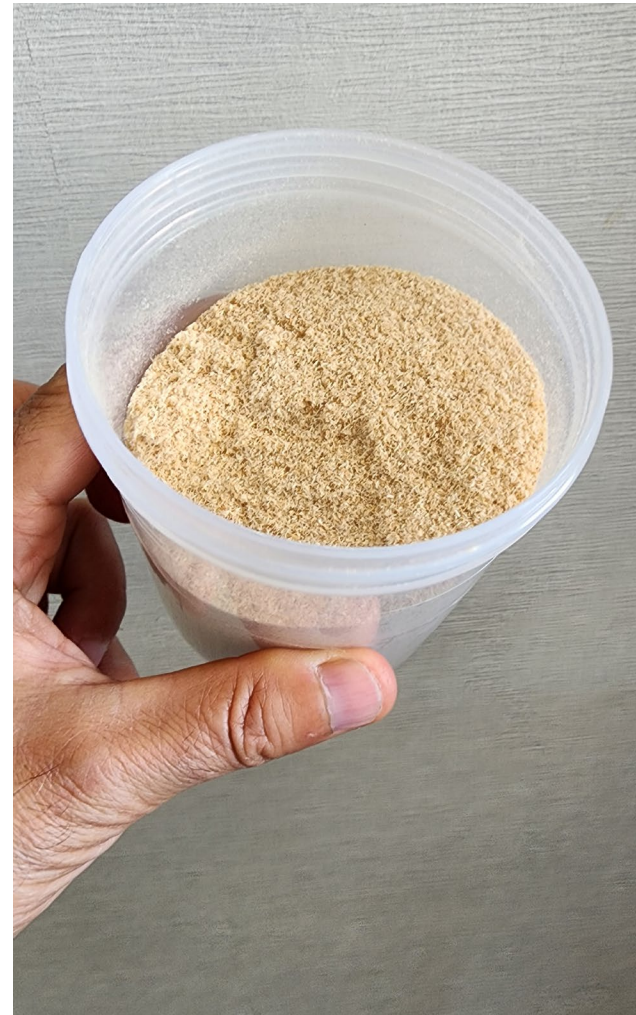
Can we Use Wood Residuals to Print Homes?

1 million tons/year
600ft² home needs 10 tons

Sawmills Residues



Hardwood
Spruce / Fir
White Pine



Stronger than Concrete



Bi↑3D

The world's first entirely bio-based 3D printed home



U.S. DEPARTMENT OF
ENERGY



OAK RIDGE
National Laboratory



MaineHousing
MAINE STATE HOUSING AUTHORITY



BioHome3D Going Through “A Good Old Maine Winter”



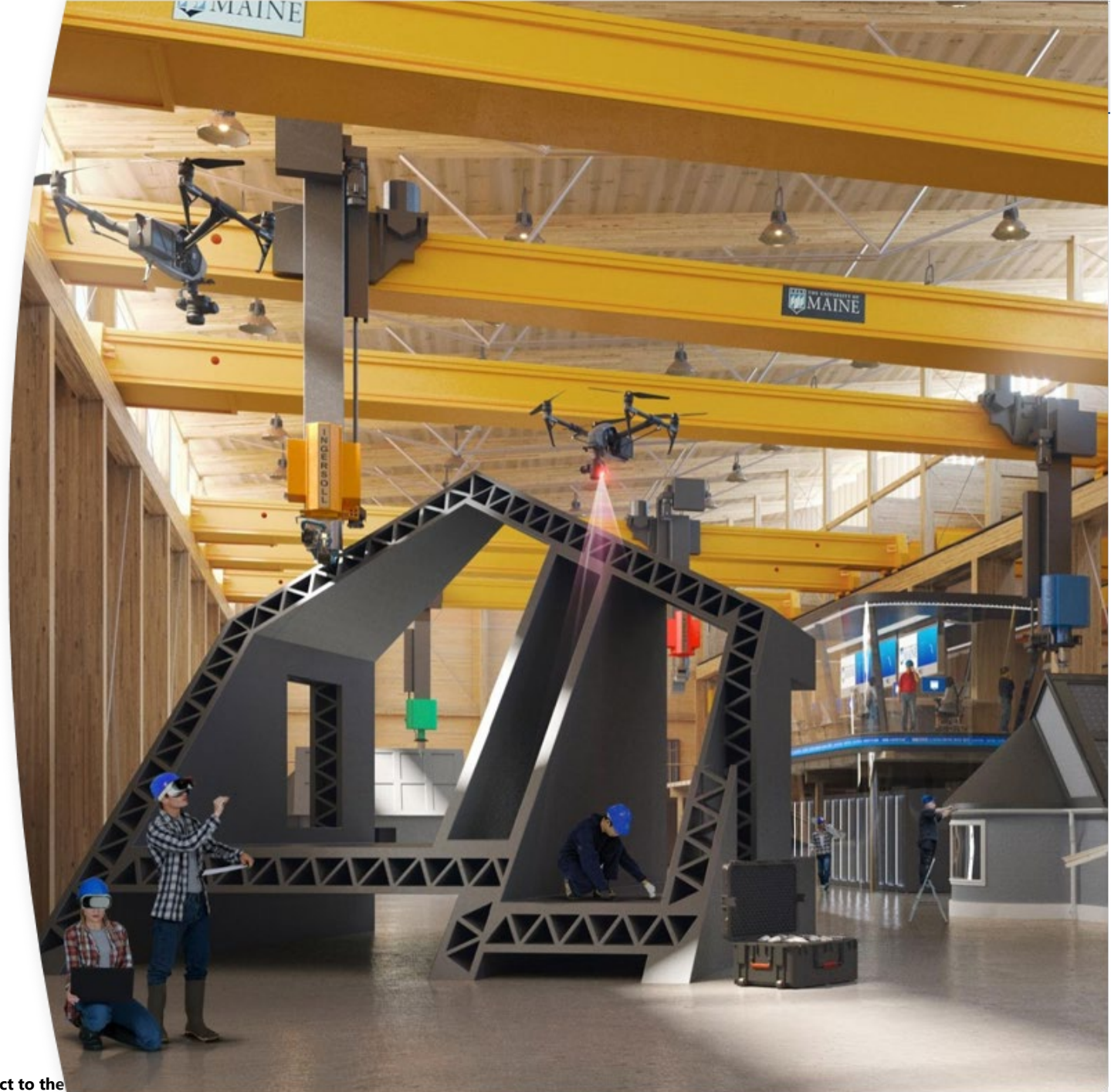
9-Units Development with Penquis, KeyBank



Workforce of the Future

GEM Factory of the Future prepares students to succeed at the frontiers of engineering, computing and information science

1. 200+ paid experiential learning opportunities offered annually
2. Immersive learning environment for students to experiment with hardware, software and computational resources
3. Fully-digitized, adaptive learning factory relies on computational methods and tools including optical-based analytics, augmented reality, real-time monitoring, digital twin, etc.



Technology Roadmap for Biobased Modular 3D Printed Homes

Bi  **3D**



2026

2025

Factory of
the Future

2024

Scale up
feedstock
with flame
retardant

FoF 1.0
Flame retardant
chemistry

2023

500lb/hr
Integrated
chases, R-value

2022

150lb/hr
100% biobased
feedstock

BioHome3D 2.0

9 Units Penquis

AI and The Workplace

Stephanie Brock

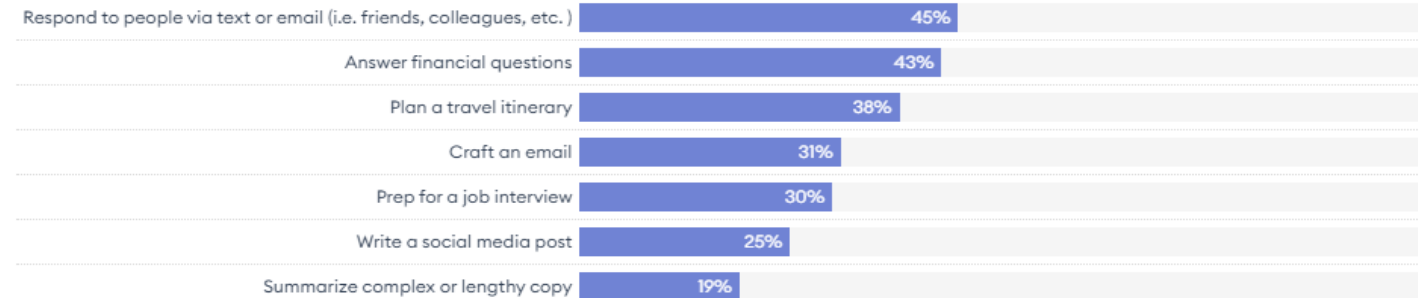
Red Thread | MEREDA Conference

AI and the Workplace: Statistics and Predictions

The time it took to reach 100 million users worldwide:

- Cell Phone **16 Years**
- World Wide Web **7 Years**
- Facebook **4.5 Years**
- Instagram **2.5 Years**
- Apple Store App **2 years**
- ChatGPT **2 Months**

Most Common Way Consumers Plan to Use Artificial Intelligence



Source: Forbes Advisor • Embed

Forbes ADVISOR

The manufacturing industry is expected to see the largest financial impact due to AI

An Accenture report forecasts that the manufacturing sector will reap the greatest financial benefit from AI adoption, with a gain of \$3.8 trillion expected by 2035.

A quarter of companies are adopting AI because of labor shortages

As labor shortages become a pressing concern, 25% of companies are turning to AI adoption to address this issue, according to an IBM report.

AI is expected to see an annual growth rate of 37.3% from 2023 to 2030

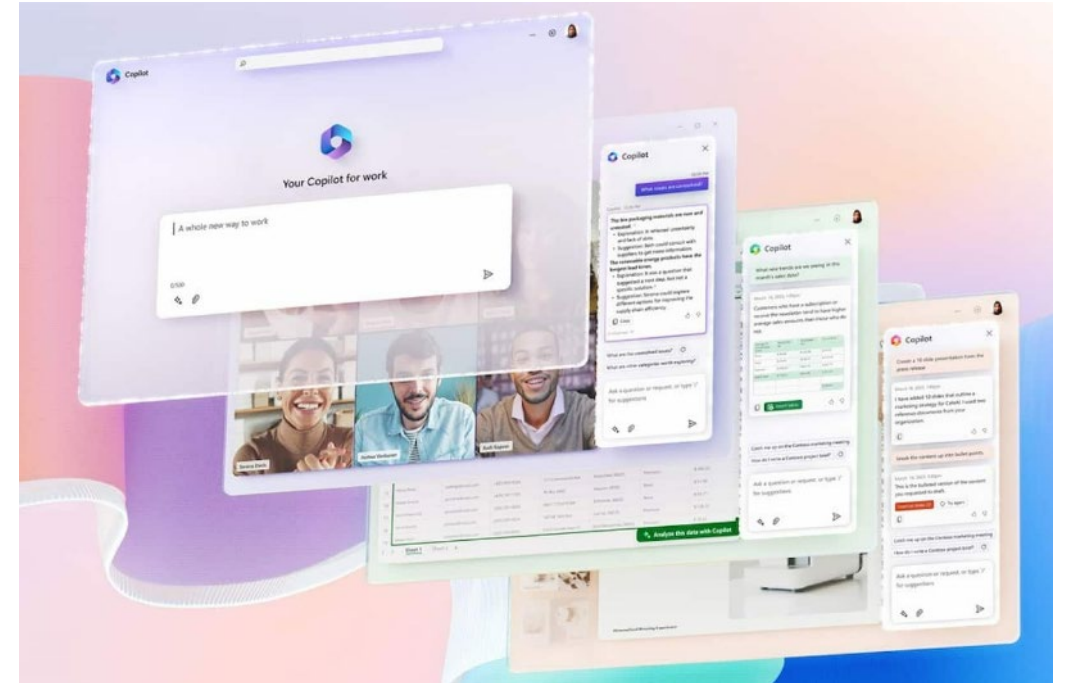
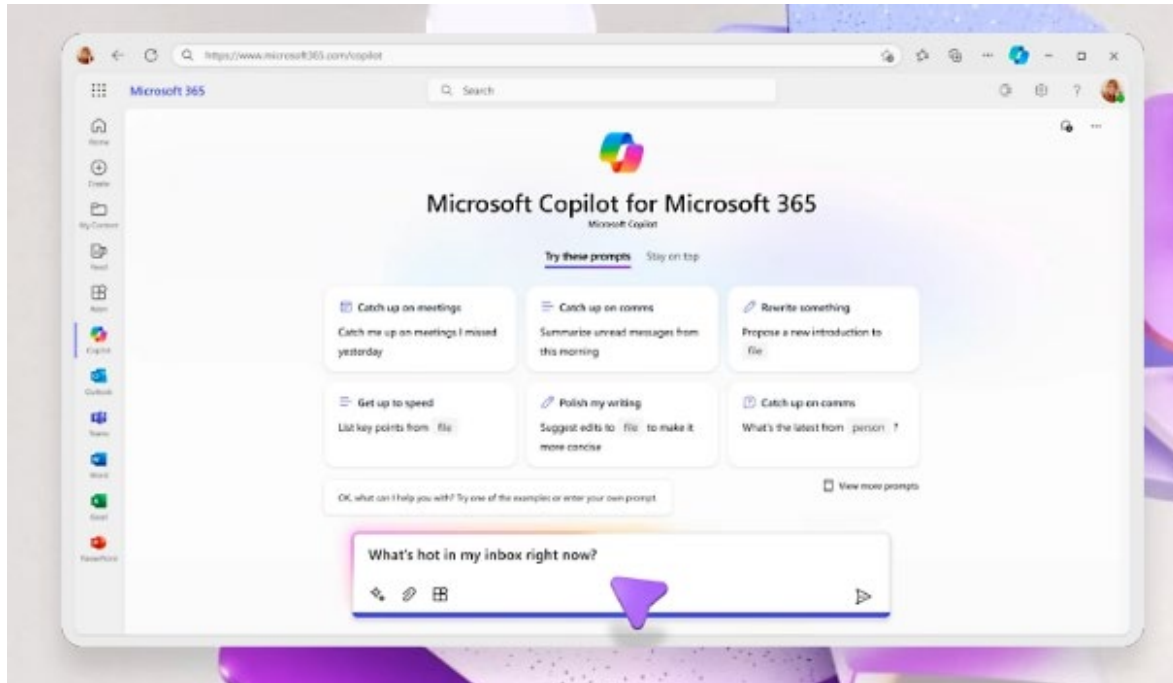
As reported by Grand View Research, AI continues to revolutionize various industries, with an expected annual growth rate of 37.3% between 2023 and 2030.

AI is capable of handling numerous office tasks

Skills not directly to content production, such as leading, dealing with critical social situations, navigating interpersonal trust issues, and demonstrating emotional intelligence, may all be more valued in the workplace (LinkedIn 2023)

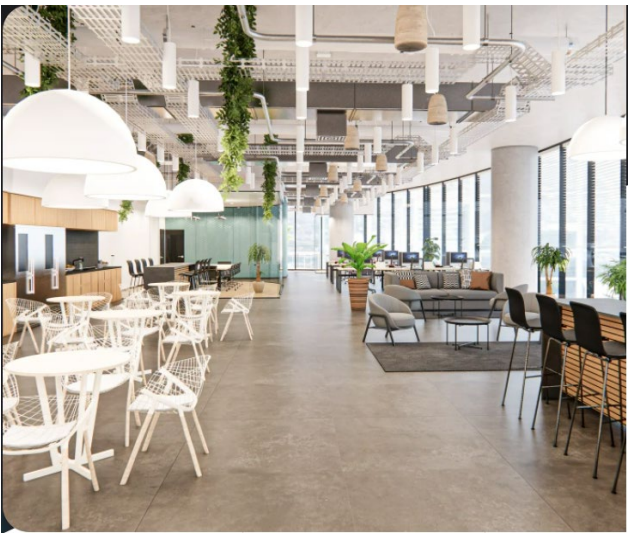
AI and the Workplace: For Microsoft Users

Microsoft Copilot empowers organizations by combining AI capabilities with enterprise data, leading to improved productivity, creativity, and collaboration.



Real estate layout planning done in seconds

Close more deals faster with qbiq's planning solution, generating AI-powered office layout plans and 3D virtual tours at the click of a button.



The first platform to automate real estate layout planning

qbiq's planning solution delivers **the next generation of test fits**, generating layout plans customized for any space and any tenant in less than 24 hours. By accelerating turnaround at a fraction of the alternative cost, qbiq is transforming real estate layout planning for landlords, brokers, and architects.

Decades of architectural knowledge loaded into thousands of engines

qbiq combines years of architectural experience with cutting-edge technology to generate test fit alternatives, taking into account costs, build time, efficiency, and utilization. The result is an optimized output planned and designed down to the millimeter.

The qbiq planning packages are fully compliant with ADA Egress, local regulations, and building constraints, offering professional-grade design alternatives compatible with AIA (American Institution of Architecture).



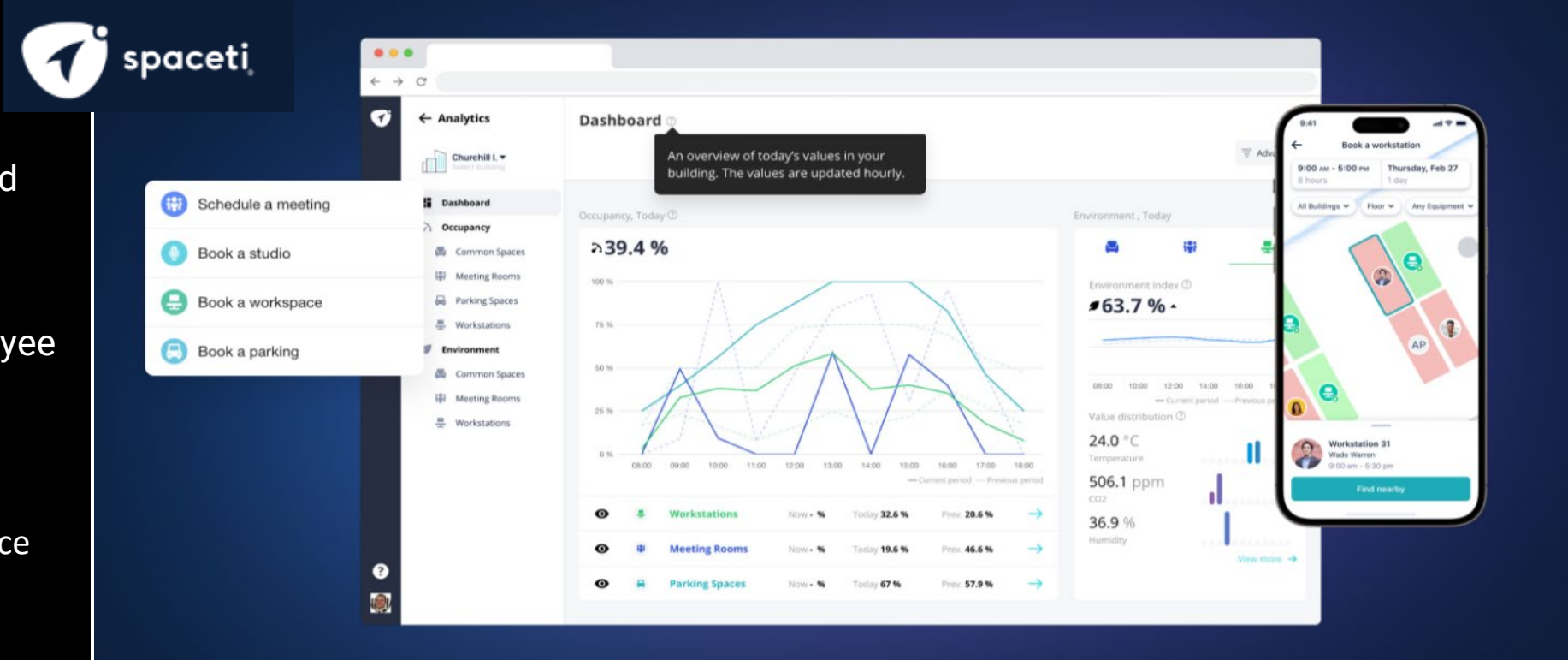
AI and the Workplace: For Business Owners, Workspace Consultants, and Designers

AI and workspace planning:

Identify trends in workspace usage, highlight underutilized resources, and predict future workspace needs.

Create adaptable office designs that flexibly accommodate varying employee needs, whether for collaboration, focused, or team meetings.

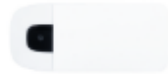
Sensor technology provides the data necessary for AI to guide future workplace decisions.



Cisco DNA Spaces



Smart Lock



People Counting



Occupancy Sensor (Workspace)



Occupancy Sensor (Room)



Environmental Sensor



Parking Sensor



Location Sensor