2019 | VOLUME 2

Tech Workplace Takes Center Stage

HOK FORWARD

An analysis of the forces reshaping the tech workplace

CONTENTS

	Page
PREFACE	1
METHODOLOGY AND PARTICIPANTS	3
TECH COMPANY LIFE CYCLE	
Startup	5
Emerging/Growth Mode	6
Established Company	6
OPPORTUNITIES AND CHALLENGES	
Convergence of Sectors	9
Evolving Regulatory Environment	11
Uncertain Business Life Cycle	13
Shrinking Talent Pool	14
Geopolitical Factors	15
Privacy and Data Security	15
Silicon Valley Exodus	16
CRE SURVEY TAKEAWAYS	19
By the Numbers	21
Key Benchmarks	23
Focus on Human-Centric Metrics	25
EMBRACING DISRUPTIVE TECHNOLOGIES	
Internet of Things	29
Case in Point: Nokia's Occupancy Sensors	30
Big Data	31
Biometrics	33
Cognitive Computing, AI and Robotics	33
Other Tech Advances	33
SPACE SOLUTIONS	
Open Plan	37
Activity-Based Workplace	38
Case Study: Cisco Systems	39
Neighborhood-Based Choice Environments	43
Case Study: OpenText	45
Space as a Service/Coworking	49
Serviced Offices	50
Managed Offices	50
Case Study: Cambridge Innovation Center	51
Agile Environments	53
Case Study: LinkedIn	55
Maker Environments for Mobile Occupants	57
Case Study: CarMax	59
Immersive Environments	61
PRIORITY ACTIONS	
Focus on Flexibility	65
Empower a Diverse Workforce	65
Invest in Ongoing Training	66
Leverage the Contingent Workforce	66
Case Study: Booking.com	67
FAST FORWARD	
The User Experience	71
Innovation on Display	71
Amenity-Rich Spaces	71
Case in Point: Nokia's Space Experiments	72
Choosing the Right Amenities Mix	72
Well-Being	73
Mindfulness	73
Beyond Sustainability	73
Space Fusion	73
Multisensory Design	73
IOT and Thick Data	74
Location, Location, Location	74
Case in Point: Nokia's Work-Life Balance	74
Case Study: Essence	75
The Rebirth of Company Towns	77
TRANSFORMATION	79
ENDNOTES	81

PREFACE

When people learned to gather and share food, we freed ourselves from the burden of merely surviving. When we began harnessing and using energy to fuel machinery, we liberated our bodies and increased our productivity. And when we started teaching these machines to operate, learn and even "think" on their own, we unleashed a future of limitless possibilities.

Each era ushered in a need for new skills, fresh approaches and innovative ways of thinking.

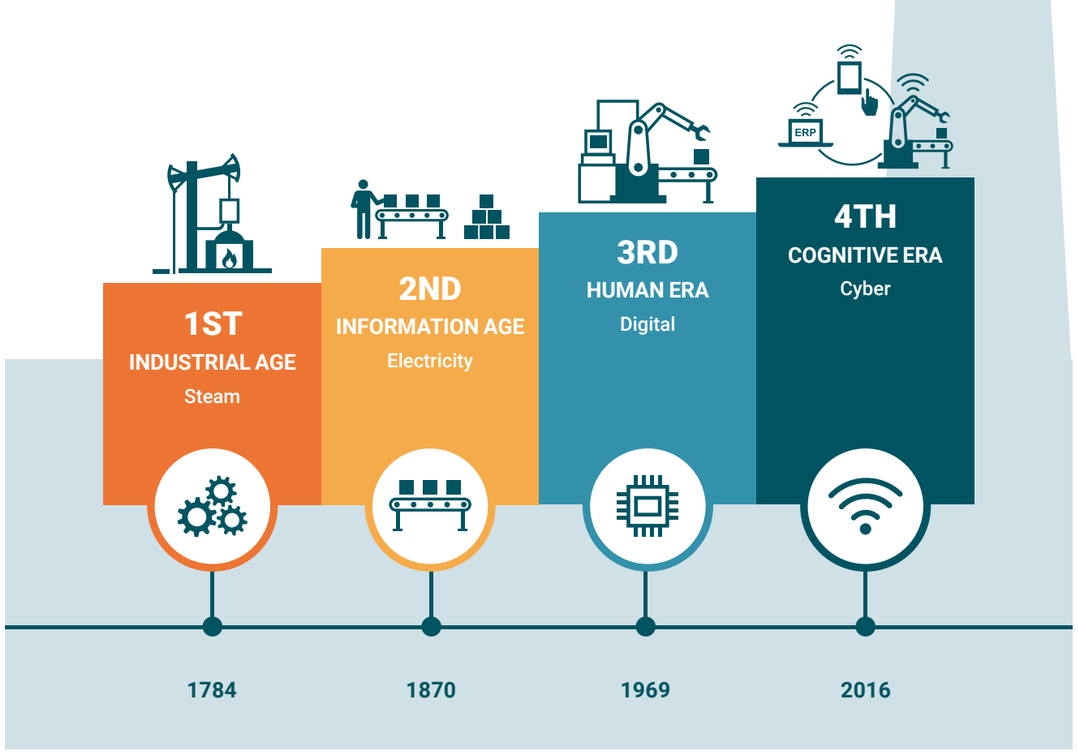
What makes the times we're living through today unique is the rapid pace of change. Nowhere is that more apparent than in the tech sector. Intense competition, readily available capital and open frontiers are challenging tech companies to continuously adapt and innovate. Yet many of their workplaces were designed for a completely different era of work.

This report highlights workplace trends and insights from tech business leaders and HOK WorkPlace specialists on the front lines of today's evolving business landscape. It also explores what's on the horizon and how tech enterprises can optimize the places where their people work.

Though the report focuses on the tech sector, it's relevant to every business interested in creating high-performance work environments that empower their people to thrive.

Each Industrial Revolution has sparked fears of redundancy, ushered in a need for new skills and disrupted business models. What distinguishes the current "cognitive era" from previous periods is the accelerated pace of change.

THE FOUR INDUSTRIAL REVOLUTIONS



METHODOLOGY AND PARTICIPANTS

HOK challenged our WorkPlace leadership team and global delivery network partners to identify trends and challenges for tech enterprises. We also conducted a global survey that assessed how tech firms are responding to their workplace challenges. To identify best practices and enhance our understanding of the trends and results, our WorkPlace team interviewed several end users.

OpenText Office, Shanghai, China
Photo Courtesy of HYE China

Authors

Tom Polucci
Director of Interiors, Global

Kay Sargent
Director of WorkPlace, Global

Gordon Wright
Director of WorkPlace, Global

Curtis Knapp
Director of Consulting, Global

Contributors

Lisa Brinkman
Regional Leader of WorkPlace, Summit, New Jersey

Lynn Ferron
Practice Leader, Ottawa

Lorraine Fisher
Director of Interiors, Philadelphia

Daniel Herriott
Director of Design, Interiors, San Francisco

Caroline Hinrichs
Director of Business Development, Experience Design

Brad Liebman
Director of Interiors, St. Louis

Pam Light
Regional Leader of WorkPlace, Los Angeles

Beate Mellwig
Practice Leader—Operations, London

Jonathan Rae
Senior Regional Practice Leader, Tampa

Tambra Thorson
Director of Interiors, San Francisco

Caitlin Turner
Director of Design, Interiors, Toronto

Sharon Turner
Director of Interiors, Toronto

Tech Contributors

AOL

CIC

Cisco Systems

Cox Communications

EA

Equifax

Google

IBM

Infinera

Manhattan Associates

Microsoft

Nokia

Polycom

Rogers Communications

Space IQ

Spotify USA Inc.

T-Mobile

Wipro

TECH COMPANY LIFE CYCLE

Though it's virtually impossible to predict a company's growth trajectory, those that succeed have clear visions and goals for the future.

Many of the world's most valuable tech companies had humble beginnings in a basement, garage or dorm room. But for every Amazon, which started in founder Jeff Bezos' garage in 1994 and today is valued at more than $1 trillion, there are thousands of startups that never got past the starting line.

Though it's virtually impossible to predict a company's growth trajectory, those that succeed have clear visions and goals for the future. As businesses mature, they move through three phases: startup, emerging/growth mode and established company. A firm's position within this continuum drives its real estate and workplace requirements.

1. Startup

In the initial phase of a new venture, work happens anywhere and everywhere. But when the fledgling company reaches about a dozen people, founders often discover the challenges of creating a shared culture if workers are dispersed or occupying someone else's space.

Many fast-growing startups seek to avoid traditional real estate leases that require commitments to a specific location under a fixed term. Instead, they adopt "infinite workplace" strategies that leverage an array of flexible space options from coworking providers, serviced offices and landlords offering shared space.

2. Emerging/Growth Mode

When a business scales up to 40 to 60 people, it needs more structure. Cliques begin to form and HR policies and workplace guidelines are required to keep the organization aligned. During this period, the focus of company leaders often turns to attracting potential investors or acquisition suitors.

As the company continues to grow, space becomes a critical asset that:

- Creates a team mentality
- Provides environments that support ideation
- Accelerates a culture of innovation

3. Established Company

As organizations grow into established companies, they need to align real estate portfolio and space strategies with their overall business strategy. By linking the workplace to their purpose, brand and culture, they can:

- Express a unified mission
- Establish and reinforce a strong brand
- Attract and retain employees
- Foster collaboration

It's also important to develop "what if" workplace scenarios that will enable the organization to quickly react to market shifts and new opportunities.

OPPORTUNITIES AND CHALLENGES

A CONVERGENCE OF SECTORS

We are quickly evolving toward an era in which tech is not just a discrete sector but a foundational element of all businesses.

From the nimble startups pioneering new business categories to the global giants reshaping our lifestyles, tech businesses are disrupting traditional business models.

Many tech companies are venturing into other sectors, including financial services, retail, hospitality and healthcare. Google has entered the defense industry with its development of robotics technologies and drones. Apple is targeting the automotive sector through its work on electric and semi-autonomous vehicles. And Amazon is taking bold steps into the healthcare realm.

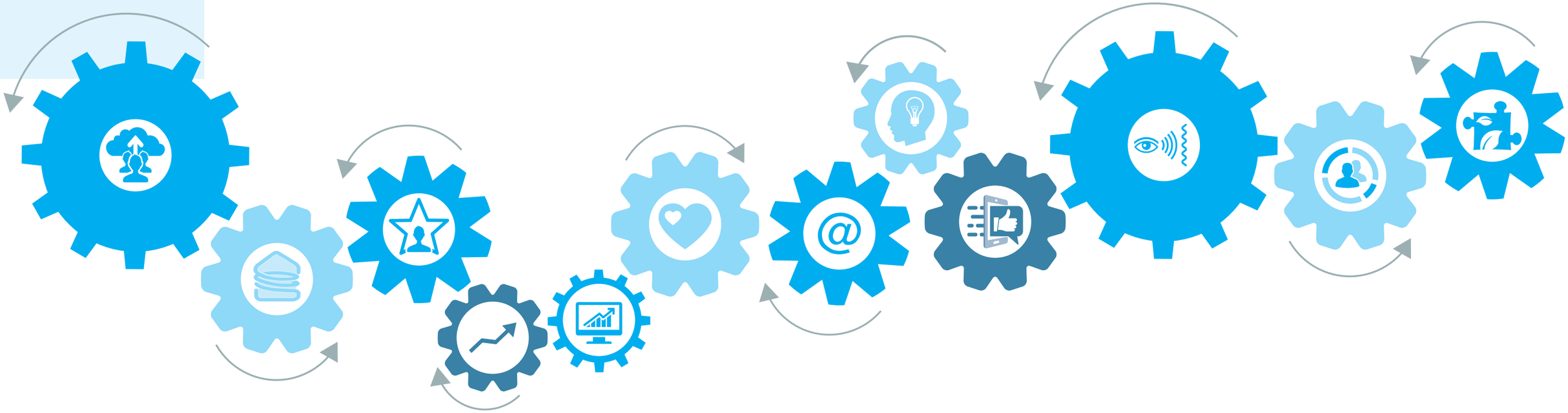
A convergence of industries is even creating entirely new sectors like technology, media and telecom (TMT), which is enabled by complementary business mergers such as Facebook and WhatsApp; Nokia and Alcatel-Lucent; and Verizon and AOL.

At the same time, companies from outside the industry are recognizing that they must become savvier about technology to stay relevant.

Some are repositioning their firms as tech companies, though their core businesses remain rooted in other industries.

We are quickly evolving toward an era in which tech is not just a discrete sector but a foundational element of all businesses. More and more companies are considering themselves "tech" companies regardless of the sector they are in.

Top Drivers In The Tech Sector



1 ENHANCING THE EMPLOYEE EXPERIENCE

2 CREATING FLEXIBLE SPACE TO MEET FUTURE NEEDS

3 ATTRACTING AND RETAINING TALENT

4 IMPROVING SPACE UTILIZATION

5 IMPROVING PRODUCTIVITY

6 PROMOTING WELLBEING

7 CREATING BRANDED EXPERIENCES

8 ABILITY TO WORK CREATIVELY

9 INTEGRATING TECHNOLOGY

10 ADDRESSING ACOUSTIC AND VISUAL PRIVACY

11 ADDRESSING CHANGING DEMOGRAPHIC

12 ADDRESSING SUSTAINABILITY

EVOLVING REGULATORY ENVIRONMENT

Some tech giants, including Microsoft, are advocating for increasing regulation of artificial intelligence technologies such as facial recognition to limit potential uses and abuses of these innovations.

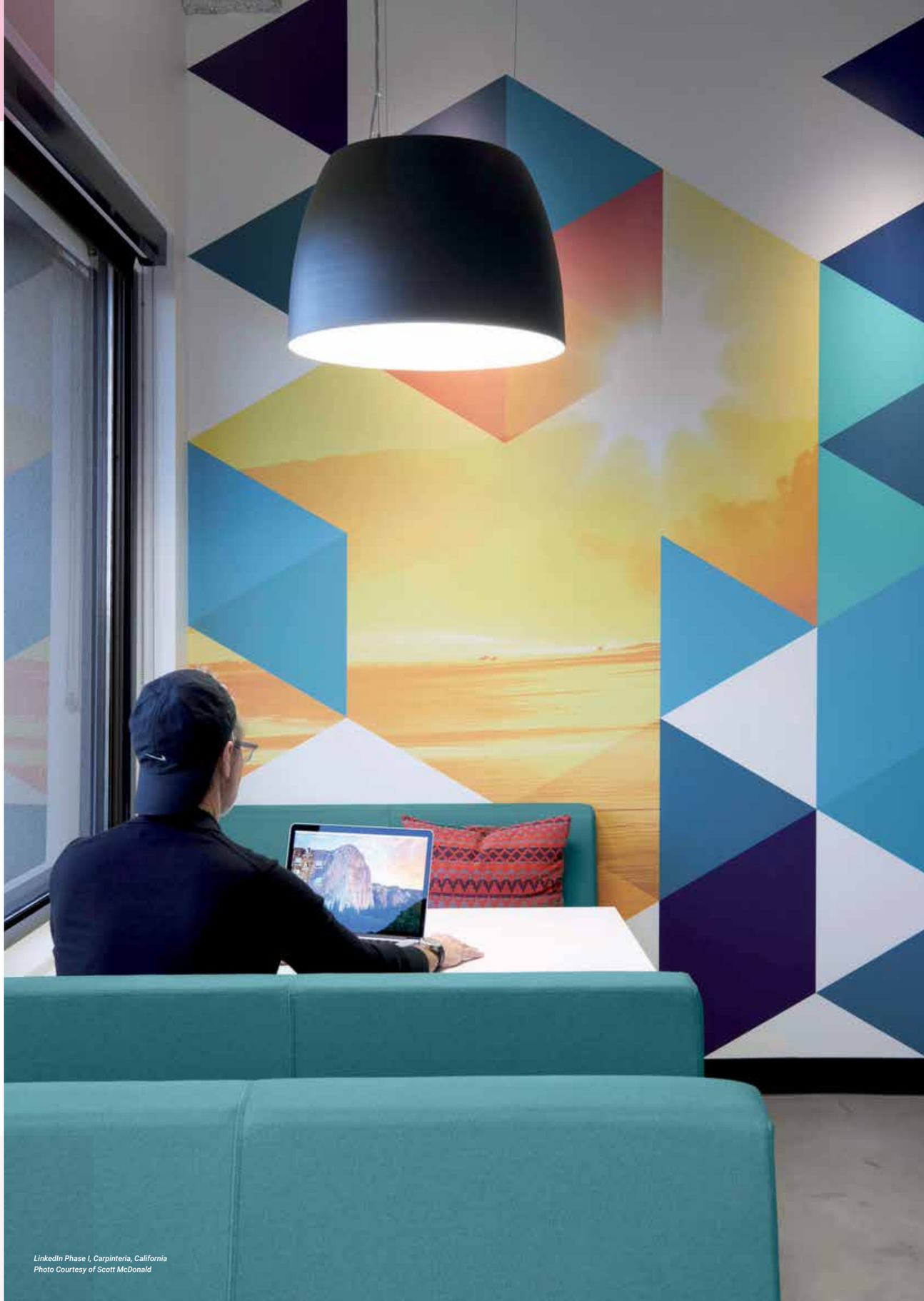
As tech companies expand into traditional industries, they often have a competitive advantage because they fall outside the purview of state and federal regulations. While lawmakers debate who should regulate these new ventures, they continue to gain market share and attract customers from traditional providers.

But recent challenges to the current regulatory environment are starting to define—and in some cases restrict—options for nascent technologies. Starting in 2020, tech firms in the U.K. will pay an unprecedented digital tax that will affect companies with global revenues of at least $640 million. Other countries are considering similar taxes.[i]

In the U.S., debates over net neutrality and a company's ability to control the speed at which consumers can access certain providers continue.

In 2017, FCC Chairman Ajit Pai repealed the neutrality policies passed in 2015, which stated that Internet access should be regulated like a public utility and prevented cable companies from slowing down access to online video streaming services. The reversal is being opposed by 22 states suing the FCC to reinstate net neutrality.[ii] California has since passed its own state-level net neutrality law that is being challenged by the federal government.[iii]

Some tech giants, including Microsoft, are advocating for increasing regulation of artificial intelligence (AI) technologies such as facial recognition to limit potential uses and abuses of these innovations.[iv]



LinkedIn Phase I, Carpinteria, California
Photo Courtesy of Scott McDonald

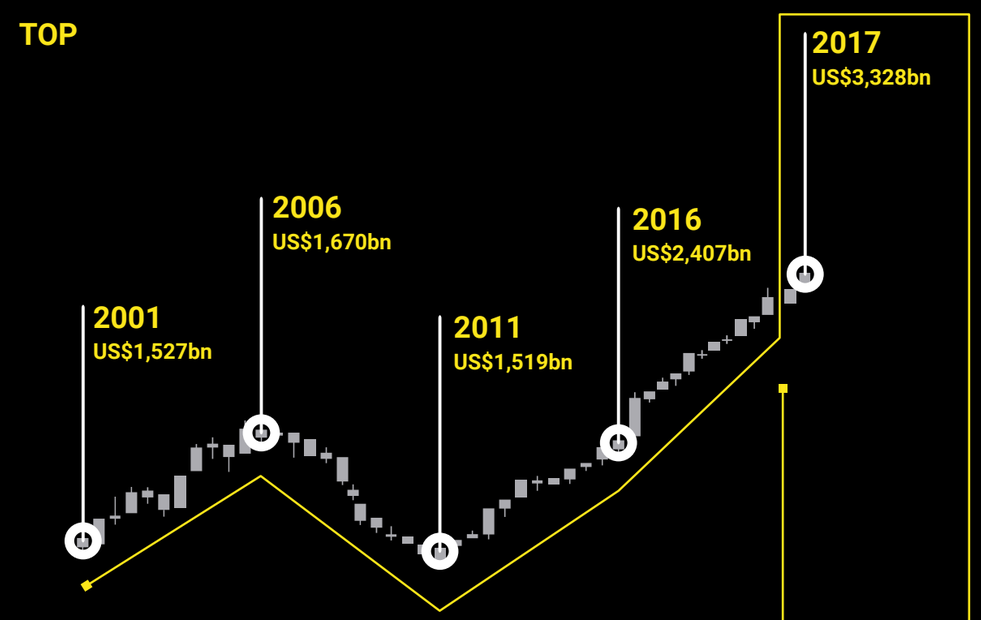
Uncertain Business Life Cycle

Globally, the average life expectancy of a company is less than 20 years. That number drops to 12.5 years in many European and Asian countries and to as low as five years in emerging markets.[v]

Up to 80% of today's businesses may not exist in 10 years. Some will fall victim to poor management or an inability to innovate or execute. Others will be absorbed into other entities via mergers and acquisitions.

TECH COMPANIES TAKE OVER THE STOCK MARKET: IN 2017 THE TOP 5 WERE VALUED AT US$3.3 TRILLION

MOST VALUABLE COMPANIES BY MARKET CAP IN BILLION US$



	2001	2006	2011	2016	2017
1	GENERAL ELECTRIC US$372bn	EXXONMOBIL US$447bn	EXXONMOBIL US$408bn	APPLE US$609bn	APPLE US$861bn
2	MICROSOFT US$327bn	GENERAL ELECTRIC US$383bn	APPLE US$377bn	GOOGLE US$539bn	GOOGLE US$730bn
3	EXXONMOBIL US$300bn	MICROSOFT US$294bn	GENERAL ELECTRIC US$275bn	MICROSOFT US$483bn	MICROSOFT US$660bn
4	WALMART US$273bn	CITI US$274bn	SHELL US$234bn	BERKSHIRE HATHAWAY US$402bn	AMAZON US$564bn
5	CITI US$255bn	GAZPROM US$272bn	ICBC US$227bn	EXXONMOBIL US$374bn	FACEBOOK US$513bn

SOURCE: MORNINGSTAR.COM, FINANCIAL TIMES, STATISTA RESEARCH VIA @MIKEQUINDAZZI

TRADITIONAL COMPANY | TECH COMPANY

Shrinking Talent Pool

As emerging technologies continue to disrupt the business landscape, it can be easy to lose sight of a company's most important asset: people.

Attraction and retention of talent is an omnipresent challenge for tech companies. Nearly half of all global employers are struggling to fill positions.[vi]

The war for talent will only intensify as Baby Boomers continue exiting the workforce and companies struggle to replace their skills, experience and institutional knowledge.

Tech employers are enticing professionals to join their organizations from other sectors. These people can then help tech enterprises move into new markets like payment systems, consumer and business lending, and investment advisory services. Many Ivy League graduates once drawn to the compensation and prestige of a Wall Street job are instead choosing the tech sector, where they see fewer regulations inhibiting innovation and more opportunities for career growth.[vii]

To ensure that their people remain valuable, productive and engaged, tech employers must adopt retraining and redeployment strategies.

Microsoft Office, St. Louis, Missouri
Photo Courtesy of Alise O'Brien

Geopolitical Factors

Companies in emerging markets, such as China-based Alibaba and Tencent, are embracing new technology faster than those in developed markets.[viii]

Toronto is producing some of the world's leading AI and deep learning companies. The city has a steady influx of venture capital and is home to several AI-focused institutions, including MaRS Discovery District, The Vector Institute and the Creative Destruction Lab.[ix] Canada also hosts large tech industry events that attract international talent, with a focus on luring computer and data scientists, engineers and developers from the U.S. to build next-generation AI technologies.[x]

Europe is the clear winner when it comes to the development of Smart Cities, with nearly half the world's tech-enabled cities based there.[xi]

Privacy and Data Security

The revelation that U.K. firm Cambridge Analytica obtained information on 50 million unknowing social media users has intensified scrutiny of the tech industry's role in securing data and guarding personal privacy.[xii]

The U.S. Federal Trade Commission, Securities and Exchange Commission and Federal Bureau of Investigation all have widened their investigations into the sharing of customer information and lack of public disclosures. The outcome of these inquiries, if not the process itself, will impact how companies handle data in the future.

In Europe, the General Data Protection Regulation enacted in 2018 will fundamentally reshape data management across every sector.

To regain trust, tech companies must continue to focus on developing data usage guidelines, being transparent about their practices and enhancing security to protect customer privacy.

Silicon Valley Exodus

The San Francisco Bay Area in California has long been a magnet for tech companies, startups and venture capitalists. In recent years it has also become one of the costliest places to live. Tight housing supply has driven rents and real estate out of reach for budding tech talent. Low- and middle-income families and younger workers unable to find affordable houses are being pushed further from their employers, leading to ultra-long commutes.

According to a 2018 report in The Economist, 46% of Bay Area residents are planning to leave the area in the next few years, up from 34% in 2016.[xiii] "We've probably hit peak Silicon Valley,"[xiv] noted AOL Founder Steve Case, who recently co-launched a $150 million "Rise of the Rest" seed fund that invests in startups throughout the Midwest.

Cities such as St. Louis, Los Angeles, Seattle, Oakland, Boulder, Austin, Nashville, Phoenix, Salt Lake City, Denver and Detroit are among the beneficiaries of this Silicon Valley exodus.

Outside the U.S., new markets in both developed and developing economies are emerging as tech hubs. East London Tech City, Silicon Allee in Berlin and 22@Barcelona are examples of how tech hubs can form when workforce diversity, quality education and capital are accessible in a market.

According to a report in The Economist, 46% of Bay Area residents are planning to leave the area in the next few years, up from 34% in 2016.

CRE SURVEY TAKEAWAYS

CRE SURVEY TAKEAWAYS

HOK conducted a global survey of real estate executives in the tech sector to assess the core issues these institutions are dealing with and how they will address them over the next three years. Key survey conclusions were:

Tech is still a high-growth sector.

Companies tend to lease real estate in urban environments.

Headcount is expected to grow, but most businesses envision **accommodating more people within their current footprint** before deciding to expand.

HIGH PRIORITY

Enhancing the employee experience and **creating flexible space** to meet current and future needs are top priorities at tech companies.

Goals for **improving space utilization, creating workplaces that support employee attraction and retention, and increasing productivity** influence workplace strategies.

Though **well-being** and **brand** are considerations when developing a workplace strategy, they are not the main drivers.

The **cost of real estate** and **time spent at the office** continue to be the most important factors influencing workspace allocation.

As hierarchy and tenure become less important within tech organizations, it's more important to **appeal to changing demographics.**

While the majority of tech companies have an official distributed work program,

43%

prefer to have employees on-site and design environments to encourage **synergy, ideation and speed to market.**

Companies often put in place distributed work policies as part of the war for talent. A top priority is to provide staff with **better work-life balance.**

"Employees are interacting with the space differently than they did 10 to 15 years ago. Our people sit in our cafés to have meetings, they hop on a quick call in a quiet room, they have a meeting in an audio privacy room. The desk as we know it is becoming less of a necessity within the office environment."

-- Julia Wright, Workplace Resources Manager, Cisco Systems

In the area of amenities, tech employers are currently focusing on **food and coffee service, but training facilities, scrum spaces and social areas** are getting increased attention. Salons and childcare programs are not.

In **urban locations,** most companies don't intend to offer amenities such as **daycare or a gym,** but instead rely on the local community to provide these services.

Tech employees value having **choices, variety and options** to select from throughout the day.

Tech employees are most dissatisfied with their **inability to manage distractions and lack of privacy.**

The average cost per SF in the U.S. ranged from

$80 to $300

but averaged **~$190 per SF** (including construction, furniture, technology and soft costs). **The cost in other regions of the world typically was less.**

Tech companies value sustainable design and will increase their focus on employee well-being, though

87%

responded that they did not intend to seek formal LEED certification and 92% did not intend to seek formal WELL certification. In some jurisdictions, such as Washington, D.C., LEED certification is a requirement for large projects.

CRE SURVEY TAKEAWAYS

By The Numbers

72% of their portfolios is leased space.

CHANGE

9% foresee no changes to the current location strategy *but*

CHANGE

16% expect a shift from predominantly urban-based strategy to a mix of urban and suburban over the next three years.

47% expect to increase headcount in the coming years while **21%** anticipated a reduction. The rest were unsure.

95% have a workplace standards/ guidelines program in place, of which **70%** are deployed globally. **10%** are deployed regionally, **10%** are deployed situationally based on business function and the remaining **10%** are deployed based on facility type.

67% anticipate growth will be leased space.

8% envision coworking space as part of their future growth strategy.

100% of those anticipating a reduction in staff envision an equal reduction in space.

44% **44%**

44% expect to take additional space to accommodate growth while **44%** anticipate a combination of doing more with their existing space and taking on some additional space.

82% of tech companies surveyed monitor and track space utilization.

But sensors are only used by **13%,** with **56%** tracking utilization via badge-in or IT logins, and **30%** doing so via observations studies.

75% of tech companies surveyed noted that they do not use a BYOD program.

59% have a formal distributed work program while

41% prefer employees to be on site.

76% have a portion of portfolio with unassigned space, with the remaining **24%** assigning staff to work points.

For those with unassigned seats, half used unassigned space for less than **25%** of their seats; one-third had unassigned space for **25-50%** of their seats; and only **8%** used unassigned seating for **75%** or more of their space, of which **8%** was **100%** unassigned.

92% of tech companies with unassigned seats used a 'first come, first served' approach, with **8%** being managed by the business group. No respondents reported using a booking system.

Key Benchmarks

Our survey and interviews with CRE leaders from tech companies revealed these key metrics:

	RANGE (IMPERIAL)	BEST IN CLASS GOING FORWARD	RANGE (METRIC)	BEST IN CLASS GOING FORWARD
WORK POINT SIZE	25-80 SF	25-36 SF	2.5–8 SM	2.5–3.6 SM
OFFICE SIZE	80–150 SF	80–100 SF	8–15 SM	8–10 SM
RSF/RSM PER EMPLOYEE	80–211 SF	100–160 SF	8–21 SM	10–16 SM
RSF/RSM PER SEAT	100–200 SF	125–140 SF	10–21 SM	12.5–14 SM
OPEN TO CLOSED WORK POINT	100% : 0% – 30% – 70%	85% : 15%		
OPEN TO CLOSED COLLABORATION SPOTS	10% : 90% – 50% – 50%	35% : 65%		
SHARING RATIO (WORK POINT : STAFF)	1 : 1 – 1: 5	1 : 1 – 1 : 1.6		
COLLABORATIVE SEAT: WORK POINT	0.5 : 1.5 – 2 : 1	1: 1		
TOTAL SEAT : STAFF	1 .1– 2 : 1	2: 1		
UTILIZATION	35%–70%	70%		
ASSIGNED SEAT IF IN THE OFFICE	0%–100%	>30%		

"More and more we are needing less and less traditional office space with desks and chairs."

- Julia Wright,
Workplace Resources Manager,
Cisco Systems

Focus on Human-Centric Metrics

Tech sector companies tend to value employee retention rates and other human-centric metrics over traditional real estate metrics such as square footage per person.

Apple Park in Cupertino, California, is emblematic of this philosophy. With a reported construction budget of approximately $5 billion, the four-story, circular headquarters structure ranks as the world's most expensive corporate office building.[xv]

Former CEO Steve Jobs envisioned a central campus that would bring Apple's staff together and maximize opportunities for collaboration. It would also serve as a sanctuary for indigenous plants, trees and natural elements, including a central pond. The building's extensive use of glass welcomes natural daylight, and its underground roads and parking spaces optimize views.

CRE SURVEY TAKEAWAYS - AMENITIES

Companies looking to attract top talent and keep their people on site are offering all sorts of amenities. These can include:

1. FOOD AND BEVERAGE SERVICE
2. TECH BAR
3. CONCIERGE
4. WELLNESS ROOMS
5. RETAIL SHOPS
6. MEDICAL CLINICS
7. AUDITORIUMS AND CONFERENCE CENTERS
8. GARDENING AREAS
9. BANKING OPTIONS
10. FITNESS FACILITIES (INDOORS AND OUTDOORS)
11. COMMUNAL OR CO-WORKING SPACE
12. PRAYER ROOMS
13. NAP PODS
14. MAKER SPACE
15. SCRUMS / DOJOS
16. GAME ROOMS

Microsoft Office, St. Louis, Missouri
Photo Courtesy of Alise O'Brien

EMBRACING DISRUPTIVE TECHNOLOGIES

EMBRACING DISRUPTIVE TECHNOLOGIES

Companies that proactively embrace new technology and digital transformation have a 50% higher return on investment than those doing so reactively.[xvi]

Sixty percent of business leaders said they struggled to respond to disruption and only 21% of them believed they had the internal expertise and talent to deal with disruptive technologies.[xvii]

Yet several emerging technologies have the potential to profoundly reshape workplace environments and position savvy companies with a distinct competitive advantage.

Internet Of Things (IOT)

The Internet of Things (IoT) is a network of devices embedded with sensors and actuators that enable the collection and exchange of data. This creates direct integration of the physical world to improve efficiency and create smart buildings. There are currently approximately seven sensors for every person and by 2020 the IoT could encompass nearly 50 billion objects.[xviii]

A smart work environment uses sensors to collect information about the physical environment and its users and leverages that data to optimize the space. Beacons, sensors and cameras can all communicate with building systems and employee smartphones to enhance the experience for all.

Employers can leverage this information to analyze the patterns and preferences of their workforce. Ambient computing—an ecosystem of network technology that responds in real time to what's happening in the business environment—is laying the foundation for an autonomous workplace. By tracking utilization, noting preferences and identifying patterns, sensors provide intelligence that can boost productivity and enhance the user experience.

CASE IN POINT

Nokia is piloting occupancy sensing at its workplaces in several large European cities. HVAC, lighting and security sensors are tied into the building management system to anonymously track use patterns and enable data-based decision making.

The Promise of Big Data and IOT:

- **Enhance the occupant experience by detecting presence and preparing space based on an individual's known preferences for lighting, temperature, beverages, food, music and more.**
- **Identify health hazards.**
- **Enhance collaboration opportunities.**
- **Predict and prevent system failures.**
- **Reduce inefficiencies and waste.**
- **Better control building systems.**
- **More effectively manage assets and facilities.**

Big Data

Using sensors and the IoT to generate "big data" provides faster quantitative information than traditional methods. But it often lacks the dimensionality and subtler aspects of capturing information via time utilization studies, on-site observations and stakeholder interviews. That's why it's essential to understand how to effectively collect and apply data.

Data collected from a singular point is often thin—or worse, irrelevant—and can lead to false conclusions. Thick data, on the other hand, is a compilation of data from multiple viewpoints, queried by human understanding and with logic applied to answer the question, "Why?" Data from an occupancy sensor, for example, might indicate that a 10-person conference room is occupied and unavailable, leading to the conclusion that more space should be provided. But if that room is being used by one individual who's seeking privacy, the data alone might lead to a false conclusion.

Before investing in data collection, answer the following questions:

- Why are you collecting the data?
- What problem are you trying to address?
- What do you need to know to make an assessment?
- What are you planning to do with the data?
- Is this a one-time assessment or will the monitoring be ongoing?
- Are there any privacy concerns or employee sensitivities that need to be considered?
- Are you looking to give users active control over their work environment?

Specific data-collection solutions often depend on the number of facilities, the availability of existing data that can be leveraged, existing resources and desired outcomes. Data collection options include:

- **Human sensors:** On-site observations by a trained workplace expert can yield valuable insights about workplace usage trends and patterns. Higher-tech solutions should always be balanced with human insights to ensure the data is thick and analyzed from multiple perspectives.
- **Badge swipe or log-in data** can be effective for quantifying the number of individuals who access a single facility.
- **Wi-Fi triangulation** is used to determine the location of mobile devices, which helps identify utilization patterns and can locate people in the event of an emergency.
- A **time utilization study** can assess usage patterns, mobility levels and the viability of desk sharing.
- A **reservation system** can track conference room bookings but not actual use or the number of people occupying a space.
- **Sensors and beacons** can detect presence, temperature, noise and light levels of a space on an ongoing basis.
- **Mobile apps** can be linked with the building management system (BMS) to respond to user preferences.

With the increased use of sensor technology to monitor workplaces, some employees are raising concerns about what data is being collected and how it's being used. Siemens, Barclays and The Daily Telegraph have all received pushback from employees questioning their use of occupancy measuring sensor technology.[xix]

In general, when people perceive technology is being used to monitor them, they resist it. But when they believe technology is helping by providing options and choices, they embrace it.

Biometrics

The use of unique physical features such as iris and fingerprint recognition or voice identification to authenticate a user can reduce the need for passwords and provide faster, more secure access to services. Apple has introduced its Face ID system and Mastercard has a "Selfie Pay" app that uses facial recognition to allow smartphone users to authenticate their identities while making purchases.

Wearable technology is also progressing beyond the ability to monitor heart rates and number of steps taken. Medical wearables soon will be able to detect a spike in stress levels or the onset of a cold.

Cognitive Computing, AI And Robotics

Advancements in tasks that mimic the human brain, machine learning, advanced and predictive analytics, and speech recognition are being introduced with great anticipation. Chatbots—computer programs that use AI to mimic audio or text conversations—are assisting customers. And AI-powered virtual assistants such as Amazon's Alexa and Apple's Siri are enhancing smart devices.

Machine learning, a subset of AI in which systems have the ability to improve based on experience, is being leveraged to improve the workplace experience and create "smart space."

Computational AI and robotics are beginning to reshape the workforce. According to a 2017 McKinsey report, 800 million people are expected to lose their jobs by 2030 because of automation.[xx] Gartner projects that AI will eliminate 1.8 million jobs by 2020 but will also create 2.3 million jobs during the same period.[xxi] And Citigroup recently reported that 30% of its bank jobs could be eliminated between 2015 and 2025, primarily due to retail banking automation.[xxii]

As some repetitive and manual tasks are replaced by AI and robotics, new industries will emerge to support these new systems and people will be freed up to shift to new functions.

Other Tech Advances

Augmentation creates an immersive and interactive realm that seamlessly interconnects the physical and virtual worlds. The objects that reside in the real world are augmented by computer-generated perceptual information and are often multiple sensory modalities, including visual, smell and sound.

The **Tactile Internet**, which enables people to communicate with machines via touch, is capable of endless virtual tasks. Elon Musk and his team are developing **Neuralink**, a system that interconnects our brains and computers and could have a profound impact on how we interact with technology.

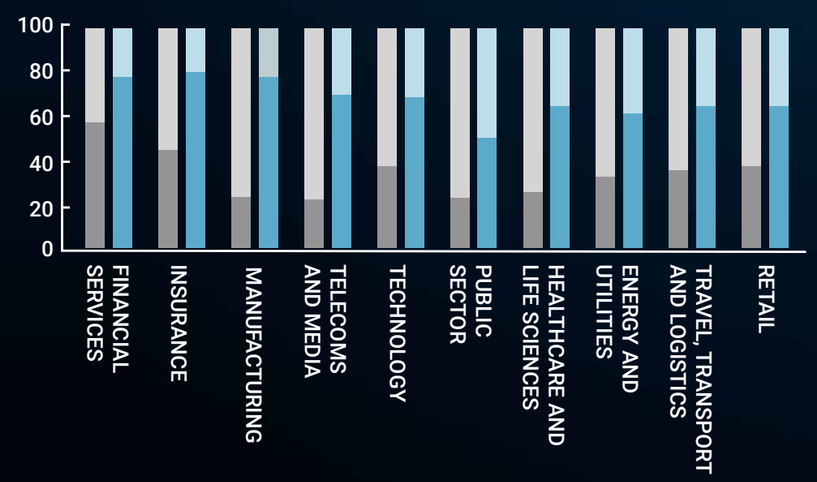
Microsoft, Facebook and Google are all working on creating standalone **augmented-reality headsets** capable of projecting detailed 3D images. The military has already developed LED-enabled contact lenses that project maps, directions and information into a person's field of vision so they can navigate and communicate hands free without having to divert their eyes to a secondary device.

The first **holographic smartphone**, Hydrogen One,[xxiii] projects 3D images on a display that can be viewed without special glasses.

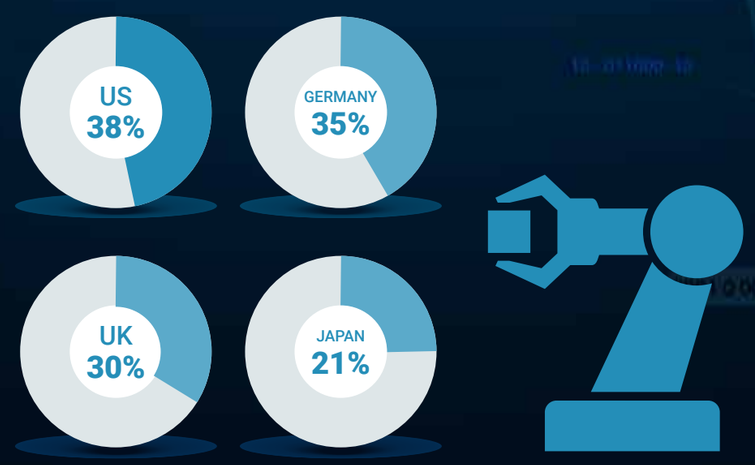
Light fidelity, or **Li-Fi**, is a new wireless communication technology that uses LED light to transmit data between devices at high speeds. Li-Fi offers faster transmission speeds than Wi-Fi and works across a higher bandwidth and in areas susceptible to electromagnetic interference. It's also more secure.

5G mobile technology is more than 10 times faster than 4G. It has the potential to connect every device, fix common bandwidth issues, save energy and transform the way people work and interact. Some tout the potential impact of 5G as equal to the advent of the printing press or the Internet.

WITHIN THE NEXT 10-20 YEARS, WILL ROBOTIC AUTOMATION PRINCIPALLY REPLACE OR SUPPORT HUMANS IN ADMINISTRATIVE JOBS IN THE FOLLOWING SECTORS?



JOBS AT RISK OF AUTOMATION BY COUNTRY



SOURCE: PWC UK ECONOMIC OUTLOOK, MARCH 2017

SPACE SOLUTIONS

SPACE SOLUTIONS

More people think of work as something they do, not where they go. Thanks to technology, they can do it nearly anywhere.

This mobility has challenged employers to create compelling spaces that draw people in and convince them to stay.

Over the past decade, open plan seating and benching strategies have given rise to several new workplace models that offer a diverse range of solutions. Yet one size definitely doesn't fit all. The right space solution for each tech company will depend on its culture, work styles, mobility profiles and business goals.

Open Plan

Definition: Creation of low- or no-panel spaces with limited enclosed areas and assigned seating.

Application: Primarily for organizations with flat organizational structures and people doing individual work with occasional collaboration.

Characteristics:

- Efficient, collaborative
- Limited or no offices or private space
- Lowered panels and greater access to natural light
- Assigned seats
- Fewer support areas required because onsite observation denotes limited movement happens when people are assigned a work point
- All work points must be equal since they are assigned with no choice

Considerations:

- Is everyone doing similar and repetitive tasks?
- Are limited levels of focus and interaction required?
- Are staff tethered to their work points throughout the day?

Activity-Based Workplace (ABW)

Definition: Designed around the tasks people do. Unassigned seating encourages movement and people can select the right setting for the task at hand. All have access to a wide variety of settings including unassigned private rooms, focus booths, and formal and informal collaborative areas.

Application: Primarily for organizations that are market- or hub-oriented in their organizational structure and that embrace internal and external mobility and free choice.

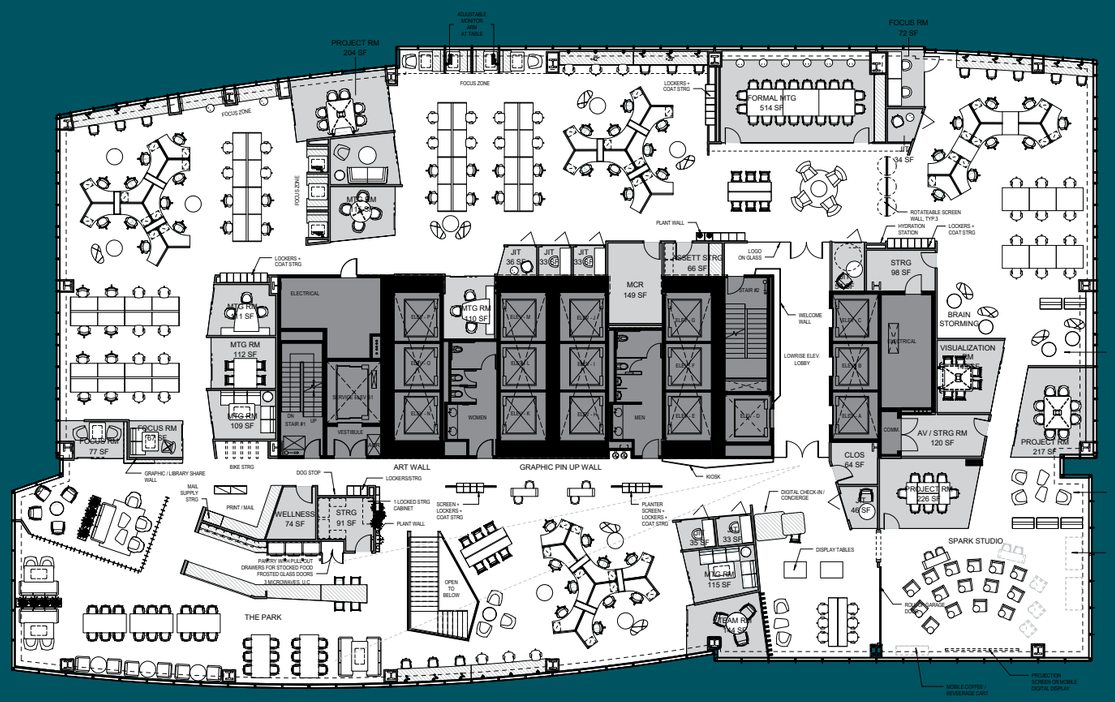
Characteristics:

- Unassigned, free-address seating
- Different settings are designed to support specific tasks
- Access to a wider range of amenity spaces, focus booths and enclaves
- Balance of concentrative zones and interactive areas
- Bring your own device (BYOD) policies, ubiquitous Wi-Fi and power, and pervasive laptop provisioning enable connectivity in any location
- Limited customization per team
- Average ~175 USF/person

Considerations:

- Are there a variety of tasks that are being performed or is everyone doing similar and repetitive tasks?
- Are different levels of focus and interaction required?
- Does your IT enable mobility?
- Is well-being a focus or concern?

Verizon 400 International Parkway, Richardson, Texas
Photo Courtesy of Jeffrey Totaro



Confidential Financial Services Company, Seattle, Washington

CISCO SYSTEMS CANADA HEADQUARTERS

TORONTO, ONTARIO
110,000 SQ. FT. / 10,220 SQ. M.

This new headquarters helps Cisco promote radical changes in how its people work. Located within the new RBC WaterPark Place building, Toronto's first LEED Core and Shell Platinum office building, the office accommodates nearly 900 employees.

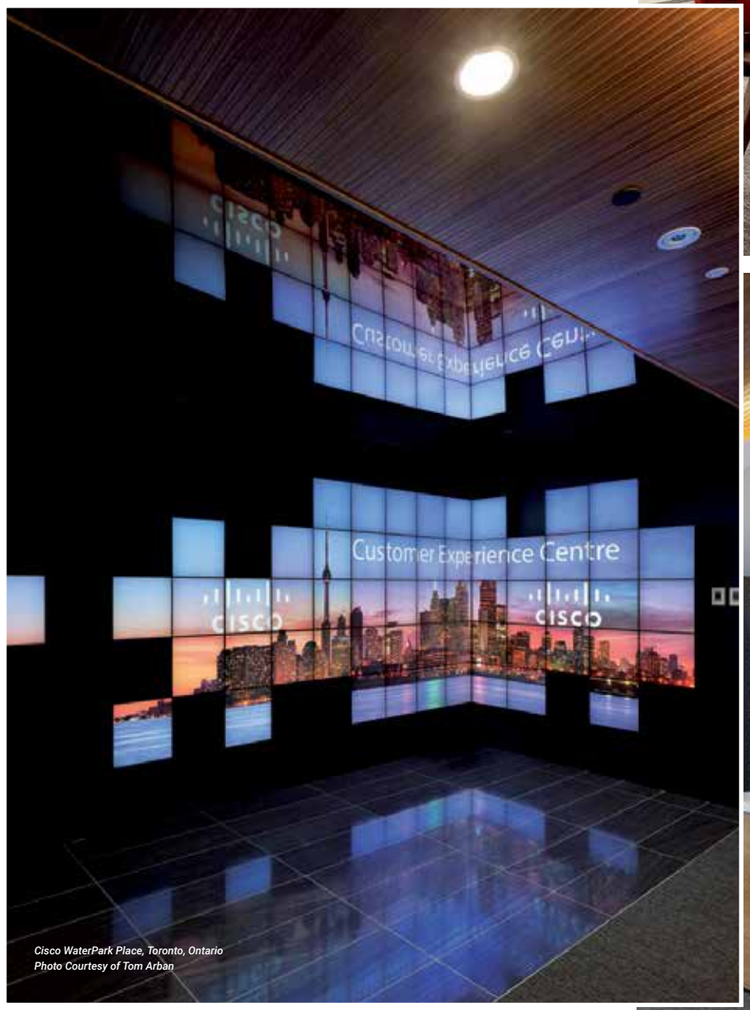
As one of this company's most technologically advanced workplaces, the space functions as a living laboratory for Cisco's Internet of Everything (IoE) initiative, as well as a showroom for clients. The intelligent building systems link Cisco's people, processes, data and assets on a single network, enabling drastic changes to how its employees work.

The smart, connected building infrastructure supports a 100 percent free address approach in the workplace. Instead of having an assigned seat, employees have the flexibility to select a workspace that supports their activities and needs when they arrive for the day.

A 2.6:1 ratio of people to individual workstations encourages people to work remotely and in team areas. To spur spontaneous interaction, the design provides a variety of places for Cisco's people to come together and collaborate.

A Client Briefing Centre and Innovation Centre both showcase Cisco's new collaboration technology products.

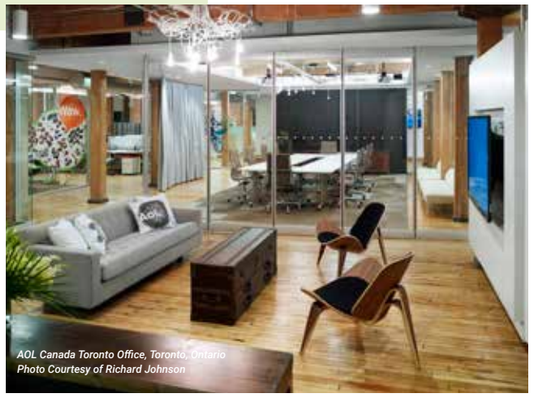
Cisco WaterPark Place, Toronto, Ontario
Photo Courtesy of Tom Arban



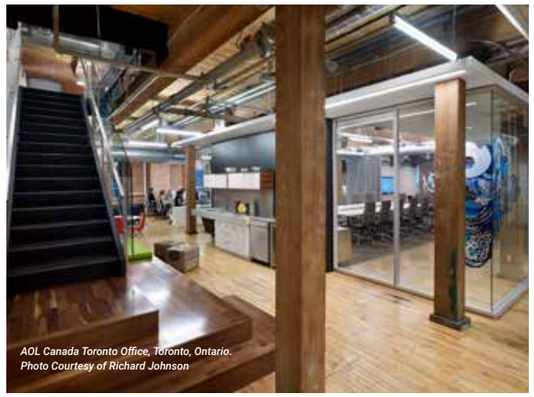
Cisco WaterPark Place, Toronto, Ontario
Photo Courtesy of Tom Arban

Cisco WaterPark Place, Toronto, Ontario
Photo Courtesy of Tom Arban

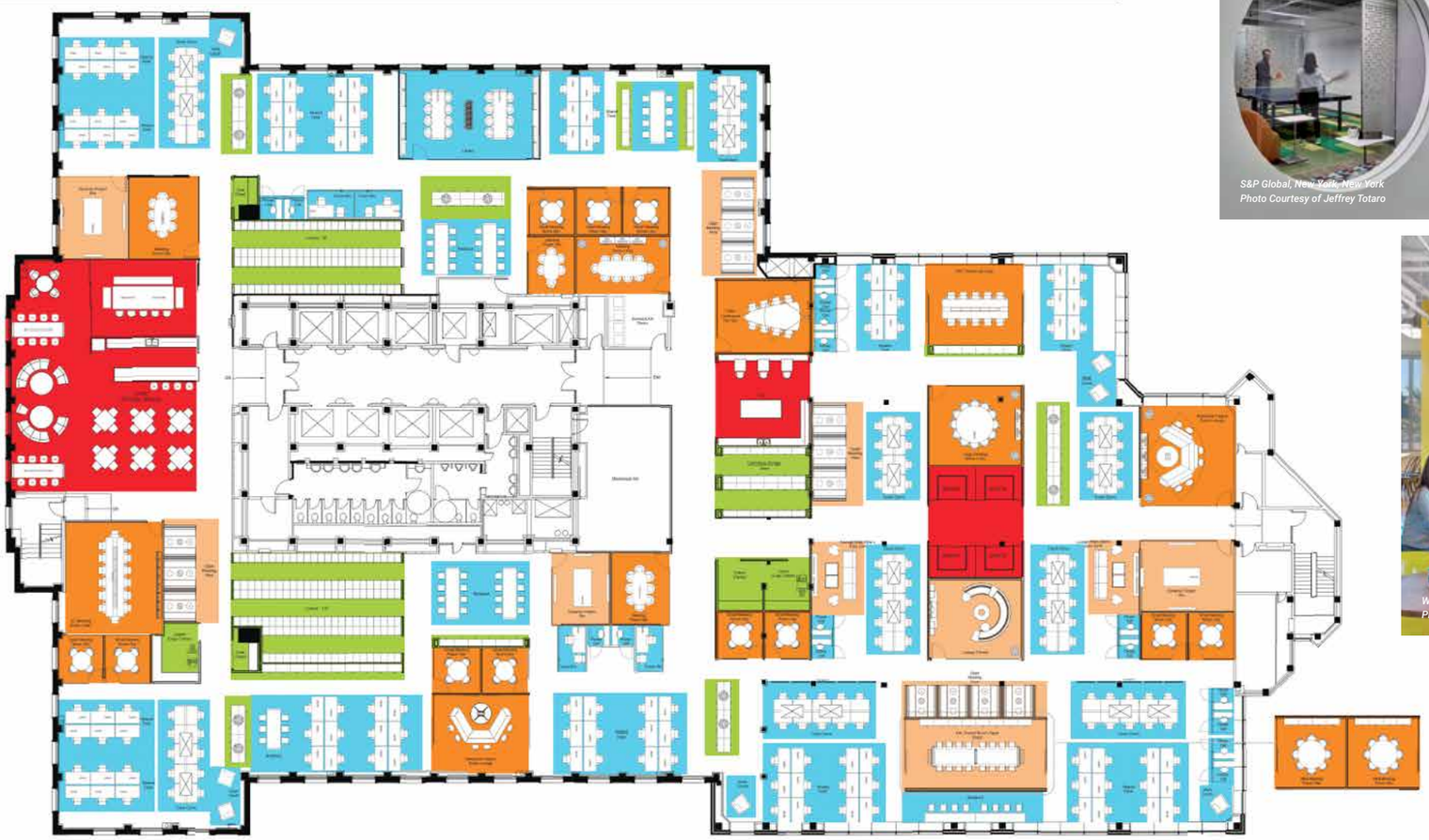
Cisco WaterPark Place, Toronto, Ontario
Photo Courtesy of Tom Arban



AOL Canada Toronto Office, Toronto, Ontario
Photo Courtesy of Richard Johnson



AOL Canada Toronto Office, Toronto, Ontario.
Photo Courtesy of Richard Johnson



Rogers Bloor Office, Toronto, Ontario

Neighborhood-Based Choice Environments (NCE)

Definition: ABW space subdivided into neighborhoods that enable people to nest, huddle and feel a sense of belonging while still having access to diverse work settings.

Application: Primarily for organizations that are team-based and mobile but seek to build community by embracing a "better together" model while providing a home base for teams and individuals.

S&P Global, New York, New York
Photo Courtesy of Jeffrey Totaro

WPP Playa Vista Office, Los Angeles, California
Photo Courtesy of Eric Laignel

Characteristics:

- Wide variety of task-based settings for highly mobile teams
- Assigned for groups, unassigned for individuals
- Neighborhood zones are microcosms of the larger floor plate. They contain a mix of work, meeting and social spaces, and are assigned to a particular group or team.
- Incorporate both stationary and movable elements to meet changing needs
- Incorporate a variety of options for each setting type to enable permission signaling
- Environments can transition at a moment's notice to respond to the work cycles of teams
- Defined circulation paths and ambiguous edges facilitate subtle transitions from gathering areas to private spaces, inviting connections and enhancing interaction
- Customization options per team allow for the creation of a team identity and personalization
- Average ~140 USF/person

Considerations:

- Is the workforce internally and externally mobile?
- Is it important that teams can personalize their neighborhoods to reinforce team identity and a sense of pride, purpose and belonging?
- Is enabling permission signaling important?
- Is it important to provide different levels of spaces, including interactive, social, concentrative and refresh areas?

OPENTEXT OFFICE

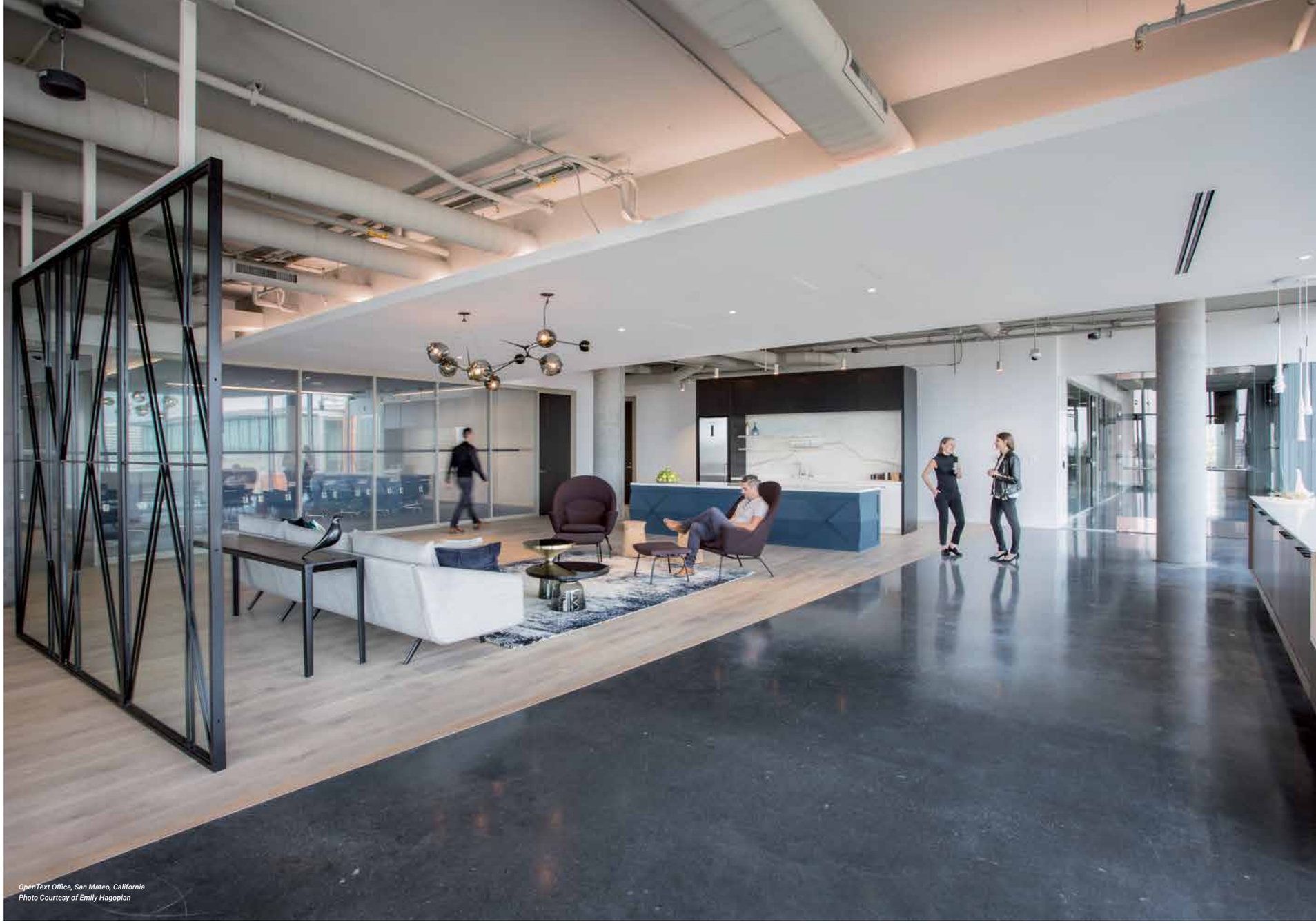
SAN MATEO, CALIFORNIA
160,000 SQ. FT. / 14,865 SQ. M.

OpenText's two-story Bay Area office is more than just a place for its employees to shape the digital future of business information. It's a space arranged to promote employee well-being and facilitate social interactions and the fusion of ideas. Team members collaborated with the software company's leaders to incorporate employee input and OpenText's values of creativity, performance and hospitality.

An open floor plan features two main avenues for foot traffic that connect to a central nexus anchored by a sweeping staircase. This design encourages employees to move and interact freely and provides a gathering space for various events. Meeting rooms and scattered seating areas give employees and clients spaces to connect. Smaller work spaces along the avenues provide private environments for independent work.

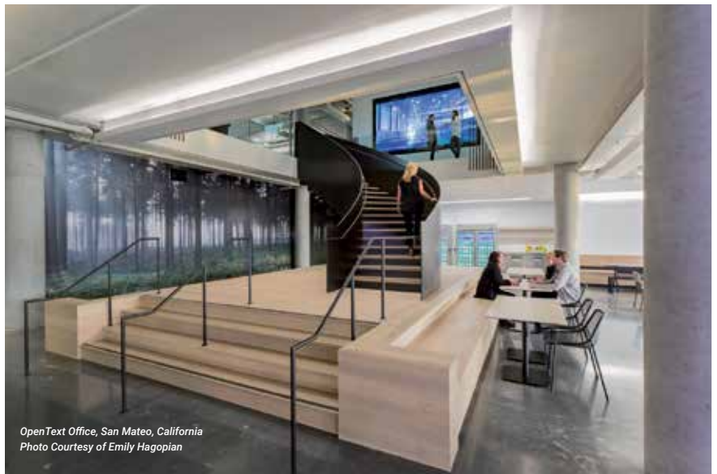
With high ceilings and floor-to-ceiling windows, the office provides beautiful views and access to natural California sunlight. Other features that enhance wellness include smart lighting and temperature controls that automatically adjust for maximum comfort. Careful acoustic planning ensures that carpets and ceilings absorb sound and open areas are strategically located away from workstations.

Treadmill desks, hydration stations, a game room, recharge pods and premium food facilities support employee health and wellness. The design specified sustainable, low-emitting materials and finishes.



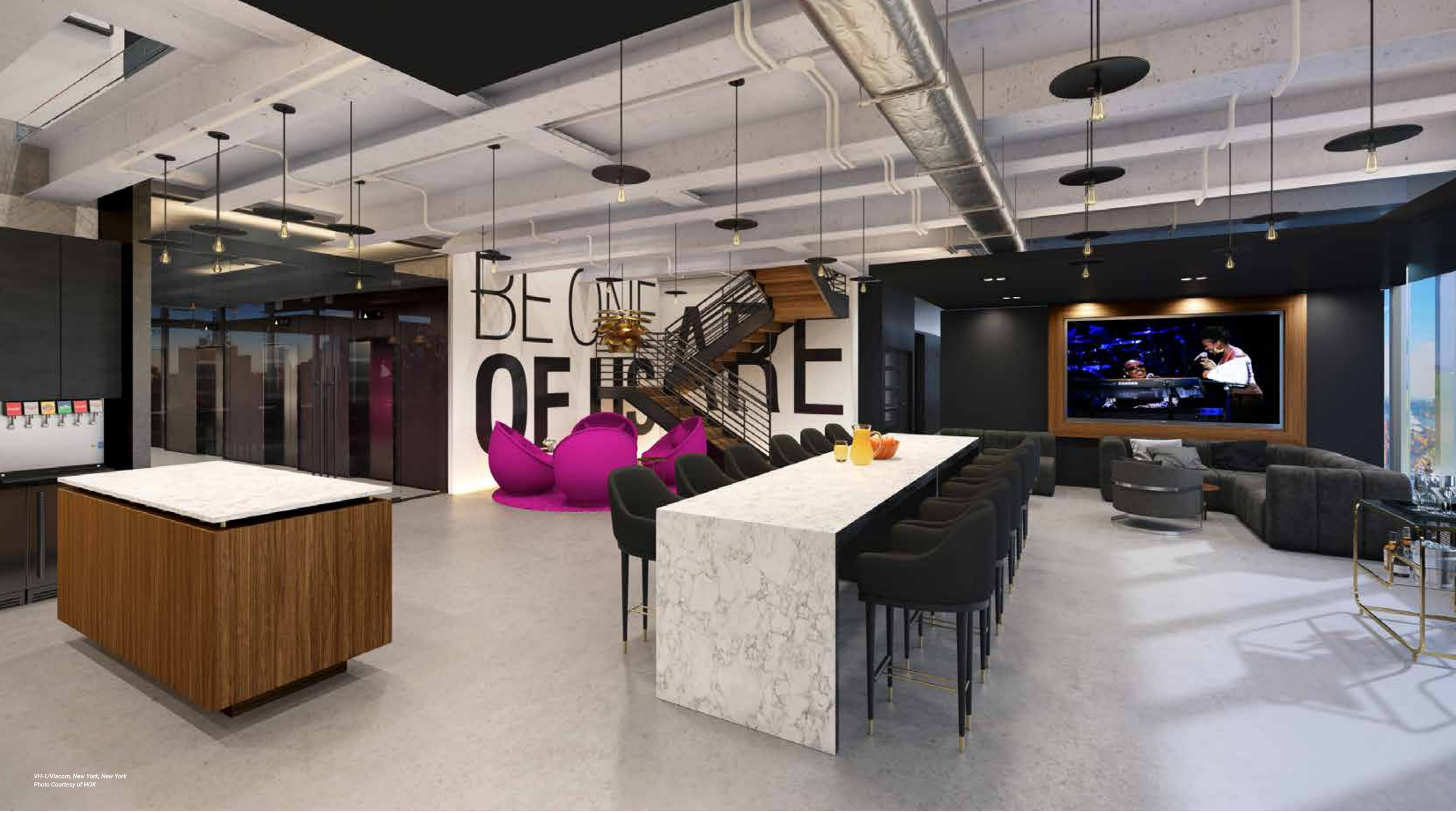
OpenText Office, San Mateo, California
Photo Courtesy of Emily Hagopian

OpenText Office, San Mateo, California
Photo Courtesy of Emily Hagopian



OpenText Office, San Mateo, California
Photo Courtesy of Emily Hagopian

OpenText Office, San Mateo, California
Photo Courtesy of Emily Hagopian



VH-1/Viacom, New York, New York
Photo Courtesy of HOK

Space As A Service (SaaS)/Coworking

Definition: Coworking space is a shared environment typically leveraged by individuals who need a place to work.

Application: Primarily for individuals who want a more professional environment to work in than their home or a coffee shop, with access to others and shared services.

Characteristics:

- Communal space
- Easy access to space with minimal output and commitment
- Increases the agility of real estate strategy and number of locations
- Access to shared resources, amenities and individuals from other companies
- Enables networking opportunities
- Offers connections, interaction and community with a diverse group of people
- Provides services of a community manager
- Limited customization
- Average ~90 USF/person but trending downward to 50-60 USF/person

Considerations:

- Do you need to scale up quickly?
- Is having a prime, industry-aligned street address important?
- Do you need dedicated space and resources?
- Does densification suit the needs of your work style?
- Are you willing to accept an existing community, culture and identity vs. building your own?
- Are you OK with lower quality solutions, furniture and finishes?
- Are you OK with your data being sold to others?

Serviced Offices

Definition: Packaged office suites for enterprises that want easy access to space with low risk in exchange for limited customization and higher rates.

Application: Primarily for firms that need quick, easy access to short-term or temporary space.

Characteristics:

- Faster access than traditional leases
- Limited customization and options
- Pay for space plus service
- Limited risk, mid-range terms, no capital outlay
- Community manager
- Reduces the risk of long-term holdings and leases
- Redirects resources previously tied up in leased space
- Provides space when and where it's needed
- Increases the agility of real estate strategy and number of locations
- Speeds entry into markets
- Allows companies to scale up quickly
- Provides ease and assurance that comes with serviced spaces
- Limited customization
- Average ~60-90 USF/person

Considerations:

- Is quick and easy access more important than a tailored space?
- Do you need to scale up quickly?
- Are you willing to accept existing community, culture and identity vs. building your own?
- Does densification suit the needs of your work style?
- Are you willing to pay more for less control but ease of management?
- Are you satisfied with lower quality solutions, furniture and finishes?
- Do you approve of your data being sold to others?

Managed Offices

Definition: Management and service of customer-owned space. Services can include design, community managers, facility management and occupancy apps. But these added services come with an upcharge of 15-20% and an extended period of obligation to the space.

Application: Primarily for firms looking to incorporate the feel of coworking environments into their space, offer concierge services and track utilization.

Characteristics:

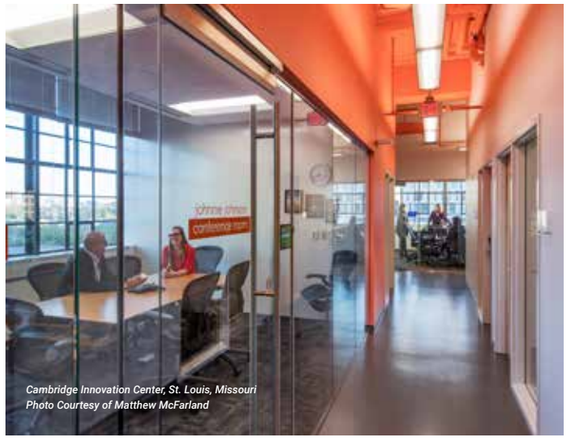
- Community managers
- Management and service for customer controlled space
- Pay for space services
- Services can include design, furniture, food and beverage, etc.
- Limited customization, options and choices
- Average ~120-160 USF/person

Considerations:

- Is redirecting resources previously tied up managing space valuable to you?
- Are the ease and assurance that come with serviced spaces more important than having a tailored workplace solution?
- Are you willing to pay more and get less control?
- Are you OK with your data being sold to others?

CAMBRIDGE INNOVATION CENTER

ST. LOUIS, MISSOURI
41,000 SQ. FT. / 3,810 SQ. M.


Cambridge Innovation Center, St. Louis, Missouri
Photo Courtesy of Matthew McFarland

Cambridge Innovation Center, St. Louis, Missouri
Photo Courtesy of Matthew McFarland

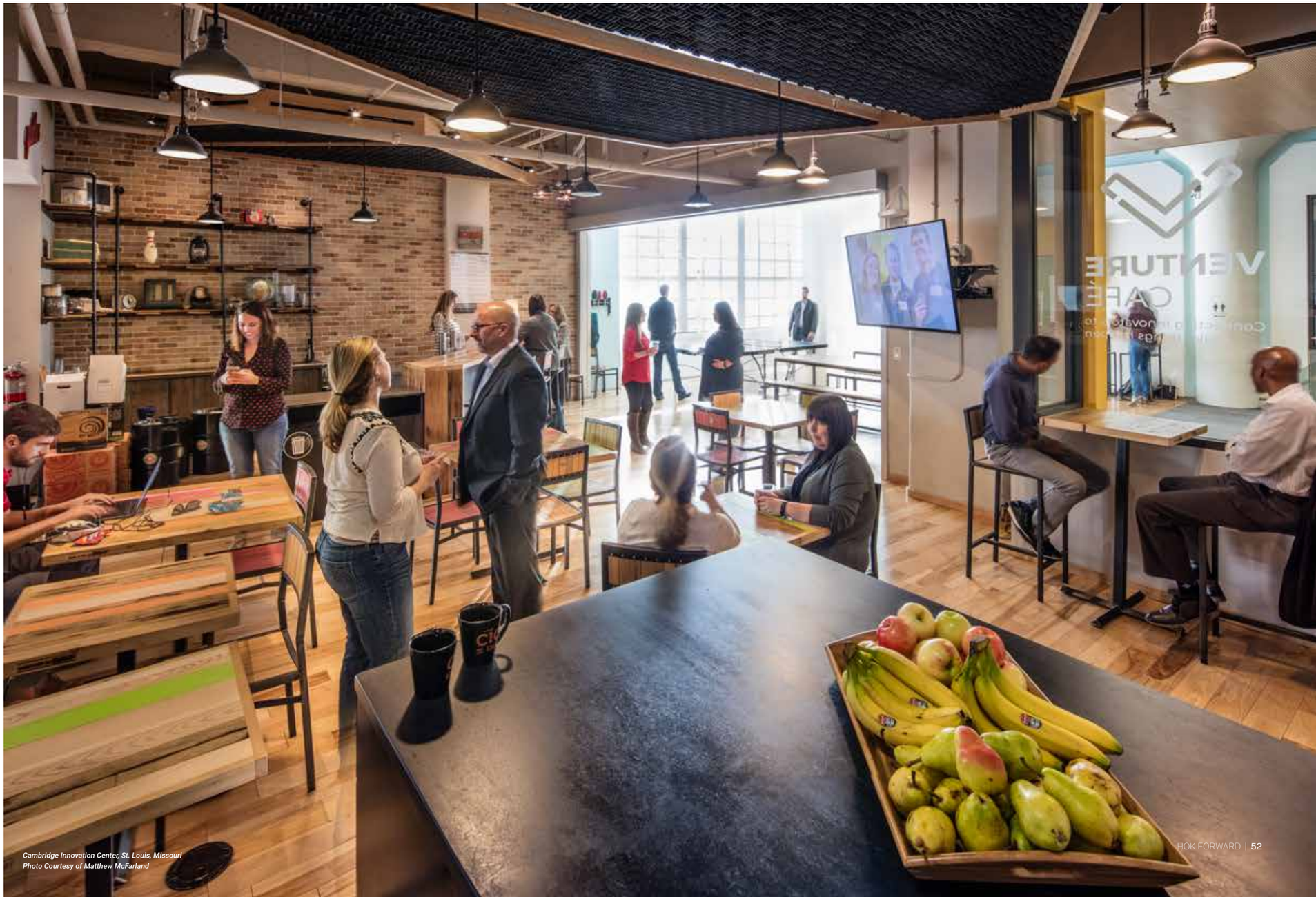
The Cambridge Innovation Center (CIC) supports startup companies by managing their office space so they can focus on their core businesses. HOK worked with the CIC to design space in the Cortex Innovation Community's @4240 building for a wide variety of business types, sizes and workplace needs.

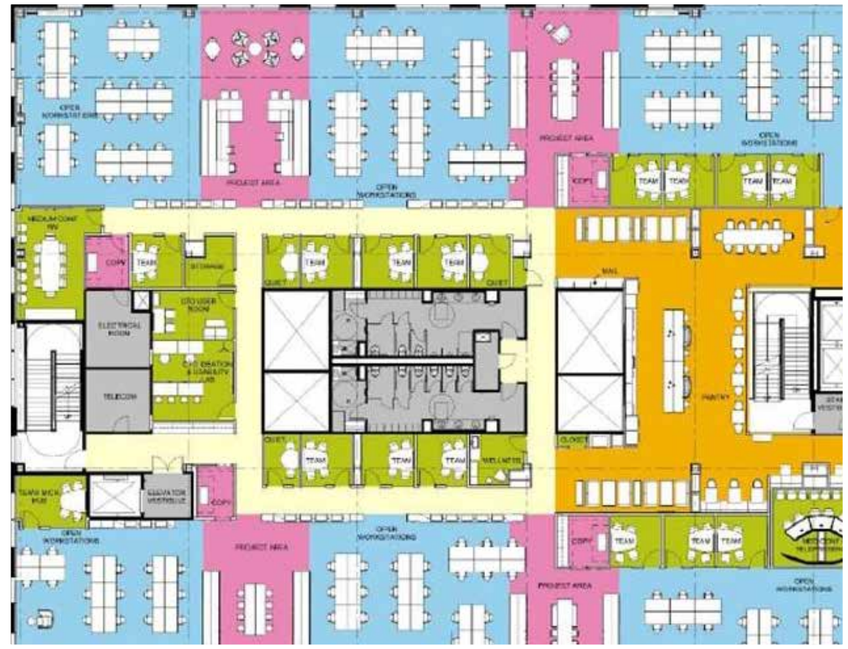
Serving as a "clubhouse for innovation," this flexible tenant space houses coworking areas for one to 30+ employees. It includes an adjacent Venture Café where CIC hosts weekly networking and educational events.

The CIC's workspace options include:

- ***Uno:*** a single 4-ft. x 6-ft. room arranged in clusters
- ***Bays:*** eight workspaces in one room
- ***Boos:*** one bay with adjacent private offices
- ***Coworking:*** large, open spaces with rentable workstations
- ***Found:*** eclectic spaces for collaboration
- ***Conference:*** glass-enclosed meeting areas in various sizes

Based on the success of this location, developer Wexford and the CIC asked HOK to design a similar space in Philadelphia. This new, much larger project includes lab space for the CIC's startup model concept. It will support the CIC's partnership with the Quorum community engagement program and the University City Science Center.


Cambridge Innovation Center, St. Louis, Missouri
Photo Courtesy of Matthew McFarland



LinkedIn Carpinteria Phase I, Carpinteria, California
Photo Courtesy of Scott McDonald

Agile Environments

Definition: Space that aligns with the Agile Methodology approach and is designed to support cross-functional project-based teams working in close proximity so they can collaborate, track and deliver projects.

Application: Primarily for team-based organizations that seek a sense of belonging and community.

Characteristics:

- Focus on innovation to collaborate, track and deliver projects
- Suits a highly iterative, interactive workforce that spends more than half its day in group work or away from a primary location
- Team-based scrums
- Streamlined space with less variety in scrum areas
- Low-to-no mobility during scrum time as the focus is being together
- Average ~120 USF/person

Considerations:

- Is your focus on innovation, ideation and problem solving?
- Do your teams function in an agile manner?
- Will restricting movement and cross-pollination support how your teams function?
- Can you assign rooms and areas as long-term project space?
- Do you want to empower teams to "own" spaces and are you willing to allow them to reconfigure it as needed?
- Can you incorporate movable elements to meet changing needs?

LINKEDIN OFFICES

CARPINTERIA, CALIFORNIA
150,000 SQ. FT. / 13,935 SQ. M.

LinkedIn Carpinteria Phase I, Carpinteria, California
Photo Courtesy of Scott McDonald

This nine-building campus in Southern California includes LinkedIn space dedicated to content coordination, content production, post-production, training, sales and distribution.

In renovating the interiors of several of LinkedIn's buildings, the design team sought to support the company's goals for enriching the lives of members, candidates, employees and visitors.

To serve a variety of work styles, the space's work settings include glass-enclosed huddle rooms, formal conference rooms, private phone rooms, semi-private collaboration areas and open hubs for eating and socializing.

LinkedIn Carpinteria Phase I, Carpinteria, California
Photo Courtesy of Scott McDonald

LinkedIn Carpinteria Phase I, Carpinteria, California
Photo Courtesy of Scott McDonald

Maker Environments For Mobile Occupants (MEMO)

Definition: Scrum spaces that extend across the whole office to create a scrappy, entrepreneurial environment with a variety of settings.

Application: Primarily for organizations that are entrepreneurial in spirit, with a flat organizational structure and a desire to innovate quickly in a "work out loud" setting.

Characteristics:

- Fungible, agile and adaptable space
- Environments can transition at a moment's notice and evolve to respond to a team's work cycle
- Undefined circulation paths and ambiguous edges facilitate a subtle transition from gathering areas to private spaces, inviting connections and enhancing interaction
- Incorporate both stationary and movable elements to meet changing needs
- Provide auxiliary spaces to encourage informal discourse between colleagues
- Encourage teams to personalize their zones and spaces to reflect their mission and purpose
- Incorporate a variety of options for each setting to enable permission signaling
- Average ~125 USF/person

Considerations:

- Is your focus on ideation, creativity and innovation?
- Do you empower staff to function in a manner that suits their personal work style and mobility profile?
- Do staff members perform diverse tasks in a variety of settings?

Microsoft Office, St. Louis, Missouri
Photo Courtesy of Alise O'Brien

CARMAX DIGITAL AND TECHNOLOGICAL INNOVATION CENTER

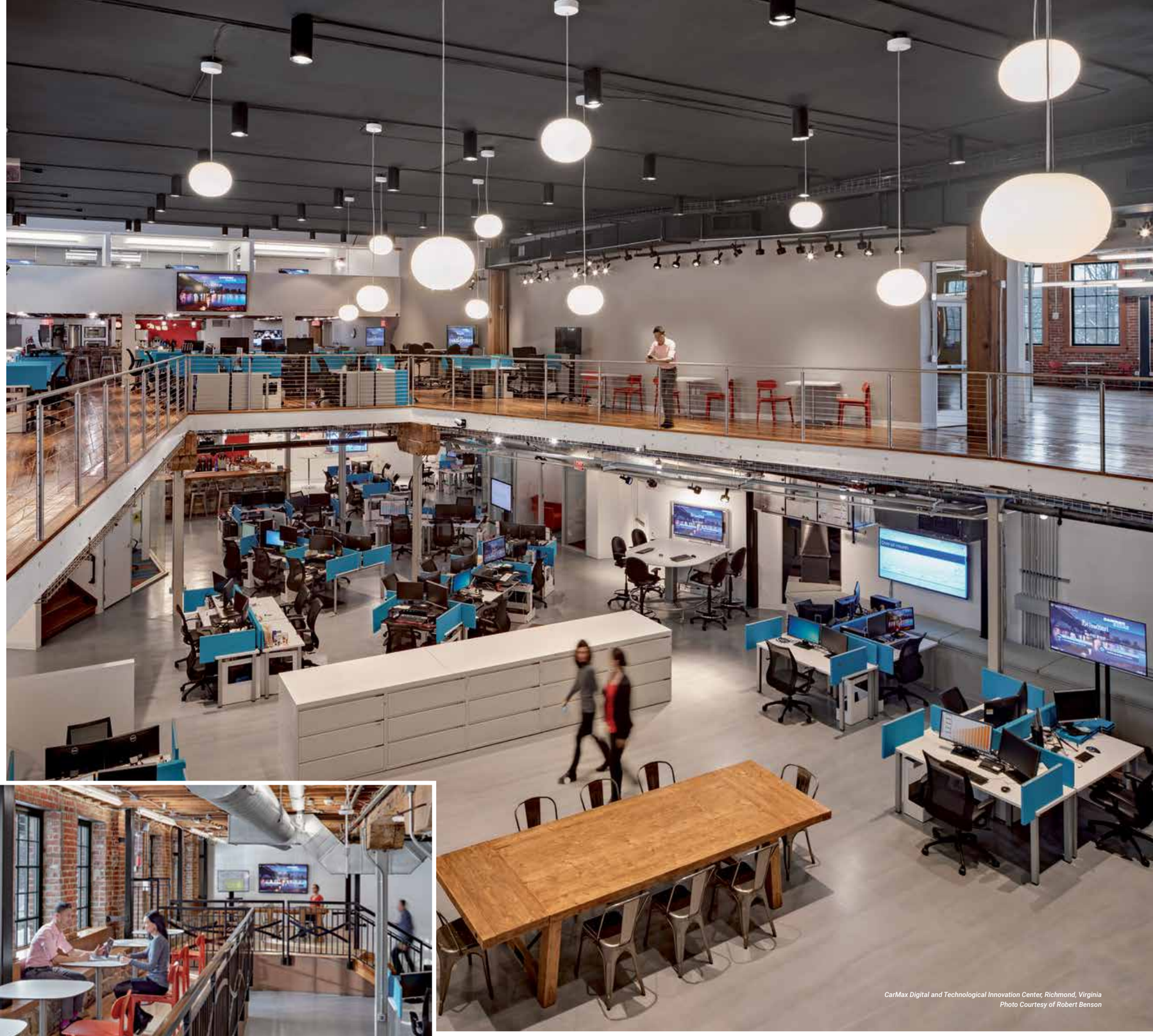
RICHMOND, VIRGINIA
34,000 SQ. FT. / 3,160 SQ. M.

Car retailer CarMax wanted to provide its "digital rock stars"—its designers, developers and programmers—with a creative, collaborative workplace that would attract the best people.

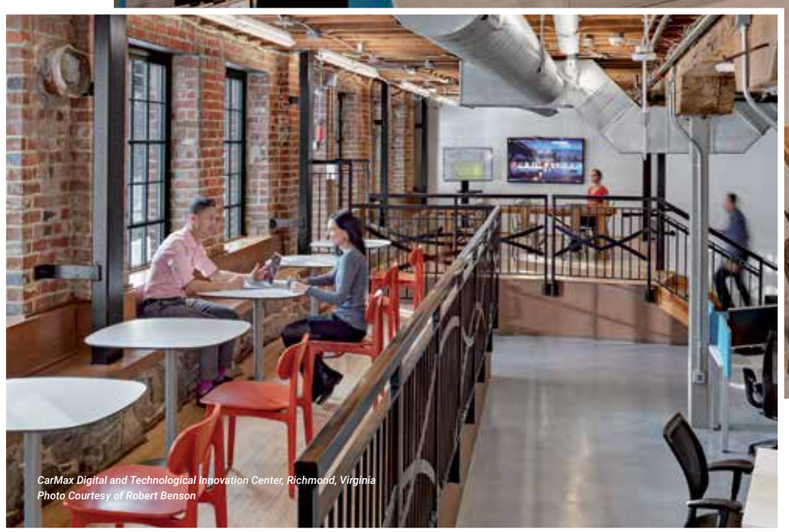
The company secured space in a circa-1873 building in Richmond's historic Shockoe Bottom neighborhood. Originally a hat factory, the building had most recently been used as a concert hall, bar and restaurant.

The design team created a contemporary workplace for up to 200 people while retaining the historic building's distinct character, including its wood floors. Areas that had previously been used as bar VIP lounges became meeting spaces and visitor offices. An existing performance stage was modified to accommodate presentations and events. The design also adapted bar areas into pantries, a ticket booth into a private phone room and dining areas into open collaboration spaces.

Mobile furniture, whiteboards and monitors support the changing needs of creatives. This flexibility enables CarMax to easily transform the offices into event space.



CarMax Digital and Technological Innovation Center, Richmond, Virginia
Photo Courtesy of Robert Benson



CarMax Digital and Technological Innovation Center, Richmond, Virginia
Photo Courtesy of Robert Benson

Immersive Environments

Definition: Curated, human-centric spaces that reflect an organization's people and DNA.

Application: Primarily for companies seeking custom solutions that incorporate a combination of planning concepts regardless of organizational structure.

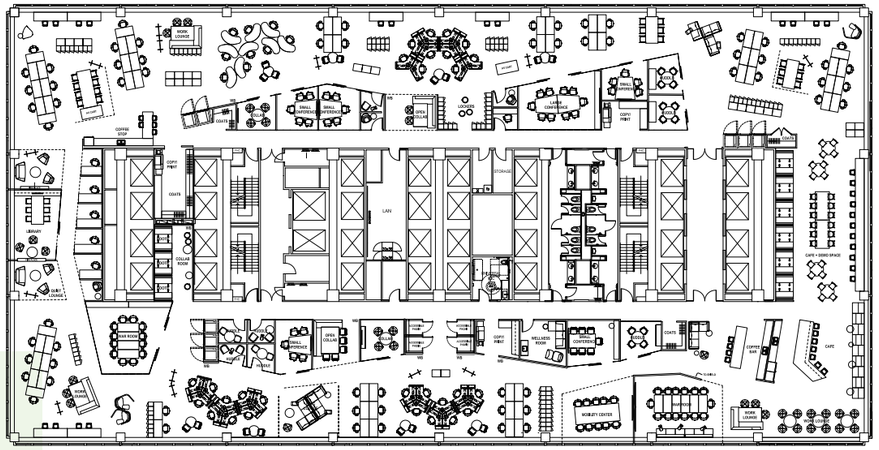
Characteristics:

- Function-driven, human-centric experiential space
- Tailored, curated solutions
- Can blend elements from a variety of planning concepts to accommodate the needs of individual teams

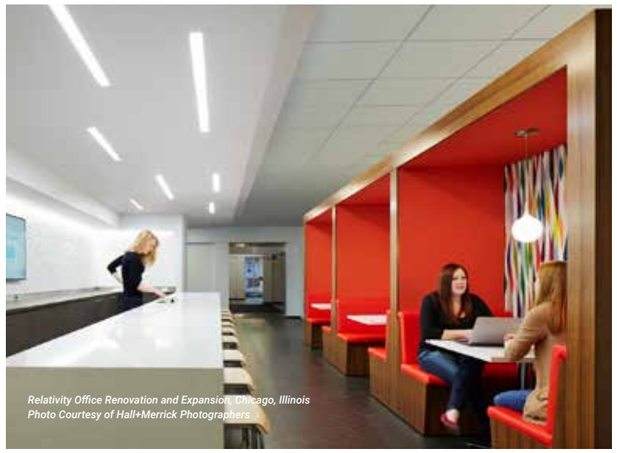
Considerations:

- Is your focus on fitting or breaking the model?
- Is yours a cutting-edge, fast-follower or wait-and-see culture?
- Do you empower staff to function in a manner that suits their personal work style and mobility profile?
- Do you support the creation of tailored, curated space that reflects the organization's mission, purpose and unique attributes?
- Do you want to empower people through place?

Relativity Office Renovation and Expansion, Chicago, Illinois
Photo Courtesy of Hall+Merrick Photographers



TD Bank Workplace of the Future, Toronto, Ontario



Relativity Office Renovation and Expansion, Chicago, Illinois
Photo Courtesy of Hall+Merrick Photographers

Relativity Office Renovation and Expansion, Chicago, Illinois
Photo Courtesy of Hall+Merrick Photographers

PRIORITY ACTIONS

4 PRIORITY ACTIONS

1. Focus On Flexibility

The workforce of tomorrow will expect—even demand—flexibility. According to the World Economic Forum, global business leaders predict "changing work environments and flexible work" will be the top demographic/socioeconomic driver of workplace change over the next decade.[xxiv]

Research by Gallup reveals that 43% of employees perform some of their work remotely and how often they do so is on the rise. Between 2012 and 2016, the frequency of those who work remotely four or more days a week increased by 30%.[xxv]

Strategically deployed workplace choice has proven to enhance attraction and retention, increase productivity, and reduce absenteeism and real estate costs. These factors alone can save a typical employer an average of $11,000 per half-time remote worker per year. A well-conceived and executed workplace flexibility program can also improve employee engagement and well-being, reduce work-life conflict, enhance creativity, and increase sustainability and resilience.[xxvi]

"The skills people will need to be employable in the next 10 to 20 years will change, not just once, but over and over again. We need to be able to 'up-skill' to stay relevant."

Sharon Turner, Director of Interiors, HOK

2. Empower A Diverse Workforce

Work environments need to accommodate all generations, genders, ethnicities, sexual orientations, learning preferences, and physical and mental challenges. Meeting the needs of an aging, increasingly diverse workforce also includes designing workplaces that meet the needs of individuals with neurodevelopment disorders such as anxiety, hypersensitivity, autism, attention-deficit/hyperactivity disorder (ADHD) and post-traumatic stress disorder (PTSD).

To create inclusive environments, employers should focus on minimizing visual clutter, simplifying navigation, intensifying contrast and providing plenty of light.

With a new group of recruits (Generation Z) on the horizon, it's particularly important to design spaces that help people focus and engage with others. Born after 2000, Gen Z is the "always-on" generation—a distinction that may be contributing to increased levels of anxiety, emotional detachment, interpersonal difficulties and loneliness. In a survey of 20,000 U.S. adults, Gen Z respondents reported the highest levels of loneliness—even higher than that of senior citizens.[xxvii]

To support these individuals, it's important to design simple, comfortable spaces that provide a variety of work zones and create team-based environments that foster community and a sense of belonging.

By providing options and enabling individuals to adapt their space, employers can create spaces that are more inclusive—and productive—for all.

"We're on the crest of a new wave, one that fluidly draws its strength from both internal and external talent from wherever it is to wherever it's needed."

Gordon Wright, Director of WorkPlace, HOK

3. Invest In Ongoing Training

The rapid pace of change, combined with the adoption of AI and automation, is accelerating the need for tech employers to continually retrain and redeploy their workforce.

With the decline of skilled workers entering the workforce and the ongoing need for employees to develop new skills, businesses need to embrace the concept of lifelong learning. But because of the skyrocketing cost of traditional higher education, companies will need to invest in resources and programs tailored to retraining the workforce or partner with educational institutions to provide external learning opportunities.

"Workplace design and work cultures need to go beyond accommodating personal differences—they need to invite, embrace and celebrate them."

Daniel Herriott, Director of Design, Interiors, HOK

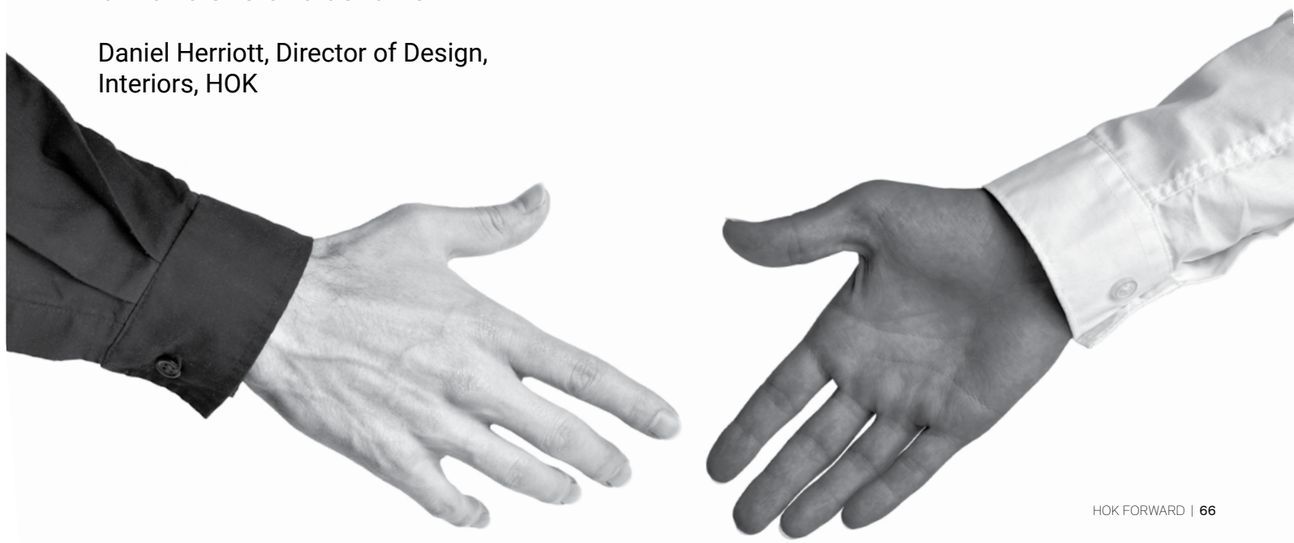
4. Leverage The Contingent Workforce

Hiring full-time staff is still the preferred employment model in the U.S.[xxviii] As the labor shortage intensifies, companies are increasingly considering part-time workers to meet current and future staffing demands.

Contingent workers currently make up 36% of the global workforce and, at current growth rates, are anticipated to represent the majority of the workforce by 2027.[xxix]

The growing gig workforce creates opportunities for companies to rethink their hiring practices and create pools of just-in-time workers to supplement a core group. This enables them to tap into a variety of skill sets without having to hire full-time employees or overburden current staff because of conservative hiring philosophies.

We predict the emergence of a swipe-for hire model for engaging consultants. This "Tinderization" of the workforce will begin to replace the traditional practice of hiring consultants based on a fixed rate per hour. A dynamic pricing model is likely to include surge pricing for periods of peak demand and specialized expertise.



BOOKING.COM OFFICE

CHICAGO, ILLINOIS

6,500 SQ. FT. / 605 SQ. M.

Like a miniature city, Booking.com's Chicago office has areas to work, meet, play and relax—and routes that connect all the spaces. Designed around Chicago's rapid transit system routes, the red, green, orange, purple and brown carpet lines guide visitors through the office.

The large windows draw the cityscape into the office. A wide variety of workspaces accommodate many different activities. One huddle room captures the dynamics of the Chicago Theatre, while a side corridor is transformed into a creative space. Murals by a local graffiti artist on the walls of a breakout room and a chain link fence add more elements of Chicago's streets to the workplace. Employee travel photos from around the world adorn the walls of the flexible training spaces.

HOK also designed Booking.com offices in Orlando, Salt Lake City and Houston. Each unique design gives the occupants a strong sense of that city's place.

Booking.com Office, Chicago, Illinois
Photo Courtesy of Seamus Payne

Booking.com Office, Chicago, Illinois
Photo Courtesy of Seamus Payne

Booking.com Office, Chicago, Illinois
Photo Courtesy of Seamus Payne

Booking.com Office, Chicago, Illinois
Photo Courtesy of Seamus Payne

Booking.com Office, Chicago, Illinois
Photo Courtesy of Seamus Payne

Booking.com Office, Chicago, Illinois
Photo Courtesy of Seamus Payne

FAST FORWARD: 10 FOCUS AREAS

10 FOCUS AREAS FOR FUTURE TECH WORKPLACES

"Our focus is on our employee experience and how they interact with and experience the space. Does it enable a productive, collaborative and user-friendly experience?"

- Julia Wright, Workplace Resources Manager, Cisco Systems

1. The User Experience (UX)

Organizations must focus on creating a curated workplace experience that includes à la carte environments with a menu of services, locations and support.

Connecting individuals with each other is a priority, and informal social spaces can help define the culture and mood within an office. Physical offices also provide opportunities to engage teams through high-impact videos, colorful graphics and other technology.

Future connections could extend outside a company's walls. Developers, architects and city planners are embracing the notion of "open architecture"—bringing the outside in and the inside out—so that people and businesses can engage more with the surrounding community. Creating woonerfs, the Dutch-inspired concept of a "living street" shared by autos, bicycles and pedestrians, can provide more vibrant precincts that blur the lines between buildings, private and public spaces.

2. Innovation on Display

As competition intensifies, tech companies should take opportunities to highlight their innovative cultures for prospective employees, customers and investors. In-house innovation centers can accelerate ideation and showcase a firm's R&D activities, products and services.

Companies can demonstrate a commitment to data security by creating Cyber Security Operation Centers (CSOC) that bring together IT, cyber, compliance and security teams in state-of-the-art scrum spaces and ready rooms where they can effectively monitor and address pending threats.

3. Amenity-rich Spaces

Exceptional amenities will continue to differentiate tech firms as appealing environments for building and nurturing careers.

Progressive employers will support work-life balance by assisting with a range of personal tasks—from finding or providing places to live; to assisting with child care, elder care and pet care; to offering concierge services for daily errands.

Providing a wide variety of gathering spaces and food and beverage options is important for building community and meeting people's physical and social needs. And high-quality coffee is a valued perk.

Employers may also provide their people with access to coworking or communal work spaces, whether through corporate memberships to external coworking centers or by creating their own shared spaces.

CASE IN POINT: NOKIA'S SPACE EXPERIMENTS

Nokia is experimenting with its excess real estate in some key European locations by creating incubator space for startups. In addition to being a viable real estate strategy, this is a way to build valuable relationships with young tech talent.

Nokia is also leveraging a pay-as-you-go serviced office model to supplement its space needs in certain markets. Though these spaces are not branded to Nokia, the company's change management program helps employees adapt to them.

"We are no longer just designing the environment, we are designing the experience."

- Kay Sargent,
Director of WorkPlace, HOK

Choosing the Right Amenities Mix

Many tech companies are struggling to determine the right mix of amenities for their facilities. To do this, they need to define their goals around:

- Keeping people at the office or pushing them out into the community
- Encouraging others to visit
- Enabling specific behaviors or activities
- Promoting health and well-being
- Reflecting core values/purpose
- Appealing to specific demographics
- Competing with other companies
- Attracting and retaining talent
- Promoting balance
- Building community
- Rewarding people

Location-based questions include:

- Are you downtown with access to many options or in a remote location?
- Is it easy to enter and exit your space?
- Is it convenient for others to come to you?
- Do you want people to leave at lunch or remain on site?
- Are there nearby amenities that you can leverage?

4. Well-Being

A renewed focus on occupant well-being will drive space to be more interactive and physically engaging. Environments that support holistic health by promoting the ability to connect, bond, refresh and incorporate movement will help employees flourish—and companies thrive.

Overly sedentary work environments create unintended consequences like decreased productivity. Studies reveal that active workers are happier, more engaged and more productive. Movement also stimulates cognitive and brain functions, improving problem-solving skills and creativity.

The growing emphasis on health and wellness is also driving demand for healthier food options, including organic and farm-to-table solutions that can be consumed on site or taken home. Other companies offer rotating on-site food trucks and pop-up vendors. Examples of current food perks within the tech sector include:[xxx]

- Whole Foods, which is owned by Amazon, offers employees volunteer trips to other countries to see how they source foods. The company also provides health immersion programs and grocery discounts.
- Google offers seasonal menu and locally sourced foods, hires top-rated chefs and provides on-site gardens.
- Facebook offers three free meals five days a week from a variety of specialty food vendors.

5. Mindfulness

The inability to disconnect is contributing to a dramatic increase in stress levels among today's workers, with 70% reporting that they feel overwhelmed daily.[xxxi] The World Health Organization (WHO) projects that 'techno-stress'—the stress of constantly being connected to and overwhelmed by technology—will be one of the largest health issues in the coming decade, costing business in excess of $300 million.[xxxii]

Companies can promote mindfulness by giving their people control over their work environment—providing them with options or add-ons that enable user manipulation. A balance of active spaces and quiet zones provides individuals with opportunities to gather and connect or engage in deep, meaningful thought.

Other effective mindfulness strategies include tech-free days or blocking emails from passing through company servers during off-hours. In Germany, both BMW and Volkswagen have enacted policies to control what is sent through their servers to employees after hours. In France, a federation of employees passed guidelines stating that companies should adopt policies that employees are not allowed to check email before 9 a.m. and after 6 p.m. A new labor law in France grants workers the right to disconnect. But most companies in North America have not yet addressed this issue.

6. Beyond Sustainability

Rather than simply addressing environmental sustainability, companies need to create high-performance spaces that generate their own energy, treat their own water, and prioritize human health and wellness.

The incorporation of biophilia and authentic, natural elements into high-tech work environments mitigates the negative impact of stress and enhances the well-being of occupants.

Circularity is created when we take materials and elements from an existing space and give them a new purpose, leading back to the point from which they originated. When reclaimed or repurposed materials are given new life, we create a link back to our heritage and legacy while contributing to a more sustainable future.

7. Space Fusion

The lines between historically siloed sectors will continue to blur. Hospitality, healthcare, retail and education environments are influencing the corporate workplace and vice versa. The interweaving of signature design elements creates 'space fusion' and drives innovation.

8. Multisensory Design

Our human senses control how we interact with our built environment. Positive experiences—such as pleasant smells, natural daylight, warmth, sounds of nature and natural views—can evoke immediate acceptance of a space, while negative sensory stimulation can cause us to reject it outright.

9. IoT and Thick Data

The IoT will enable tech businesses to prepare space, identify issues and inefficiencies, control building systems, and better manage their facilities and other assets. Employers will leverage thick data to identify the patterns and preferences of their workforce so they can enhance building operations and improve the user experience.

10. Location, Location, Location

The suburban campus model that has been prevalent for the past 50 years developed in response to poor living and working conditions of the 19th century industrial city. Its primary goal was to attract young talent through the design of separate zones and facilities for living, working, learning and playing. After decades of suburban growth, this approach is being challenged by a new urban model that emphasizes blended, mixed-use environments that are revitalizing urban zones and catering to neo-urbanites. This trend is informed by an unprecedented migration to urban settings. Fifty-five percent of the world's population currently lives in urban areas, and the United Nations predicts this will increase to 68% by 2050.[xxxiii]

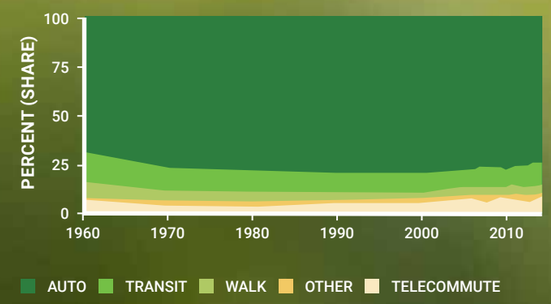
Twitter and Airbnb have opted to locate in former industrial buildings in downtown locations. Yelp, LinkedIn and Salesforce.com are also investing in downtown cores but moving into vertical campuses featuring interconnected atriums. Uber is transforming an old Sears building in Oakland. And Amazon created a university-like campus in downtown Seattle.

Walkable cities, public transportation and access to shared amenities are all benefits of downtown locations. But limited space and site options, zoning restrictions and the cost to build in urban locations continue to present challenges. And a significant segment of the middle class—the bedrock of a city's workforce—continues to relocate to the suburbs, posing additional challenges for urban locations that aspire to serve as thriving work centers.

CASE IN POINT: NOKIA'S WORK-LIFE BALANCE

As Nokia undergoes multiple consolidations, it is choosing to locate in places that support lifestyle blending: eat, play, work and live. Access to talent is a key influencer, as the company is recruiting and replenishing at the same time it is reducing staff.

TRENDS IN BAY AREA COMMUTING



SOURCE: METROPOLITAN TRANSPORTATION COMMISSION, VITAL SIGNS, 2015

ESSENCE OFFICE

NEW YORK, NEW YORK
29,750 SQ. FT. / 2,765 SQ. M.

For its new office in Lower Manhattan, Essence, WPP's global data and measurement-driven agency, wanted to imbue its distinct flavor in the space. Unique signage, neon lights, bar carts, an eclectic array of furniture and custom pieces, such as the boiler room door that hangs on a library wall, create a dynamic environment. A glass garage door opens to connect the pantry and game room for movie screenings and meetings.

The activity-based work environment encourages collaboration among creative teams. Built-in booths and phone/focus spaces accommodate private, heads-down work.

The office is part of WPP's co-location of 4,100 employees from six GroupM agencies and Kantar (WPP's data information firm) into one office in Lower Manhattan's 3 World Trade Center. The result is a vertical campus that offers clients easy connections to the company's comprehensive media expertise. Shared amenity spaces, agile work settings and a kit-of-parts design address WPP's desire for its offices to be flexible to respond to changing business demands.

Essence Office, New York, New York
Photo Courtesy of Eric Laignel

Essence Office, New York, New York
Photo Courtesy of Eric Laignel

Essence Office, New York, New York
Photo Courtesy of Eric Laignel

The Rebirth Of Company Towns

A growing number of U.S. firms are providing housing amenities and personal transportation to and from work for their employees.

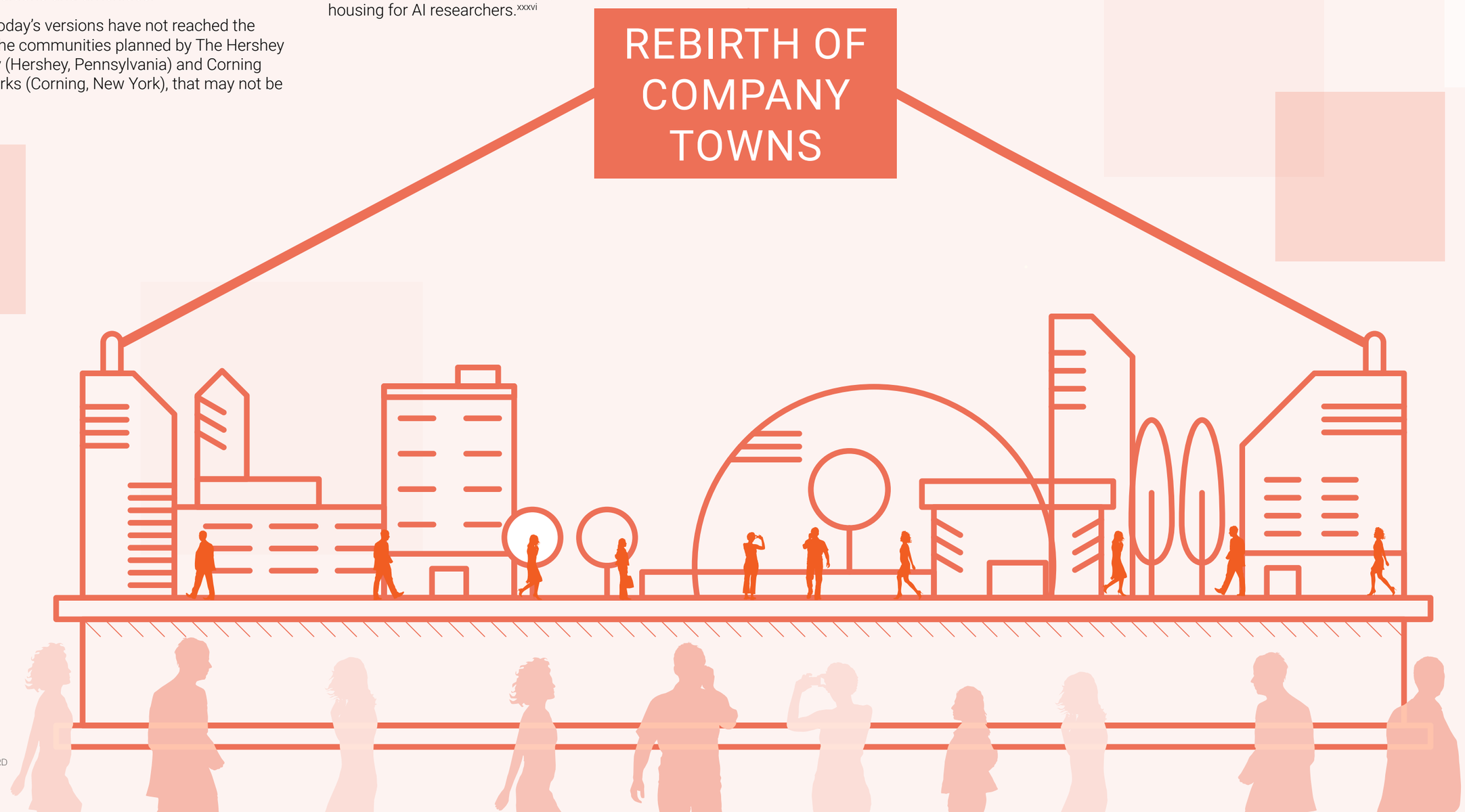
This trend is reminiscent of the company town concept popularized during the 19th and early 20th century, when more than 2,000 settlements arose across the U.S.[xxxiv] These large-scale planned communities were primarily focused on attracting skilled workers by providing attractive living conditions and amenities.

Though today's versions have not reached the scale of the communities planned by The Hershey Company (Hershey, Pennsylvania) and Corning Glass Works (Corning, New York), that may not be far off.

Facebook plans to build housing, retail stores, a hotel and other community amenities—a self-described multiuse village—at its corporate headquarters in Menlo Park, California. The project would include 1,500 housing units and over 125,000 square feet of new retail space.[xxxv]

And OpenAI, a nonprofit artificial intelligence research company co-founded by Elon Musk, is bidding on sites in northern California to create an office campus and temporary housing for AI researchers.[xxxvi]

Facebook plans to build housing, retail stores, a hotel and other community amenities—a self-described multiuse village—at its corporate headquarters in Menlo Park, California. The project would include 1,500 housing units and over 125,000 square feet of new retail space.



TRANSFORMATION

We're on the cusp of merging the digital realm with physical space. Technology and a renewed focus on human-centric spaces are transforming the work experience.

At the center of this evolution should be a commitment to engaging, equipping and empowering individuals to excel. This involves developing flexible, technology-infused space solutions that accommodate a growing diversity of work styles, preferences and personalities.

The next generation of high-performance tech workplaces will function as engagement centers and dynamic hubs where people gather, connect and innovate.

By focusing on human-centric metrics and thinking outside the box, we can create resilient tech workplaces that adapt to whatever the future may bring.

We need to design this next-generation workspace with courage if we want to keep pace and truly transform the work experience.

The future is ours to grasp.

ENDNOTES

i Paul Hannon, Timothy Martin and Sam Schechner, "UK to Impose Developed World's First Digital Tax on Google, Facebook and Rivals," MarketWatch, October 29, 2018, https://www.marketwatch.com/story/uk-to-impose-developed-worlds-first-digital-tax-on-google-facebook-and-rivals-2018-10-29.

ii David Shepardson, "Twenty Two States Ask U.S. Appeals Court to Reinstate Net Neutrality Rules," Reuters, August 20, 2018, https://uk.reuters.com/article/us-usa-internet/twenty-two-states-ask-u-s-appeals-court-to-reinstate-net-neutrality-rules-idUKKCN1L605W.

iii "Net Neutrality in the U.S.," Wikipedia, retrieved January 7, 2019, https://en.wikipedia.org/wiki/Net_neutrality_in_the_United_States.

iv Natasha Singer, "Microsoft Urges Congress to Regulate Use of Facial Recognition," The New York Times, July 13, 2018, https://www.nytimes.com/2018/07/13/technology/microsoft-facial-recognition.html.

v "Business Mortality," Cloudnames, retrieved January 5, 2019 http://cloudnames.com/en/blog/business-mortality/.

vi "Talent Shortages at Record High," Manpower Group, June 25, 2018, https://www.manpowergroup.com/media-center/news-releases/Talent+Shortages+at+Record+High+45+of+Employers+Around+the+World+Report+Difficulty+Filling+Roles.

vii Nathaniel Popper and Conor Dougherty, "Wall Street Stars Join Silicon Valley Gold Rush," The New York Times, March 24, 2015, https://www.nytimes.com/2015/03/25/business/wall-st-stars-join-silicon-valley-gold-rush.html.

viii "The Beauty of Disruption," BCG, retrieved January 6, 2019, https://www.bcg.com/publications/2018/beauty-disruption-eight-takeaways-european-strategy-leadership-summit.aspx.

ix Naheed Kurji, "Toronto's Thriving AI Ecosystem Serves as a Model for the World," Venture Beat, December 22, 2017, https://venturebeat.com/2017/12/22/torontos-thriving-ai-ecosystem-serves-as-a-model-for-the-world/.

x Steve Levine, "An Exodus of U.S. Tech Workers to Canada Escalates," Axios, retrieved February 15, 2019, https://www.axios.com/exodus-us-tech-workers-canada-0a42cd15-9294-4157-acb2-fc5850e3b766.html.

xi Dan Swinhoe, "Why GDPR Means Smart Cities Need to Move on From an Open Data Approach," IDG Connect, February 1, 2018, www.idgconnect.com/abstract/29380/why-gdpr-means-smart-cities-open-data-approach.

xii Julia Glum, "Was Your Facebook Data Actually Breached?" Money, March 22, 2018, http://time.com/money/5210825/facebook-data-breach-experts/.

xiii "Why Startups Are Leaving Silicon Valley," The Economist, August 30, 2018, https://www.economist.com/leaders/2018/08/30/why-startups-are-leaving-silicon-valley.

xiv Kevin Roose, "Silicon Valley Is Over, Says Silicon Valley," The New York Times, March 4, 2018, https://www.nytimes.com/2018/03/04/technology/silicon-valley-midwest.html.

xv "The Most Expensive Buildings in the World," World Atlas, retrieved February 2, 2019, https://www.worldatlas.com/articles/the-most-expensive-buildings-in-the-world.html

xvi "The Beauty of Disruption," BCG.

xvii "The Beauty of Disruption," BCG.

xviii Dave Evans, "The Internet of Things," Cisco, retrieved Dec. 20, 2018, https://www.cisco.com/c/dam/en_us/about/ac79/docs/innov/IoT_IBSG_0411FINAL.pdf.

xix Melissa Oyler, "Office Tracking Devices," Bisnow, June 13, 2018, https://www.bisnow.com/national/news/office/office-tracking-devices-enhanced-user-experience-or-big-brother-watching-89416.

xx "Robot Automation Will Take 800 Million Jobs by 2030," BBC News, retrieved January 6, 2019, https://www.bbc.com/news/world-us-canada-42170100.

xxi Ben Pring and Peter Andrew, "Artificial Intelligence: A Skynet Future or the Greatest Story of Humankind," Network Asia, July 4, 2018, https://www.networksasia.net/article/artificial-intelligence-skynet-future-or-greatest-story-humankind.1530695558.

xxii Matt Egan, "30% of Bank Jobs Are Under Threat," CNN Business, April 4, 2016, https://money.cnn.com/2016/04/04/investing/bank-jobs-dying-automation-citigroup/.

xxiii Jacob Kastrenakes, "RED's Hydrogen One Holographic Smartphone Launches on November 2," The Verge, October 29, 2018, https://www.theverge.com/circuitbreaker/2018/10/29/18029480/red-hydrogen-one-price-release-date-att-verizon.

xxiv "The Future of Jobs," World Economic Forum, retrieved January 7, 2019, http://reports.weforum.org/future-of-jobs-2016/.

xxv Niraj Chokshi, "Out of the Office: More People Are Working Remotely, Survey Finds," The New York Times, February 15, 2017, https://www.nytimes.com/2017/02/15/us/remote-workers-work-from-home.html.

xxvi Julian Fields, "How Working From Home Saves Your Company Money," Lifesize, January 22, 2018, https://www.lifesize.com/en/video-conferencing-blog/how-working-from-home-saves-your-company-money.

xxvii Alexa Lardieri, "Study: Many Americans Report Feeling Lonely, Younger Generations More So," U.S. News, May 1, 2018, https://www.usnews.com/news/health-care-news/articles/2018-05-01/study-many-americans-report-feeling-lonely-younger-generations-more-so.

xxviii "Skill Shift: Automation and the Future of the Workforce," McKinsey & Company, May 2018, https://www.mckinsey.com/featured-insights/future-of-organizations-and-work/skill-shift-automation-and-the-future-of-the-workforce.

xxix "The Agile Advantage," CBRE, retrieved January 12, 2019, https://www.cbre.us/-/media/files/2018/cbre-the-agile-advantage2.pdf.

xxx Dan Gentile, "13 Companies With the Best, Most Insane Food Perks," Thrillist, January 6, 2014, https://www.thrillist.com/eat/nation/company-perks-13-companies-with-the-best-food-perks.

xxxi "Study: 70% of People Feel Overwhelmed by the Amount of News in Their Lives," B&T Magazine, June 6, 2018, http://www.bandt.com.au/media/study-70-people-feel-overwhelmed-amount-news.

xxxii "Stress at the Workplace," World Health Organization, retrieved January 15, 2019, https://www.who.int/occupational_health/topics/stressatwp/en/.

xxxiii "2018 Revision of World Urbanization Prospects," United Nations Department of Economic and Social Affairs, May 16, 2018, https://www.un.org/development/desa/publications/2018-revision-of-world-urbanization-prospects.html.

xxxiv Michele Lent Hirsch, "America's Company Towns, Then and Now," Smithsonian Magazine, September 4, 2015, https://www.smithsonianmag.com/travel/americas-company-towns-then-and-now-180956382/.

xxxv Avery Hartmans, "Facebook Is Building a Village That Will Include Housing, a Grocery Store and a Hotel," Business Insider, July 7, 2017, http://www.businessinsider.com/facebook-building-employee-housing-silicon-valley-headquarters-2017-7.

xxxvi Julie Littman, "WeWork, Elon Musk Company Bid on Mostly Vacant, 22-Building Property Spanning 30 Acres," Bisnow, July 5, 2018, https://www.bisnow.com/san-francisco/news/construction-development/wework-elon-musk-entity-bid-on-mostly-vacant-22-building-property-spanning-30-acres-90320.

Additional stock images courtesy of Shutterstock.

Work is no longer a place people go—it's an experience that happens anytime and everywhere. Our workplace strategists and designers look beyond the environment to design this complete experience. High-performance workplaces enable people to be productive, engaged and happy, whether they are distributed workers, digital nomads or working in an office building, hospital, lab, campus or at home. HOK's evidence-based design solutions optimize the potential of these experiences. This may involve decreasing occupancy costs, embodying an organization's culture or fostering innovation—however our client defines success. Leveraging our global network and knowledge of best practices, HOK's WorkPlace practice leads the strategic planning, design and implementation of work experiences across the world.

Tom Polucci
Director of Interiors
t +1 212 981 3803
tom.polucci@hok.com

Gordon Wright
Director of WorkPlace
t +1 415 356 8769
gordon.wright@hok.com

Kay Sargent
Director of WorkPlace
t +1 571 329 1313
kay.sargent@hok.com

Curtis Knapp
Director of Consulting
t +1 214 231 5838
curtis.knapp@hok.com

hok.com/workplace

© 2019 HOK Group, Inc. All rights reserved.