CUSHMAN &
WAKEFIELD

Center for Real Estate
and Urban Analysis
THE GEORGE WASHINGTON UNIVERSITY

PURPOSE OF PLACE

HISTORY AND FUTURE OF THE OFFICE

ABOUT THIS STUDY

This report is the second in a four-part series that provides a new perspective on COVID-19's effects on the commercial real estate industry and the future of the office. In this study we partner with senior researchers at George Washington University to do a thorough review of academic literature and industry studies, examining the benefits of office and working from home (WFH) focused on several key areas including productivity, creativity / innovation, corporate culture, branding, employee engagement and walkable places. The learnings from this study also lay the foundation for a part three report that will include occupier and investor input and modeling of future workplace ecosystem scenarios.

Despina Katsikakis
Global Head of Total Workplace
Cushman & Wakefield

David C. Smith
Vice President, Global Head of Occupier Research
Cushman & Wakefield

Michael Rodriguez, AICP
Director of Research Smart Growth America and
Doctoral Candidate, George Washington University

Christopher Leinberger
Co-Founding Partner & Managing Director Places Platform, LLC
Former Chair and Professor, Center for Real Estate & Urban
Analysis, George Washington University School of Business

TABLE OF CONTENTS

KEY FINDINGS

THE FOUR REASONS FOR THE OFFICE

History suggests there are four main reasons for organizations to bother to be in offices at all. These are the reasons we have offices today and, to varying degrees, they continue to drive the need for office space in a post-COVID-19 world. The importance of each has shifted over time as the office moves from a place of management to a place of engagement and inspiration.

- Social needs for the employees that reinforce the culture of the organization. This includes personal social needs of employees, but also the corporate benefits of collaboration, mentoring, learning and development, and creative ideation.
- Productive environments for office workers.
- Capital requirements unique to the office space and location.
- Management requirements for centralized command and control. While this may have been a primary reason for office space historically, it is now the least common of these drivers.

WORKPLACE STRATEGY & LOCATION TERMINOLOGY

It is important to distinguish between the different terms associated with workplace strategy and employee location.

- **Office-based:** Work that is conducted inside the traditional corporate office workspace.
- **Remote work:** Moving away from office locations and requiring employees to work remotely all of the time. Also referred to as virtual office or telework.
  - A subset of remote work is "work from anywhere," which allows employees to choose to live and work from any city or town regardless of where their employer's offices are located.
- **Flexible, hybrid ecosystems:** Giving workers the ability to choose where they work on any given day. Providing several location options for employees to access in and around a given market. This may include a core office, satellite locations, coworking access, etc. Also referred to as agile.
  - In a flexible arrangement, organizations may still have expectations for employees to be in the office on a regular basis.

BALANCING REMOTE & OFFICE WORK

There may be a "Goldilocks" relationship where both too little and too much remote work are sub-optimal.

- Employees want choice AND want the ability to work in the office.
- The degree of that balance depends on corporate culture, employee personality, job function and team dynamics.
- A 2007 meta-analysis of 46 academic studies of literature suggests that **workers see greater autonomy and lower work-life conflict when working remotely up to 2.5 days per week; beyond 2.5 days per week the researchers found that there were greater harms to relationships with coworkers.**[1]

DRIVERS OF WORK CULTURE & WORKPLACE ENVIRONMENTS

In an attempt to understand the issues associated with the distributed workforce, we explored research associated with five dynamics driving work culture and workplace environments—issues that will determine what is expected in the post-COVID-19 office.

1. **Productivity / Output:** An office workplace environment can drive productivity or erode it, depending greatly upon a worker's role, personality and job complexity, as well as the tasks to be accomplished on any given day.
   - Remote work can increase productivity through reductions in commute time, perceived stress and ongoing interruptions.
   - Productivity is impacted by the type of work being done, how much interaction with others is required for success, and the quantity and quality of space available when employees work outside of the office.

2. **Innovation / Creativity (Agglomeration Theory):** The impact of remote work on creativity is mixed and supports that a mix of remote and office-based work is advantageous.
   - Getting away from the office periodically has measurable benefits for innovation by creating "head space" for workers and offering new ways (or "fresh eyes") to look at projects. These gains, however, have not been proven over long-term, permanent virtual work.
   - Measurable creativity and innovation gains from remote work have consistently included environments where employees were also regularly together face-to-face.

3. **Company Culture and Branding:** Less face-to-face interaction means employees are less likely to be engaged in the corporate culture, and managers find it more difficult to foster certain values through traditions and customs.
   - **Half of employees struggle to connect with their company's culture during the COVID-19-induced remote work experiment.**[2]

4. **Employee Satisfaction / Retention:** Offering choice in where work is completed is a net positive for employees. However, working from home exclusively is often associated with lower employee outcomes.
   - **Only 55% of employees engaged in remote work during COVID-19 restrictions have a "sense of wellbeing."**[3]
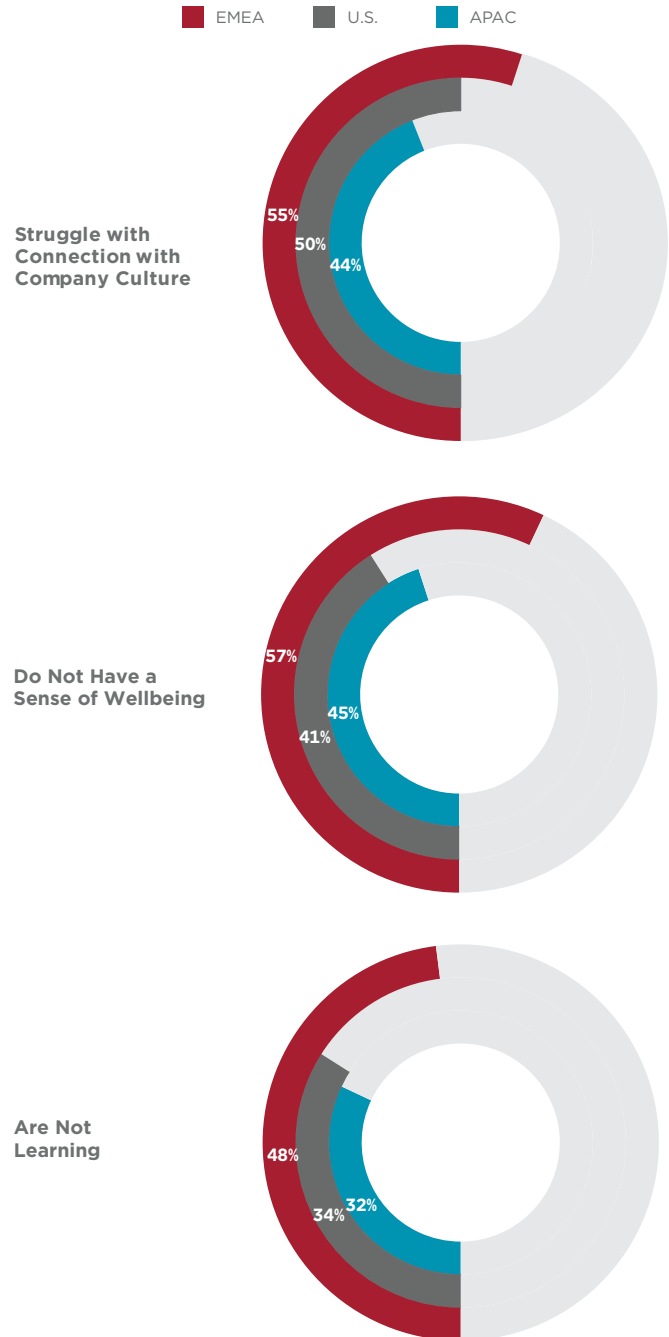
- Over a third of employees (36%) engaged in remote work during COVID-19 restrictions do not feel like they are learning.[4] Formal process learning is continuing but informal learning and mentoring are challenges.

5. **Location and Building Strategy:** The overall shift over the past two decades towards walkable urbanism—which includes dense, mixed-use spaces in both urban centers and suburbs—is unlikely to be undermined completely, should organizations utilize remote work more in the future.

KEY TAKEAWAYS

- Having reviewed the main drivers affecting the future of office in the post-COVID-19 world, we find it unlikely that organizations will see sustained 100% remote work in the long-run given mixed evidence in the research and occupiers' mixed experiences with their employees.

- Long-term tailwinds for the role of the office and the generation of office demand remain.

   - The knowledge and experience economies, which require office space more than agricultural or industrial economies, have been growing increasingly important for modern economies around the globe for the past 50 years.

- COVID-19 has been a drastic and society-changing experience that has greatly impacted office   workers around the globe. We expect the shift towards 100% remote work by employers for their office workforce is very unlikely outside of a singular event like a pandemic.

   - We reviewed very few studies of a completely remote organization, underscoring how rare office-free organizations have been in the recent past.

   - In any study, the impact of remote work was a matter of magnitude (how often can employees work from home) and selection (which employees can work remotely).

   - **Every organization we studied, ultimately, still utilized office space.** Thus, the post-COVID-19 future will likely be characterized by organizations determining the right balance of remote work to advance their organizational priorities rather than one that sees a move toward an office-free world.

CONCERNS RELATED TO REMOTE WORK DURING COVID-19

Legend: EMEA — U.S. — APAC

Struggle with Connection with Company Culture
- 55%
- 50%
- 44%

Do Not Have a Sense of Wellbeing
- 57%
- 45%
- 41%

Are Not Learning
- 48%
- 34%
- 32%

Source: Cushman & Wakefield's XSF@home Total Workplace analysis.

---

[1] Gejendran, R. and Harrison, D.A. (2007). The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. Journal of Applied Psychology 92(6).

[2] Cushman & Wakefield's XSF@home Total Workplace analysis.

[3] Cushman & Wakefield's XSF@home Total Workplace analysis.

[4] Cushman & Wakefield's XSF@home Total Workplace analysis.

OVERVIEW

The commercial real estate industry is undergoing a structural shift as dramatic as any it has seen in its more than 200-year history. The combination of a severe recession and a global pandemic has caused workers and businesses to reconsider how often to use their offices, how to use the office differently in the future, and how much office space they will require. In response to the current questions related to what a post-COVID-19 world looks like for office owners and occupiers, the following report will summarize the history and purpose of offices and the research known about the role of the office in the economy.

PERCENTAGE OF OCCUPATIONS ACROSS ALL INDUSTRIES THAT CAN BE CONDUCTED FROM HOME

53%
in Luxembourg

44%
in United Kingdom

37%
in United States

26%
in Phillipines

26%
in Brazil

Source: University of Chicago

/////////////////////

54%
of workers in 2020 reported having access to some work from home benefits, compared to only 28% in 2011.

Source: Glassdoor Economic Research

/////////////////////

During COVID, **60%** of U.S. economic output was dependent on working from home.

**Source:** Stanford University; U.S. Bureau of Economic Analysis

CURRENT RECESSION'S IMPACT ON OFFICE WORKERS

In 2020 Q2, 93% of the world's economies were in recession, according to the World Bank, which is more than during the Great Depression. In 2020, the U.S. entered into the steepest economic downturn since the Great Depression. U.S. GDP declined at annualized rates of -5% and -31% in the first two quarters of 2020,[5] and September unemployment stood at 7.9%, over twice the rate it was in February, with countless additional workers taking pay cuts, facing temporary furloughs or facing reduced work schedules and available hours. In 2020 Q2, across the globe's top 51 economies, Moody's Analytics estimates that 64.1 million nonfarm jobs were lost. In Q1, these economies employed 2.3 billion nonfarm workers.

However, office workers have been somewhat more insulated from this economic devastation as they learned to work out of home offices, many adapting to makeshift spaces in basements, bedrooms and kitchens. According to a May 2020 Stanford University survey, up to 60% of U.S. economic output was dependent on working from home, with 42% of all workers working from home, 33% of workers not working at all, and only 26% of workers commuting.[6] This forced experiment is the reason the very idea of the office is being rethought as workers find working from home not only possible, but in some cases preferable.

PROPORTION OF OCCUPATIONS ABLE TO WORK REMOTELY
SELECT COUNTRIES
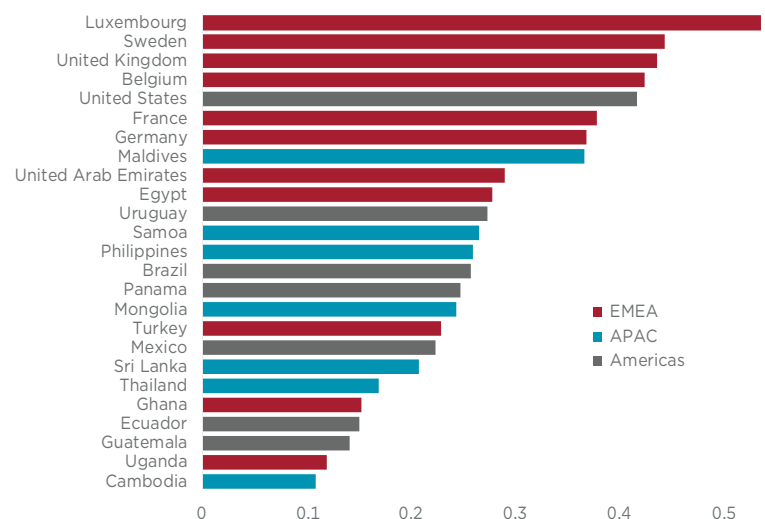
Source: Jonathan Dingel and Brent Neiman, University of Chicago

Even if employees do not necessarily work from home, the majority of them have access to some work from home benefits. According to Glassdoor, one of the world's largest job and recruiting sites, 54% of workers in 2020 reported having access to some work from home benefits, compared to only 28% in 2011.[7] Another study by the Bureau of Labor Statistics, using U.S. Census data, indicates that upwards of 44% of all U.S. workers have the ability to work remotely, although only 11% actually do.[8] And, a recent University of Chicago study pegged the upper bound of all occupations across all industries in the U.S. that can be conducted from home in a similar range (37%).[9] Globally, this ranged from under 10% on the low end to over 40% of occupations in 10 different European countries, including Denmark (41%), the United Kingdom (44%), Switzerland (45%) and Luxembourg (53%).

EXAMINING THE ROLE OF THE OFFICE

Given the rise of distributed workforces in response to the COVID-19 pandemic, it is important to scrutinize the pros and cons of different types of work and the varying locations required to support business goals. Through an extensive academic and industry research review, we identified five dynamics that will determine the future of the post-COVID-19 office.[10]

- **Productivity / Output:** How does the office provide productivity gains? For which types of work?

- **Innovation / Creativity (Agglomeration Theory):** How much benefit do companies gain by having groups of people congregate on a regular basis at the office? How does the office environment optimize socialization and agglomeration?

- **Company Culture and Branding:** What are the attributes that impact culture, connection with colleagues, mentoring and learning and which of these attributes rely heavily on face-to-face interactions? What internal and external benefits for a company's brand does the office offer? How does this vary by quality of building, by quality of interior space, and by offerings in and around the building?

- **Employee Satisfaction / Retention:** What is an employee getting from being in the office? Are amenities, technology solutions and employee-services more important or less important in a post-COVID-19 world?

- **Location and Building Strategy:** What are the internal and external benefits for a company's brand of the office? How does this vary by quality of building, by quality of interior space, and by offerings in and around the building?

This report is the second in Cushman & Wakefield's "*New Perspective: From Pandemic to Performance*" series, and it is the first of two conducted in affiliation with the George Washington University (GWU) School of Business Center for Real Estate and Urban Analysis and Places Platform, LLC, a U.S. place-based real estate database firm. This first report is divided into four sections:

1. Four Economies that Led to the Rise of Office

2. History and Rationales for Office

3. The Five Dynamics Affecting the Post-COVID-19 Office

4. Conclusions and Next Steps

---

[5] U.S. Bureau of Economic Analysis (2020, Sept. 30). Gross domestic product (third estimate).

[6] Bloom, N. (2020, June). *How working from home works out*. Stanford Institute for Economic Policy Research. (Policy Brief). https://siepr.stanford.edu/research/publications/how-working-home-works-out

[7] Zhao, D. (2020, March 18). *Work from home: The future of work arrived?* Glassdoor Economic Research. https://www.glassdoor.com/research/working-from-home/

[8] Dey, M., Frazis, H., Loewenstein, M.A., and Sun, H. (2020). Ability to work from home: evidence from two surveys and implications for the labor market in the COVID-19 pandemic. *Monthly Labor Review*. Washington: U.S. Bureau of Labor Statistics. https://www.bls.gov/opub/mlr/2020/article/ability-to-work-from-home.htm

[9] Dingel, J. I. and Neiman, B. (2020). *How Many Jobs Can be Done at Home?* Becker Friedman Institute for Economics at University of Chicago. https://bfi.uchicago.edu/wp-content/uploads/BFI_White-Paper_Dingel_Neiman_3.2020.pdf

[10] For the purpose of this report, "post-COVID" refers to the time period after the current health concerns have subsided and while COVID-19 is still in the public consciousness, the direct health risks are relatively small or non-existent. Our assumption is that this post-COVID era will begin in approximately 2022 or 2023. For more information on global office demand scenarios, see Cushman & Wakefield's *Global Office Impact Study and Recovery Timing Report*.

01
FOUR ECONOMIES THAT LED TO THE RISE OF OFFICE

The past 200 years of history have given rise to four economies, each layered on the previous. For thousands of years the foundation of all economies was agriculture and unsurprisingly in the first U.S. Census in 1790, 92 percent of all employment was agricultural.[11] The other eight percent of employment was in trade, distribution, a small manufacturing sector, civic functions and educational sectors. This minority segment of employment was generally located in a handful of cities and many small towns throughout the early states in the U.S., the largest being New York (population: 33,131) and Philadelphia (28,522) out of a total population of 3.9 million.

The subsequent economies following agriculture in the U.S. and other advanced economies are:

• Industrial (Mining and Manufacturing)

• Knowledge

• Experience (Including Retail)

Each new economy initially grew rapidly in employment and GDP contribution (absolutely and relatively) while agriculture and the subsequent economies grew more productive, requiring fewer relative workers. Each of the older economies never shrank in overall output; in fact, they continued to absolutely grow, but their relative share of workers and the GDP output as a share of the total fell.
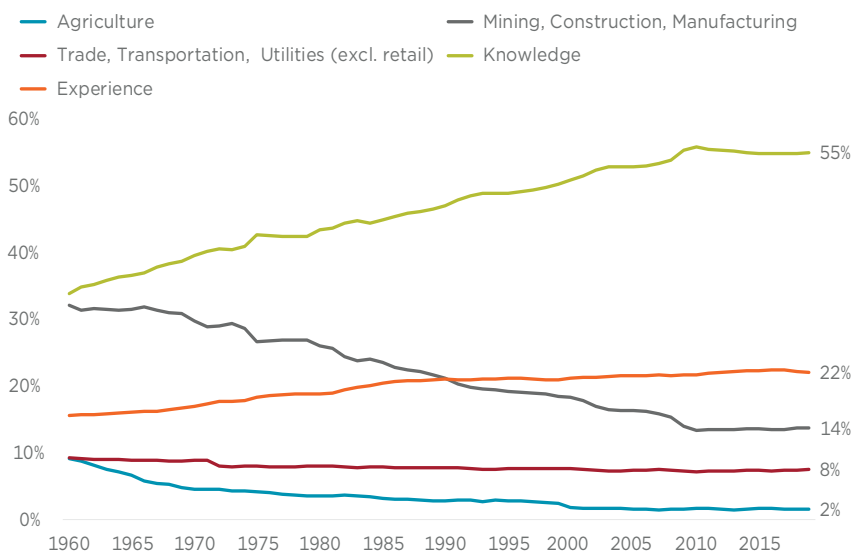
The peak of the Industrial era is considered to be 1960. The graph below shows the share of total employment for each year from 1960 until 2019. The one constant in a modern economy is Trade, Transportation and Utilities. This foundational component of the economy has been remarkably stable over the past 60 years, employing about 25 percent of U.S. workers, in spite of the substantial technological changes (8% when retail is included in the Experience economy as in the chart below).

Starting around 1960, the knowledge economy began growing as technological, scientific, managerial, higher education, professional services, design and other "creative class" jobs grew. Educated at the burgeoning U.S. university system, the number of college graduates in the workforce grew dramatically in the late 20th century, as did the need for master's degrees, doctorates and medical degrees. Over this period, the share of U.S. adults over 25 years old with a college degree increased from 8% to 36%.[13]

Much of the work performed by knowledge economy workers takes place in offices, whether conventional, lab space, university, professional service or R&D offices. In 1980, there was a total of 1.355 billion square feet of for-lease office space in the U.S. Over the next 10 years, 1.377 billion square feet of new for-lease office space was delivered in the U.S., more than doubling the office inventory in one decade.[14] During the 1990s Europe experienced a significant growth spurt with office inventory increasing

KNOWLEDGE & EXPERIENCE ECONOMIES' GROWTH[15]
U.S. EMPLOYMENT BY SECTOR, 1960-2019

— Agriculture
— Mining, Construction, Manufacturing
— Trade, Transportation, Utilities (excl. retail)
— Knowledge
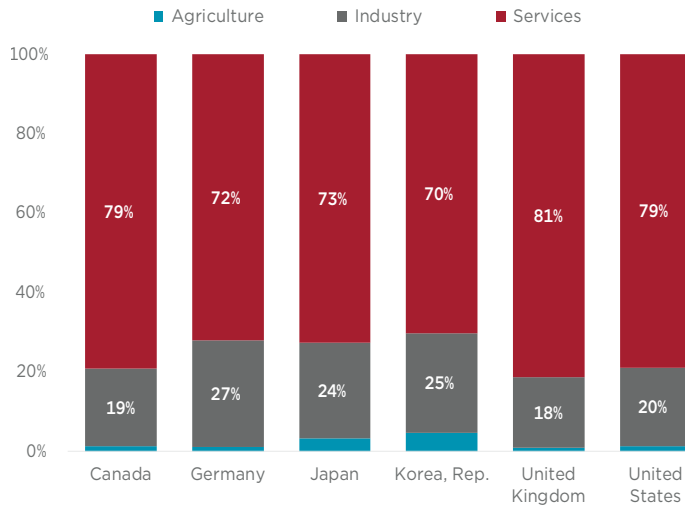— Experience

Source: U.S. Bureau of Labor Statistics

THE INDUSTRIAL ECONOMY

The industrial economy in the U.S. peaked around 1960 when it was nearly 30 percent of all employment. The industrial economy has steadily lost market share and today represents only eight percent of employment, though 35% of real GDP in 2019.[12]
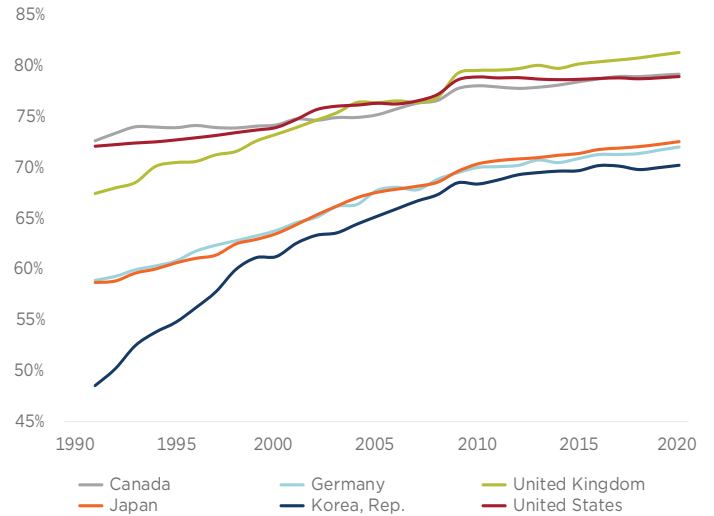
However, the industrial sector is highly productive on a per worker basis and some metropolitan areas continue to have higher GDP per capita in their industrial sectors than any other economic sectors. Certainly the U.S. exported wide sections of the industrial economy and jobs abroad to lower labor cost countries. However, the main reason for the relative decline in industrial employment has been the increased productivity due to increased capital investment and upgrading of worker skills. The typical factory worker today has a two-year post-high school degree and has highly technical skills to manage the software that control the machines in the manufacturing process.

SECTOR EMPLOYMENT[16]
(SELECT COUNTRIES, 2020)

Legend: ■ Agriculture ■ Industry ■ Services

	Canada	Germany	Japan	Korea, Rep.	United Kingdom	United States
Services	79%	72%	73%	70%	81%	79%
Industry	19%	27%	24%	25%	18%	20%

Source: World Bank

SERVICES SECTOR EMPLOYMENT[17]
(SELECT COUNTRIES, 1991-2020)

Legend: ▬ Canada ▬ Japan ▬ Germany ▬ Korea, Rep. ▬ United Kingdom ▬ United States

Source: World Bank

significantly in markets such as Amsterdam (+64%), Central London (+65%) and Dublin (+80%). More recently, during the most recent economic expansion, cities across Asia Pacific saw office inventories double (for example, Shanghai, Beijing, Hyderabad, Jakarta and Manila).

As with the previous economies, it is widely expected that the knowledge economy will peak at some point. It's becoming increasingly clear the next growth economy is the experience economy, which includes tourism, restaurants, live music events, professional sports and culture. These are high-growth areas in part because tourism is one of the largest five industries in the world, and more people visit museums than attend all professional sporting events.[18]

In many ways the experience economy is where workers who in previous economies would have worked in heavy industry now find employment. From an economic perspective, one of the great misfortunes of the COVID-19 pandemic is that it has disproportionately impacted the experience economy. Proximity and in-person interaction, which the pandemic is currently limiting, lie at the heart of the experience economy. The vitality of the experience economy has led to the absolute and relative absorption growth—as well as the price and valuation premiums—of walkable urban places. This energy and activity is on hold in many markets, but will come back in a post-COVID-19 world if workers, businesses and consumers regain confidence in the health and safety of experience economy environments.

[11] U.S. Department of Agriculture (1969). The story of U.S. agricultural estimates. (Misc. Pub. No. 1088). Washington: Statistical Reporting Service. https://www.nass.usda.gov/About_NASS/pdf/The%20Story%20of%20U.S.%20Agricultural%20Estimates.pdf

[12] U.S. Bureau of Economic Analysis (2020, Sept. 30). Contributions to percent change in real gross domestic product.

[13] U.S. Census Bureau. Educational attainment of the population of the United States: 1960; Educational attainment in the United States: 2019.

[14] Cushman & Wakefield Research.

[15] U.S. Bureau of Labor Statistics. (2020). Current employment survey for all industries except for agriculture. Current population survey for "agriculture and related services". For the purposes of this chart: "Trade, transportation, and utilities" excludes retail; "experience" includes retail, leisure and hospitality, and personal and laundry services; "knowledge" includes financial activities, professional and business services, education and health services, and other services excluding personal and laundry services.

[16] World Bank; International Labour Organization, ILOSTAT database. Data retrieved in June 21, 2020.

[17] World Bank; International Labour Organization, ILOSTAT database. Data retrieved in June 21, 2020.

[18] According to American Alliance of Museums website. https://www.aam-us.org/programs/about-museums/museum-facts-data/#_edn9

[19] Cision PR Newswire (2017, July 27). Retail's most profitable square footage. PRNewswire.com. https://www.prnewswire.com/news-releases/retails-most-profitable-square-footage-636947493.html.

THE EXPERIENCE ECONOMY

Many other business sectors are going to be transformed by the experience economy in ways that we can only speculate. In the retail sector, a great example has been the Apple store. The concept was met with great skepticism in 2001 when Steve Jobs announced it. A computer maker getting into retail seemed like a misalignment of strategy to many observers. Despite the skepticism, the Apple Store became a success story.

How successful? As a baseline, the average retail store in 2017 had sales of $325 per square foot according to a report by CoStar.[19] Historically, the highest selling retail category (outside of gasoline sales) are jewelry stores, selling very valuable but small items which means they lease very little space. Brands such as Tiffany & Co. sell about $2,951 per square foot, while a top apparel retailer like Lululemon Athletica sold about $1,560 per square foot.

Apple stores averaged $5,546 per square foot of annual sales; 17 times the average. This is due to both relatively small products (computers, phones, tablets, etc.) but also because Apple created an educational experience. Formerly low-skill retail clerks were transformed in Apple stores into computer consultants. Customers not just go for the initial purchase but continually come back for instruction at the Genius Bar, which allows for sales of new and improved products.

02
HISTORY OF CITIES AND THE OFFICE

While we've considered how the U.S. economy has shifted from its agrarian roots towards a knowledge and experience-based economy, we also consider where the office plays into our urban footprint and what its role might be in a post-COVID-19 future. For humankind's basic economic survival during the agricultural economy, we tended to only build shelters and a small amount of commerce and manufacturing structures. Palaces were built for wealthy aristocrats and royalty, representing the then-one percent. The only high-rise structures of the agricultural economy were religious and honorific structures. The purpose-built office is a result of the industrial and knowledge economy.

Stepping back in time to consider why we have offices at all gives us a perspective on how we use land, and where the office fits in to a future urban landscape when technology continues to decrease the cost and time of communication. What might history suggest to us about the future of office?

We offer that offices grew into existence for four primary requirements:

1. Management requirements for centralized command and control.

2. Productive environments for work completion and knowledge / information exchange between office workers.

3. Capital requirements unique to the office space and location

4. Social needs for the employees that reinforce the culture of the organization.

A quick view of cities and the history of offices highlights these four requirements that are familiar to many real estate professionals. Each plays a role in the history of the office. In a post-COVID-19 world, there may be shifts in the prevalence and priority of each for businesses and employees.

WHY WE HAVE OFFICES IN CITIES

Before considering why we have offices at all, we should consider why we have cities and why people and organizations choose to locate close to one another. Economists call the forces that lead to cities the "agglomeration" forces, a concept that goes back to Alfred Marshall in 1890.[20] The three main agglomeration forces are the desire of people and firms to be near materials and inputs, to be close to other people, and to be around important ideas. The latter two are the most important to office-using organizations.

Over time, the access to people—or "labor market pooling"—led to the agglomeration of tech talent in the San Francisco Bay Area, for example. Companies knew there was a critical mass of specialized workers there, and new tech workers understood they could maximize their employment potential by locating in that region.

Access to ideas, known as "knowledge spillovers," is that soft force of cross-pollination from one idea to another, and the innovation in the finance industry in powerhouses like New York and London are a testament to it. We will discuss these forces when we talk about walkable urbanism as one of the five trends for office in the post-COVID-19 world, but they're worth thinking about in the context of office more broadly.

These agglomeration forces are what gives us the classic skyline—it's no coincidence the tallest building in the center cities of the 30 largest U.S. metropolitan areas is an office tower—and it is why so many organizations choose to occupy these buildings. In its

architecture, Salt Lake City speaks to the history of American society: the tallest building was once the Salt Lake Temple, which was subsequently surpassed by its City and County Building, only to all be surpassed by the glass and steel Wells Fargo Center office building.

Office's role in urban history is quite new. The urban theorist Lewis Mumford in *The City in History*[21] notes cities developed and grew to facilitate religion, provide security (e.g., city walls) and enable commerce. Today most cities exist for commercial reasons. Fewer cities serve as pilgrimage sites compared to ancient and pre-Modern times. If there was a structure that dominated the skyline in pre-Modern times, it most likely served a religious purpose, whether it was the ziggurats of the Mayan Mesoamerica or St. Paul's Cathedral of London. Today it is usually an office building, and it is there because office-using organizations have a need for that unique kind of physical space and a need to be close to one another and commerce.

SERVICES SECTOR EMPLOYMENT [22]
(SELECT COUNTRIES, 1991-2020)
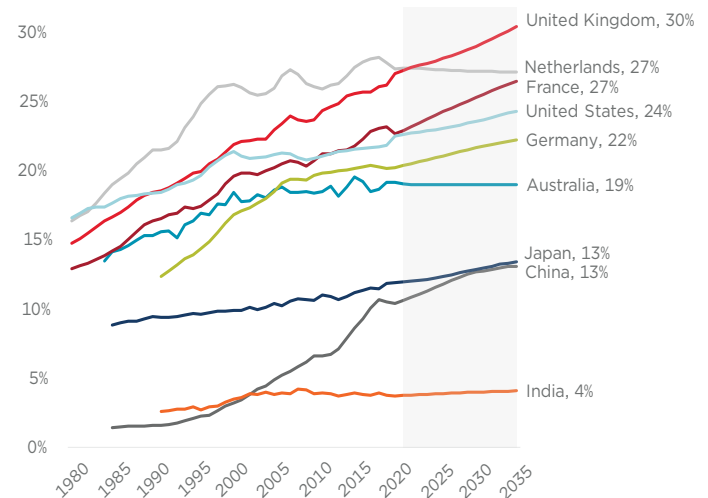
Source: Moody's Analytics analysis of various government sources.

LEARNING FROM ARCHITECTURAL HISTORY

Cities only began to see what we might consider an "office" during the 16th century Renaissance. Government officials, merchants and professionals tended to work either from government palaces or, more likely, their own home, which doubled as an office and warehouse.

The earliest Western "office" work took place in the **coffee houses** of London, where by 1663 there were 82 coffeehouses that provided a site for the gathering of eclectic minds where "powers, playwrights, journalists and members of the public gathered around long

wooden tables."[23] Hipsters with laptops populating coffee shops is not a new development—that trend already existed over 350 years ago with those coffeehouses serving as part coffee shop and part coworking space.

London is also the site of two key architectural contributions to the history of the office. The first is the **Old Admiralty Office**, which, built in 1726, provided official spaces where naval officers and their functionaries could administer the reams of paperwork, orders and dispatches of an ever-expanding naval-based colonial empire.[24] Here we see an early example of one of the four primary reasons the office developed—the need for centralized command, control, management and communication is evident in the architecture of this first office building. The Admiralty is still occupied today, using a layout familiar to 20th century office workers: functionaries and workers in the windowless core with a perimeter for officials and officers with natural light.

Recounting an office experience not too foreign to workers today, the early 19th century essayist and author, Charles Lamb wrote: "On Friday I was at office from 10 in the morning (two hours dinner except) to 11 at night – last night til 9."[25]

In the American context, the first purpose-built offices were offshoots of what would have been government customs houses used for accounting imports, exports, and importantly, trade tariffs, the largest source of Federal government revenue in the early republic. On New York's East River waterfront, **Schemerhorn Row** was constructed in 1812 to provide "counting houses" that provided space for bureaucratic functions of the nation's newly emerging shipping companies.[26] "Built as a group like residential row houses, counting houses represent an early phase in the development of commercial architecture in New York when buildings had not yet acquired architectural individuality based on their function."[27] These building were built to be flexible in their use, with possible functions including residential, retail, warehouse or office.

If managerial command and control was one of the major functions of offices, it was with the rise of efficiency-based Taylorism[28] that the modern specialized office focused on the second reason for the advent of the office: productivity of office workers. In upstate New York, Buffalo provided one of the most iconic buildings that would influence North American offices for another century: The **Larkin Building**. Designed by Frank Lloyd Wright in 1904, it served as the headquarters for the Larkin Soap Company. Mail-orders of soaps and other dry goods were processed in an interior core of open desks for clerks in the center with supervisors along the windowed edges.[29]

Management would overlook along their higher floor perimeter offices. It was the synthesis of Wright's modernist vision and influenced by the Taylorism fixation on rationality, order and efficiency.

By the 20th century, the third driver of office—the need for capital investment came into play. Organizations now required purpose-built offices that could accommodate machines that tabulated accounting records, physical cabinets to file and preserve orders, and telephones to allow communication.[30]

By the mid to late 20th century, as the knowledge economy was layering on top of the industrial, most office buildings were still satisfying the demands of management command and control while maximizing the productivity of workers. And growing capital requirements meant more complex telecommunications networks, large mainframe computers, and eventually personal computers and servers. This capital could not be replicated in the home until the 1990s when the laptop and internet connectivity became widely available. The expansion of broadband networks and the decreasing costs of computers further decreased the tie between capital requirements and the office.

The fourth user requirement of the office, the desire to drive social and cultural connectedness, is more modern phenomena. It roots date to the 1970s with the advent of environmental psychology (i.e., the study of transactions between individuals and their physical settings[31]) along with a growing focus on human behavior that increasing saw workers as more than just production drones. One of the modern apotheosis of office requirements is the **Googleplex**, completed in 2004 as the headquarters of Google in Mountain View, California. While management command and control and productivity have remained consistent user requirements, this campus-like atmosphere illustrates the confluence of capital requirements (e.g., servers, secure areas and computer systems) and the social and cultural importance to a modern company of building morale and encouraging employee collaboration, knowledge exchange and innovation of a modern company.

Google was at the vanguard of fostering the quirky corporate culture of the modern tech company: relaxed dress codes, games in the office common areas and generous food amenities. One reason behind these efforts is to foster physical and social interaction among computer programmers and engineers who might not otherwise be pre-disposed to socialize. Jacobsin and Stiernstedt[32] go beyond that analysis and argue that the Googleplex, with a "main street" and transparent open layout, serves to place information at the pinnacle of the organization. The office for Google serves to turn people and objects into information, putting them into position where they can be "handled and organized as information."

The Googleplex may not be a realistic or even ideal solution for many occupiers, but it epitomizes the modern office's move to reflect and reinforce corporate work culture. The social needs of employees and the cultural needs of the organization—an information-based culture with a focus on serendipitous interactions and collaboration to drive innovation, creativity, and a fun attitude—reflect the need for those employees to work from the office.

CONCLUSION

We argue that the history of offices suggests four main reasons for organizations to bother to be in offices at all: managerial command and control, optimization of worker productivity, capital requirements that cannot be provided elsewhere, and building individual social interaction while fostering a corporate culture. All of this occurs inside a broader context of cities, where the reason for locating there can be described by economic "agglomeration" forces.

Each of these dynamics face different degrees of threat of disruption by increased remote work and more distributed workforces. Going forward this report will consider that the future demand for office will depend on the degree to which each of these requirements holds for occupiers, and the degree to which these needs can be sufficiently met outside of an office, especially through additional remote work.

---

[20] Marshall, Alfred (1890). *The Principles of Economics*. London: MacMillan and Co.

[21] Mumford, L. (1961). *The city in history: Its transformations, and its prospects*. San Diego: Harcourt, Inc.

[22] Moody's Analytics analysis of various government sources.

[23] British Broadcasting Corporation (2013, July). *How the office was invented*. BBC News Magazine. https://www.bbc.com/news/magazine-23372401

[24] Cilcennin, J. P. L. T. (1960). *Admiralty House, Whitehall*. Country Life.

[25] Lamb, C. (1935). Commins, S. (Ed.). *The complete works and letters of Charles Lamb*. New York: The Modern Library.

[26] Kardas, S., & Larrabee, E. (1991). Summary Report of 1981-1983 Archaeological Excavation, the Schermerhorn Row Block (Vol. 1). Historic Sites Research. Mahr, M. B. (2001). The South Street Seaport Museum: Schermerhorn Row Block (Doctoral dissertation, Pennsylvania State University).

[27] New York Architecture. Schermerhorn Row. NYC-architecture.com. http://www.nyc-architecture.com/SCC/SCC001.htm

[28] Taylor, F. W. (1919). The principles of scientific management. New York: Harper & brothers.

[29] Duffy, F. (1997). The new office. London: Conran Octopus Ltd.

[30] Mance, H. (2020, April 15). The rise and fall of the office. Financial Times. https://www.ft.com/content/f43b8212-950a-11ea-af4b-499244625ac4

[31] According to the Australian Psychology Society website. https://www.psychology.org.au/About-Us/What-we-do/advocacy/Advocacy-social-issues/Environment-climate-change-psychology/Psychology%E2%80%99s-role-in-environmental-issues/What-is-environmental-psychology

[32] Jakobsson, P. and Stiernstedt. F. Googleplex and informational culture. In S. Ericson, K. Riegert (Eds.) Media houses: Architecture, media and the production of centrality (pp. 113-137). New York: Peter Lang.

TIMELINE OF THE OFFICE

451 B.C.

DEVELOPMENT OF ROMAN TOWNS
Each town had a square bounded by shops government offices. It is the Latin word 'officium' meaning bureau that gives us the word we use today

1663

Over 80 **COFFEE HOUSES** in London for public gathering

1726

OLD ADMIRALTY OFFICE in London

1812

SCHEMERHORN ROW in NYC (counting houses)

1904

THE LARKIN BUILDING in Buffalo, NY

1950s

HAMBURG
The development of a more fluid, people-based approach to open floor plan office design

22 BISHOPSGATE completed in London's financial district. The largest commercial development in Europe: A 'vertical village' with 200,000 sf of occupier-focused amenities, WELL certification, biometric security and an open platform, cloud-based technology infrastructure

The current tallest building in the world—**BURJ KHALIFA**—is completed (reaching 828 meters or 2,717 feet high)

U.S. OFFICE INVENTORY doubles with the development of 1.377 bsf of office space

1980s

2010

2020

AROUND THE GLOBE

2004

2015

Launch of **THE EDGE** in Amsterdam , 'The Smartest and Greenest Office Building in the World'

GOOGLEPLEX in Silicon Valley

WHAT IS THE FUTURE OF THE OFFICE?

03

FIVE DYNAMICS FOR THE FUTURE OF OFFICE

Considering the main four main purposes of offices discussed in the previous section, and the agglomeration forces that undergird business locations in cities, we believe that five main dynamics will impact the degree to which remote work in a post-COVID-19 world will impact the office sector. In this section we provide a review of the academic literature on how remote work impacts each of these drivers.

1. **PRODUCTIVITY / OUTPUT:** Stems from user requirements to be able to manage employees and to provide employees a productive space that can optimize individual and organization-wide outputs.

2. **INNOVATION / CREATIVITY:** Related to output but focused on how organizations generate new ideas and products.

3. **COMPANY CULTURE AND BRANDING:** Refers to how organizations establish a culture that communicates their values and mission, and how physical space communicates their message.

4. **EMPLOYEE SATISFACTION / RETENTION:** The requirement to meet social needs of employees, increase engagement with their work and the organization, reduce turnover and thereby also enhance productivity. Critical components to the employee experience include mentoring and learning.

5. **LOCATION AND BUILDING STRATEGY:** With a focus on walkable urbanism, placing the office in a broader context of its location in the city, and how organizations meet many of their needs not just from what is inside the office but also by what is around it.

1. PRODUCTIVITY AND OUTPUT

One of the major questions regarding remote working boils down to whether an organization's workforce can be equally productive when working from home compared to coming into the office. During COVID-19, many organizations are engaging in an experiment, whether they want to or not, and they wonder whether productivity and remote work are in direct conflict.[33]

Productivity is a measure of output divided by input. For relatively simplistic tasks, productivity can be measured in a straightforward manner (e.g., customer service calls per person-hour, orders processed per day, the amount of keystrokes of data input per day, etc.). However, for most knowledge economy workers, productivity metrics become more complicated because these workers do not perform simple tasks that can be easily measured into units. Thus, productivity is often subjective. While people have a sense of it, we cannot easily point to a simple and clear measure.

EVIDENCE

One way productivity is enhanced is by reducing total business disruption, and the COVID-era necessities have underscored how remote work flexibility was necessary to continue business operations. A 2010 White House Council of Economic Advisors study noted that the federal government saved $100 million per day in potential lost productivity by having the flexibility to not shut down during snow closures.[34] They also highlight that Cisco Systems, when introducing flexible work arrangements, increased productivity by $195 million in 2003. While flexible work arrangements are not mass remote work arrangements, they point to employees benefiting from not being required to report to the office in the traditional nine-to-five, five days a week schedule. Of course, greater work-life balance, generally, ought to lead to greater productivity through greater employee happiness, and one study of European firms shows there's a positive correlation between productivity and work-life balance.[35]

Flexible work arrangements can improve work-life balance by reducing commute times and increasing the ability to focus. However, there may be diminishing returns for employees beyond a certain point of remote work. A 2007 meta-analysis of 46 academic studies of literature suggests that *workers see greater autonomy and lower work-life conflict when working remotely up to 2.5 days per week; beyond 2.5 days per week, the researchers found that there were greater harms to relationships with coworkers*.[36] Some remote work had a positive relationship with supervisor ratings, and remote work was related to lower turnover. However, the results are complex and depend on industry, occupation, job complexity and the degree of remote work.

While these results concur with psychology studies that suggest that autonomy raises productivity by 5%,[37] management also has to learn to manage a remote work

force. A distributed workforce demands an outcome-focused management style instead of an input-focused one, and in the words of a Sun Microsystems vice president, "if you have to manage by monitoring, [remote work] isn't for you."[38]

One of the most commonly cited recent papers on the measured productivity impacts of remote work examines a Chinese travel agency call center. Written by Bloom, et al., the oft-cited study indicates that productivity improved 13% through a combination of workers spending more time working and by taking more calls per minute.[39] Because this was a randomized control trial, the study carries more scientific weight in terms of identifying productivity effects. However, it is difficult to compare this impact for all organizations given the many cultural differences between different countries. Additionally, a travel agency call center does not necessarily reflect the work functions of many office occupiers in the advanced knowledge economy. As with many of these studies, there may be other factors that impact the outcomes. In this case, there may have been selection bias because participants had to opt-in and there were certain requirements for individuals to be part of the study (i.e., have a private room at home, have sufficient bandwidth at home and have been with the firm for at least six months).

Asking employees to rate their own productivity is another technique to measure work from home impacts, and one survey of 1,004 by Airtasker[40] indicates some positive productivity impacts. Workers reported 37 minutes of unproductive time per day when in the office compared to 27 minutes per day when at home. However, there was some negative impact on the ability to focus: 71% of workers identified it was easy to focus at the office compared to 61% when working from home.

PRODUCTIVITY

Evidence from literature is mixed and depends on the complexity of work and the degree of remote work.

Low-order and high-order functions are most likely to benefit from remote work.

Thinking in a framework of "autonomy" and "interaction" requirements for workers is key.

The work-life balance seemed to be hit, too, with 29% of remote workers struggling with work-life balance compared to 23% of office workers.

This suggests, at a minimum, that the work-life balance perceptions are complex. The Airtasker survey indicates somewhat worse work-life balance when working remotely compared to some impacts in other studies.

This is mirrored in Cushman & Wakefield's Experience per Square Foot (XSF@home) consulting work where 46% of clients' surveyed employees are not able to find sufficient time away from work during COVID-19-induced work from home policies. Similarly, only 55% of employees have a sense of wellbeing while working from home during COVID-19.[41] These challenges are exacerbated for younger workers, who are more likely to have limited space for a home office or even share their residence with roommates.

Another more recent academic study on the U.S. Patent and Trademark Office (USPTO) is a little more telling about impacts on productivity in the U.S. context. Conducted by Choudhury, et al.,[42] the study makes a key distinction of USPTO patent examiners remote work situation: the remote workers are divided between "work from home" or "work from anywhere." The former still requires workers be within commuting distance of the USPTO's Alexandria, Virginia headquarters, while work from anywhere employees can be anywhere in the U.S. so long as they sometimes report to headquarters at their own expense.

Their main finding is that workers participating in work from anywhere—those who can locate anywhere in the U.S.—experienced a 4.4% greater productivity in their patent applications processed, controlling for quality, than workers who participated only in work from home. Further, the authors find that these employees gained some financial benefit by being capable of enjoying cheaper housing outside of the high cost Washington, DC area. Thus, geographic flexibility is a benefit workers enjoy at little cost to their productivity.

Some elements of the work from anywhere environment in this study are worth note. The USPTO still had a major headquarters office presence and its employees were expected, at their expense, to periodically report to it. Secondly, employees could only become eligible for the work from anywhere program after working for the USPTO for two years, allowing managers to filter employees they deemed capable of more remote work. This is therefore not an example of a pure virtual office, may contain some selection bias, and is more similar to work from anywhere arrangements experienced by other companies noted by the authors: GitLab, HitHub, Zapier, NASA, and DataStax, for example.
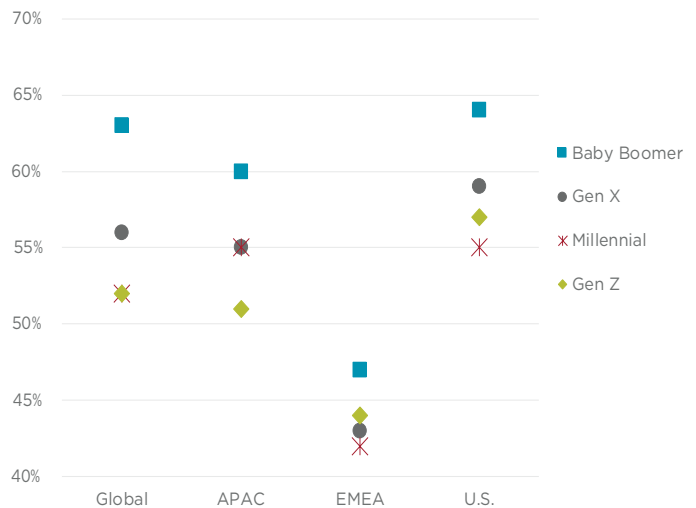
From an employer's perspective, there could also be some bottom-line productivity benefits to work from anywhere policies. If employees can elect to work from

ABLE TO FIND SUFFICIENT TIME AWAY FROM WORK

Legend: Baby Boomer, Gen X, Millennial, Gen Z
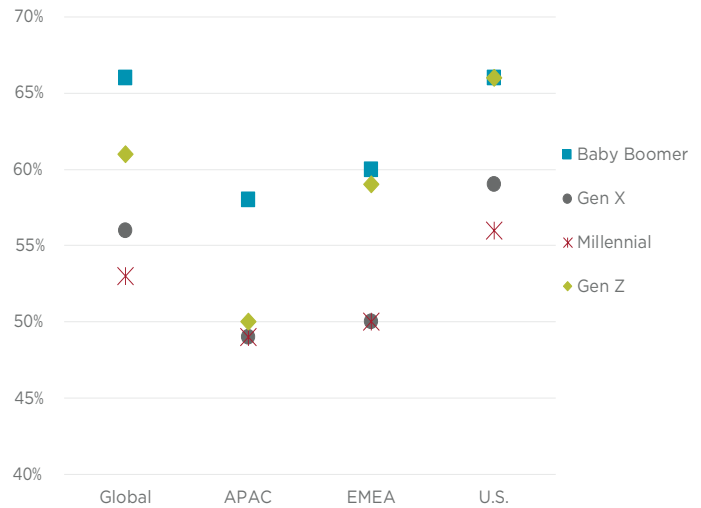
Source: Cushman & Wakefield's XSF@home Total Workplace analysis.

HAVE A SENSE OF WELLBEING

Legend: Baby Boomer, Gen X, Millennial, Gen Z

Source: Cushman & Wakefield's XSF@home Total Workplace analysis.

anywhere in the country, many will choose locations that fit their lifestyle and budget without the constraint of having to be near the headquarters, or at least a satellite office. Because many of those workers can enjoy lower housing costs, their wage expectations are lower.

In a study of call center workers, Mas and Pallais[43] find that that employees are willing to accept 8% lower wages when given work from anywhere arrangements, and 20% lower wages in exchange for greater schedule flexibility. While the legal and organizational politics implications of

paying remote workers less require further examination, organizations possibly can benefit from lower labor costs by permitting workers to live elsewhere.

THE AUTONOMY-INTERACTION MATRIX

The mixed findings on productivity suggest that when it comes to the link between productivity and remote work, "it depends." It depends on the nature of the work being done, the proficiency of the individuals, and many other factors. One way of conceptualizing this is to consider two main factors: autonomy and interaction. We borrow these terms from a framework developed by architecture theorist Francis Duffy in his 1997 book *The New Office*.[44]

Writing in the era when technology was just beginning to allow significantly more flexibility, Duffy provides this framework for understanding that the ability to work remotely depends on a combination of two critical factors: the degree of **autonomy** that the individual worker has to perform their work, and the level of **interaction** that is required for work. More autonomy means greater "control, responsibility and discretion," while more interaction means requirements of "personal, face-to-face contact that is necessary to carry out tasks."

We offer this matrix here as an important way of thinking about the future of office. Which activities does it best support? Which roles benefit most from it? How does that inform the mix of work arrangements for an organization?

Duffy offers four "types" of office organizations that he terms as hive, den, club and cell—each depending on the level of autonomy and interaction of the

organization's workers. While all combinations are relevant, we argue that what he terms "clubs" and "hives" constitute the largest segment of the office market and are highly relevant when considering threats from remote working.
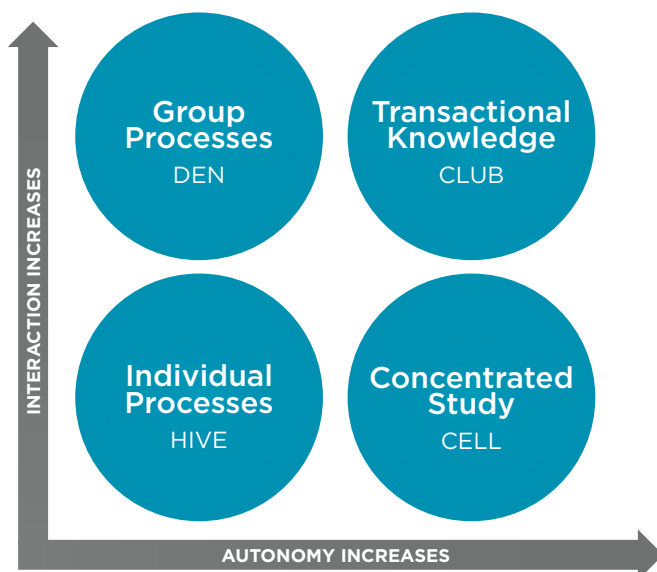
Workers with high autonomy and high interaction can engage in offices called "clubs," reminiscent of old coffee houses or social clubs where workers sometimes meet together and benefit from the agglomeration forces and spillover effects previously described. Because their work is high-order, but still requires face-to-face interaction, they will regularly engage in in-office work but only meet on an "as-needed" basis to satisfy the interaction. With greater ability to work from anywhere, their previous needs for office space can sometimes be met by virtual office systems. As an example, Duffy offers the New York offices of advertising agency Chiat/Day and its focus on "fluid movement" in and out of the office space. In a more contemporary sense, the offerings of flexible office space from companies like Industrious, WeWork and Regus quite literally model the office as a club for the member companies and workers.

The low-autonomy, low-interaction workers are what Duffy calls "hives," evoking worker bees. Such tasks are like the call centers described in the study of Chinese travel agents and the USPTO patent examiners. These functions are a bit more subject to Taylorism-style productivity measures, but these functions pose two threats to office demand: they are increasingly outsourced to other countries, and they are increasingly able to be managed remotely without the need for a large office space.

CONCLUSIONS – PRODUCTIVITY

- Distributed workforces offer potential output benefits to employers:
  - ▪ Disruption avoidance
  - ▪ Increased productivity
  - ▪ Improvements in employee work-life balance
  - ▪ Access to talent

- Productivity is difficult to define for knowledge and creative class workers. These are the very employees who both can execute much of their work from anywhere and benefit the most from in-person collaboration / interaction.

- Impacts of remote work on productivity vary greatly depending upon employee personality, role and job complexity.

- Employee choice is a net-positive; working remotely every day is often not.

AUTONOMY & INTERACTION[45]

INTERACTION INCREASES

| Group Processes DEN | Transactional Knowledge CLUB |
| Individual Processes HIVE | Concentrated Study CELL |

AUTONOMY INCREASES

2. INNOVATION AND CREATIVITY

The modern office workplace is increasingly technological, creative and knowledge-based. Although firms might think about revenue per employee or aggregate productivity numbers, often the key output of talent in knowledge companies is their ability to innovate new ideas and be creative. Examples include cutting-edge internet tech companies, marketing firms, talent agencies, consulting firms and many advocacy nonprofits.

This is where increased remote work can seem more challenging since creativity often stems from face-to-face and spontaneous interaction. By one definition, "innovation represents the core renewal process in any organization. Unless it changes what it offers the world and the way it creates and delivers those offerings, it risks its survival and growth process."[46]

EVIDENCE

In a meta-analysis of various definitions of innovation, one study identifies that certain words prevail across the literature: "new," "product," "process," "service" and "creativity" are among the top words among definitions of innovation for organizational literature.[47]

If remote working results in ambiguous impacts on productivity, how might it impact innovation and creativity? Shouldn't we expect it to also impact the ability of workers and managers, and the organization as a whole, to refresh themselves in new and creative ways that offer improved products and services?

In a 2010 book on the nature of innovation in the workplace, Steven Johnson suggests that innovation thrives, "when ideas can serendipitously connect and recombine with other ideas." As mentioned before, this is tightly related to the concept of knowledge spillovers, albeit at the firm level.[48] Impromptu interactions in the office kitchen, around the water cooler, and in the halls provide the perfect opportunities for coworkers to not only be more productive with one another, but to also create and innovate.

In one study of new product development teams at five European firms, researchers noted that remote working actually increased product development performance and the speed with which new innovations occurred.[49] However, this came with an important caveat: ***all organizations still had face-to-face contact, even with flexible work schedules or hot-desking.*** The firms did not adopt a 100% remote work or "virtual office" model. Businesses "cannot do without a sufficient level of face-to-face contact," the authors note, underscoring the fact that pure virtual offices would likely stymie innovation. This is confirmed by two studies that suggest that the optimal outcome of remote work exists when it is done only on a part-time basis, which can reduce isolation of employees and increase their knowledge interaction.[50, 51]

Creativity is also a characteristic of occupation and job function. Of course, we can consider some tasks to be more rote while others more creative. One study explores remote work's different impacts on rote and creative tasks in a lab environment. Participants completed select tasks in a lab setting, some of which were defined as "dull" and others as "creative." When taken outside of the lab to a remote environment, the productivity for the workers given "dull" tasks declined by 6% to 10%, while the workers given creative tasks increased their productivity by 11% to 20%.[52] Of course, a short-term lab setting indicates that creativity may, in a vacuum, benefit in the short-run when workers are outside of the office, but what about long-term outcomes within the given dynamics of a real-life organization?

In one survey conducted by creative firm Mural, the organization indicated that 47% of their workers reported that the quality of their creative design work suffered when working remotely. Meanwhile, only 15% of workers thought their work was better outside of the office.[53] This justifies the mixed view on innovation. The literature finds empirical estimates of any effect on creativity and innovation elusive, partly because it is more difficult to measure innovation and partly because most studies tend to focus on productivity.

In a qualitative interview analysis of managers and employees at four different firms, researchers found remote work to be a double-edged sword when it came to "innovative work behavior" of employees.[54] On the positive side, employees noted the ability to focus better when away from hectic workplaces and to more easily "work in environments in which they are less prone to distractions." This suggests that for successful remote work, employees need a distraction-free place in their home, or a productive environment in a "third office" such as a satellite office, coworking location or coffee shop. For some workers, however, a distraction-free home office is not an option. Young workers, for example, are more likely to have work-from-home challenges due to caregiver responsibilities and inadequate workspace.[55]

EXPERIENCE CHALLENGES WORKING FROM HOME
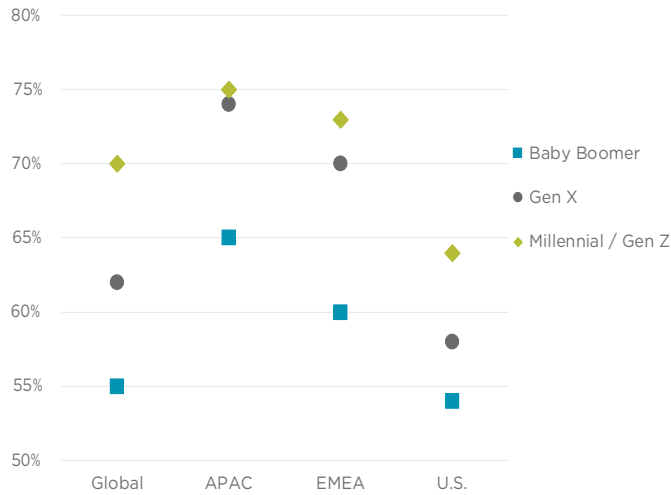
Source: Cushman & Wakefield's XSF@home Total Workplace analysis.

Other positive impacts of employees getting out of the office: the ability to feel more energized and to effectively step back from the work and bring fresh eyes to their tasks.

The downsides, similar to the effects on productivity, are that isolation from the organization and decreased communication could result in less innovation among employees. Those who work remotely extensively "perceived to be less intensively communicating with their peers" which "ultimately can lead to employees missing out on all sorts of important information and sources of inspiration."

CONCLUSIONS—INNOVATION AND CREATIVITY

- An important implication for the future of office demand is that employees and managers are intuitively aware of the benefits and risks of remote working and therefore balance their approach to manage hybrid models of working from the office and from anywhere.

- Getting away from the office periodically has measurable benefits for innovation by creating "head space" for workers and offering new ways— or "fresh eyes"—to look at projects. These gains, however, have not been proven over long-term, permanent virtual work.

- Impromptu collaboration and serendipitous discussions play a key role in creativity and innovation, highlighting the need for office space.

- Remote work is complementary to in-office work, but not a full substitute for most workers as it decreases innovation.

- Ultimately, "the positive effects of remote working on [innovation] can only be fully realized if employees have the freedom to determine the extent to which they engage in it themselves and a balance is maintained between physical and digital communication."[56]

3. CULTURE AND BRANDING

Offices provide an important benefit to organizations through their ability to foster a corporate culture, and for the organization to communicate its "brand" of values and external messaging throughout its workplace. If the office is taken away, managers would undoubtedly struggle to establish these two concepts virtually. To what extent does remote working impact the ability of organizations to nurture the corporate culture that they've invested so heavily in establishing? And how might it impact the broader communication of an organization's brand to employees and external stakeholders?

CULTURE

By one definition from management expert Bruce Perron, "organizational culture defines a jointly shared description of an organization from within."[57] Like broad culture, organizational culture can refer to the shared values, traditions, customs and goals of an organization. An organizational culture can manifest itself through different aspects of the organization: degree of hierarchy, management style (output-based or input-based), norms around hours worked and attendance, degree of performance orientation, dress code and many other aspects.

Think about your own organization and its symbols and cultural traditions. How does the organization recognize individuals? Celebrate achievements? Ensure a commitment to the social good outside of the organization? What is the organization's dress code? What are the expectations around how early or late employees are in the office? Each of these examples are ways in which culture is established in an organization, and management may or may not foster and manage culture directly.

When scholars study remote work, there are no completely applicable studies that examine the direct relationship between remote work and corporate culture. Instead, culture might manifest itself in performance, creativity or employee satisfaction—elements discussed in other sections of this report. For example, if employees feel a degree of alienation from their teams due to remote working, that can be indicative of culture.

There is, however, literature exploring how remote working and culture are related. The first finding is that *culture influences* how much organizations can adopt various degrees of remote working. Second, there is a subsequent feedback loop where adoption of remote working begins to influence culture. And finally, managers adopting more remote working in their organization have to *think conscientiously about how to build culture with greater degrees of remote work.*

Based on a framework from organizational theorist Peter Standen,[58] organizations can establish remote working to meet many goals. These include rational

CULTURE AND BRANDING

Culture is often established through in-person interaction, and remote work would require significant management efforts to maintain corporate culture.

Not all organizational cultures are amenable to significant remote work, and a distributed workforce can in turn influence culture.

Organizations lose opportunities to use offices for branding if they move towards virtual models.
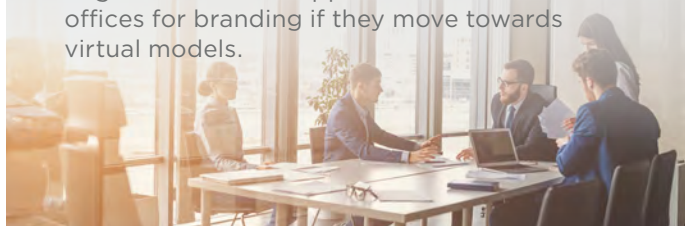
goals of profits and productivity, or meeting business needs; human relation goals of fostering employee-centered relationships; or simply episodic and hands-off approaches.

Standen also posits remote working can change a company's underlying culture because employees have more independence and meet less often face-to-face. These three potential evolutions—formalization of control, liberalizing and dilution—are not mutually exclusive and can act in countervailing ways within an organization.

The first way this can happen is with formalizing control as organizations, recognizing the increased distance, take steps to increase oversight of employees since they cannot do so in the office. An example is the GSA recommending to government employees to "monitor performance" as part of their remote working toolkit.[60]

Another potential feedback is liberalizing, which is related to greater autonomy for employees—a key part of the "interaction/autonomy" matrix we've discussed previously. When employees are remote, they require a combination of trust as well as tools for communication such as company-issued cell phones, laptops, webcams, teleconferencing accounts, etc. Standen contends that these communication tools and systems can lead to faster decision making. Employees are trusted to act on decisions, and they can, ideally, quickly communicate those decisions. But this is often a function of organizations that already had a higher degree of discretion, performance and autonomy to begin with.

Finally, Standen posits a third possible feedback mechanism whereby remote working influences culture: the dilution of an already established corporate culture. Without active management efforts, many of the shared values, norms and traditions can fall by the wayside as employees interact with each other less and share fewer

experiences together. Of course, this brings us to why organizations must manage for culture even more when they adopt greater degrees of remote work.

One recent white paper by the teleconferencing company Zoom[61] warns employers that managers must consistently get a sense and feel of their employees' sense of culture through feedback and surveys. One sign of a culture diluting, to use Standen's term, is when employees use inconsistent language when describing the corporate culture. Other signs include a lack of trust and transparency, as well as isolation, which has been shown to decrease performance and creativity.

BRANDING

The office provides organizations a physical space that communicates their culture, and part of this is through branding. Office fit-outs can focus heavily on physical, overt branding such as corporate logos, colors, photos and subtle architectural nods like transparent board rooms. In many ways, branding is ultimately a physical expression of corporate culture.

Marketing firm GNU Group[62] stresses that one of the goals of office space and branding is to connect disparate locations and provide corporate unity, an important goal for larger organizations with many offices. Another goal is to enhance the visitor experience by communicating its mission to visitors while at the same time making the space engaging and inviting. Lastly, and related to a section we will talk about further in this report, one of the goals is to increase employee engagement within the company. It's important to note that half of employees at Cushman & Wakefield client firms indicate they struggle to connect with their company's culture during the COVID-19-induced work from home experiment.[63]

CONNECTION TO COMPANY CULTURE WHILE WORKING FROM HOME DURING COVID-19

APAC: 56%
Global Average = 50%
U.S.: 50%
EMEA: 45%
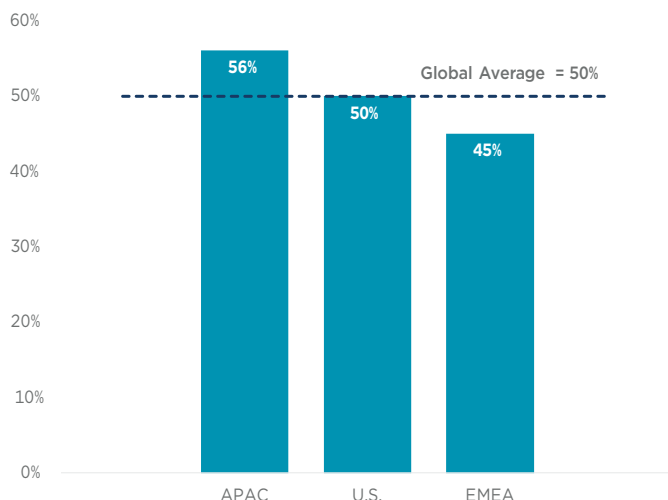
Source: Cushman & Wakefield's XSF@home Total Workplace analysis.

CONCLUSIONS—CULTURE AND BRANDING

- While empirical studies do not fully measure the impact of remote working on corporate culture and branding, there are frameworks to explore the impacts. Remote working can provide some benefits to culture, but tends to pose more challenges.

  - Half of employees struggle to connect with their company's culture while working from home during COVID-19.

  - Even during more normal times, less face-to-face interaction equates to less engagement in the corporate culture, and managers find it more difficult to foster certain values through traditions and customs.

  - Going fully virtual will eliminate that physical manifestation of their organization in the office, which will make corporate branding more challenging.

- Increased remote working can lead to one or more of the following common outcomes, which vary in their value:

  - Formalization of control: Feeling out of control, organizations increase oversight of the remote workforce and attempt to manage (or even micromanage).

In one review of large organizations,[59] organizational cultures with the following characteristics were more predisposed to attempt broader remote work policies:

- Less emphasis on control, coordination, rules, formality, stability and predictability.

- Greater focus on productivity outputs and achievement (compared to inputs).

- Early adoption of technology.

- Focus on making employees feel part of the organization (organizations with strong socialization).

- High levels of creativity and innovation.

- Liberalizing: Greater autonomy is given to employees and improved communication leads to faster decision-making and execution.

  - Dilution: The existing culture is slowly weakened as the physical distance of employees makes it more difficult to impart and reinforce shared values, norms and traditions.

- Mentoring and learning opportunities are diminished via remote work without active efforts by the company to replace the consistent interaction, as well as spontaneous interactions that lead to these learning opportunities.

- The degree of autonomy and interaction of employees plays a vital role in whether organizations can continue to maintain a consistent culture. Many organizations are presently being stressed in this regard as they lack the same human interaction that fosters these shared values.

4. EMPLOYEE ENGAGEMENT AND SATISFACTION

Beyond the degrees of productivity, creativity and culture, organizations use office space to increase employee engagement and satisfaction. In one sense, this can be thought of as an organization-wide productivity goal: more engaged employees are more productiv and turnover is a large cost for organizations. In other words, a happy employee is a productive and innovative employee.

In a tangible sense, employees benefit from remote working through increased autonomy, decreased commuting time and increased work-life balance. In one study, researchers estimate that remote workers have saved $90 billion in commuting costs during COVID-19 restrictions over the March to August 2020 period.[64] On the other hand, working from home has caused disruption and stress unique to virtual work—for example, not all employees have access to focused offices and share their home with roommates, dependents, partners or spouses. This stress has been felt disproportionately by younger workers since the onset of COVID-19.[65]

The demands of remote working from COVID-19 restrictions have indeed shifted capital requirements and costs onto employees—workers must have access to high-speed internet, webcams, high-quality microphones and physical space to conduct work. The sudden sales in backyard "office sheds" is indicative of how employees are adapting.[66]

EVIDENCE

One study of a supply chain management company identifies that increased remote working can, on balance, be negative towards employee exhaustion and job engagement.[67] Employees in this study reported mixed impacts on job stressors, especially decreased conflicts in their roles but greater role ambiguity. The authors claim these stressors are related to reduced job satisfaction and higher turnover intentions. These employees were also less engaged, and the authors find that reduced support and feedback left employees feeling isolated.

Isolation returns as a recurring theme. An in-depth survey study of sales and consulting professionals identifies that high-frequency remote working is associated with high degrees of isolation and thus low engagement.[68] The mitigation to isolation effects appear to lie in feedback and increased interaction— even virtually—with peers and managers. This is potentially increasingly problematic for the training and development of young workers—both Millennial and Gen Z—who desire more regular feedback relative to their older colleagues.[69]

In support of negative impacts, Noonan and Glass[70] identify what they call a "work devotion schema," or the creeping sense of working more hours when work is constantly at home. Over 67% of remote workers reported working more than 40 hours per week in one government survey, with that figure being 50% in another. A recent survey by the Martec Group during COVID-19 restrictions underscores a drop in employee mental wellness and decline in overall job satisfaction.[71]

However, other studies differ. In 2015, Golden, et al., found that remote working increased job satisfaction and performance, with less stress or exhaustion.[72]

EMPLOYEE ENGAGEMENT AND SATISFACTION

Engagement and satisfaction often will depend on the level of autonomy and interaction requirements employees have.

Stressors of remote work can include isolation, costs borne by employees, and "work devotion," blurring home and work lines.

Benefits include satisfaction, freedom, and reduced commuting.
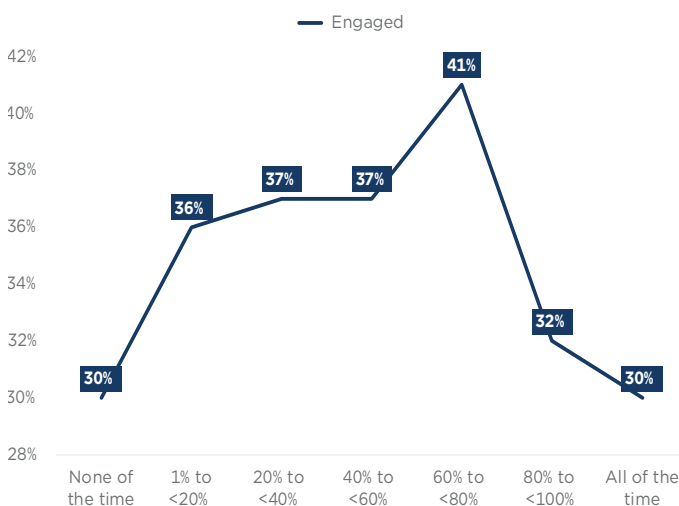
Another experiment of remote work at a Belgian company identified remote employees having less stress compared to office workers, with no significant conflicts with personal life or changes to engagement.[73] In a meta-analysis, Martin and MacDonald identify that remote work is associated with increased retention, increased organizational commitment, productivity and performance.[74] Finally, a study by KPMG during COVID-19 restrictions also finds that 67% of workers reported improved work-life balance and 84% were satisfied with their employer.[75]

Part of the story for remote work and engagement may have to be related to the frequency. In a 2020 Gallup study, published before COVID-19 caused large-scale remote work, survey results indicate that employee engagement is optimized for employees who work remotely 60% to 80% of the time (or 3-4 days).[76] Interestingly, engagement is lowest—and active disengagement is highest—at the extremes of work remotely "none of the time" or greater than 80% of the time.

CONCLUSIONS—EMPLOYEE SATISFACTION

- There are mixed results from various studies related to the impact of remote work on employee satisfaction or engagement. This points to the fact that distributed workforce strategy needs to be customized for individual organizations and needs to take into account different types of employees, roles, functions and team structures.

- As noted in previous sections, the future of office demand will be different based upon the autonomy and interpersonal interaction of specific groups of employees because engagement, satisfaction, productivity and creativity all depend on things such as how senior an employee is, the complexity of their tasks, and how much they see their customers, clients and coworkers.

- The negative effects of a distributed workforce on employee satisfaction can be exacerbated by poor management of remote work and workers. Regardless of the strategy—from 100% virtual office to all employees required to be in the office every day—talent management still matters.

EMPLOYEE ENGAGEMENT LOWEST AT EXTREMES[77]

— Engaged

	None of the time	1% to <20%	20% to <40%	40% to <60%	60% to <80%	80% to <100%	All of the time
Engaged	30%	36%	37%	37%	41%	32%	30%

Source: Gallup

5. LOCATION: WALKABLE URBAN VERSUS DRIVABLE SUBURBAN

There are two basic locations for all real estate products, including office: *walkable urban places and drivable suburban locations*. Through extensive research focused on the largest 30 U.S. metropolitan areas,[78] and in-depth studies of regions including New York[79], Detroit, Atlanta, Washington, DC and Dallas, our research has identified important trends that Jerry Seinfeld would agree with. The places with vibrant walkable urbanism—encompassing energy, attitude, and personality—are not only in demand by people and businesses, they are shaping the future of American urbanism according to market indicators.

Prior to the middle to late 20th century, most real estate, especially office, was located in only one place: walkable urban areas. Then the mid-to late 20th century introduced a new location for real estate in general, and office in particular: drivable suburban locations.

The pendulum of market demand swung from building walkable urban office space prior to World War II to primarily building the new drivable suburban office space in the mid-to late 20th century in John Garreau's popularized "edge cities,"[80] business parks, and along freeways in what urbanist Robert Lang renamed "edgeless cities."[81] The early 21st century witnessed a swing back to demand for walkable urban as will be expanded upon below.
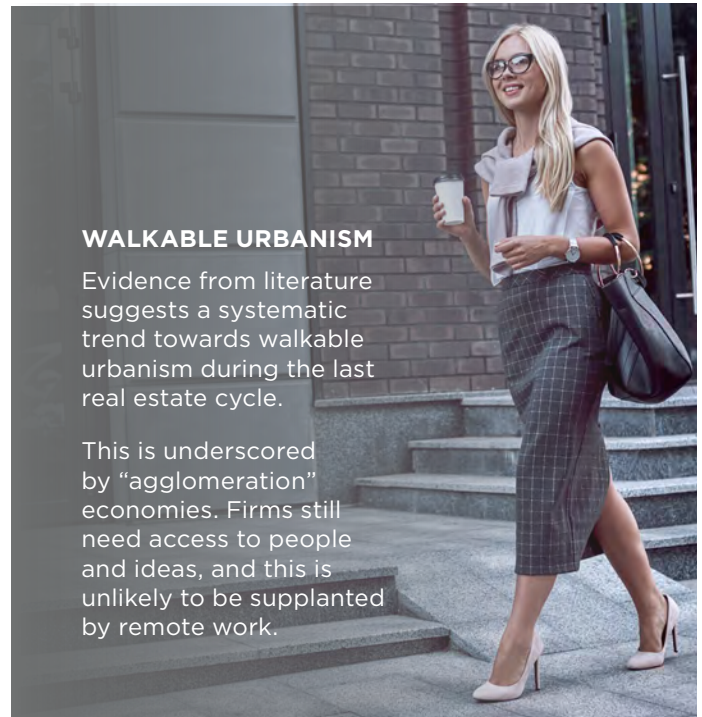
WALKABLE URBAN PLACES

With a higher density, these locations usually have a floor area ratio (FAR) of above 1.0 and generally over 2.0. They are comprised of a mix of many real estate product types, and are accessible by multiple means of transportation, including automobile, transit, bike and walking. One characteristic of a walkable urban place is that most destinations and services are located within walking distance, or approximately one half-mile (or 0.8 kilometers).

Walking distance acts as a governor on the size of a walkable urban place, which occupies between 100-500 acres. Research in metropolitan Washington, DC shows that the average walkable urban place with office as a major component is 310 acres.[82]

Our research has theorized and illustrated that walkable urban places include eight types, including:

- Downtowns of the central city of the metropolitan area
- Downtown adjacent, surrounding the Downtowns, i.e., Uptown Dallas (TX); Brussels Uptown, Belgium; Greater Southern Waterfront, Singapore
- Urban universities, i.e., Univerzita Karlova, Prague, Czech Republic; Penn/Drexel (PA)
- Innovation districts, i.e., Cambridge, UK; Xuhui Riverside, Shanghai; Cortex District (MO)

WALKABLE URBANISM

Evidence from literature suggests a systematic trend towards walkable urbanism during the last real estate cycle.

This is underscored by "agglomeration" economies. Firms still need access to people and ideas, and this is unlikely to be supplanted by remote work.

- Urban commercial, i.e., Friendship Heights (DC); Shoreditch, London, UK
- Suburban town centers, i.e., Belleview (WA); Mumbai-Powai, India; Lucca, Italy
- Redeveloped edge cities, i.e., Alexander-Arena, Rotterdam, the Netherlands
- Green/Brown field places, i.e., Railway Yards, Stuttgart, Germany; Reston Town Center (VA

DRIVABLE SUBURBAN LOCATIONS

These locations are lower density and have an FAR under 1.0 and generally under 0.6. They are noted by segregated real estate product types and a lack of mixed-use development. The automobile defines the urban form here, and parcels are often separated by surface parking lots with accessibility only by cars, trucks and sometimes bus transit. Highway accessibility and visibility is of the utmost importance.

Drivable suburban locations include:

- Edge cities, i.e., Perimeter (GA)
- Edgeless cities, i.e., I-270 corridor (MD)
- Business parks, i.e., Elk Grove Business Park at O'Hare (Ill.)

EVIDENCE

The base research for this report, *Foot Traffic Ahead 2019*,[83] has shown that in the 30 largest U.S. metro areas, walkable urban office rents are 105% higher than drivable suburban office. In addition, in various metropolitan markets, we have found that there is a

> "Energy, attitude and personality cannot be 'remoted' through even the best fiber optic lines. That's the whole reason many of us moved to New York in the first place."
>
> – Jerry Seinfeld, *New York Times*, August 24, 2020

30 to 40% cap rate premium for walkable urban office, which results in a valuation premium per square foot for walkable urban office of between 135% and 150% over drivable suburban office.

Office net absorption was 2.5 times higher for walkable urban office during the 2010 to 2019 economic upturn than its 2010 base market share, meaning that it gained substantial market share. Drivable suburban office net absorption during 2010 to 2019 was 50% lower than its 2010 base, meaning that the drivable suburban office market share declined.[84]

This plays out in decisions that corporate executives make about relocations. In a 2015 study of nearly 500 corporate relocations, researchers at Smart Growth America, George Washington University and Cushman & Wakefield found that companies moved away from drivable suburban locations and towards areas with greater walkability.[85] The new corporate office locations in this study identified had an average WalkScore of 88 ("very walkable") compared to the prior location average of 51 (the cusp of "car-dependent" and "somewhat walkable").

The agglomeration economics mentioned previously are precisely why Walkable Urban Places matter and will matter in the future. The ability to attract and retain talented workers is a commonly-cited reason for office location decisions. On the one hand, firms reduce their risk for lean times by having greater labor market flexibility as evidenced by more volatile firms tending to be near one another.[86] There are also high rental premiums. Costa and Kahn show that "power couples"

of two educated workers are significantly more likely to choose to live in large cities because doing so reduces the risk of unemployment for either of the two.[87]

More importantly, organizations in Walkable Urban Places benefit from the agglomeration force of knowledge spillovers as they get to be close to ideas. Valuation premiums and dramatic market gains (prior to the pandemic) reveal that walkable urban office had pent up demand while drivable suburban office was leasing and valued at a discount while losing market share. In short, employers bid up the price of office real estate to compete for local talent and local knowledge.

There is plenty of evidence pointing to the ways that organizations benefit from these knowledge spillovers, and one piece of evidence is the patent density (patents per 100,000 people) in different regions. Jaffe, et al.,[88] identified that certain regions in the U.S. have significantly higher patent density than others, and this provides empirical evidence of what they call "the invisibility of knowledge spillovers." In another case using Swedish trademarks, Kekezi and Klasson[89] argue that knowledge is—like capital, land, and labor—part of the input process and that firms access more knowledge by being physically close to it. Wallsten goes on to show that U.S. firms are more likely to participate in the Small Business Innovative Research program when they are close to other firms that participate. This underscores that the concept of using an innovation subsidy travels from one firm to another via socialization of executives and employees of differing firms.[90]

CONCLUSIONS—WALKABLE URBANISM

- Remote working and technology have potentially mixed impacts when it comes to Walkable Urbanism. Knowledge spillovers still require office space and a physical location, and place still matters. In one sense, information is everywhere, and people can access ideas anywhere in the world. But access to ideas is not simply about the information, but also about the random occurrence of meeting others with similar ideas and generating new ones together. This is more likely to occur in person.

- While web cameras and teleconferencing can replace some of this interaction, we argue that the spontaneity that comes from Walkable Urban Places is important. It is a force that tends to occur when people are physically interacting at the office and around the city as well.

---

[34] The COVID environment is a unique situation as parents working from home often are supervising children, and the author of this report has quipped that "working from home with your children is a productivity disaster." He is highlighting the need to have a productive environment at home, with the capital requirements of WiFi, teleconferencing technology, and a physical space to work with less interruption being key.

[35] U.S. Council of Economic Advisors (2010, March). *Work-life balance and the economics of workplace flexibility*. Washington: U.S. Council of Economic Advisors. https://obamawhitehouse.archives.gov/files/documents/100331-cea-economics-workplace-flexibility.pdf

[35] Bloom, N., Kretschmer, T., and Van Reenan, J. (2009). Work-life balance, management practices, and productivity. In Freeman, R.B. and Shaw, K.L (Eds.) *International differences in the business practices and productivity of firms* (pp. 15-54). Chicago: University of Chicago Press.

[36] Gajendran, R.S. and Harrison, D.A. The good, the bad, and the unknown about telecommuting: Meta-analysis of psychological mediators and individual consequences. *Journal of Applied Psychology* 92(6), 1524-41.

[37] Johannsen, R. and Zak, P.J. (2020). Autonomy raises productivity: An experiment measuring neurophysiology. *Frontiers in Pyschology* 11:963.

[38] King, R. (2007, Feb. 12). Working from home: It's in the details. *Bloomberg Businessweek*. https://www.bloomberg.com/news/articles/2007-02-12/working-from-home-its-in-the-detailsbusinessweek-business-news-stock-market-and-financial-advice

[39] Bloom, N., Liang, J., Robers, J., and Zhichun, J.Y. (2015). Does working from home work? Evidence from a Chinese experiment. *Quarterly Journal of Economics* 130(1) 165-218.

[40] Airtasker (2020, March 31). The benefits of working from home. *Airtasker Blog*. https://www.airtasker.com/blog/the-benefits-of-working-from-home/

[41] Cushman & Wakefield's XSF@home Total Workplace analysis.

[42] Choudhury, P., Foroughi, C., & Larson, B. Z. (2020). Work-from-anywhere: *The productivity effects of geographic flexibility*. Harvard Business School Working Paper, No. 19-054. Cambridge: Harvard Business School.

[43] Mas, A. and Pallais, A. (2017). Valuing alternative work arrangements. *American Economic Review* 107(12), 3722-59.

[44] Duffy, F. (1997). *The new office*. London: Conran Octopus Ltd.

[45] Duffy, F. (1997). *The new office*. London: Conran Octopus Ltd.

[46] Bessant, J., Lamming, R., Noke, H. and Phillips, W. (2005), "Managing innovation beyond the steady state", Technovation, Vol. 25 No. 12, pp. 1366-76

[47] Baregheh, A., Rowley, J., and Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management Decision* 47(8), 1323-39.

[48] Johnson, S. (2011). *Where good ideas come from: The natural history of innovation*. New York: Riverhead Books.

[49] Coenen, M. and Kok, R.A.W. (2014). Workplace flexibility and new product development performance: The role of telework and flexible work schedules. *European Management Journal* 32(4), 567-76.

[50] Goodrich, J.N. (1990). Telecommuting in America. *Business Horizons* 33(4), 31-37.

[51] Baruch, Y., and Nicholson, N. (1997). Home, sweet work: Requirements for effective home working. *Journal of General Management* 23(2), 15-30.

[52] Dutcher, E.G. (2012). The effects of telecommuting on productivity: An experimental examination. The roll of dull and creative tasks. *Journal of Economic Behavior and Organization* 84(1), 355-363.

[53] Landes, M. (2015, April 24). Remote design looks like this: an infographic. *Mural*. https://www.mural.co/blog/remote-design-looks-like-this-an-infographic

[54] Moll, F. and de Leede, J. (2017). Fostering innovation: The influence of new ways of working on innovative work behavior. In de Leede, J. (Ed.) *New Ways of Working Practices* (pp. 95-143). Bingley, UK: Emerald Group Publishing, Ltd.

[55] Cushman & Wakefield's XSF@home Total Workplace analysis.

[56] Moll, F. and de Leede, J. (2017). Fostering innovation: The influence of new ways of working on innovative work behavior. In de Leede, J. (Ed.) *New Ways of Working Practices* (pp. 95-143). Bingley, UK: Emerald Group Publishing, Ltd.

57 Matkins, M.D. (2013, May 15). What is organization culture? And why should we care? *Harvard Business Review*. https://hbr.org/2013/05/what-is-organizational-culture

58 Standen, P. (2000). *Organizational culture and telework*. In Daniels, K. and Lamond, D.A. (Eds.) *Managing telework: Perspectives from human resource management and work psychology* (pp. 31-41). Boston: Cengage Learning.

59 From Peter Standen.

60 U.S. General Services Administration. *Government employee's mobile worker toolkit*. https://www.gsa.gov/cdnstatic/TeleworkToolbox5262011.pdf

61 Distribute Consulting and Zoom Video Communications, Inc. (2020). *How to adapt company culture for remote work*. https://zoom.us/docs/doc/How-to-Adapt-Company-Culture-for-Remote-Work.pdf

62 Murphy, P. (2019, April 25). The value of consistent office branding: Guidelines for multi-location corporations. *GNU Group*. https://www.gnugroup.com/resources-value-consistent-office-branding-guidelines-for-multi-location-corporations/

63 Cushman & Wakefield's XSF@home Total Workplace analysis.

64 Ozimek, A. (2020, Aug.) How the shift to remote work has impacted commuting. *Upwork*. https://www.upwork.com/press/economics/where-remote-work-saves-commuters-most/

65 Cushman & Wakefield's XSF@home Total Workplace analysis.

66 Brown, D. (2020, Sept. 8). Americans are buying, building, converting backyard sheds into home offices. *USA Today*. https://www.usatoday.com/story/money/2020/09/08/americans-turn-backyard-sheds-into-home-offices-pandemic-rages/3454144001/

67 Sardeshmukh, S.R., Sharma, D., and Golden, T.D. (2012). Impact of telework on exhaustion and job engagement: A job demands and job resources model. *New Technology, Work and Employment* 27(3), 193-207.

68 Shikha, A. (2012). *Does workplace isolation matter? Examining the impact of workplace isolation on telecommuter work engagement*. (Doctoral dissertation). Melbourne, FL: Florida Institute of Technology.

69 Schroth, H. (2019). Are you ready for Gen Z in the workplace? *California Management Review* 61(3), 5-18.

70 Noonan, M. and Glass, J.L. (2012). The hard truth about telecommuting. *Monthly Labor Review* 135(6), 38-45.

71 Bean, C. (2020). *Working remotely during Covid-19: An in-depth understanding of the emotions felt by remote workers and how companies can best react*. Chicago: Martec Group. https://info.martecgroup.com/remote-work-emotions-COVID-19

72 Allen, T.D., Golden, T.D., Shockley, K.M. (2015). How effective is telecommuting? Assessing the status of our scientific findings. *Psychological Science in the Public Interest* 16(2), 40-68.

73 Delanoeije, J. and Verbruggen, M. (2020). Between-person and within-person effects of telework: A quasi-field experiment. *European Journal of Work and Organizational Psychology*, 1-14.

74 Harker Martin, B., and MacDonnell, R. (2012). Is telework effective for organizations? A meta-analysis of empirical research on perceptions of telework and organizational outcomes. *Management Research Review* 35(7), 602-616.

75 KPMG Advisory (2020). *American worker survey. Covid-19: Reality of work and the virtual workforce*. (American worker survey. Summer 2020 pulse). https://advisory.kpmg.us/articles/2020/american-worker-survey-summer-2020.html

76 Hickman, A. and Robison, J. (2020, Jan 24). Is working remotely effective? Gallup research says yes. *Gallup*. https://www.gallup.com/workplace/283985/working-remotely-effective-gallup-research-says-yes.aspx

77 Hickman, A. and Robison, J. (2020, Jan 24). Is working remotely effective? Gallup research says yes. *Gallup*. https://www.gallup.com/workplace/283985/working-remotely-effective-gallup-research-says-yes.aspx

78 Leinberger, C.B. and Rodriguez, M.A. (2016) *Foot traffic ahead: Ranking walkable urbanism in America's largest metros*, 2016. Washington: George Washington University School of Business; Loh, T.H., Leinberger, C.B., and Chafetz, J. (2019). *Foot traffic ahead: ranking walkable urbanism in America's largest metros*, 2019. Washington: George Washington University School of Business and Smart Growth America.

79 Leinberger, C.B., Rodriguez, M.A., and Loh, T.H. (2016). *The WalkUP wake-up call: New York*. Washington: George Washington University School of Business.

80 Garreau, J. (1992). *Edge city: Life on the new frontier*. New York: Anchor Books.

81 Lang, R. (2003). *Edgeless cities: Exploring the elusive metropolis*. Washington: Brookings Institution Press.

82 Leinberger, C.B. and Loh, T.H. (2016). *The WalkUP wake-up call: DC*. Washington: George Washington University School of Business.

83 Loh, T.H., Leinberger, C.B., and Chafetz, J. (2019). *Foot traffic ahead: ranking walkable urbanism in America's largest metros, 2019*. Washington: George Washington University School of Business and Smart Growth America.

84 Loh, T.H., Leinberger, C.B., and Chafetz, J. (2019). *Foot traffic ahead: ranking walkable urbanism in America's largest metros, 2019*. Washington: George Washington University School of Business and Smart Growth America.

85 Smart Growth America (2015). *Core values: Why American companies are moving downtown*. Washington: Smart Growth America. https://www.smartgrowthamerica.org/app/legacy/documents/core-values.pdf

86 Puga, D. and Overman, H.G. (2007). Labor pooling as a source of agglomeration: An empirical investigation. In Glaeser, E.L (Ed.) *Agglomeration economics* (pp. 133-150). Chicago: University of Chicago Press.

87 Costa, D.L. and Kahn, M.E. (2000). Power couples: Changes in the locational choice of the college educated, 1940-1990. *Quarterly Journal of Economics* 115(4), 1287-1315.

88 Jaffe, A.B., Trajtenberg, M., and Henderson, R. (1993). *Quarterly Journal of Economics* 108(3), 577-98.

89 Kekezi, O. and Klaesson, J. (2020). Agglomeration and innovation of knowledge intensive business services. *Industry and Innovation* 27(5), 538-61.

90 Wallsten, S. J. (2001). An empirical test of geographic knowledge spillovers using geographic information systems and firm-level data. *Regional Science and Urban Economics*, 31(5), 571–599.

04
CONCLUSIONS
AND NEXT STEPS

Having reviewed five main drivers affecting the future of office in the post-COVID-19 world, we think it is unlikely that organizations will see sustained 100% remote work in the long-run given mixed evidence in most of the research.

Productivity is enhanced sometimes, but other times can decline, and this will depend on the demands of the job. Creativity and innovation might increase for highly creative work in the short term, but it can also make creative decision-making more challenging. Corporate culture is more likely to take a hit with increases in a distributed workforce as managers will have to adapt to establishing shared values and experiences. Additionally, while some employees report greater satisfaction when they can work from home, COVID-era restrictions to near-100% remote work have brought significant

negative feedback and impacts on mental health. Finally, there has been an overall shift towards walkable urbanism that is unlikely to be undermined completely should organizations increase worker location flexibility in the future. Place still matters.

The question for the next part of this research series, which will include focus groups with industry leaders and statistical simulations, will be related to the scale of the increase in remote working. On average, it was 11% of all workers (both full and part-time) in the U.S. in 2018.[91] Going forward, it is likely that the future will include more remote working than we have previously seen given trends and the change of thinking during COVID-19. The question is how high the work from home percentage will go.

For more information on the next report within the "*New Perspective: From Pandemic to Performance*" series, please see the Appendix.

In addition, each of the 30 largest U.S. metropolitan areas have a different mix of office-using industries, such as finance, professional services, tech or higher education. As we have noted, some industries are more inclined to work from home and the various occupations within those industries have different propensities for the desirability and scalability of working from home.

Finally, the economic and social preference of office occupiers having the office in a walkable urban place versus a drivable suburban location must be considered. Issues to be considered include comfort levels of workers using transit in the post-COVID-19 world, which many walkable urban places rely upon for commuting; the desire to locate in a center city versus urbanizing suburbs; and whether or not to avoid density by locating in a drivable suburban location, such as a business park.

Again, we believe that a drastic and society-changing shift towards 100% remote work for office workers is very unlikely outside of a singular event like a pandemic. Very few studies we reviewed included a completely remote organization, underscoring how rare office-free organizations have been in the recent past. In any study, the impact of remote work was a matter of magnitude (how often can employees work from home) and selection (which employees can work remotely). **Ultimately, every organization studied still had office space.** Thus, the post-COVID-19 future is likely to be one of ramping up how much remote work is done rather than completely going towards an office-free world.

While it is unlikely the office is going away entirely, we are in the midst of understanding how much additional remote working and new approaches to office design may impact overall demand.

The post-COVID-19 world will see the continuation of the knowledge economy, as demonstrated by the huge stock price appreciation of the major tech companies during the pandemic shutdown in mid-2020. In addition, the post-COVID-19 world should see the restart of the experience economy, bringing back the restaurants, music venues, public spaces, cultural and sports venues, among other experience economy uses.

These two economies have fueled the growth in walkable urban places over the past 20-25 years and once they reestablished, there is no reason to think the urban vitality driving walkable urban office should not return.

[91] Dey, M., Frazis, H., Loewenstein, M.A., and Sun, H. (2020). Ability to work from home: evidence from two surveys and implications for the labor market in the COVID-19 pandemic. *Monthly Labor Review*. Washington: U.S. Bureau of Labor Statistics. https://www.bls.gov/opub/mlr/2020/article/ability-to-work-from-home.htm

APPENDIX
MOVING FORWARD

The second phase of this research partnership will entail an additional report related to the post-COVID-19 office and workplace ecosystem, which includes qualitative focus groups with occupiers, owners and place managers such as "business improvement district" (BID) executives.

We will also offer quantitative simulations of the work environment, as well as an overall quantitative outlook on the future of remote work and office demand. This analysis should outline how much more work from home could be expected, what that will mean for office demand, and how the post-COVID-19 office may look different.

The five dynamics we have explored in detail as part of this report will also be factored into an industry-occupation matrix of probable outcome for each of the 30 largest metropolitan areas regarding increased propensity of working from home versus the office. The final report will also include:

- The results of focus groups that will provide rich detail and insights into how real estate professionals view and experience the five dynamics affecting the future of office.

- Original research simulating the possible outcomes of the corporate headquarters of a medium-sized anonymous company that will illustrate how increased remote work impacts the chances of interacting and collaborating with co-workers.

- Summary of a statistical simulation for each of the 30 largest U.S. metropolitan areas, given their industry-occupational 2018 base.

- Conclusions about the future of office in each of the 30 largest U.S. metropolitan areas and recommendations for office owners and occupants.

PRIMARY AUTHORS

Despina Katsikakis
Global Head of Total Workplace
Cushman & Wakefield
despina.katsikakis@cushwake.com

David C. Smith
Vice President, Global Head of Occupier Research
Cushman & Wakefield
david.smith4@cushwake.com

Michael Rodriguez, AICP
Director of Research Smart Growth America and
Doctoral Candidate, George Washington University

Christopher Leinberger
Co-Founding Partner & Managing Director Places Platform, LLC
Former Chair and Professor, Center for Real Estate & Urban Analysis,
George Washington University School of Business

CONTRIBUTORS

Kevin Thorpe
Chief Economist
Global Head of Research
kevin.thorpe@cushwake.com

David Bitner
Vice President, Global Head of Capital Markets Insights
david.bitner@cushwake.com

Dominic Brown
Global Head of Demographic Insights, APAC-lead
dominic.brown@cushwake.com

Steven Zatta
Global Lead Research and Innovation, Total Workplace
steven.zatta@cushwake.com

Rebecca Rockey
Economist
Global Head of Economic Analysis & Forecasting
rebecca.rockey@cushwake.com

Andrew Phipps
Head of Business Development, EMEA
& Local Markets, Global Futurist
andrew.phipps@cushwake.com

About The Center for Real Estate and Urban Analysis

The Center for Real Estate and Urban Analysis is a national thought-leader on real estate and policy at The George Washington University School of Business. Our primary goals are to develop and teach the real estate curriculum for graduate and undergraduate students, conduct influential real estate research, create networking opportunities for students and alumni, and facilitate career opportunities for students and alumni.

About Cushman & Wakefield

Cushman & Wakefield (NYSE: CWK) is a leading global real estate services firm that delivers exceptional value for real estate occupiers and owners. Cushman & Wakefield is among the largest real estate services firms with approximately 53,000 employees in 400 offices and 60 countries. In 2019, the firm had revenue of $8.8 billion across core services of property, facilities and project management, leasing, capital markets, valuation and other services. To learn more, visit www.cushmanwakefield.com or follow @CushWake on Twitter.