

# Research Revolutionizing Commercial Real Estate

## How Bitcoin and Blockchain are Poised to Disrupt CRE

When you consider the vast potential of blockchain technology, the commercial real estate industry may seem like it is stuck in the Dark Ages. Otherwise known as the underlying “railroad” powering bitcoin, a digital currency created in 2009 that has no transaction fees, blockchain technology provides an open or permissible registry of all transactions on the network.

Each “block,” or record of transactions, is stored in a permanent database, all linked together in chronological order. The blockchain is like a full history of banking transactions, while each block is like a bank statement. Blockchain technology is starting to change the way in which companies approach security, supply chain and the ownership of assets, and can do the same for commercial real estate.

**Ownership:** One way that blockchain technology could influence real estate is with regard to titles and land ownership. Enterprise-level blockchains could provide secure registries for titles, eliminating

many causes of fraud within commercial real estate. When everything is stored in a permanent database, old-fashioned methods of recordkeeping – like paper files, spreadsheets and unsecure databases – become obsolete. Blockchains can establish an irrefutable record of ownership, which can also unlock tremendous amounts of value in developing nations where people do not have legal titles to real estate, so-called “dead capital” that is estimated to be \$20 trillion worldwide.

**Investment:** Investing in commercial real estate generally requires a large amount of capital. That’s an obvious barrier for many individuals aiming to increase their wealth and diversify their assets through real estate investments. Blockchain technology can eliminate that barrier. Secure asset fractionalization can be made possible with blockchains, and could enable an individual to finance and own a small share of commercial real estate. Most people on Main Street can’t afford to own a shopping mall, but fractionalization would allow you to directly own 1/10,000th of a shopping mall. This can be a small yet powerful (at scale) step toward growing an investment portfolio.

**Supply Chain:** Blockchain technology can aid in managing construction costs as well, since that shopping mall needs to be built before you can really own any of it. Advanced blockchain workflows and smart contracts could allow for performance-based payments that unlock



## Upcoming Research

Look forward to these reports and white papers published by the NAIOP Research Foundation.

- **Office Space Demand Forecast**  
Forecasts net absorption of office space eight quarters out, at the national level.
- **Economic Impacts of Commercial Real Estate Development (2016 Edition)**  
Annual study on development expenditures and their impacts on jobs, GDP and salaries/wages, at the national and state levels.
- **Best Practices in the Planning and Development of Innovation Districts**  
Studies design features, capital sources, partnership arrangements, product mix and policy objectives of innovation districts, developed to stimulate economic activity by attracting and supporting entrepreneurs.
- **Repositioning Suburban Office Parks**  
Examines low-density suburban office parks that have been modified to enhance their value by increasing density, mixing uses and adding amenities. ■



The NAIOP Research Foundation fosters building better communities through practical research and education that advances the quality, and makes evident the benefits, of commercial real estate ownership and development. The Foundation's work empowers developers, owners and investors to make sound decisions informed by cutting-edge data and analysis.



**Governors**

Governors support the Foundation's program of work through pledging significant financial support and by giving their time and sharing their expertise.

**Industry Trends Task Force**

NAIOP leaders and Research Foundation Governors meet annually to identify trends that will impact the industry in the intermediate and long term, often leading to future research.

**Distinguished Fellows Program**

Engages the nation's foremost commercial real estate, economic and public policy experts and serves as a bridge between the practicing commercial real estate sector and the academic community. The program is supported by the Research Foundation, and Fellows conduct and utilize the Foundation's reports.

**National Research Directors**

Thought-leadership from industry meetings with national research directors from major commercial real estate brokerage and data firms is applied to future research topics. ■



Dear Industry Leader,

When I accepted the chairmanship of the NAIOP Research Foundation, I reflected on how far we have come as an industry and organization. As our business has changed and we've experienced the ups and downs of the cycle, the Foundation has expanded its role in providing insights, ideas and thought leadership.

In the coming months, the Foundation will release new studies that are both timely and imperative: "Repositioning Office Parks" will examine what can be done to revive suburban office parks and adapt to new demands, and "Best Practices in Planning and Developing Innovation Districts" will shed light on the ways innovation districts help revitalize areas. These reports will join our forecasts on industrial and office space demand and "Economic Impacts of Commercial Real Estate," a key tool in leveraging our advocacy efforts to demonstrate the positive impact of our industry on the U.S. economy.

As we move through 2016, we'll continue to see changes and shifts in our businesses and the economy. The NAIOP Research Foundation will help keep you prepared for whatever is to come. Thank you to our supporters who help us expand our leadership role in advancing the CRE industry. I encourage you to contact the Foundation staff to learn how to get involved.

Sincerely,

*R. Heins*

Ralph Heins  
President, Primera Companies, Inc.  
2016 Chairman, NAIOP Research Foundation



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based on construction milestones. Therefore, an owner or property developer could create a secure and fully-established system for paying a construction company based on the progress they make. Those performance-based payments would be fully documented and transparent through the blockchain in a permanent database, serving as a comprehensive record of progress towards completion of a commercial real estate project.

Blockchain technology holds vast potential for the commercial real estate industry. Adopting this technology will help make property owners more confident in their investments. By advancing the industry's standards for ownership, security and supply chains, blockchain technology can help bring commercial real estate into the next era.



*Matthew Roszak is a blockchain entrepreneur, investor and advocate. He is the co-founder and chairman of Bloq, a blockchain enterprise software company, as well as a founding partner of Tally Capital, a private investment firm focused on blockchain-enabled technologies. He has testified before U.S. Congress on blockchain technology, and produced the industry's first-ever documentary, The Rise and Rise of Bitcoin. @MatthewRoszak | @BloqInc*

## Viewpoint

### What are you most optimistic about in the industry right now?

“Our development pipeline is as full as it has ever been, although the kind of work has moved away from retail and office into mixed-use, multifamily and industrial. Technology, through process-improvement initiatives, offers us productivity gains so we work smarter. We have an opening in the economy that we need to take advantage of now because we do not know how long it will last, so there is a strong sense of urgency. This is a good time to be a developer.”



**Rick Tollakson**  
President and CEO  
Hubbell Realty Company

“The enormous volume of CMBS loans coming due in 2016 and 2017 makes me, as both an opportunistic real estate investor and a bridge lender, optimistic about finding new investment opportunities. Given these maturities, many real estate owners will be required to infuse new capital into their properties in order to refinance.”



**Robert Stofer**  
Vice President  
PCCP, LLC

“The new and interesting ways millennials are using space; everything from co-working, open workspace and micro-apartments to the use of big data to make spaces more responsive. It will cause a real shake-up in some of our ‘mature’ buildings, but I think it will ultimately be very good from a social standpoint to a reduction in environmental impact. It means that we, as developers, have to be much better listeners, experimenters, and problem-solvers in order to remain relevant.”



**Joan Woodard**  
President and CEO  
Simons & Woodard Inc.



## Welcome to our New NAIOP Research Foundation Governor



**Joan Woodard**  
President and CEO  
Simons & Woodard Inc.

Joan Woodard is a longtime NAIOP member, joining the association in 1987 and serving as chairman in 1994. In her 45-year commercial real estate career, she has developed expertise in financing, development, acquisition/disposition, leasing and management. Today, she is president and CEO of Simons & Woodard, a Santa Rosa, California-based management, architecture and development firm. She serves as a faculty member for NAIOP's Center for Education.

To become a partner in the Foundation's work, contact Bennett Gray at [gray@naiop.org](mailto:gray@naiop.org) or 703-904-7100.



## Meet a Governor

**Douglas Swain**  
Vice President and General Manager  
The Opus Group  
Indianapolis, Indiana

### Q. Where are we in the market cycle?

**A.** Using the baseball analogy, the industrial sector is in the sixth inning of a strong game – and there's potential for extra innings. Looking at the entire industry, we've shifted into the seventh inning, but with no potential for extra innings. We'll see shifts and slowdowns in some sectors, and unknown factors – the presidential election, tax code reform, regulations and the way the government manages its debt and revenue – will have an impact. We need legislation that is longstanding instead of renewed year-to-year, allowing the industry to have long-term confidence.

### Q. What is the next wave of opportunity?

**A.** Industrial continues to be robust, with sustained demand and solid investment opportunities. At Opus, we're seeing demand for infill industrial that is closer to the city center, labor force and transportation – driven by e-commerce dynamics and population shifts into urban areas. There's some talk that multifamily has run its course, yet it is still doing very well in populated, urban areas, and that's due to a fundamental shift on how people are choosing to live. Student housing offers good opportunity, as there's plenty of stock that needs to be updated and upgraded.

### Q. Why did you become a NAIOP Research Foundation Governor?

**A.** Engaging with thought-leaders and industry icons has deepened my relationships in many of the markets I'm working in today. Meeting with the Governors provides me with a valuable opportunity to discuss global and local trends and talk about what's on the horizon.

### Q. Why is the Foundation's work important?

**A.** The Foundation's research offers broad perspective on development trends and opportunities across markets of all sizes, and that's valuable because it provides an extensive understanding on how these shifts and trends apply to our own businesses, projects and regions.

*Douglas Swain joined the Research Foundation Governors in 2015. He served on the NAIOP Corporate Board of Directors, is a member of the Industrial V National Forum, and is founder and past president of NAIOP Indiana. At Opus, he is responsible for the leadership and overall operations of the Indianapolis regional office, including management of active projects and pursuit of real estate development in Indiana, Ohio, Kentucky and Tennessee. ■*

## Looking Ahead: The Office Space Demand Forecast

This May, the NAIOP Research Foundation released the inaugural Office Space Demand Forecast to predict net absorption of U.S. office space over eight quarters.

Created by researchers Hany Giurguis, Ph.D. of Manhattan College and Joshua Harris, Ph.D., CRE, CAIA of the University of Central Florida, the model is similar to the Industrial Space Demand Forecast which successfully projected a drop and rebound in net absorption of industrial space in 2009 and 2010. Below are the leading, coincident and lagging variables used in the forecast.

**The growth rate in real gross domestic product (GDP)** captures the broadest level of macroeconomic activity, reflecting the value of all goods and services produced in a given year. The strongest correlation indicates a two-quarter lead over net absorption.

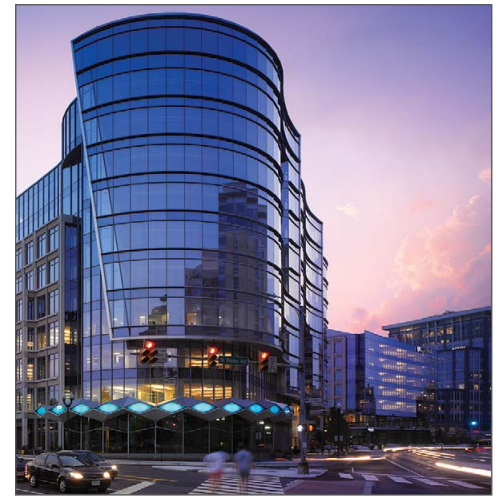
**Corporate profits of domestic industries** directly capture the financial capacity and growth of firms that may need to expand. Profits are a source of retained earnings, so they provide a clue about how much money is available to fund investments in plant and equipment, an activity that

raises productive capacity. The strongest correlation indicates a one-quarter lag behind net absorption, yet contemporaneous correlation is also strong, making this a strong coincident indicator.

**Total employment in the financial services sector** is a direct measure and proxy for office-using employment that best fits with changes in office space demand. Employment in financial activities was found to correlate with a four-quarter lag behind net absorption. However, contemporaneous correlation was also strong, making this a strong coincident and confirming indicator.

Two variables from the **Institute for Supply Management's Non-Manufacturing (ISM-NM) indices** serve as proxies to measure the future health of office-using firms. The **ISM-NM Inventories Index** measures changes in inventory, indicating increases, decreases or no change in inventory levels, while the **ISM-NM Supplier Deliveries Index** measures how long it takes suppliers to deliver parts and materials that are integral to service sector businesses.

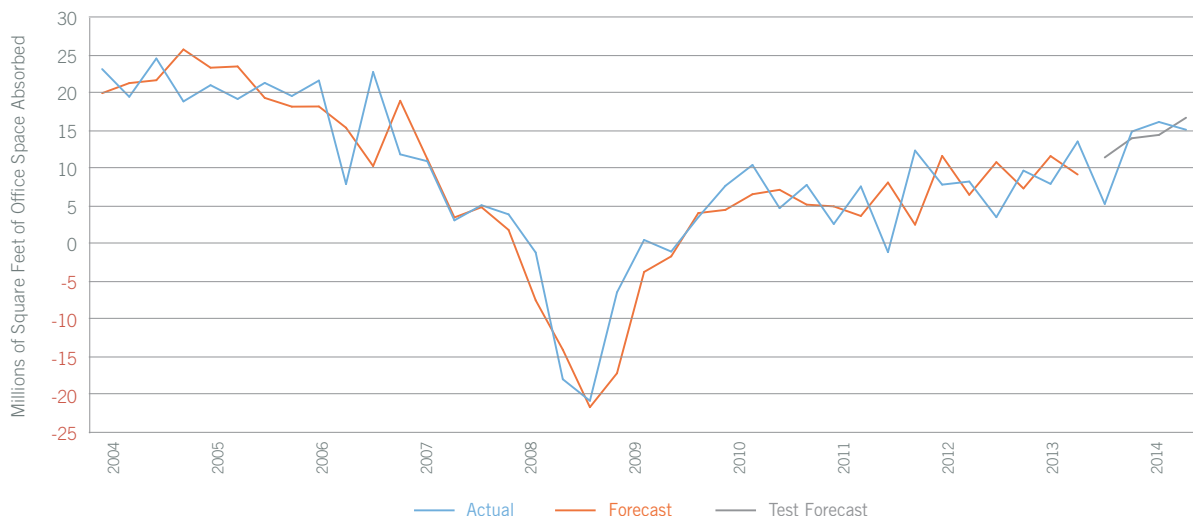
In the graph below, the “test forecast” shown in gray for 2013 is an out-of-sample



forecast, meaning the model did not know the actual number of square feet absorbed, enabling it to make predictions. The “forecast” shown in red was generated as the model was being built; it indicates what absorption levels would have been using the model. The blue line shows actual net absorption.

*The first eight-quarter **Office Space Demand Forecast** was released in May 2016. Net absorption is forecast to range between 8 and 13 million square feet each quarter. The forecast is available online at [naiop.org/research](http://naiop.org/research). ■*

### Actual vs. Forecast Model Predictions



Margarita Foster is Vice President for Knowledge and Research with NAIOP. ■

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## Research Foundation Governors

The NAIOP Research Foundation invites individuals who have demonstrated considerable dedication to guiding the future of the commercial real estate industry through their financial support, time, talent and expertise to accept the lifetime distinction of Governor.

Governors help shape the Foundation's research agenda by serving on committees and giving direction to research projects undertaken. They enjoy exclusive networking and invitations to special events throughout the year.

Governors take pride in knowing that their contributions are building the capacity of the Foundation to develop and disseminate best industry practices that advance the profession and make our communities better places to live and work.

To join the Governors, contact Bennett Gray at [gray@naiop.org](mailto:gray@naiop.org) or 703-904-7100, ext. 168. ■



*The NAIOP Research Foundation newsletter compiles strategic resources and analysis selected from the Foundation's work and features its Governors. It is published by the NAIOP Research Foundation. ■*