LOCATIONAL INTELLIGENCE TRANSFORMING OUTLOOK OF REAL ESTATE INVESTMENT TRUSTs

By Yagna Agarwal

Abstract

The present paper is an attempt to understand the effect of locational intelligence on the real estate industry, with emphasis on the Real Estate Investment Trusts. On the first count, the terms locational intelligence and REITs are understood in profundity. Then, the factors affecting value of REITs have been identified. The effect of Locational Intelligence on these factors has been highlighted. Limitations of the same have been recognized. The study reveals that although there are several limitations of locational intelligence, the advantages it provides weighs in favor of locational intelligence creating a significant impact on the real estate industry.

Introduction

In India, real estate investments are known to be made by a select few with significant capital. In the past, real estate has been a high growth industry in terms of value, but not in terms of investor participation, largely due to high value of investment, legal risks, regulatory compliances, and informality. However, the industry has been significantly changing. The recent launch of financial instrument Real Estate Investment Trusts (REITs), is expected to bring a whirlwind in the industry. REITs are like mutual funds, that offer returns through dividends and capital appreciation, with the underlying assets being real estate. Embassy Office Parks, a joint venture of Blackstone Group and Embassy Group, has filed to float a commercial REIT in India, with a minimum ticket size of Rs. 2 Lakhs. This helps bring down the minimum investment required to invest in real estate and increases investor participation. Additionally, REITs boast with the advantages of giving investors, higher liquidity, access to professionally managed and developed properties, option for diversification of portfolio, tax benefits (as dividends from REITs

are usually tax-exempt) and lower risk in terms of fraud (as REITSs are publicly traded securities they have to confer to robust regulations of SEBI). With the evident advantages, REITs are to gain velocity in the coming years, thereby requiring the use of Decision Aiding and Execution Tools, by investors, which calls the need for use of innovative technology of Locational Intelligence.

Location intelligence is a business intelligence tool that relates geographic contexts to business data, with the help of data analytics (traffic movements, residential vis-a-vis commercial space, number of retail outlets, etc.), artificial intelligence and various levels of machine learning programs. This can help identify undervalued assets, justify valuations and make real estate investment decisions, that were otherwise made without much formal information backing. In a long term vision we can also envisage integration of smart contracts through blockchain in real estate and making it a more accessible and formalized investment option for investors.

Keywords

Real Estate, Locational Intelligence, Artificial Intelligence, REITs, Machine Learning, Data Analytics, Blockchain, Smart Contracts, Innovation

Review of Literature

Prashant Das and Divyanshu Sharma, explore the relevance, benefits and opportunities for REITs in India. They describe how Indian real estate scenario shall undergo a transformation after launch of these investment vehicles.

Pitney Bowes Business Insight, investigated the importance of Locational Intelligence. The study throws light on the Business Week MapInfo survey, that shows more than 64% of 1700-C level executives from companies with 500+ employees and turnover exceeding $50 million, appreciate the need of locational intelligence as part of their technology asset pool, and believe that it will add great value to their processes and decision making.

Mark Lycett, discusses the characteristics of Big Data, recognizes the shortcomings and achieves to find solutions to those issues. He emphasizes dematerialization, liquidity and density are key aspects of making data more useful.

Objectives of Study

1. To study the considerations that affect value of REITs
2. To study the impact of locational intelligence on those considerations
3. To identify challenges with locational intelligence

Methodology

A REIT is a pool of multiple properties. The combined value of these properties divided by the number of shares gives estimated Net Asset Value per Share (NAVPS).

NAVPS is calculated as below:

Calculation of NAVPS	**Known/Estimated**
Last 12-month NOI[1]	Known
- Non-cash rent[2]	Known
+ Full-year adjustment for acquisitions	Known
= Pro forma cash NOI for last 12 months	
+ Next 12 months growth in NOI	Estimated
= Estimated next 12 months cash NOI	
÷ Capitalization rate	Estimated
= Estimated value of operating real estate	
+ Cash and equivalents	Known
+ Land held for future development	Known
+ Accounts receivable	Known
+ Prepaid/other assets (excluding intangibles)	Known
= Estimated gross asset value	

[1] Net Operating Income

[2] Non-cash rent (difference between average contractual rent and cash rent paid) is removed

− Total debt	Known
− Other liabilities	Known
= Net asset value	
÷ Shares outstanding	Known
= Net asset value per share	

Table 1: Calculation of NAVPS along with parameters Known and Estimated

Table 1 represents valuation of REITs, involves estimation of Growth Rate and Capitalization Rate. The below scenario Analysis provides an insight into how the NAVPS varies with change in above rates.

Scenario Analysis						
Estimation Parameter	Growth Rate (%)			Capitalization Rate (%)		
Percentage of Parameter	1.50	3.00	4.50	7.00	8.00	9.00
Last 12-month NOI	100.00	100.00	100.00	100.00	100.00	100.00
- Non-cash Rent	2.00	2.00	2.00	2.00	2.00	2.00
+ Full-year adjustment for acquisitions	3.00	3.00	3.00	3.00	3.00	3.00
= Pro forma cash NOI for last 12 months	101.00	101.00	101.00	101.00	101.00	101.00
+ Next 12 months growth in NOI (cash NOI x Growth Rate)	1.52	3.03	4.55	3.03	3.03	3.03
= Estimated next 12 months cash NOI	102.52	104.03	105.55	104.03	104.03	104.03
÷ Capitalization rate	0.08	0.08	0.08	0.07	0.08	0.09
= Estimated value of operating real estate	1281.44	1300.38	1319.31	1486.14	1300.38	1155.89
+ Cash and equivalents	15.00	15.00	15.00	15.00	15.00	15.00
+ Land held for future development	20.00	20.00	20.00	20.00	20.00	20.00
+ Accounts receivable	3.00	3.00	3.00	3.00	3.00	3.00
+ Prepaid/other assets (excluding intangibles)	2.00	2.00	2.00	2.00	2.00	2.00
= Estimated gross asset value	1321.44	1340.38	1359.31	1526.14	1340.38	1195.89
− Total debt	200.00	200.00	200.00	200.00	200.00	200.00
− Other liabilities	50.00	50.00	50.00	50.00	50.00	50.00
= Net asset value	1071.44	1090.38	1109.31	1276.14	1090.38	945.89
÷ Shares outstanding	20.00	20.00	20.00	20.00	20.00	20.00
= Net asset value per share	53.57	54.52	55.47	63.81	54.52	47.29

Table 2: Scenario Analysis of Growth Rate and Capitalization Rate comparing NAVPS

Table 2 depicts how NAVPS changes drastically with minimal change in Growth rate and Capitalization rate, that highlights how important it is to aptly estimate these two parameters.

On the first account, the growth rate depends on many factors and these factors were previously estimated using informal information, however newer technologies such as locational intelligence have proved to measure these factors more precisely. But, since there are multiple sub-classifications in the type of assets REITs hold, such as Hotel, Warehouse, Office, Residential, Industrial, Health Care, Retail/Shopping and Other Diversified properties, there is not an inclusive list of factors that help define the growth rate. Below is an attempt to illustrate the cross-section of locational intelligence and estimation of these factors.

1. **Population Concentration:** For a residential, commercial, retail and warehouse REIT, the data indicating high population growth as well as concentration can be of immense value, as these types of assets proved to have a high correlation with increase in population. Furthermore, population strata can be divided based on age group, income levels, race, spending habits, and many more. The below image gives an example of the population density in different areas of Boston, and further analyzes the population based on different segments.

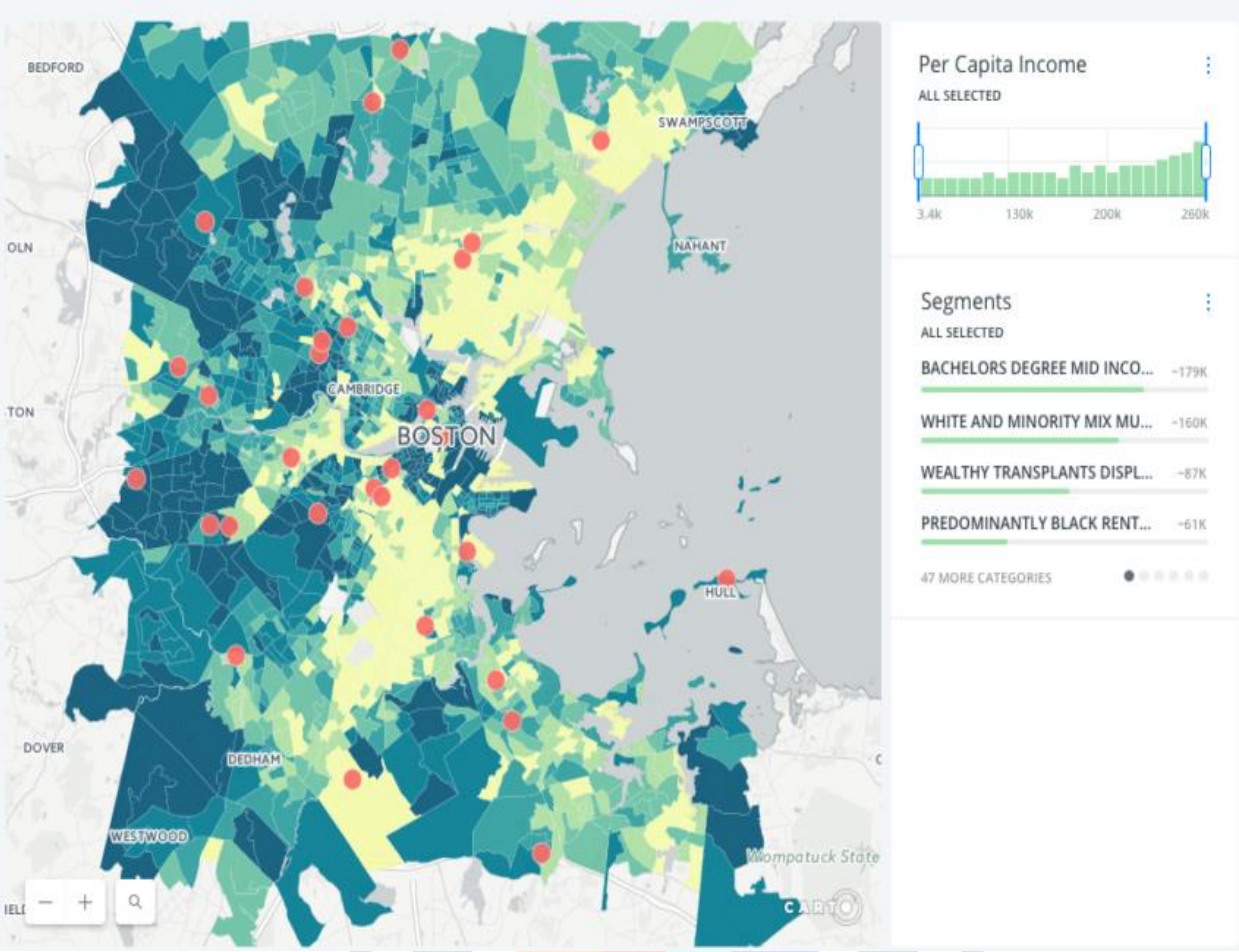

Figure 1: Screenshot of Locational Intelligence Visualization

2. **Retail Sales Growth:** Retail sales data can be collated from POS devices and mapping of retail points, in a certain location. A high retail sales is a strong indicator of growing consumer spending and further a high demand of residential and shopping assets.

3. **New space supply vs demand:** Locational intelligence aids in viewing the matching of supply and demand of commercial and hotel properties. This can be valuable in terms of understanding the scarcity of space in a neighborhood when compared to population concentration. Hence, we can accord a higher expected growth value to spaces with high demand and moderate new supply.

4. **Job creation:** Surprisingly, Job creation has been one the most influential factors in making real estate decisions. A good example in the city of Hyderabad is the Gachibowli area, where special economic zones along with high incentives for technology oriented businesses has created a nice for this location, leading to magnanimous increase in jobs. Therefore creating demand for individual residential spaces and individual work offices. Concepts such as Co-working and Co-living spaces have been curated

to meet this unique demand. These have demonstrated to be high ROI and scalable ideas, that investors have conceived. Locational intelligence has proven to be of aid in identification of such innovative opportunities.

5. **Traffic Density:** Heat sensors and satellite mapping create traffic waves, that is useful to determine the location of properties with the expectation of traffic influx. For example a retail store would generate steeper revenue streams if located in a highly traffic dense area.

6. **Weather:** Weather, pollution levels, other external factors play a crucial role in valuing residential properties. Better weather areas are highly preferred and charge a premium. Weather graphs and pollution levels can be mapped location-wise and provide insight into quality of living.

7. **Natural Calamities:** Measuring the risk to natural calamities is critical for two reasons. Firstly, to discount for such risks in the capitalization rate. Secondly, to define the insurance premium to be paid. Both these are quintessential factors that can be logically derived through relevant data.

On a second account, capitalization rate is based on comparable sale data of recent transactions. The data related to comparable property values and its related NOI needs to be gathered to calculated the Capitalization rate, using the below formula:

$$Capitalization\ Rate = \frac{NOI}{Property\ Value}$$

Locational intelligence aids in maintaining a data repository of NOI and Property value, that helps forecast the Capitalization rate, based on geography. Various machine learning programs and artificial intelligence tools, work to understand the input data, and standardize it using complex statistical models after accommodating specific risk factors and accounting for historical industrial cyclical movements, to derive the appropriate capitalization rate.

To examine critically, it is imperative to underline the limitations that come along side locational intelligence, namely the three V's of Data - Velocity, Volume, and Variety.

1. **Velocity:** The pace at which relevant data sets can be collected poses one of the biggest challenges. Millions of data points, have to be scrutinized with Billions of parameters. Processing such data within the required time frame is challenging.
2. **Volume:** Geospatial data requires scanning, organizing and storing of numerous data points. Such heavy data is an impediment. This can be solved in two ways, first by reducing the number of data points (that may in turn affect the quality of output), second by substituting certain data by drawing conclusions from matching correlations with processed third party data sets. For example, the traffic density in a certain area can be measured using satellite mapping of heat temperatures, population strata in the area or/and google maps traffic data, rather than individual tracking of cars.
3. **Variety:** Data collected is not standardized, which makes it arduous to process. Wide array of data types has brought about non-uniformity. For example, traffic data can be collected from GPS, phone sensors, CCTV's cameras, third party applications, audios, videos, etc.. Deeper learning programs need to be designed to make this data consistent and user friendly.

Conclusion

Although there are certain limitations, it is certain that through the means of providing better insights, locational intelligence will aid investments in the Real Estate Industry, especially in case of REITs. The larger impact of this will be to transform the current industry to a more formal and legal one, that will reduce the risks of investing and in whole increase investor participation. An analogy of this industry draws back to the over the counter share market of India back in 1990's that has now transformed to a more secure, transparent, legal, regulated and lucrative exchange traded market. Similarly, with implementation and legalization of blockchain technologies, smart contracts in real estate will eventually be developed and attract a huge chunk of investors. Locational Intelligence powered investments and analysis will drive the industry forward, to come up with more innovative as well as high return generating assets, in totality dramatically transform the real estate scenario.

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