Is Cloud the Future for Real Estate?

by Anuradha M

TRIGENT

OVERCOMING LIMITS

Since the year 2012, global capital allocation to direct real estate has doubled, rising from US$166 billion in 2012 to US$ 320 billion recently. These numbers are not surprising when viewed from the fact that real estate is the most vibrant, valuable, and largest asset class in the world and as an investment option is considered low risk making it enticing for investors in an insecure economy. Co-participants such as developers, agents and financiers, are racing along, grabbing the fruits from low hanging trees.

However, there is a dramatic change happening within the overall industry and that is the growing awareness of a shadow warrior, i.e. technology. Because of escalating demand for efficiencies and better user experiences, Real Estate technology (RealTech) has taken the brick and mortar out of this industry and replaced it with real technology. Venture capital funding into RealTech companies increased 1200% from US$ 221 million in 2012 to $2.6 billion in 2016.

Real estate has always been a traditional industry and its participants comfortable with antiquated processes. If inefficiencies resulted from these processes, they were ignored for the overall good. But now these companies are viewing the impact of technology and change agents are incorporating technology solutions to optimize costs and operations. This white paper focusses on the impact of technology and how it benefits the real estate industry.

Real Estate Sector Participants

Lease and Asset Management

Lease management companies focus on the tools, processes and business models used for the leasing and management of residential, commercial or industrial real estate, from single properties through to solutions designed for complex property portfolios. These companies have also migrated their offline business model to state-of-the-art technology platforms. These platforms are often designed and implemented by service providers. Some classic services offered by these platforms include:

- Peer to peer leasing
- List and search
- Inspection /transaction management
- Tenant screening and so forth

Town Planning

Town or urban planning software has evolved with time to address the challenges of sustainable town planning. Softwares' offer intuitive features and workflows which overcome disorganized data and operational inefficiencies. It is an interdisciplinary field which includes social, engineering and design sciences.

- Urban design software
- Virtual reality and simulation technology
- Mapping platforms
- Satellite technology
- Beacon technology

Customer Relations Management (CRM) software

Buyers are looking for properties in locations as far away from home as can be imagined. They use search and discovery tools, listing portals and directories to identify properties. Within companies, agents are using lead generation solutions to identify prospects. Some of the common software being used by real estate companies are:

- Property marketing and sales solutions including social marketing and marketing automation
- Acquisition finance and investment platforms including crowdfunding, peer-to-peer lending and on-demand finance solutions
- Workforce management software

Design and Construction

Construction and design projects have been familiar with technology for some time now. Tools such as construction design, building information modeling (BIM) are being used regularly for detailed schematics. Now with 2D and 3D imaging, newer technologies are invading this space:

- Virtual reality and simulation technology
- Enhanced architectural and design platforms

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- Smart building platforms and artificial intelligence
- Innovation in building material
- Beacon Technology
- Suppliers and material sourcing platforms
- Project finance and investment platforms

While all the above participants or players within the real estate eco system opt for technology solutions in one form or the other, there is one significant technology disrupter that is often ignored, i.e. cloud.

Cloud technology has proven its value in several sectors such as healthcare, ecommerce, transport & logistics, finance, manufacturing, etc. But within the real estate sector there are some early adopters and others who view the cloud from afar.

Why move to the cloud?

The rapid rate at which this industry is growing and the overall effect of digital technology on consumers has heightened expectations. Every aspect of a consumer's life is impacted by technology and whether it is renting a car, buying groceries or socializing, digital transformation has escalated customer expectations from service providers and obviously real estate cannot be left out. Urbanization has also impacted real estate considerably. According to the 2014 World Urbanization Prospects Report by the United Nations' Department of Economic and Social Affairs, 54 percent of the world's population currently lives in urban areas and over 400 cities now have a population greater than 1 million people. This number is forecast to reach 70% globally by 2050 but will be even higher in regions like the Asia Pacific and Eastern Europe where the average is closer to 85%. For real estate, this is an opportunity beyond compare.

> **"Real estate is lagging behind in the adoption of advanced technology but the influence of highly disruption cloud-based business solutions will play a significant role for real estate companies."**
> *– Deloitte Report*
> *'Digital disruption in commercial real estate Catalyst for growth?'*

However, to cope with this rising wave of expectations, the industry has to make some fundamental changes to the way it serves customers. Legacy systems and manual operations have already given way to technology solutions at a basic level, but there is a need for more. Real estate of the future will need to process user and environmental data and be agile and available. While there are newer technologies emerging to support specific areas or businesses within the real estate umbrella, cloud technology has the power to make a difference to this industry, irrespective of size, functionality or geography. Real estate has literally transcended borders. However, over and above all this real estate players, to stay competitive are realizing that their business is about concrete structures, but hidden within the walls are data structures.

Paving the way to cloud migration

Real estate players have not followed a uniform business and operational pattern and this is because there are so many variations within the eco system. From the nature of business to size to location and customer profile, these businesses are defined by factors which do not have valid data. In other cases, a central platform may be connected to third party applications. Similarly, there may be several hundreds of variants to the same business and its players.

To demystify the complexity of cloud migration requires answers to three simple questions:
- What are the back-end applications that might be more cost-efficient when hosted on a cloud?

- Do you want your critical applications to remain hosted within your premises, especially when there is a better option available?
- Is it the ambiguity of security and compliance that worries you when considering the cloud?

There are no right and wrong answers for the questions listed above. It is only a 200ft high view of a business but it still provides the first foothold for planning cloud migration. A micro level understanding of a business is required to determine a cloud migration strategy. In most cases, companies do not opt for a complete migration of their existing systems and applications to the cloud. There are various reasons for this including security, third-party agreements etc. In such instances, a hybrid approach can be adopted. A determining factor will be the set of rules from the Financial Accounting Standards Board that will roll out in early 2019. These rules necessitate companies to include operating leases on their balance sheets. When that happens companies can take a fresh look at buying versus leasing data centers.

Advantages of the cloud

The cloud helps real estate companies with the power of real-time data from a centralized location. This transcends the traditional siloed approach making it easier for agents, brokers and contractors to make decisions on the go.

Data collected over time can become huge and unwieldy. Also typically, files are stored in various formats both online and offline. The cloud provides secure storage which makes it easy to access.

The economic benefits of cloud computing can be significant since cloud computing provides cost flexibility and the potential for reduced costs. Heavy capital expenditure can be avoided, because IT resources are acquired on demand as needed and paid for as an operating expense. Also, the cost of staff resources required to deploy and maintain IT resources are included in the cost of cloud computing. Therefore, the need for additional skilled IT staff resources and related costs may be reduced when using cloud services for IaaS and PaaS platforms but even more so for SaaS solutions where the cloud service provider takes the lion's share of responsibility.

From an operational perspective, cloud services offer scalability and the ability to adjust to demand rapidly. Cloud services can offer better security and privacy for real estate systems. Cloud service provider data centers are typically highly secure and well protected against outsider and insider threats using administrative, physical and technical methods implemented and maintained by expert professional staff. Cloud services can offer sophisticated security controls, including data encryption and fine-grained access controls and access logging. Real estate systems built using cloud services can provide web access to data, avoiding the need to store information on client devices. The need for scarce IT security skills within the real estate organization also is minimized. Cloud service providers typically operate on such a scale that they have all the necessary IT skills, with the costs of those skills spread across many customers.

Real estate functionality can be enhanced by cloud-based IT systems that offer the potential for broad interoperability and integration. Real estate cloud services are Internet-based and generally use standard protocols, so connecting them to other systems and applications is typically straightforward. The ability to share information easily and securely is a critical capability, and cloud services are good enablers for this.

Cloud services also support rapid development and innovation, especially for mobile and Internet of Things (IoT) devices; thereby satisfying the demands placed on real estate IT systems by these new and rapidly advancing technologies. Cloud services can enable remote access to applications and data via the Internet using wired and wireless systems to enable access at anytime from anywhere that internet connectivity can be established. Support for access by mobile devices is often

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a feature supported by real estate cloud services.

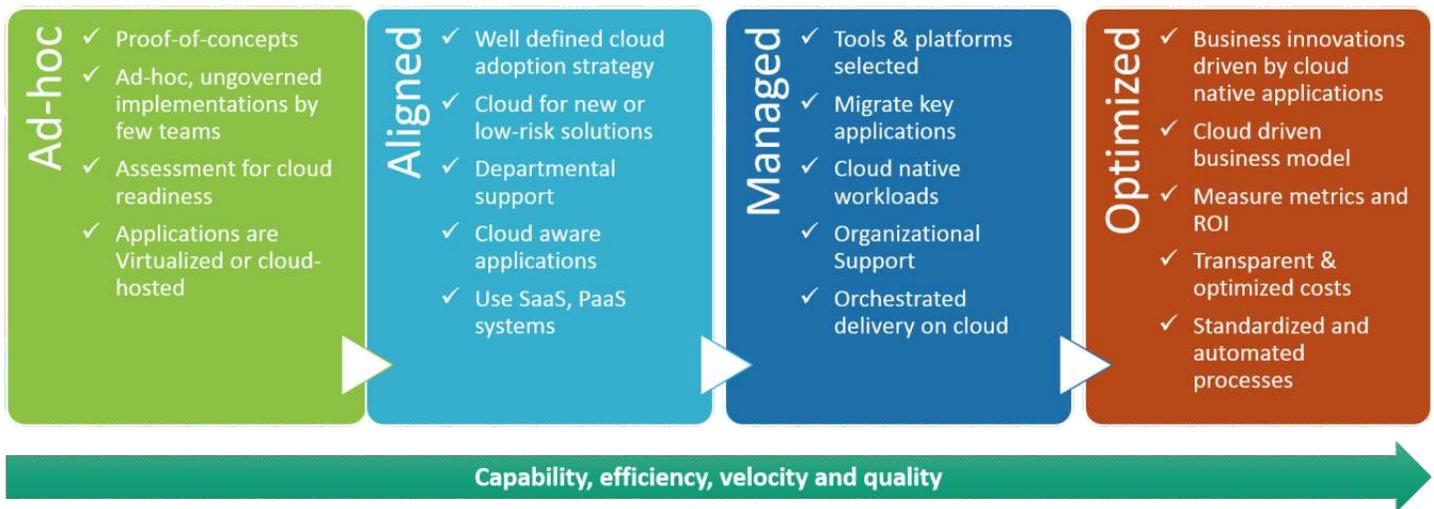# Trigent's Cloud Advantage (cost, time, and operational advantages)

Traditional web applications are fault-intolerant, do not scale, and contain single points of failure. With cloud services and infrastructure, the IT departments have access to unlimited resources, reduced costs and greater agility – with no financial risk. With tremendous benefits, real estate companies are not asking if they should migrate to the cloud – they are wondering how to migrate to cloud, very soon. Trigent will understand your unique business requirements, assess your current investments in technology and applications, and help create a roadmap.

Legacy applications are critical to the unique needs of many organizations. In some cases, these applications may not be moved to public cloud due to regulatory compliance. If the best option then is to leave the applications on premises, Trigent's engineers will build an SOA/web service that allows mash-ups and integrations that permit access from new mobile and/or cloud applications.

For applications that can be modernized, we create a strategy for modernization, such as "lift-and-shift", complete re-architecture or anything in between. By establishing a phase-wise project plan, reinforced with industry best practices and structured processes, the migration will be well planned, executed and supported.

Cloud Adoption Maturity Model

The diagram below can be used to determine the maturity of your organization's cloud adoption through four stages: Ad-hoc, Aligned, Managed and Optimized. You can also use this as a suggested roadmap towards your cloud goals. As your organization progresses through four stages, your IT system's capability, agility, efficiency, velocity, and quality increases correspondingly.

Ad-hoc	Aligned	Managed	Optimized
✓ Proof-of-concepts	✓ Well defined cloud adoption strategy	✓ Tools & platforms selected	✓ Business innovations driven by cloud native applications
✓ Ad-hoc, ungoverned implementations by few teams	✓ Cloud for new or low-risk solutions	✓ Migrate key applications	✓ Cloud driven business model
✓ Assessment for cloud readiness	✓ Departmental support	✓ Cloud native workloads	✓ Measure metrics and ROI
✓ Applications are Virtualized or cloud-hosted	✓ Cloud aware applications	✓ Organizational Support	✓ Transparent & optimized costs
	✓ Use SaaS, PaaS systems	✓ Orchestrated delivery on cloud	✓ Standardized and automated processes

Capability, efficiency, velocity and quality

As digital disruption continues to be a game changer, real estate companies will surely feel the impact. To survive and compete, companies will have to rethink their IT strategy. They will remain committed to their core vision but may need to approach their business strategy with flexibility. This flexibility will require a commitment to innovation from which operational excellence and cost advantage will ensue.

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About Trigent

Trigent is a technology solutions company that provides comprehensive solutions for business problems via outsourced software product and applications design, development and quality assurance. Trigent serves customers like Independent Software Vendors (ISVs), enterprises and SMBs in the High Tech, Healthcare, Education, Ecommerce and Manufacturing areas. Trigent's solutions help clients overcome budget, schedule and resource constraints.

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Our Headquarters

Trigent Software Inc.
2 Willow Street, Suite #201
Southborough, MA 01745
+1 (877) 387-4436
sales@trigent.com

Other Location

Trigent Software Ltd.
Khanija Bhavan, 1st Floor
#49, West Wing, Race Course Road
Bangalore - 560001, India
+91 (80) 2226-3000

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