



VMware Tanzu Application Service reduced time to market estimates from 14 months to 6 months, helping CoreLogic to respond quickly to the demands of their customers



In collaboration with VMware Tanzu Labs, CoreLogic built CondoSafe and transformed into an agile software development practice

CoreLogic

Reimaging real estate

Demystifying the real estate business with cloud native software

If you've ever purchased a home, you know how complex the process can be. There are multiple parties involved—the buyer, the seller, realtors, mortgage lenders, insurers, and so on each with their own priorities. What they all have in common is the need for reliable data and insights, but in today's digital lifestyle, even that isn't enough. They want these insights delivered by intuitive software and applications at every step in the process.

Buyers want data on similar homes for sale and applications that make it easy to compare them side by side. Lenders need data on creditworthiness and interest rates coupled with software that makes sense of it to get buyers the best mortgage rates. Insurers require property and crime data surfaced via interactive visualizations to determine which new markets to enter. And the list goes on.

The challenge for everyone involved is that this data is spread across multiple parties. Some data comes from government agencies. Other data comes from financial markets. Still more data comes from private parties such as credit agencies. The different data sources have different formats, are updated at different intervals, and have varying levels of accuracy. Making sense of it all and accessing it when and where needed is challenging, to say the least. That's where CoreLogic comes in.

"Our goal is always to provide our clients with the most up-to-date, accurate and useful insights possible so they can make better informed business decisions," said Richard Leurig, senior vice president of CoreLogic's Innovation Development Center. "That means not only do we need to generate meaningful insights from all this data, but we need to put these insights into the hands of our clients with intuitive, powerful software and applications."

CoreLogic's products include a multiple listing service (MLS) platform called Matrix that enables realtors to search MLS data via a Google-like search box and easily generate customizable listing presentations for clients. Another product, Instant Merge, merges credit ratings from the major agencies into a single score for a more complete and



The Irvine, California-based company specializes in bringing all this real estate-related data together for analysis and delivering tailored insights via software products to the various parties involved in the homebuying process. It manages more than 3.5 billion property and financial records, and serves more than 10,000 customers, including realtors, mortgage brokers, home insurers, and even construction companies. Its data and insights are involved in 75 percent of all mortgage and capital market loans.

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accurate borrower profile for lenders. SkyMeasure, another CoreLogic product, uses satellite imagery to provide insurers more accurate information about the age and condition of roofs so they can more accurately price risk.

A foundation for innovation required

CoreLogic traces its roots back to 1991. Since then, the company has grown both organically and by acquisitions. By 2014, CoreLogic was operating a slew of different databases, operating systems and development tools, all siloed in different pockets of the organization. This heterogeneous technology environment hadn't slowed the company down, but the real estate business is in the midst of reinvention. Nimble start-ups are using software to streamline the various parts of the buying process, including making MLS data more accessible and automating things such as mortgage approvals. With competitive pressures mounting, Leurig and his team knew the company needed to consolidate and modernize how it built and shipped software to maintain and extend its leadership position.

"We had 50, maybe 60 siloed technology stacks throughout the different lines of business that were cobbled together," Leurig explained. "These different tech stacks served us well for years and were delivering great point solutions to our customers. But they didn't share a common foundation that would let us quickly and easily build and iterate on new products and make them available to our customers on whatever devices they use."

CoreLogic had spent decades developing its reputation as a leader in real estate data and analytics. But if it didn't improve the way it delivered software and new products to customers, Leurig knew the company wouldn't be able to maximize the full value of all those insights its analysts and data scientists uncover. Ultimately the goal, said Leurig, was to empower CoreLogic's developers to rapidly build new features and applications to get the right insights into the hands of the right customers at the the right time and in the right format.

Let developers develop

After examining the IT landscape, CoreLogic chose to standardize its application development environment on VMware Tanzu Application Service. Tanzu Application Service is an application development platform that was designed from the ground up to take advantage of the resiliency and flexibility offered by the cloud. It also hides most of the underlying infrastructure complexities from developers so they can spend their time writing code instead of dealing with things such as managing dependencies and network configurations.

"We want our developers focused on CoreLogic's special sauce, the things that make us unique and valuable to our clients," Leurig said. "We don't want them getting distracted having to deal with some behemoth, unwieldy infrastructure. We pay developers to develop compelling software, not to waste time tweaking application servers. With [Tanzu Application Service], that's now a reality."

"The perception by the customers in our industry is that we have great data, great analytics delivered by a great technological process."

RICHARD LEURIG
SENIOR VICE PRESIDENT, INNOVATION DEVELOPMENT
CENTER, CORELOGIC

Among other benefits, Tanzu Application Service supports microservices architectures, in which monolithic applications are broken down into more manageable, well-defined components. This makes it easier and faster to develop and iterate on new features and applications without disrupting other services. This was critical for CoreLogic, which needed to improve the speed with which it reacted to changing customer needs.

CoreLogic also recognized it needed to modernize its approach to data management. Lengthy batch processing makes it difficult to provide downstream applications with the timeliest data and insights. To streamline the process, CoreLogic adopted Spring Cloud Data Flow, a toolkit for building data integration and real-time data processing pipelines. It allowed CoreLogic to breakdown its monolithic data pipeline into a series of loosely coupled microservices.

The result is what CoreLogic calls on-demand data manufacturing. Engineers now have the flexibility to quickly add new sources of data and combine different data sources in new

and innovative ways that enable the company's data scientists to uncover novel, potentially market-moving insights. This gives the company the technological underpinnings to respond quickly to changing market conditions and demands from customers.

Deploying Tanzu Application Service and Spring Cloud Data Flow weren't the only steps CoreLogic took to improve its software development capabilities. CoreLogic developers also shed the traditional waterfall development approach it had been using in exchange for an agile methodology. The waterfall approach requires defining complex application requirements



upfront and then spending months building an application to those specifications. Unfortunately, actual user requirements are difficult to capture in a hypothetical setting and they change quickly, so this often leads to software that doesn't meet the needs of the business and goes over budget.

Agile methodology, on the other hand, involves developing and deploying software in short, iterative steps, learning from user feedback along the way. Rather than a lengthy upfront scoping process, developers using agile methodology define just enough requirements to get started. Agile has proven to be the better approach for building software that meets business requirements as there are plenty of opportunities for course correction. It also gets software into the hands of users much faster than the traditional waterfall approach. And the approach puts the customer at the center of attention.

Using agile methodology in conjunction with a cloud native platform such as Tanzu Application Service enables developers to make the most of both, increasing developer productivity and resulting in better software.

Great analytics delivered by cutting-edge software

It didn't take long for CoreLogic's investment in Tanzu Application Service and agile methodology to prove its worth.

The first product developed on the platform was an information validation and document portal application called CondoSafe. CoreLogic allocated a team of 12 developers, four quality

assurance software engineers, and a number of representatives from the line of business to build CondoSafe, Leurig said. Based on products of similar scope developed in the past, the team set a goal to deliver the product in 14 months. The result? Thanks to Tanzu Application Service automating a number of processes that handle infrastructure complexity, the team was ultimately reduced to just a single product manager, one user experience designer, and six engineers who delivered the product in six months.

CoreLogic's experience developing CondoSafe was no anomaly. Since deploying Tanzu Application Service and adopting agile methodology, CoreLogic is developing software at a pace it could never before achieve, Leurig said. Its developers now spend their days writing code instead of managing infrastructure or sitting in scoping meetings. Curating and managing data pipelines is much simpler with Spring Cloud Data Flow, which enables developers to treat them like any other software product. Most importantly, CoreLogic's customers have access to the most cutting-edge, intuitive, and effective software in the entire real estate industry.

"With the help of [Tanzu Application Service], our customers now look at us as industry-leading experts and much more of a technological and innovative company than they have in the past," Leurig said. "The perception by the customers in our industry is that we have great data, great analytics delivered by a great technological process."



@CoreLogicInc improved time to market for the CondoSafe application with the help of @VMware #Tanzu Application Service.