



Research Agenda, Q1 2017

Multi-Tenant Datacenters

Covering the overall business landscape and the critical metrics of the global multi-tenant datacenter market.

The Multi-Tenant Datacenter Channel focuses on the global multi-tenant datacenter (MTDC) market with research covering critical metrics such as capacity and utilization, segmented by key regional markets, both in the US and globally. Specific deliverables include profiles of vendors, market-specific evaluations, examinations of key trends, analysis of M&A activity, coverage of financial results and outlook, and tracking of the ongoing expansion activity of providers globally. Aimed at executives from datacenter providers, as well as vendors, investors and real estate professionals, the Multi-Tenant Datacenter Channel covers the overall size, scope and growth of the MTDC market globally, with extensive coverage of both North America and Latin America as well as special reports on Asia included in channel. Specific analysis on Europe, the Middle East and Africa is available in a separate European channel.

ABOUT 451 RESEARCH

451 Research is a preeminent information technology research and advisory company. With a core focus on technology innovation and market disruption, we provide essential insight for leaders of the digital economy. More than 100 analysts and consultants deliver that insight via syndicated research, advisory services and live events to over 1,000 client organizations in North America, Europe and around the world. Founded in 2000 and headquartered in New York, 451 Research is a division of The 451 Group.

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Overview

The multi-tenant datacenter (MTDC) market is changing rapidly as providers not only continue to build and expand datacenters, but also seek to differentiate themselves. In the past, differentiation came, in many cases, from location or quality of facility. These still matter, but MTDC providers today are also faced with decisions such as whether to offer higher-level services (hosting, cloud or even managed applications); what types of customers to target; and where to expand. In addition, the MTDC market is very fragmented – in our Datacenter KnowledgeBase, we currently track more than 1,000 providers and almost 4,000 facilities worldwide. Some consolidation has occurred already, but there is likely more to come as providers look to add services and facilities in new areas.

The 451 Research Multi-Tenant Datacenter Channel offers detailed data and analysis to help service providers, customers (including enterprises), investors and equipment vendors better understand key trends in the industry, as well as the dynamics of particular geographic markets. In 2017, we will analyze supply/demand trends and the competitive landscape in more than 20 MTDC markets around the world, while monitoring activity in many more. For those 20+ markets, we provide metrics such as total capacity, utilization, forecasts and market size. More broadly, we will cover topics such as the economics of the business (pricing, costs), funding, state incentives, interconnection trends, compliance, service offerings and sources of differentiation across the industry. These topics are complemented by analysis of competitive positioning and potential strategic partnerships, as well as profiles of key service providers – both international and domestic. We will also continue to examine and discuss quarterly earnings results and M&A activity.

As part of our research, we will examine key questions such as:

- How are retail colocation providers responding to wholesale providers' move toward offering smaller amounts of space, competing with them directly?
- How is the growing adoption of cloud impacting MTDC providers?
- Which datacenter operators are seeing success by moving up the stack and offering cloud, hosting and other managed services?
- How do enterprises decide whether and where to lease datacenter space?
- Will more datacenter space be required in 'edge' markets, for example, to serve content to end users more efficiently?
- How are customers' network connectivity needs changing, and how does that influence their datacenter choices?
- Which markets in the US and internationally are seeing strong demand for datacenter space and would be good areas for investment? Are there areas with oversupply?

Many of our Technology and Business Insight reports focus on specific markets. In these reports, we list key vendors that are part of the local market and categorize them by service offering. MTDC providers today are faced with decisions around whether to change or add to their service offerings, so in our Market Insight and other reports we discuss the services and strategies of individual providers in greater detail, as well as how the industry is evolving overall. Our current service buckets include: wholesale datacenter services, retail colocation services, interconnection, managed hosting, web and basic application hosting, and IaaS. In our reports, we typically place providers in multiple categories, and for us to include them in a local market report, firms must offer colocation in addition to any network, IaaS, hosting or other services.

Wholesale Datacenter Service Providers

Wholesale and retail colocation models have been blurring and the two operators are now often competing head-to-head. We will examine how wholesale providers are evolving and discuss how their economics differ from those of more managed service-oriented providers, the importance of scale, various approaches to connectivity and other key questions.

Interconnection Service Providers

Network connectivity continues to grow in importance and datacenter providers are responding in various ways. In addition, certain facilities house larger numbers of networks and ecosystems than others. We will discuss key network-dense facilities in various markets as well as overall interconnection trends and how firms can differentiate through their interconnection strategies.

Retail Colocation Providers

In markets where wholesale providers are present, retail colocation providers can end up competing on price with larger-scale providers. They need to differentiate to survive and there are several ways to do this, such as adding services, specializing in high-density offerings, and/or emphasizing connectivity and network expertise. At the same time, some enterprises are interested in having several options (e.g., colocation, hosting, IaaS) for their IT infrastructure and seek help putting those pieces together. Colocation providers may be well placed to offer those options. We will continue to track providers that offer colocation, how they differentiate, what additional services they offer and who these providers are competing with, as well as who their customers are.

Note

In addition to the market dynamics listed above, the Multi-Tenant Datacenter Channel will continue to collaborate with fellow 451 Research analysts across other channels as we assess the wider implications of the increased industry focus on Multi-Tenant Datacenters. Numerous vendors overlap areas of our research, and some have multiple products in different technology domains.

Upcoming Research on Multi-Tenant Datacenters

Voice of the Enterprise (VotE)

Combining 451 Research's industry-leading analysis with an extensive network of more than 50,000 senior IT professionals, Voice of the Enterprise tracks adoption across thousands of organizations and exposes the major opportunities for enterprises, IT vendors, suppliers and investors. Each quarter's survey has a focused theme, as indicated in the table below.

	Workloads and Key Projects	Organizational Dynamics	Vendor Evaluations	Budgets & Outlook
Datacenter Transformation	Q1	Q2	Q3	Q4

Supply-Side Research

Understanding the pace of growth and identifying the segments and industries driving value in the market is the focus of 451 Research's market tracking and forecasting methodologies. Through quarterly updates, 451 Research delivers its tracking and forecasting of the supply of key business application market indicators by region and country.

		Updates
Datacenter Market Monitor & Forecast	Datacenter Market Monitor	Q2, Q4

Datacenter KnowledgeBase

451 Research's Datacenter KnowledgeBase is a global database of more than 4,700 retail and wholesale colocation datacenter facilities. This KnowledgeBase is established as the industry's most authoritative and comprehensive set of intelligence on the multi-tenant datacenter (colocation) market, bringing together data from on-site visits, quarterly provider outreach and financial analysis. We track more than 30 regional markets and more than 100 individual metrics per facility. The KnowledgeBase is available in four geographic market levels:

- Worldwide (Global) – All metro areas plus market sizing and forecast
- Global Region(s) – All metro areas within a single region, plus market sizing and forecast for that region
- Large Metro Area(s) – Sites within a single large metro area
- Emerging Metro Area(s) – Sites within a single emerging metro area

The Datacenter KnowledgeBase is delivered on a quarterly basis directly to clients in a user-friendly Excel Pivot table based file.

Technology & Business Insight Reports

Planned TBIs include market-specific coverage of the top 10 markets in the US; Latin American markets; top Asian markets; Canada; and emerging markets in North America such as Minneapolis, Houston and Miami. Not all reports are listed here, as some dates and markets are still being determined. We will also provide a North American Providers report in the second half of the year that will profile specific players and provide market size and forecasts for the North American MTDC industry overall.

North American Markets

MTDC Market Report: Northern California (San Francisco, Silicon Valley, Sacramento)

Analyst: Kelly Morgan

Publication Date: Q1 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Salt Lake/Reno/Las Vegas

Analyst: Rick Kurtzbein

Publication Date: Q1 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Austin/San Antonio/Houston

Analyst: Rick Kurtzbein

Publication Date: Q2 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Ohio

Analyst: Stefanie Williams

Publication Date: Q2 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC: North American Providers 2016

Analysts: Stefanie Williams, Rick Kurtzbein, Kelly Morgan, Dan Thompson

Publication Date: Q2 2017

The Multi-Tenant Datacenter North American Providers Report 2016 presents estimates of the overall size, scope and growth of the MTDC market in North America. It also spotlights various prominent US-based MTDC providers.

MTDC Market Report: Greater NY/NJ

Analyst: Lisa Stauffer

Publication Date: Q2 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Chicago

Analyst: Rick Kurtzbein

Publication Date: Q3 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Dallas

Analyst: Stefanie Williams

Publication Date: Q3 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Minneapolis

Analyst: Rick Kurtzbein

Publication Date: Q3 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Northern Virginia

Analyst: Lisa Stauffer

Publication Date: Q3 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Canada

Analyst: Kelly Morgan

Publication Date: Q3 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Pennsylvania

Analyst: Lisa Stauffer

Publication Date: Q4 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

Latin American Markets

MTDC Market Report: Brazil

Analyst: Jeff Paschke

Publication Date: Q1 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Mexico

Analyst: Jeff Paschke

Publication Date: Q2 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Argentina

Analyst: Jeff Paschke

Publication Date: Q3 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the area, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

Asia-Pacific Markets

MTDC Market Report: Tokyo

Analyst: Kelly Morgan

Publication Date: Q1 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the country, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Melbourne/Sydney

Analyst: Stefanie Williams

Publication Date: Q1 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the territory, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Guangzhou/Shenzhen

Analyst: Teddy Miller

Publication Date: Q1 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the territory, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Taiwan

Analyst: Teddy Miller

Publication Date: Q2 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the territory, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Beijing

Analyst: Teddy Miller

Publication Date: Q3 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the territory, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Southeast Asia (Malaysia, Indonesia, Thailand)

Analyst: Dan Thompson

Publication Date: Q3 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the territory, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Hong Kong

Analyst: Dan Thompson, Teddy Miller

Publication Date: Q4 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the territory, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Singapore

Analyst: Dan Thompson

Publication Date: Q4 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the territory, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

MTDC Market Report: Shanghai

Analyst: Teddy Miller

Publication Date: Q4 2017

This report provides an overview of the competitive dynamics in the market, a 451 Research Market Map™ of the competitors in the territory, market share of the dominant providers, supply and demand trends, utilization trends and a pipeline of planned MTDC builds.

Other Reports

M&A Outlook 2017: Multi-Tenant Datacenter, Hosting and Managed Services

Analysts: Kelly Morgan, Penny Jones, Agatha Poon, Jeff Paschke, Brenon Daly

Publication Date: Q1 2017

Even after a recent record tech M&A run, dealmakers still had ambitious shopping plans in 2016. Across the globe, tech acquirers announced \$500bn worth of transactions in the just-completed year, ranking 2016 as the second-highest annual total since the internet bubble burst. More than any other year, 2016 saw an expansion of buyers beyond the 'usual suspects,' as old-line companies got caught up in transforming their businesses through M&A.

Preview: MTDC Trends 2018

Analysts: Kelly Morgan, Rick Kurtzbein, Stefanie Williams, Dan Thompson

Publication Date: Q4 2017

This report provides a view of key trends that will affect the North American multi-tenant datacenter market in 2018. It details the top trends, likely impact and recommendations for each.

MTDC: Global Providers 2017

Analysts: Jeff Paschke

Publication Date: Q4 2017

The Multi-Tenant Datacenter Global Providers Report 2017 presents estimates of the overall size, scope and growth of the MTDC market globally. It also spotlights various prominent global MTDC providers.