IDC MarketScape: Worldwide Life Science R&D ITO Services 2021 Vendor Assessment
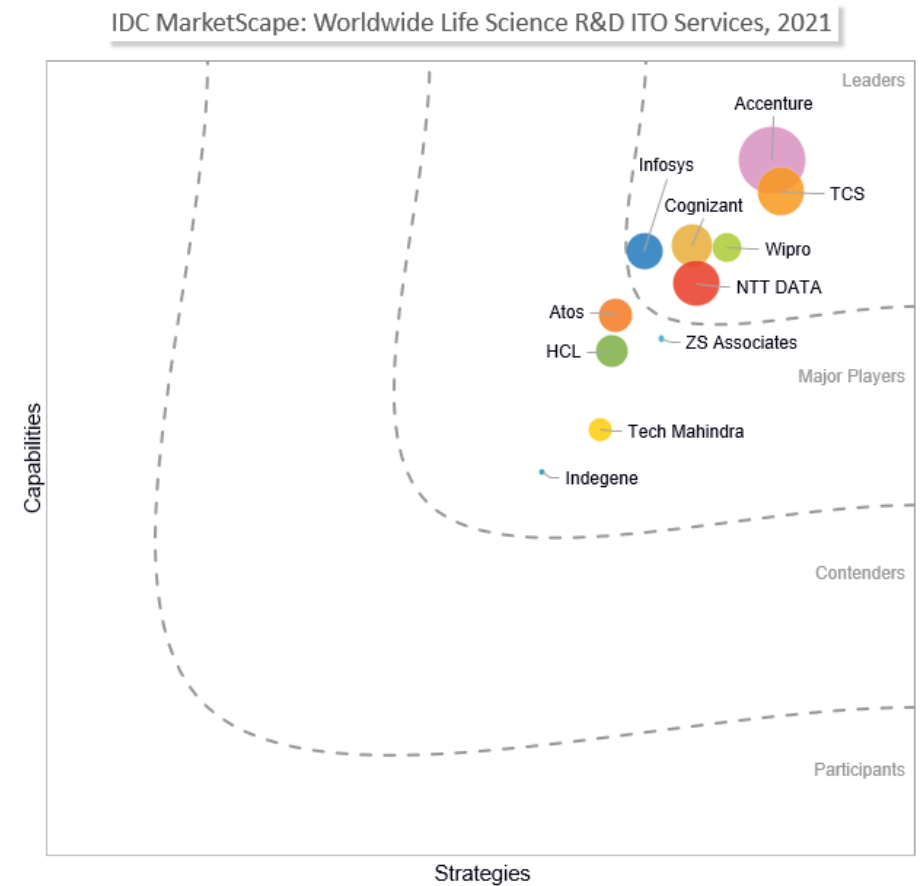
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THIS IDC MARKETSCAPE EXCERPT FEATURES NTT DATA

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Life Science R&D ITO Services Vendor Assessment

Source: IDC, 2021

Please see the Appendix for detailed methodology, market definition, and scoring criteria.

IDC OPINION

There has been a significant change in the role of IT service providers in the past one and a half years. From service providers that would support much of the day-to-day IT infrastructure management, the COVID-19 pandemic has caused life science companies to lean on their IT service providers to provide strategic direction in ensuring business continuity during this critical time. The ability to "keep the lights on" has almost become a business-critical need, and those IT service providers that could not meet those criteria during the pandemic have come under the radar, and continuity of these partnerships may now be reevaluated.

The ask, however, has been more than that. The life science industry has looked at IT service providers to transition into being true partners that can provide mindshare in helping them craft their future road map to drive digital resiliency and provide innovative strategies and technologies to help them accelerate growth. As the world adopted a disaggregated care model and "patient centricity" gained critical importance, experience and expertise in implementing decentralized clinical trial solutions and in crafting remote patient engagement solutions have gained importance. The steady shift in focus on real-world data (RWD) from commercial to R&D had heightened the importance of partners that have capabilities in driving electronic data capture (EDC)-electronic health record (EHR) integration. As data has become the new gold, life science companies are now looking at their IT vendors to truly partner with them in helping them think through their strategies around data governance and data acquisition, including answering questions such as whether they should obtain data, or insights, or a data analytics platform, as well as with which companies should they be establishing strategic partnerships. IT service providers are slowly stepping into the territory which once used to be owned purely by strategic consulting companies, as life science companies value the ability of their IT partners to provide them with both the strategic direction and help them with integrating data and technology within existing workflows. Thus it is an interesting time, where IT service providers are seen to be building their strategic consulting portfolio to complement and enhance their IT offerings, while strategic consulting companies are growing their digital and data and analytics footprint.

IT services providers are now exploring newer territories such as *in silico* drug discovery, drug repurposing, the digitalization of labs to build the lab of the future, and the development of digital twins. The pandemic has brought to the fore the importance of collaboration and co-innovation and has led to the evolution of digital ecosystems. Thus expertise in implementing federated learning platforms and in providing data fabrics that can enable the secure and real-time sharing of data between cross-functional teams serves as a differentiator.

The life science industry, having seen a vaccine being successfully brought to the market in less than a year, is hungry to replicate these models and to accelerate innovation for other therapeutics. Therefore, partners with expertise in integrating robotic process automation (RPA) and AI/ML into their solutions and with well-established partnerships with cloud providers are becoming partners of choice. Experience in agile implementation strategy has become a necessity, not a "nice to have," as speed and flexibility have become the need of the hour.

While the life science industry seeks IT service providers that can partner with them to provide accelerated and scalable solutions, a lot of the industry is wary about increasing its IT spend right now, given the challenges that the pandemic has posed. Thus the industry is looking for partners that can provide flexible modular solutions that can be rapidly integrated within existing workflows, without

requiring significant investment in new platforms and solutions and the need to shelve existing legacy platforms.

The pandemic has served as a wake-up call to the life science industry. As the industry struggled to sustain and recoup, it has taken note of the partners that rapidly moved in to provide support and that made a true difference in these challenging times. One may expect to see a phase of consolidation, as pharma and biotech companies narrow down their partnerships, complementing these with partnerships with some of the many smaller start-ups that leveraged an excellent opportunity to bring in innovative solutions, which were the need of the hour. Thus IT service providers are also moving fast to establish these partnerships themselves to address this need.

While there are routinely a number of vendors with sufficient experience to effectively compete for RFIs, RFPs, and other service requests, it is important for companies to shrink the broad list of prospective vendors to a short list of three to five finalists based on a balanced scorecard that accurately captures specific company requirements and needs. Successful selection of a single (or limited number of preferred) service providers depends on careful consideration of key criteria. Building on contributions from 11 major life science R&D IT outsourcing (ITO) service providers (including the top 5 vendors by R&D ITO market share), this study examines the life science R&D IT outsourcing vendor landscape today with a view toward expected growth over the next three to five years. This is the third of three IDC MarketScape documents (BPO, ITO, and strategic consulting) examining IT outsourcing in the life science R&D space. When evaluating vendors, the key criteria IDC believes that life science companies should consider include:

- Breadth of life science R&D ITO services offered; depth of related application, platform, and project experience; and number of customers the vendor has served
- Geographical footprint and global delivery capabilities, level of priority and focus by the vendor on the life science R&D sector, and the vendor's pace of investment in related life science-specific capabilities
- Depth of business-related, industry-specific knowledge and the ability to apply this knowledge to improving client performance and success
- Foundational IT service capabilities, corporate financial stability, and ability to accommodate different types and sizes of life science clients
- Diligent vetting of customer references to examine vendor capabilities surrounding project management, IT technical skills, account management, and overall value delivery to clients

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

IDC frequently has unique visibility into vendor selection processes within life science companies through clients and contacts in the industry. For a vendor to be considered for inclusion in this study, the vendor's services must have been significantly evaluated for the potential to engage clients within the target IDC MarketScape space. Further research and due diligence were then conducted to narrow the list of vendors to only those that IDC views as legitimate contenders for future deals within the life science R&D ITO services space. Eleven life science R&D ITO vendors were selected to participate in this study:

- Accenture
- Atos
- Cognizant
- HCL
- Indegene
- Infosys
- NTT DATA
- Tata Consultancy Services (TCS)
- Tech Mahindra
- Wipro
- ZS Associates

ADVICE FOR TECHNOLOGY BUYERS

The pandemic has accelerated growth of IT outsourcing in the life science industry. It has also changed the lens through which the life science industry looks at IT service providers. Priority is being given to those that could ensure seamless business continuity during the time of the pandemic. The next most important criterion is the ability to accelerate innovation by providing strategic direction, complemented by technology implementation. Accountability, demonstrated through risk-sharing and outcome-based pricing models, is another driving factor.

All of these are complemented by the ability of IT service providers to provide solutions that will help them quickly adapt to evolving business models and drive new product development while complying with increasingly complex and growing regulatory compliance requirements. The life science industry is also monitoring the investment in R&D that IT service providers themselves are making to develop innovative solutions in newer areas, as these will be the partners that will provide technologies that will help them differentiate themselves. Hence, IT service providers are also continuously scanning the radar to stay ahead of the curve and build both technology and thought leadership, upskilling their internal teams and upgrading their technology portfolio.

As the life science R&D sector is literally exploding with innovative technologies and implementation models, it has become apparent that partnerships are key. Life science companies are choosing IT vendors that not only have strong internal capabilities, but those that have made the right choices in terms of their strategic partners, so that the partnership with the IT service provider brings compounded value to the table.

In an industry which is not currently interested in making major investments in IT, IT service providers that can provide flexible, modular solutions, agile implementation strategies, and outcome-based pricing models will be partners of choice. In a time of struggle and survival and in an industry that is trying to return to normal, IT service providers should cut the slack, move beyond transactional activities and conventional business models, prove their worth, and truly take their partnerships to the next level. This is an opportunity not to be lost.

In IDC's view of the ITO ecosystem, key attributes that life science companies are looking for in their preferred service providers include:

- The ability to ensure business continuity and drive digital resiliency
- Deep, proven life science–specific ITO capabilities
- An understanding of the life science business at both company and tactical levels
- Flexibility in resourcing on a global basis, including availability of onshore/onsite for some needs and shadow resources to accommodate anticipated attrition
- The ability to effectively scale up engagements in a timely fashion (both onshore and offshore)
- Strong referenceable clients
- Practical understanding of application, platform, and infrastructure best practices that can be quickly translated into engagements to efficiently and effectively develop, maintain, and advance both industry-agnostic and life science–specific data, application, and platform needs

IDC recommends that life science companies also consider the following during their vendor selection include:

- The ability to regionally source external outsourcing resources in emerging regions as life science companies expand globally
- The ability to work effectively with multiple stakeholders (including competing service providers) to drive IT operational efficiency and effectiveness across organizational boundaries
- Emphasis on quality over cost at a foundational level
- The ability to deliver a unified service capability over multiple service or geographical areas
- Commitment to growing partner relationships with companies through investment and flexibility as processes change and evolve
- The potential to seamlessly expand services delivered across the broader business process, IT, and strategic consulting outsourcing landscape as part of preferred vendor relationships
- Compatible corporate cultures
- Established strategic partnerships with key players
- The ability to demonstrate accountability through outcome-based/risk-sharing pricing models

VENDOR SUMMARY PROFILES

This section briefly explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each of the criteria outlined in the Appendix, the description here provides a summary of each vendor's strengths and challenges.

NTT DATA

After a close evaluation of NTT DATA's offerings and capabilities, IDC has positioned the company in the Leaders category in this 2021 IDC MarketScape for worldwide life science R&D ITO services.

Established in 1967, NTT DATA has been serving the life science industry for more than 25 years. The company is headquartered out of Tokyo, Japan, and its U.S. offices out of Plano, Texas, and has service delivery centers in 50 countries across the world. NTT DATA has extensive experience working with over 50 pharmaceutical and biotechnology companies, across multiple geographies, with more than 50% of its customers based in the United States, 25% in Europe, and 10% in APAC. Also, 85% of its customers have revenue of over $1 billion, and the company derives 17-20% of its revenue from its life science efforts, of which 30% represents its life science R&D revenue. NTT DATA employs over 45,000 people, with more than 3,500 dedicated life science resources, with at least half of these having industry-specific experience.

NTT DATA brings a broad portfolio of ITO capabilities that spans healthcare and life science, resulting from the acquisition of Dell Services. With a focus on process automation and platform collaboration, with its own IP (Nucleus), eliminating the need for other third-party tools and fees and platform partnerships, NTT DATA offers a differentiated offering that spans the full spectrum of ITO services.

Strategic Initiatives

NTT DATA is focusing on building its capability for the ingestion and integration of structured and unstructured data from multiple data sources using the NTT DATA engine (HCLS Insights) powered by Nucleus (NTT DATA's intelligent enterprise platform) to create a foundation for advanced analytics and technologies (such as AI, ML, and NLP) and build descriptive, diagnostic, and predictive insights to provide a multifaceted view into clinical trials and commercial operations. It powers a precision medicine strategy by enabling physician and participant targeting, site identification, and biomarker progression. It is focusing on a user experience approach, collecting all stakeholder input within the patient's ecosystem to provide a comprehensive perspective, while integrating social interaction techniques and leveraging assets such as Jibo, the behavioral robot, to help pharma companies design for the future. The company is building on its cloud-native global qualified infrastructure and clinical service desk to enhance employee and customer experience.

M&As

In 2020, NTT DATA acquired Hashmap (a Snowflake Premier Partner) and Acorio (an Elite ServiceNow partner) to help accelerate clients' digital transformation journeys and establish a trusted data foundation to operationalize and scale AI. Almost half of Acorio's revenue comes from its life science business. Flux7 is an AWS premier consulting partner that NTT DATA acquired in 2019 and provides cloud implementation and migration, automation, DevOps, and agile application consulting and development services for enterprises. Its acquisition of NETE (2019), a leader in digital services and health information technology solutions for U.S. federal healthcare agencies, provides NTT DATA with expertise in application development, digital services, clinical/bioinformatics, advanced data analytics, cloud, and cybersecurity. It also acquired Cognosante in 2019 that enables health information exchanges (HIE) for federal agencies, delivering interoperability between providers, plans, managed care organizations, and other entities, while also providing intelligent data analytics in a self-service data inquiry environment. The acquisition of Dell Services in 2016 was focused on life science R&D services. On May 18, 2021, NTT DATA entered into an agreement to acquire Nexient, a cloud-native company that will expand NTT DATA's differentiating transformation, modernization, and cloud app development experience. Along with a proactive investment in digital and consulting for life science, the Nexient acquisition will accelerate NTT DATA's push into digital therapeutic global app development.

Pricing Models

NTT DATA sees fixed price, milestone-based contracts with a year-on-year reduction in service fees, driven by automation, as the continued industry ask. One-fifth of its contracts involve risk sharing.

Strengths

NTT DATA has served as a global systems integrator for over 40 years, investing $3.6 billion annually in R&D. ITO represents 65% of NTT DATA's business, half of its ITO engagements include an innovation and an AI component and 60% include an IP component. Its focus on process automation and platform partnerships differentiates the company from its peers. It has vast expertise in heterogeneous life science data integration, analysis, data management, and cyberinfrastructure. The company has been recognized for its high-quality managed services and SLA attainment and as a capable partner for setting up these services from scratch. It is now focusing on digital and cloud, data and operational consulting, and persona and customer experience. It is building strong capabilities in areas such as behavioral robotics through its partnership with MIT Labs (through being a corporate sponsor in residence at MIT Media Labs). The company also sees its acquisition of Jibo (its behavioral robot) potentially transitioning into a digital therapeutic.

At the core, NTT DATA is a telecom company and the bulk of what it does is data compression. The $3.5 billion in annual R&D spend across the company is leveraged by life science, notably for data flow, analytics, and AI related to oncology for early detection and imaging technology. The NTT DATA engine (Life Sciences Insights, powered by Nucleus) provides a multifaceted view into clinical trials and commercial operations and into driving quality and identifying areas of improvement. Nucleus is NTT DATA's own advanced analytics platform, with built-in bots to enable biomarker identification and site and patient identification. It offers a full suite of enterprise imaging and analytics including infrastructure, managed services, and consulting as part of its Nucleus for Unified Clinical Architecture (UCA), one of the world's largest hybrid cloud-based imaging archives. It is working on making the use of imaging (MRIs) more cost effective and scalable and has partnered with Vidence (an oncology informatics company) to build advanced ML algorithms to predict patient outcomes.

In Japan, it has partnered with a global top 5 pharmaceutical company to develop a clinical trial platform designed for the Japanese market, called PhambieLINQ, to evaluate clinical outcomes for cancer patients based on healthcare big data including electronic medical records. It has partnered with Chugai Pharmaceuticals to develop an AI-enabled clinical trial document generation solution, incorporating ontology and semantics. It has developed wearable tech to enable a remote healthcare model, including enabling remote and real-time physical therapy after surgery and in-clinic biosignal capture. Through its venture arm, NTT Venture Capital, it also has an exclusive partnership with world-class clinics to generate actionable insights from data using a portfolio company's clinical analytics platform.

To quote one U.S. life science company, "NTT DATA helped me establish a service from scratch. We wanted a premium support model. They understood what I was looking for. When tough conversations occurred, they met it with open minds and addressed issues. They demonstrated a willingness to partner with me and were not solely trying to deliver on price. They were responsive and flexible. When we urgently needed help, they helped us with things that we hadn't even contracted for. At the end of the day, they helped us build a pretty damn good level of service."

Challenges

While NTT DATA has breadth of expertise, it should build depth of expertise in R&D-specific market segments to compete successfully for traditional ITO life science R&D RFPs. Even though NTT DATA has a fairly diverse set of capabilities in ITO, the company could strengthen its expertise in areas such as the development of drug safety tools and accelerators, IDMP, and investigator portal development.

Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis, or strategies axis, indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represents the market share of each individual vendor within the specific market segment being assessed.

IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions on the IDC MarketScape, on detailed surveys and interviews with the vendors, publicly available information, and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

For the purposes of this study, ITO includes outsourcing of all IT services, including integration of IT solutions, app development and maintenance, application portfolio rationalization, infrastructure management, consulting and package implementation services aligned to business imperatives, and support from data governance, IT security, cloud implementation, and intelligent automation solutions.

Market Overview

A turbulent year and a half had the life science industry dealing with the suspension and the discontinuation of multiple clinical trials and had businesses coming to a staggering halt. This is where IT service providers have differentiated themselves, have worked round the clock, and have come up with innovative technologies and business models to help their life science customers ensure business continuity, roll out new clinical trials, and accelerate innovation to bring new therapies and vaccines to the market at a speed unheard of before. The IT service providers have helped their life science customer successfully implement decentralized clinical trials, complemented by the use of the Internet of Medical Things (IoMT) and telemedicine, while developing innovative solutions to ensure continued patient engagement in a remote, disaggregated care model. Undoubtedly, all of this has been enabled by the support of regulators across the globe.

While patient expiries and the loss of blockbuster drug revenue were the key drivers in the past, the newer drivers referenced previously have resulted in IT service providers being looked at through a different lens. The life science industry is no longer looking only for tactical support and externalizing noncore competencies, but is looking for partners, that can bring in true thought leadership and innovative solutions, to drive business agility. As the borders between life science and healthcare are blurring, and connected health gains increasing importance, the life science industry is looking for partners that can help it connect the dots and develop more holistic solutions, providing a complete view of the patient across not only the continuum of care but the continuum of research and care.

With data becoming the new currency, insights are defining the new net worth of an organization and life science companies are leaning on their IT partners to help them navigate the path. As the industry attempts to figure out its cloud strategy, its data governance models, and its digital transformation road map, IT service providers have an increasingly important role to play. As the life science industry remains hungry to recover and grow, one has seen the growth of digital ecosystems and the use of federated learning platforms and regulatory-compliant collaborative IT infrastructure to fuel co-innovation.

The industry is rapidly exploring the use of AI/ML, NLP, computer vision, and AR/VR to transform R&D. High-performance computing is gaining increasing importance, and the ability of GPU-powered transformer models and the use of digital twins to exponentially accelerate *in silico* drug discovery will disrupt the industry. IT service providers that have acquired expertise in these technologies and have the appropriate partnerships will lead the way.

While ensuring digital resiliency and driving accelerated innovation remain the key objectives of this industry, the life science industry is still keeping a cautious eye on budgets. While it may move toward vendor consolidation, it is going to look for cost-effective and modular solutions that can be easily integrated within existing workflows.

Key R&D areas where ITO services have expanded include *in silico* discovery, the use of digital twins, regulatory compliance and intelligence, the increased importance of RWE in R&D, expertise in decentralized clinical trial solutions and telemedicine, and expertise in strategy and technology to support M&As. Areas anticipated for ITO growth will likely include AI/ML-enhanced ITO solutions, remote patient monitoring solutions, and RWE and regulatory-compliant collaborative IT infrastructure.

IDC expects that when combined with BPO and strategic consulting services, the total IT services market will continue to grow at double-digit rates over the next five years, across the entire life science R&D value chain.

LEARN MORE

Related Research

- *IDC MarketScape: Worldwide Life Science R&D Strategic Consulting Services 2021 Vendor Assessment* (IDC #US48159321, forthcoming)
- *IDC MarketScape: Worldwide Life Science R&D BPO Services 2021 Vendor Assessment* (IDC #US48126821, August 2021)
- *IDC Health Insights: Knowledge-Based Medicine Digital Transformation in Life Sciences, July 2021* (IDC #US48069421, July 2021)
- *Leveraging Telehealth to Accelerate Clinical Trials* (IDC #US48024721, July 2021)
- *The Future of Intelligence for Life Sciences: Transcending Boundaries* (IDC #US47730821, June 2021)
- *GPU-Powered Transformer Models Poised to Accelerate Drug Discovery and Disrupt Drug Development* (IDC #US47660321, May 2021)
- *IDC TechScape: Worldwide Life Science R&D Machine Learning and Cognitive Computing Landscape, 2021* (IDC #US47482121, March 2021)

Synopsis

This IDC study is the third of a three-part life science R&D IDC MarketScape series focused on IT outsourcing. With a specific focus on life science R&D ITO, this document seeks to compare major IT service providers with each other, based on operational, business, and market-centric criteria that should be important to life science companies when considering the selection of an external service provider to take over noncore IT activities. IDC MarketScape assessment of IT outsourcing in life science R&D was previously performed in 2011, 2013, 2015, and 2018.

Dr. Nimita Limaye, research VP, Life Science R&D Strategy and Technology at IDC, noted, "The COVID-19 pandemic has brought to the fore the importance of the ITO service providers to the life science industry. Their role has transitioned beyond that of serving as tactical providers to that of strategic partners that will help steer the implementation of agile innovation models, drive digital resiliency, and fuel accelerated business growth. It is for the ITO service providers to build their internal capabilities, strengthen their digital ecosystems, and provide both the technology and the mindshare that will help them truly leverage this momentous opportunity."

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

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