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Dassault Systemes SE

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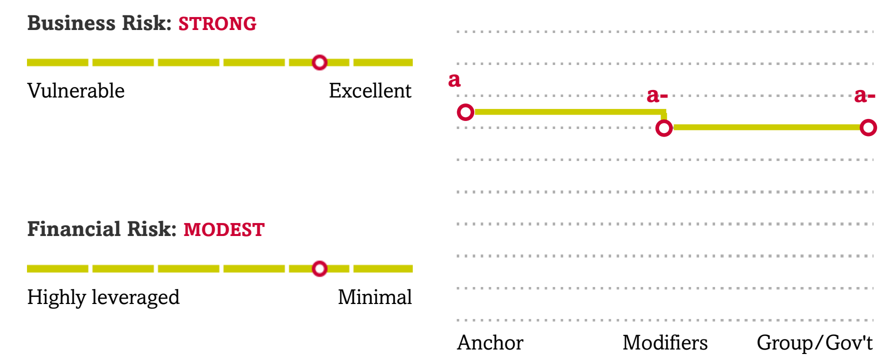


Issuer Credit Rating
A-/Stable/--

Credit Highlights

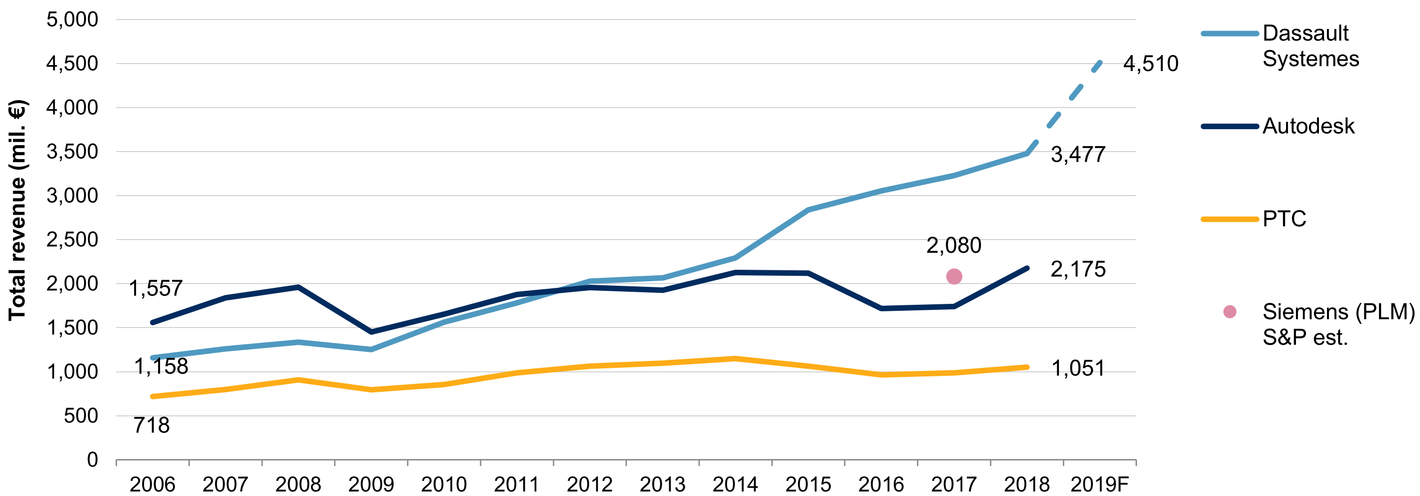
Overview

Key strengths	**Key risks**
Broad and sophisticated solutions combining industry knowledge-based and mission-critical software, which provides very high barriers to entry and a lasting edge over generic software vendors.	Long sales cycle and significant number of proof of concepts can affect margin and payback period.
Strong differentiation from close competitors through its first mover unified platform strategy and large adoption by industry leaders, challengers, and new entrants.	Threats from market competition and talent retention, as well as the need to maintain key partnerships and differentiate.
Established and proven resilience across cycles given exposure to product planning and not production volumes.	Very-large-scale, cash-rich software companies could over time become competitors.
Well-established and distant No. 1 position in product lifecycle management (PLM) with about 33% market share.	Global exposure to macroeconomic and currency risks.
Strong innovation capacity, reflected in cumulative research and development (R&D) spending of €5.3 billion from 2006-2018, combined with a highly qualified and stable workforce.	
Current strong management, prudent financial policy, and supportive ownership structure underpin a strong governance framework.	

Dassault Systèmes SE is a world leader in PLM solutions and scientific and industrial software. Dassault Systèmes benefits from very high barriers to entry due to the breadth and sophistication of its solutions, challenges in replicating its combined expertise in enterprise software, and its deep industrial know-how and high command of scientific knowledge. This is combined with its differentiating capability to offer digital continuity, from design to simulation and manufacturing, via a platform available on premise and in the cloud. The company has a well-established and distant No.1 position in PLM with about 33% market share (estimated by the company in its core markets), which is increasing by roughly 1 percentage point per year. This compares with its closest competitors, Siemens PLM (about 21% market share), PTC (9%), and Autodesk (6%). The company also has an above-peer-average adjusted margin of 34%, compared with less than 20% for its peer group, together with a large installed customer base of more than 250,000 (increasing by 8% on average per year) comprising industry leaders, challengers, and newcomers across 11 industry verticals (and about 70 vertical subsegments), with a record-low churn of less than 5%.

Chart 1

Dassault Systèmes Is A Leader In 3D Software, With A Long Track Record Of Above-Market-Average Growth

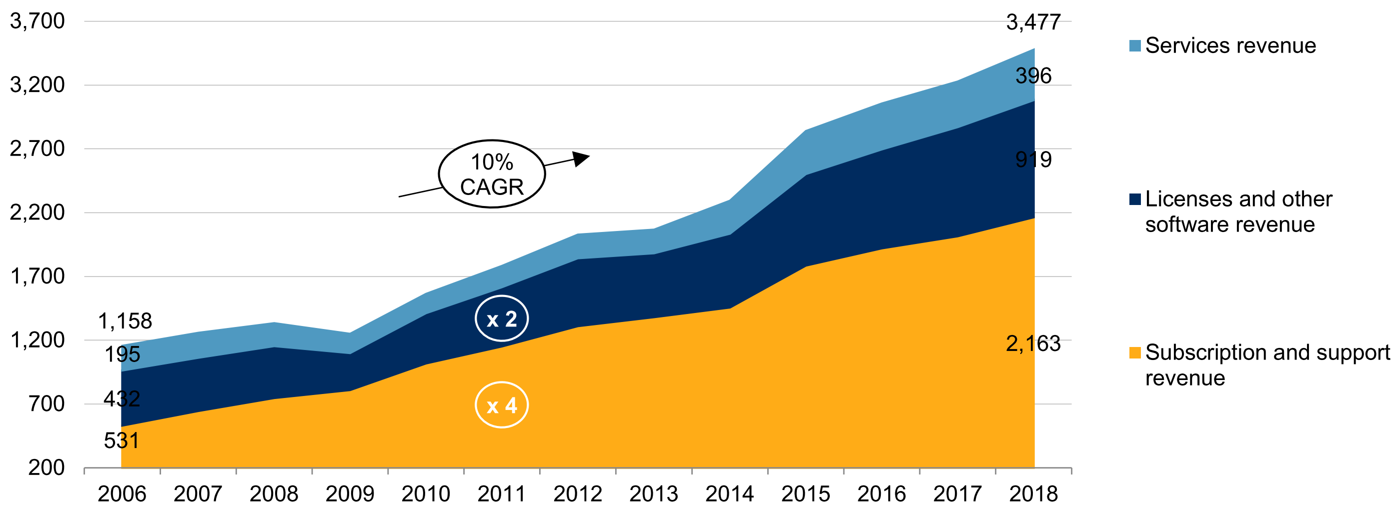


PLM--Product lifecycle management. F--Forecast. Source: Companies filings, S&P Global Ratings.
Autodesk and PTC at €/$ constant rate of 1.1813.

Dassault Systèmes had a strong track record during the previous economic downturn and investment and end-market cycles, when it was not as diversified and integrated as it is today. Dassault Systèmes had a track record of better resilience during economic downturns and investment and industry cycles versus competitors like Autodesk or PTC, even before it moved to a platform strategy in 2012. Its proprietary solutions, more efficient R&D efforts, the long-term high weight of recurring revenue (subscription and support services) in the revenue model, and high diversification of clients, geographies, and industry footprints allowed revenue growth and margin improvement to persist through cycles. The company increased its revenue by an average of 10% per year over 2006-2018, while the competition's average annual revenue growth remained well below 5%. Moreover, it increased its average International Financial Reporting Standards (IFRS) EBITDA margin to 30%, when competitors achieved well below 20% over the same period.

Chart 2

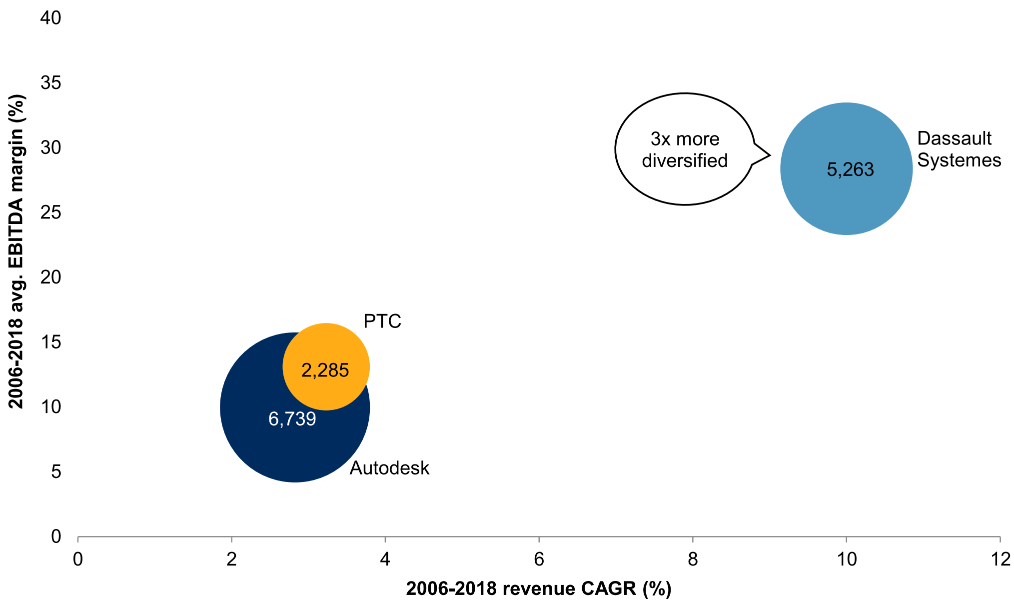
Resilience Of Dassault Systèmes' Subscription Model Throughout The Cycle
Total revenue (IFRS) breakdown (mil. €)



CAGR--Compound annual growth rate. IFRS--International Financial Reporting Standards. Source: Company filings, S&P Global Ratings.

Chart 3

Dassault Systèmes' Above-Average Growth Results From Strong Differentiation
Cumulative R&D spend (mil. €) versus revenue CAGR and average EBITDA margin



CAGR--Compound annual growth rate. R&D--Research and development. Bubble size represents cumulative R&D spending at constant €/$ rate of 1.1813. Source: S&P Global Ratings.

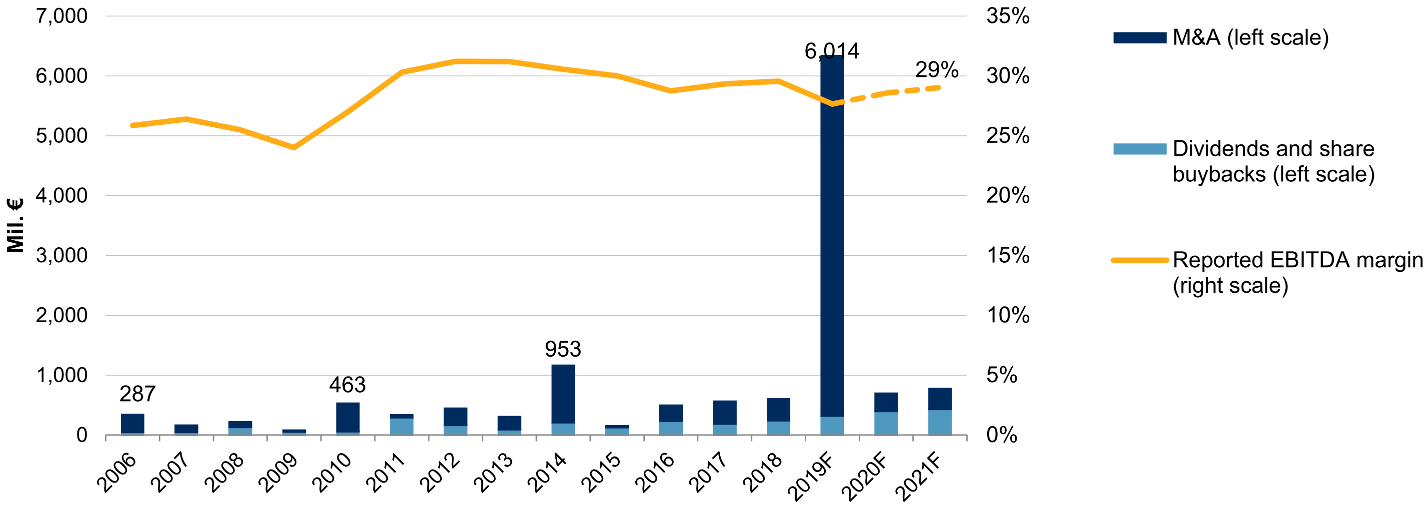
S&P Global Ratings anticipates the company will organically expand about 10% per year on average over 2019-2021, with adjusted EBITDA margin strengthening above 34% by 2020. We believe that the company's future growth and resilience to cycles will be supported by the ever-increasing trend toward digitalization across industries, the deep industrial transformations currently taking place, and the demand shift toward integrated applications, which allow faster time to market in a cost- and quality-effective manner. This is shown by its major contracts and recent client wins. In addition to Dassault Systèmes' portfolio of solutions and platform strategy, the group's steadily enlarged end-market footprint should further enhance its resilience to economic and industrial cycles in the future.

The recently completed €5.5 billion acquisition of Medidata is the company's largest since inception in 1981. We anticipate that the announced acquisition of U.S.-based electronic data capture and clinical test management solutions leader Medidata Solutions will enable Dassault Systèmes to expand its life sciences division and unlock sizable revenue and cost synergies in the next few years. These include revenue synergies after a few years and progressive optimization of R&D costs, platform, and cloud infrastructure with the company's own resources (3DEXPERIENCE platform and cloud solution Outscale).

Dassault Systèmes' leverage will temporarily increase following the debt-funded Medidata acquisition but should remain low over time, given its rapid deleveraging capability. The acquisition of Medidata results in S&P Global Ratings-adjusted debt to EBITDA increasing to 2.8x in 2019, from 0.0x at year-end 2018. We anticipate that Dassault Systèmes will make primarily bolt-on acquisitions (up to about €300 million per year) and occasional large billion-euro range acquisitions--although not in the next five years. However, we factor in our rating the company's ability to rapidly deleverage post acquisition, and we expect reported net leverage to halve by 2021.

Chart 4

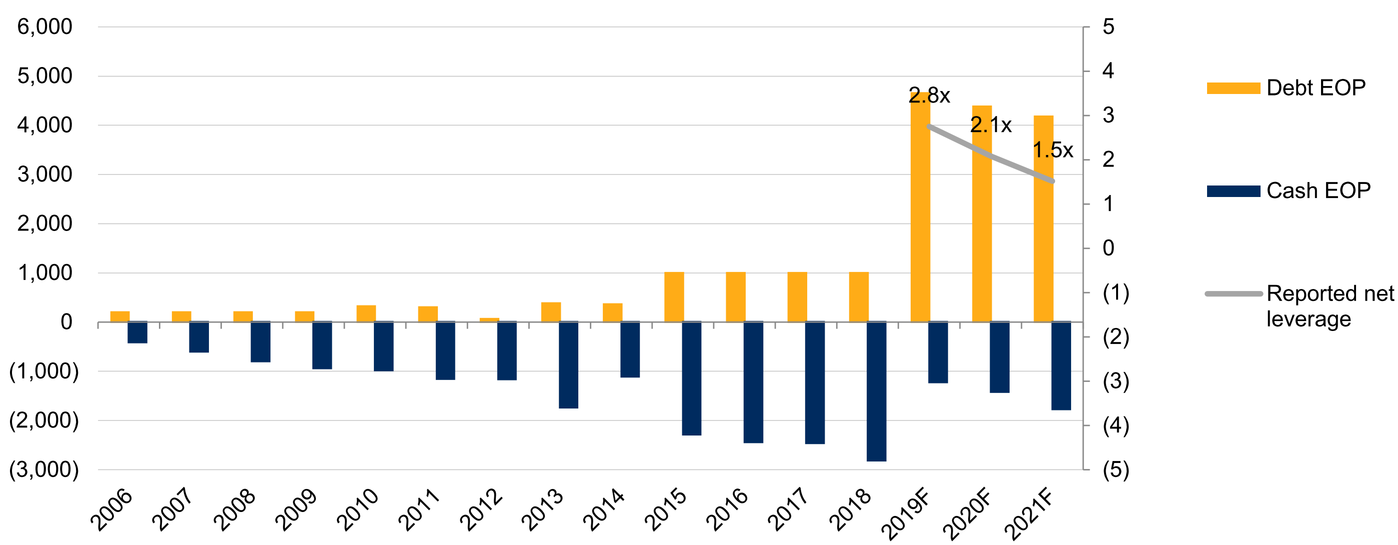
Credit Cycles And M&A Barely Affected Dassault Systèmes' Margins
M&A vs. reported EBITDA margin (operating income + depreciation and amortization)



M&A--Mergers and acquisitions. F--Forecast. Source: S&P Global Ratings.

Chart 5

Dassault Systèmes Leverage Will Remain Low Over Time
Debt and cash position EOP (mil. €)



EOP--Effect on payroll. F--Forecast. Source: Company filings, S&P Global Ratings.

Outlook: Stable

The stable outlook reflects our expectation that Dassault Systèmes will likely post about 10% organic revenue growth over 2019-2021 with adjusted EBITDA margins strengthening above 34%. We expect the company to sharply deleverage to adjusted debt to EBITDA below 2.0x by 2021

Downside scenario

We could lower the rating if the company's revenue growth trajectory significantly slowed as a result of stronger competition from existing or new competitors or higher than expected integration and restructuring costs, coupled with adjusted EBITDA margins deteriorating sustainably below 30%. Alternatively, we could lower the rating if our adjusted leverage ratios sustainably exceeded 2.0x or funds from operations (FFO) to debt remained sustainably below 45%, which could stem from consistently higher merger and acquisition (M&A) outlays than we currently expect.

Upside scenario

We could raise the rating if we expected that the company would maintain adjusted leverage sustainably below 1.5x and FFO to debt above 60% in the future, while sustaining its strong business risk profile.

Our Base-Case Scenario

Assumptions

- Global real GDP growth of 1.3% in 2019 and above 2.0% from 2020. This supports continued solid global software industry growth of 4%-6% in 2019, along with the increasing development of digitalization across industries and industrial transformations, which will be boosted by the ongoing technology cycle (3D printing, 5G, Internet of Things, quantum computing, and artificial intelligence).
- Average annual run-rate revenue growth of 10% over 2019-2021, led by Dassault Systèmes' core industries, where software revenue will increase 8%-9% on average per year, and supported by underlying market growth of 6% per year over the same period. Furthermore, diversification of industries will see software revenue increase 12% per year on average, above underlying market growth of 8%.
- The expansion of the company's addressable market with Medidata in life sciences and continued bolt-on M&A in 2019, along with increasing adoption of the 3DEXPERIENCE platform will drive revenue growth. We expect expanding options, including the shift to a cloud-based subscription models and the progressive migration of core industries, to be key factors in this growth, but we take a conservative position and do not see the marketplace initiative generating meaningful revenue before 2020-2021.
- Adjusted EBITDA margin expanding above 34.5% by 2021, from 34% in 2018, with a temporary dilution in 2020 due to the integration-related nonrecurring costs of the Medidata acquisition and continuing costs related to proof of concept efforts to deploy Dassault Systèmes' solutions.
- Stable capital expenditure (capex) of 2.4%-2.6% of pro forma revenue on average per year over the period.
- Cash dividends in line with the company's policy, as illustrated by the cash dividend of €170 million paid in 2019. The company has a distribution target of about 30% of average IFRS net income.
- Reduced bolt-on acquisitions of about €1.1 billion over 2019-2021, including the January 2019 IQMS

Key Metrics

	2018A	2019E	2020F	2021F
Revenue (mil. €)	3,477	4,510	4,974	5,477
Adjusted EBITDA margin (%)	34.5	32.2	33.3	33.9
Adjusted FFO (mil. €)	991	1,045	1,354	1,497
Unadjusted FOCF (mil. €)	826	876	1,158	1,318
FFO to debt (%)	-	26	36	46
Cash (mil. €)	2,810	1,220	1,420	1,768
Adjusted leverage (x)	-	2.8	2.3	1.8

*2019-2021 are pro forma the Medidata acquisition.

A--Actual. E--Estimate. F--Forecast. FFO--Funds from operations. FOCF--Free operating cash flow.

acquisition.

- Total share repurchases of about €556 million over 2019-2021, offsetting the dilution of dividend and stock-based compensation. This amount may be increased by €285 million of the acquisition equity, which may be compensated over time.
- The €350 million term loan repaid in July 2019.

Base-case projections

Revenue growth will remain robust and resilient. We expect EBITDA margins above 30%, supported by strong industry growth, organic performance, and addressable market expansion.

FFO and discretionary cash flow (DCF) will increase. We forecast FFO will reach €1.5 billion, with DCF approaching €1.0 billion by 2021.

The company's cash will continue to increase, supporting deleveraging. Strong operating performance, prudent distribution policy, and Dassault Systèmes' strong governance framework will support deleveraging below 2.0x (1.8x S&P Global Ratings-adjusted and 1.5x reported) by 2021.

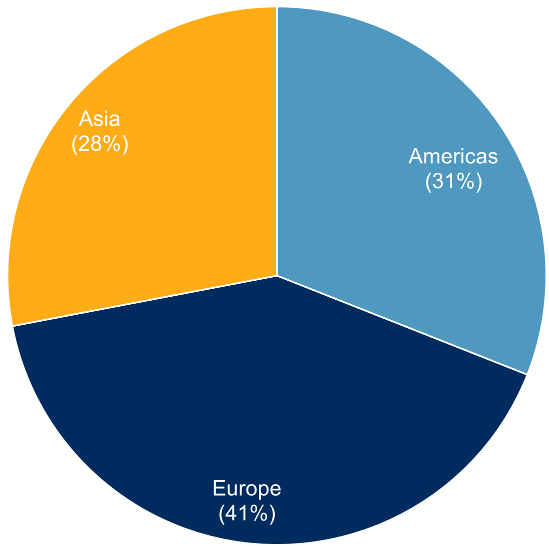
Company Description

Dassault Systèmes was formed in 1981 as a subsidiary of the Dassault Group to develop computer-aided design (CAD) software, mostly for the aerospace and defense industry. Today, it develops and markets specialized PLM software and services for all industry verticals. This encompasses 3D design (new CAD), simulation, digital manufacturing, product data management, as well as additional solutions such as supply chain management, marketing and sales, and collaborative project management tools. The company has integrated these products into 3DEXPERIENCE, a single, unified, and interoperable platform.

Dassault Systèmes generated 2018 revenue of €3.5 billion and S&P Global Ratings-adjusted EBITDA of €1.2 billion (34% margin), with a high level of recurring revenue (62% of total revenue and 70% of software revenue). Software revenue amounted to €3.1 billion, of which 70% was generated from subscription and support services and 30% from licenses and other revenue. Europe accounts for 43% of revenue, the Americas 28%, and Asia 28%.

Chart 6

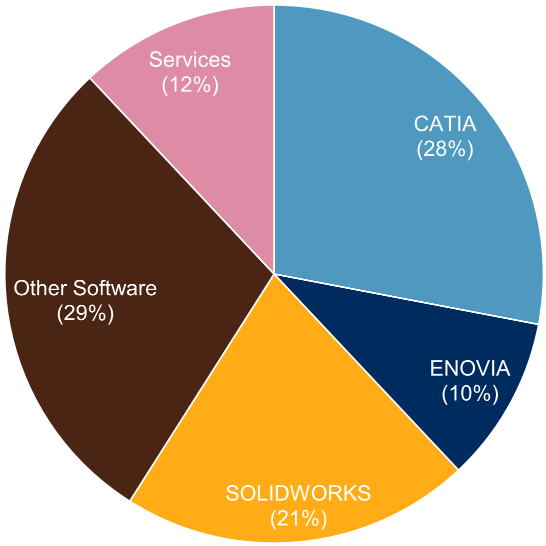
Dassault Systèmes' Software Revenue By Geography Year-To-Date September 2019



Source: S&P Global Ratings.

Chart 7

Dassault Systèmes' Software Revenue By Brand Year-To-Date September 2019



Source: S&P Global Ratings.

We expect pro forma 2019 revenue, including the acquisition of Medidata (assuming the merger closes in early fourth-quarter 2019) of €4.5 billion and S&P Global Ratings-adjusted EBITDA of €1.5 billion (32% margin). Pro forma the acquisition of Medidata, software revenue exposure from the Americas will increase to 35%, with Europe and Asia reducing to 39% and 26%, respectively.

Business Risk: Strong

Dassault Systèmes provides companies' engineering, R&D, manufacturing, and marketing divisions with the software solutions they rely on to design, test, and produce goods, while organizing their lifecycles and industrial processes end to end. Its software further allows them to experiment with designs, simulation, and modifications before the final construction or manufacturing process starts, a critical advantage for both mainstream and highly specialized products, as well as complex processes. Dassault Systèmes is among the few companies to have grasped the industry's scientific knowledge, the understanding of industrial processes and know-how, coupled with the power of computer software utilizing the latest technologies. It furthermore offers digital continuity through integrated applications on a single platform (the 3DEXPERIENCE platform), allowing synchronized 3D design, simulation, digital manufacturing, and creation of digital marketing assets in real time and across functions.

Dassault Systèmes had a strong track record during the past economic downturn and investment and end-market cycles, especially at times when it was not as diversified and integrated as it is today. We believe that future growth and resilience to cycles will be supported by the ever-increasing trend toward digitalization across industries, and the demand shift toward integrated applications, allowing faster time to market in a cost- and quality-effective manner. This is seen in its major contracts and recent client wins. In addition to its portfolio of superior solutions and platform strategy, the group's steadily enlarged end-market footprint should further enhance its resilience to economic and industrial cycles in the future.

Furthermore, Dassault Systèmes displays a strong balance sheet, a prudent financial policy, and has a well-seasoned and stable management team, along with a supportive ownership structure (41% owned by the Dassault family, 6% by the group's chairman, and 1% by the CEO).

Our assessment of Dassault Systèmes' business risk is supported by:

- One of the software industry's highest barriers to entry, due to the combination of very sophisticated, industry knowledge-based, and mission-critical software solutions with Dassault Systèmes' deep understanding of industrial processes and best practices that have been integrated over time into its software solutions. This expertise, also partially shared by a few competitors like Siemens, Autodesk, and PTC, takes time to replicate, and thus provides a major and lasting edge over generic software vendors.
- Strong differentiation from close competitors through its unified platform 3DEXPERIENCE. No single competitor (Siemens PLM, Autodesk, PTC, or others) has integrated and coupled its solutions in a platform ensuring digital continuity across design, simulation, and digital manufacturing, while propagating changes in real time and indexing data to learn from any product specificities and human-based decisions across all the stages of the product lifecycle. Partially integrated solutions exist within competitors, but no companies have bridged the full PLM suite while including comprehensive product data management, supply-chain, marketing, sales, and collaborative tools, as well as the ability to generate a product's digital twin. In addition, no competitor has streamlined its solutions in a single, unified architecture of hardware, information technology (IT) structure and system agnostic (built over an abstraction layer and thus patchable to any proprietary IT system), available on premises or in the cloud or hybrid cloud, and which is interoperable with Dassault Systèmes' or third-party legacy solutions.
- Its platform strategy that aggregates and processes the data of its users' experience and further feeds Dassault Systèmes' R&D to optimize and update its solutions. This not only enables efficient and customer-centric R&D to develop better releases and products more quickly, but also fosters the adoption of the newest generation of its solutions for clients already on the platform. Its newest solutions encompass disruptive innovations that facilitate competitive gains, such as generative design (deep-learning-based and cognitive-augmented) and manufacturing tools for 3D printing.
- Strong innovation capacity, reflected in its cumulative R&D spending of €5.3 billion over the 12 years since 2006, as reported in its accounts prepared under IFRS, excluding the cost of software. This is about €1.5 billion less than Autodesk over the same period, despite Dassault Systèmes' greater diversification. This translates into continuously enriched applications via several annual product updates developed within a cost-efficient, common R&D infrastructure. Furthermore, it allows the company to command a significant and sustained price premium, with prices higher on average than its competitors.
- An established and proven resilience across cycles. Dassault Systèmes had a track record of better resilience during economic downturns and investment and industry cycles versus competitors like Autodesk or PTC, even before it

moved to a platform strategy in 2012. Its superior proprietary solutions, more efficient R&D efforts, early shift into a mostly recurring revenue model, and its high diversification of clients, geographies, and industry footprints allowed revenue growth and margin improvement to persist through cycles. The company increased its revenue by an average of 10% per year over 2006-2018, while the competition's average annual revenue growth remained well below 5%. Moreover, it increased its average IFRS EBITDA margin to 30%, when competitors achieved well below 20% over the same period.

- A highly qualified and stable workforce. Dassault Systèmes key asset comprises its highly educated workforce of 17,623 full-time equivalent employees from 130 countries (as of June 30, 2019). Of these, 41% are in R&D and have advanced degrees in science and engineering. The company also maintains partnerships with a network of global universities, research, and excellence centers. It enjoys an industry-low turnover rate (at about 9%), while its R&D division's turnover is even lower than the group's total average.
- The current strong management and governance background. We think that Dassault Systèmes' family shareholding structure has been instrumental in fostering a very long-term strategy, as well as a maintaining a stable and well-seasoned management with a long average tenure of over 20 years. We think that management continuity and long-term vision have consistently underpinned the company's competitive edge, while supporting critical investment and diversification decisions that have resulted in the doubling of Dassault Systèmes' addressable market every 10 years. This has come about by its anticipation of future market needs and entrance into new verticals where competitors were not present, such as virtual planet, the 3DEXPERIENCE platform, digital twin, life sciences, and smart cities, among others.
- Our expectation of underlying revenue growth of 10% on average per year over 2019-2021, and ample financial flexibility to support growth initiatives and ongoing margin expansion. Dassault Systèmes has been net cash positive since its inception, thanks to its strong and predictable cash flow generation, and had an available cash balance of about €3.1 billion as of June 30, 2019. It has a strong execution track record of M&A with the integration of over 115 entities in the past 10 years.

Our assessment of Dassault Systèmes' business risk is mitigated by:

- A long sales cycle. Adoption of the 3DEXPERIENCE platform often comes with a structural re-engineering of a client's inner processes, which lengthens the buying and decision-making period. Clients' transformation cycles can be very long and the strategic nature of such investments requires a significant number of proof of concepts, which can negatively influence the margin and payback period. This in turn relies on Dassault Systèmes' ability to attract and keep well-trained sales and marketing talent to provide the right consulting and service to companies wanting to transform.
- The threat of market competition. Dassault Systèmes operates in a fragmented industry that is rapidly evolving. Its platform requires continuous innovation, additional features, annual product releases, recurring updates, and technological breakthroughs to maintain its market leadership and differentiation. Although its R&D spending is the most efficient of its peer group, it still relies on its ability to attract and retain the right talent for its R&D engine. It also remains exposed to traditional M&A integration risk and high enterprise value (EV) multiples to complement its portfolio with external solutions.
- Global exposure to macroeconomic and currency risks. The company is also affected by rapidly evolving laws and regulations, as well as export control risks.
- The presence of very-large-scale, cash-rich software companies. These could over time become competitors.

Peer comparison

Table 1

Dassault Systemes SE--Peer Comparison

Industry sector: Software and services

	Dassault Systemes SE	Autodesk Inc.	PTC Inc.	SAP SE	Oracle Corp.	Microsoft Corp.	Alphabet Inc.	Adobe Systems Inc.
Ratings as of Nov. 18, 2019	A-/Stable/--	BBB/Stable/--	BB/Stable/--	A/Stable/--	A+/Negative/A-1+	AAA/Stable/A-1+	AA+/Stable/A-1+	A/Stable/--
	--Fiscal year ended--							
(Mil. €)	**Dec. 31, 2018**	**Jan. 31, 2019**	**Sep. 30, 2018**	**Dec. 31, 2018**	**May 31, 2019**	**June 30, 2019**	**Dec. 31, 2018**	**Nov. 30, 2018**
Revenue	3,477.4	2,243.5	1,068.8	24,708.0	35,442.1	110,583.0	119,503.3	7,975.1
EBITDA	1,199.8	337.3	242.7	7,557.5	16,708.6	53,531.0	40,139.9	3,418.7
Funds from operations (FFO)	990.7	201.9	175.1	5,537.7	12,155.1	43,837.5	34,624.2	3,133.3
Interest expense	43.2	61.3	49.7	187.8	1,971.6	2,563.4	601.7	106.7
Cash interest paid	38.5	67.4	48.1	332.8	1,950.9	2,312.0	562.4	99.6
Cash flow from operations	959.5	373.8	233.0	4,557.7	13,414.7	47,153.9	42,486.9	3,596.5
Capital expenditure	72.4	58.5	33.6	1,458.0	1,489.2	12,236.4	21,877.1	235.4
Free operating cash flow (FOCF)	887.1	315.3	199.4	3,099.7	11,925.5	34,917.5	20,609.8	3,361.1
Discretionary cash flow (DCF)	642.8	(66.1)	(747.4)	1,421.7	(23,700.5)	5,608.0	12,683.4	1,550.6
Cash and short-term investments	2,809.9	832.5	246.0	8,627.0	33,935.8	117,603.3	95,327.3	2,851.7
Debt	0.0	1,279.3	488.5	5,122.6	22,564.2	0.0	0.0	1,583.2
Equity	4,625.8	(184.1)	752.7	28,877.0	20,062.5	89,921.3	155,147.6	8,268.4
Adjusted ratios								
EBITDA margin (%)	34.5	15.0	22.7	30.6	47.1	48.4	33.6	42.9
Return on capital (%)	19.4	1.5	6.1	19.3	31.1	50.4	17.5	30.2
EBITDA interest coverage (x)	27.8	5.5	4.9	40.2	8.5	20.9	66.7	32.0
FFO cash interest coverage (x)	26.7	4.0	4.6	17.6	7.2	20.0	62.6	32.5
Debt/EBITDA (x)	0.0	3.8	2.0	0.7	1.4	0.0	0.0	0.5
FFO/debt (%)	N.M.	15.8	35.8	108.1	53.9	N.M.	N.M.	197.9
Cash flow from operations/debt (%)	N.M.	29.2	47.7	89.0	59.5	N.M.	N.M.	227.2

Table 1

Dassault Systemes SE--Peer Comparison (cont.)								
FOCF/debt (%)	N.M.	24.6	40.8	60.5	52.9	N.M.	N.M.	212.3
DCF/debt (%)	N.M.	(5.2)	(153.0)	27.8	(105.0)	N.M.	N.M.	97.9

N.M.--Not meaningful

Higher rated peers, including Microsoft, Oracle, and SAP, have larger scale, higher margins, and a more dominant competitive position given their simpler, mass-market solutions that command much lower adoption risk. Pro forma the Medidata acquisition, peers also have low or no adjusted debt and higher DCF and cash balances, which gives greater strategic and financial flexibility.

Financial Risk: Modest

Dassault Systèmes financial risk profile reflects the company's solid free cash flow generation and prudent financial policy. Although the company is pursuing an expansion of its addressable market by temporarily incurring leverage, we think it will achieve its M&A and distribution objectives well within the limits of the rating. This is because its strong and resilient growth profile and increasing earnings give it ample financial flexibility and cash buffers.

Dassault Systèmes has completed the acquisition of Medidata for a total EV of $5.8 billion (€5.5 billion), including the payment of stock-based compensation. The purchase was primarily funded with debt (€4 billion) and cash on hand (€1.4 billion), which offsets the deal's positive effect on growth and profitability for the next two years.

Pro forma the completed acquisition, Dassault Systèmes' adjusted leverage will peak at 2.8x in 2019. We expect the company to sharply deleverage thereafter, to 2.3x in 2020 and to sustainably below 2.0x from 2021. This is in line with management's stated target of net debt to EBITDA (non-IFRS) of about 1x through the investment cycle.

Financial summary

Table 2

Dassault Systemes SE--Financial Summary					
Industry Sector: Software and services					
	--Fiscal year ended Dec. 31--				
(Mil. €)	**2018**	**2017**	**2016**	**2015**	**2014**
Revenue	3,477.4	3,228.0	3,055.6	2,839.5	2,294.3
EBITDA	1,199.8	1,121.9	1,038.0	960.5	702.4
Funds from operations (FFO)	990.7	872.5	689.0	717.7	482.6
Interest expense	43.2	42.1	55.9	37.2	33.5
Cash interest paid	38.5	39.3	39.4	33.6	30.4
Cash flow from operations	959.5	800.1	672.3	679.9	536.4
Capital expenditure	72.4	84.5	56.7	43.6	45.4
Free operating cash flow (FOCF)	887.1	715.6	615.7	636.3	491.0
Discretionary cash flow (DCF)	642.8	531.3	386.5	509.6	283.5
Cash and short-term investments	2,809.9	2,460.7	2,492.8	2,351.3	1,175.5
Gross available cash	2,809.9	2,460.7	2,492.8	2,351.3	1,175.5

Table 2

Dassault Systemes SE--Financial Summary (cont.)

Industry Sector: Software and services

	--Fiscal year ended Dec. 31--				
(Mil. €)	**2018**	**2017**	**2016**	**2015**	**2014**
Debt	0.0	0.0	0.0	0.0	0.0
Equity	4,625.8	3,996.0	3,882.8	3,487.7	2,959.5
Adjusted ratios					
EBITDA margin (%)	34.5	34.8	34.0	33.8	30.6
Return on capital (%)	19.4	20.4	19.9	21.1	17.3
EBITDA interest coverage (x)	27.8	26.6	18.6	25.8	21.0
FFO cash interest coverage (x)	26.7	23.2	18.5	22.4	16.9
Debt/EBITDA (x)	0.0	0.0	0.0	0.0	0.0
FFO/debt (%)	N.M.	N.M.	N.M.	N.M.	N.M.
Cash flow from operations/debt (%)	N.M.	N.M.	N.M.	N.M.	N.M.
FOCF/debt (%)	N.M.	N.M.	N.M.	N.M.	N.M.
DCF/debt (%)	N.M.	N.M.	N.M.	N.M.	N.M.

N.M.--Not meaningful

Liquidity: Exceptional

Pro forma the Medidata acquisition, we assess Dassault Systèmes' liquidity as exceptional. We understand Dassault Systèmes has funded the purchase with €4.0 billion equivalent of term loans and bonds, together with €1.4 billion of available cash (of which €150 million is from the target). Based on this, sources will likely remain comfortably higher than 2x over the next two years, and will keep exceeding uses even if EBITDA declines by 50%.

With its sizable cash on hand and external sources of liquidity, we believe Dassault Systèmes could absorb high-impact, low profitability events without refinancing and could withstand severe adverse market conditions, as shown by its track record over the past 15 years. We also find the company to have generally prudent risk management through its strong credit metrics and historically positive net cash position. Furthermore, the group will likely maintain its high standing in the capital markets.

Principal Liquidity Sources	Principal Liquidity Uses
• Cash and short-term investments of a little more than €1.2 billion pro forma the acquisition by year-end 2019. • FFO of about €1.1 billion in 2019 and €1.3 billion in 2020. • Available revolving credit facility (RCF) of €750 million.	• S&P Global Ratings-estimated working capital requirements of about €50 million per year. • Annual debt maturities of €200 million-€270 million. • Pro forma capex of €130 million-€150 million annually in 2019 and 2020. • Bolt-on acquisitions of about €300 million per year. • Cash dividends and share buybacks of about €400 million in the next 12 months.

Debt maturities

As of Sept. 30, 2019 :

- 2022 : €900 million
- 2024 : €1,700 million
- 2026: €900 million
- 2029: €1,150 million

Covenant Analysis

Dassault Systèmes' notes, term loan and RCF do not have financial maintenance covenants.

Other Credit Considerations

We apply a one-notch negative adjustment for our comparable ratings analysis, which primarily reflects Dassault Systèmes' lower margin of error buffer for transformative M&A compared with larger software peers. This is mainly due to its comparatively lower absolute discounted cash flow, cash balances, and the greater adoption risk of its products than simple, mass-market solutions.

In addition, Dassault Systèmes operates in fragmented markets where there is a diverging degree of digitization across verticals. Although the adoption of the 3DEXPERIENCE platform has started with its core industries, where many industry leaders and challengers are adopting it (among them Boeing, Airbus, Safran, Dassault Aviation, Lockheed Martin, Groupe PSA, Tesla, Land Rover, Toyota, P&G, Johnson & Johnson, Bouygues, EDF, Amgen, Exxon Mobil, and BHP), many of its clients are still using collections of unintegrated PLM solutions. The extent to which the 3DEXPERIENCE platform adoption will accelerate is therefore uncertain and this could constrain Dassault Systèmes' addressable market and future revenue growth. The 3DEXPERIENCE platform represented 25% of software revenue and 40% of license revenue in 2018 and 27% and 43%, respectively, in the first nine months of 2019.

Environmental, Social, And Governance

Dassault Systèmes' exposure to environmental and social risk factors is comparable to the broader software sector. Environmental factors are core to Dassault Systèmes' operations because the company improves the light and heavy industrial world's environmental footprint. The company's business is, by design, focused on virtualizing as many industrial processes as possible so its customers can eliminate waste, reduce mistakes from production to end-of-life disposal, and optimize products, manufacturing, and processes, while reducing raw materials and energy consumption.

The company's solutions face customer privacy and data security risks, which could cause significant reputational and monetary damage if compromised. That said, we believe Dassault Systèmes' proprietary cloud solution Outscale, security enforcement efforts, and financial resources are key factors in mitigating any negative effects from potential vulnerabilities.

We assess Dassault Systèmes' management and governance as strong, reflecting our positive view of its strategic planning and risk management processes and its consistency in achieving its operational goals despite challenging economic and market conditions.

Issue Ratings - Subordination Risk Analysis

Capital structure

Dassault Systèmes' capital structure consists of a €750 million senior unsecured RCF, €1.0 billion of term loans, and €3.65 billion of bonds at the company's level.

Analytical conclusions

The issue rating on the senior unsecured bonds is 'A-', in line with our long-term issuer credit rating, because no significant elements of subordination risk are present in the capital structure.

Reconciliation

Table 3

Reconciliation Of Dassault Systemes SE Reported Amounts With S&P Global Ratings' Adjusted Amounts (Mil. €)

	--Fiscal year ended Dec. 31, 2018--						
Dassault Systemes SE reported amounts							
	Debt	**Shareholders' equity**	**EBITDA**	**Operating income**	**Interest expense**	**S&P Global Ratings' adjusted EBITDA**	**Cash flow from operations**
Reported	1,000.0	4,561.9	1,027.9	768.2	15.4	1,199.8	898.6

Table 3

Reconciliation Of Dassault Systemes SE Reported Amounts With S&P Global Ratings' Adjusted Amounts (Mil. €) (cont.)

	Debt¶	Equity	EBITDA	EBIT	Interest expense	Funds from operations	Cash flow from operations
S&P Global Ratings' adjustments							
Cash taxes paid	--	--	--	--	--	(170.6)	--
Cash taxes paid: Other	--	--	--	--	--	--	--
Cash interest paid	--	--	--	--	--	(13.0)	--
Operating leases	353.1	--	86.4	25.5	25.5	(25.5)	60.9
Postretirement benefit obligations/deferred compensation	96.8	--	2.1	2.1	2.3	--	--
Accessible cash and liquid investments	(2,669.4)	--	--	--	--	--	--
Share-based compensation expense	--	--	83.4	--	--	--	--
Nonoperating income (expense)	--	--	--	38.5	--	--	--
Noncontrolling interest/minority interest	--	63.9	--	--	--	--	--
Debt: Put options on minority stakes	58.0	--	--	--	--	--	--
Debt: Other	(11.0)	--	--	--	--	--	--
Total adjustments	(2,172.5)	63.9	171.9	66.1	27.8	(209.1)	60.9
S&P Global Ratings' adjusted amounts							
	Debt¶	**Equity**	**EBITDA**	**EBIT**	**Interest expense**	**Funds from operations**	**Cash flow from operations**
Adjusted	--	4,625.8	1,199.8	834.3	43.2	990.7	959.5

Ratings Score Snapshot

Issuer Credit Rating

A-/Stable/--

Business risk: Strong

- **Country risk:** Low
- **Industry risk:** Intermediate
- **Competitive position:** Strong

Financial risk: Modest

- **Cash flow/leverage:** Modest

Anchor: a

Modifiers

- **Diversification/portfolio effect:** Neutral (no impact)

- **Capital structure:** Neutral (no impact)
- **Financial policy:** Neutral (no impact)
- **Liquidity:** Exceptional (no impact)
- **Management and governance:** Strong (no impact)
- **Comparable rating analysis:** Negative (-1 notch)

Related Criteria

- Criteria | Corporates | General: Corporate Methodology: Ratios And Adjustments, April 1, 2019
- Criteria | Corporates | General: Reflecting Subordination Risk In Corporate Issue Ratings, March 28, 2018
- General Criteria: Methodology For Linking Long-Term And Short-Term Ratings, April 7, 2017
- Criteria | Corporates | General: Methodology And Assumptions: Liquidity Descriptors For Global Corporate Issuers, Dec. 16, 2014
- General Criteria: Group Rating Methodology, Nov. 19, 2013
- Criteria | Corporates | Industrials: Key Credit Factors For The Technology Software And Services Industry, Nov. 19, 2013
- Criteria | Corporates | General: Corporate Methodology, Nov. 19, 2013
- General Criteria: Country Risk Assessment Methodology And Assumptions, Nov. 19, 2013
- General Criteria: Methodology: Industry Risk, Nov. 19, 2013
- General Criteria: Methodology: Management And Governance Credit Factors For Corporate Entities, Nov. 13, 2012
- General Criteria: Use Of CreditWatch And Outlooks, Sept. 14, 2009

Business And Financial Risk Matrix

	Financial Risk Profile					
Business Risk Profile	Minimal	**Modest**	Intermediate	Significant	Aggressive	Highly leveraged
Excellent	aaa/aa+	aa	a+/a	a-	bbb	bbb-/bb+
Strong	aa/aa-	**a+/a**	a-/bbb+	bbb	bb+	bb
Satisfactory	a/a-	bbb+	bbb/bbb-	bbb-/bb+	bb	b+
Fair	bbb/bbb-	bbb-	bb+	bb	bb-	b
Weak	bb+	bb+	bb	bb-	b+	b/b-
Vulnerable	bb-	bb-	bb-/b+	b+	b	b-

Ratings Detail (As Of November 18, 2019)*

Dassault Systemes SE	
Issuer Credit Rating	A-/Stable/--
Senior Unsecured	A-

Ratings Detail (As Of November 18, 2019)*(cont.)	
Issuer Credit Ratings History	
27-Aug-2019	A-/Stable/--

*Unless otherwise noted, all ratings in this report are global scale ratings. S&P Global Ratings' credit ratings on the global scale are comparable across countries. S&P Global Ratings' credit ratings on a national scale are relative to obligors or obligations within that specific country. Issue and debt ratings could include debt guaranteed by another entity, and rated debt that an entity guarantees.