A Work Project, presented as part of the requirements for the Award of a Master's degree in Finance from the Nova School of Business and Economics.

Private Equity Challenge - LBO Teradata

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Abstract

The project investigates the opportunity to invest in Teradata, a US-based listed company, committed to provide software services related to the cloud computing, within the global IT services industry. The company recently changed its business model from traditional one time software sales to contract based software services, changing its way to sell the software and its future income, while aiming to innovate its way to do business. The investment yields a 27.9% IRR and 4.4x money multiple. The cloud industry is fundamental to support other businesses and sectors, driving the market to grow at a 16.3% YoY, reaching a market size of approximately $947 billion by 2027. Teradata is a well-established organization, yielding $1,836 million in turnover and making an EBITDA of $327 million, as of 2020.

Keywords: Private Equity Challenge, Software, Software Companies, Software as a Service, Cloud Computing, Market Overview, Valuation, LBO, Mergers and Acquisitions

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Disclaimers

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Investment Committee Paper

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Executive Summary

Teradata is expected to yield a strong 4.4x MoM and 27.9% IRR over a 6-year holding period

Overview & History

- Teradata offers software, hardware, and services that manage complex data situations and solve problems for the world's largest customers.
- Its long-time presence and strong technical capabilities differentiate it from other competitors in the market.
- Founded in 1979 and headquartered in San Diego, California, Teradata offers its powerful cloud solutions worldwide.

	2019	2020	TTM
Gross Margin	50%	56%	**61%**
EBITDA Margin	9%	10%	**16%**
Operating Margin	1%	1%	**10%**

Industry Overview

- The exponential growth in the market is driven by the increase in enterprise infrastructure spend on cloud**. Data storage demands** and **cheap access** to large amounts of it are push the IT market to **$2 trillion in 2025**, a **50% increase** from 2020.
- The **cloud computing sector** is expected to grow at **16.3% YoY** from 2021 until 2027, demonstrating a strong growth.

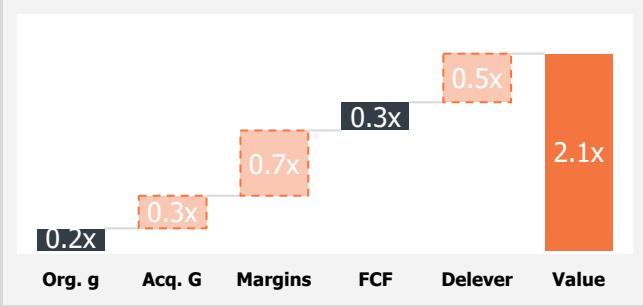
Investment Opportunity

- Teradata is a pioneer in the software space and leverages its successful long-standing history and strong customer base to generate value.
- Its greatest asset is its **strong human capital** providing cutting-edge data analytics solutions for complex data through its premier product, Teradata Vantage.

Established customer base in a growing market	Brand loyalty
Potential for **expansion through acquisitions**	Inorganic growth and synergy capture
Clear **operational inefficiency**	SG&A improvement

Value Creation

- Value is created generating inorganic growth, margin expansion through efficiency improvement, market expansion and cash generation.
- Three acquisitions are made in the IoT & cybersecurity space.
- Total value generated is 2.11x



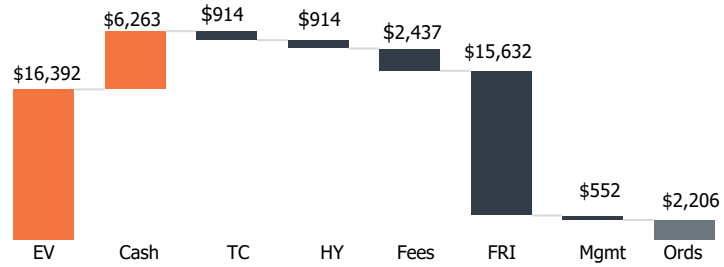
Exit and Returns

Sources	$m	EBITDAx	Uses	$m	% total
Debt	**$2,743**	**6.0x**	**EV**	**$7,614**	**97.7%**
Equity	**$4,412**	**9.7x**	**Fees**	**$179**	**2.3%**

Teradata is valued at 16.7x EV/EBITDA at entry & exit

- **Fund Return:** 27.9% IRR & 4.4x MoM
- **Management Return**: 64% IRR and 19.5x MoM

Exit will be an IPO in 2027 due to forecasted size and market expectations



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Company Overview

01 Company Introduction
02 Business Drivers
03 Operating Divisions
04 Cost Structure
05 Management Overview
06 Historical Financials

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1/4 Company Introduction

Teradata focuses on providing software, hardware, consulting and outsourced IT services to the world's largest corporate customers. It specializes in large amounts of data spread out across multiple storage locations.

Company Introduction

Teradata is a company that sells software, hardware and services for database management. Its sales strategies are
- to sell subscriptions for its software
- to bundle additional services.

Its products are a key part of a company's operations. It has 365 customers to date.

It continues to succeed because of its technical skill and loyal customer base.

Competitive Advantages

Partnership Network: Teradata has several key partnership agreements which encourage other firms to sell Teradata software.

Presence in end markets: Teradata is present in most end markets around the world and uses a large remote support team to offer 24/7 service.

Skilled in complex situations: Teradata's product works extremely well in hard to manage situations, which differentiates its product.

Core Products*

Software

Teradata's main software product is Vantage, a platform for customers to manage their data.

It offers key functionality that businesses need to use in their daily operations.
- Data management
- Data cleaning and backup
- Data analysis and reporting

Hardware

Teradata's hardware consists of hard drives to store large amounts of data on and servers to process the data and deliver it between a customer's terminals and offices.

Teradata employees will travel to customer sites in order to set up the hardware and to install new hardware.

Services

Teradata's service offering complements its other product lines and encourages repeat business.

By making it simple to outsource data management functions to Teradata, it is more likely that customers who are satisfied will stay with the company.

Teradata's Key Revenue Lines†

Contracts

The Contracts category includes long-term commitments signed by customers for a period of 1-3 years.

These contracts are very high margin because once the software is produced, it is distributed easily. They also ensure revenue stability for Teradata.

As reported	2019	2020	YTD
Subscription software licenses	$157	$224	$238
Services and other	$1,205	$1,227	$862
Gross Margin	**$880**	**$920**	**$828**

Legacy

The Legacy category includes one-time perpetual software license and hardware sales.

A perpetual license never expires, but a customer will not receive updates for their software. Hardware sales also do not include updates for customers.

As reported	2019	2020	YTD
Perpetual software licenses & Hardware	$106	$73	$58
Gross Margin	**$22**	**$34**	**$53**

Consulting

The Consulting category includes the business transformation and outsourced IT services Teradata offers.

These services grow consumption of Teradata and increase contract sales.

As reported	2019	2020	YTD
Consulting services	$431	$312	$284
Gross Margin	**$13**	**$11**	**$245**

Sources: Teradata website, Teradata financial statements, Teradata ESG report
Notes: *Detailed explanation of the products can be found in Appendix A; Details can be found in Appendix B

2/4 Cost Structure

The transition to long-term contracts has greatly increased Teradata's gross margin. Restructuring charges, investments into new products, and expansion of the sales teams have added to fixed costs.

Costs of Revenue

Suppliers	Delivery	Installation	**Legacy** Hardware
10% of total costs of rev.	Shipping and storage fees	Employees travel to site	Gross Margin **47%**

Cost of Revenues | **Legacy Gross Profit**

Distribution	Updates	**Contracts** Software
Software products are installed via the internet	New software updates are developed	Gross Margin **84%**

Cost of Revenues | **Software Gross Profit**

Support Plan Level	Maintenance	**Contracts** Support
Customers choose a level of support	Staff are trained and kept on call	Gross Margin **64%**

Cost of Revenues | **Support Gross Profit**

Negotiation	Hours Worked	Deliverables	**Consulting**
Contracts are negotiated	Time spent and charged	Cost of the deliverables	Gross Margin **4%**

Cost of Revenues

Operating Expenses

Operating Expense Analysis:
Operating expenses have stayed within a tight range as a percentage of revenue, implying that most of Teradata's run-rate OPEX is variable.

Cost Drivers:
A certain amount of fixed costs, such as the **restructuring costs, stock compensation costs,** and **investments into new products and sales teams** have driven the fixed cost base.

Operating Leverage Concerns:
Teradata's increasing fixed cost base will decrease profitability and increase risk.

SG&A Expense Categories as a percentage of revenue*

SG&A Breakdown	2020	(%)
Total	**$669**	**100%**
Rents	$19	3%
Compensation	$477	71%
Marketing	$100	15%
Accounting	$3	1%
Other	$70	10%

Broad Components of R&D

Development tools	**Market research**	**Improvements**
Contractors	**Testing & feasibility**	**Stock compensation**

Broad Components of SG&A

Recruitment & training	**Legal & contract fees**	**Accreditations & certifications**
Lost contract sales	**Restructuring**	**Sales & stock compensation**

Sales Channels and Partnerships†

Direct Sales: Teradata sales staff directly negotiates with the customer.

Independent Software Vendor (ISV): Agreements with third parties to cross-sell for a commission.

Consultants: Commissions are paid to IT consultants who install Teradata products.

Platform Partnerships: Major partnership contracts with AWS, Google Cloud, and Microsoft Azure, to sell Teradata software.

Sources: Teradata financial statements; Teradata Non-GAAP financial statements; Bloomberg Supply Chain Research
Notes: OPEX is defined as Operating Expenses. *Detailed SG&A breakdown can be found in the appendix

3/4 Historical Financials (1/2)

Teradata moves away from an On-site Hardware towards an All-Cloud service

Financial Statements

Historical Income Statement		2016A	2017A	2018A	2019A	2020A	2021 LTM
($m)							*9/30/21*
Subscription software licenses	1	$15	$33	$71	$157	$224	$278
Services and Other		1120	1014	1183	1205	1227	1205
Total Contract Revenue		$1,135	$1,047	$1,254	$1,362	$1,451	$1,483
Legacy Revenue		600	429	340	106	73	83
Consulting Services		587	582	570	431	312	367
Total Revenue	2	$2,322	$2,058	$2,164	$1,899	$1,836	$1,933
Growth		-8%	-11%	5%	-12%	-3%	5%
Total Contract Costs		271	304	374	442	477	360
Legacy Costs		318	259	222	84	39	52
Consulting Services Costs		544	569	542	418	301	338
Gross Profit		$1,189	$1,024	$1,026	$955	$1,019	$1,185
Gross Margin	3	51%	50%	47%	50%	56%	61%
SG&A		662	652	666	618	669	643
R&D	4	292	306	317	327	334	316
Calculated EBITDA		$361	$211	$179	$163	$175	$307
Adjustments	5	115	83	82	141	152	114
Adjusted EBITDA		$476	$294	$261	$304	$327	$421
EBITDA margin		20%	14%	12%	16%	18%	22%
Net Income	6	$125	-$67	$30	-$20	$129	$119

Comments

1. Mid 2015, Teradata announces a product and revenue mix restructuring in order to realign itself for the growing demand for All-Cloud service. It switches the legacy revenue to a "pay as you" on the cloud service.

2. Legacy Revenue is recognized immediately. **For contracts, revenue is recognized over time, while cash is received upfront at the start of the year**, within 30 to 90 days. Contacts with customers typically last between 1 to 3 to years. **If a customer exceeds their contracted usage of Teradata, they will settle their accounts at the end of the month.**

3. Despite the decrease in Total Sales, 2020 sees the highest gross margin yet due to a differentiated product mix regarding the increase in subscription software licenses.

4. R&D has remained stable despite depressed revenue. However, the company **shifted to a 70% investment in cloud technology** in 2020 from 30%, fueling migration.

5. Adjustments include restructuring costs, goodwill impairments, a significant portion of 2015's adjustments and capitalized contracts.

6. Due to a new tax system, a disproportionate amount of tax was considered in this years, significantly distorting a smoothed growth in Net Income.

Sources: Annual Reports, Quarterly Reports, Broker Notes, News Reports, Proxy Statements

4/4 Historical Financials (2/2)

Teradata has strong cash flows and is able to pay off all of its obligations

Operating Cash Flow	2016A	2017A	2018A	2019A	2020A	YTD	LTM
Adjusted EBITDA	$476	$294	$261	$304	$327	$366	$421
Income Taxes	($96)	($125)	$3	($7)	$153	($36)	($23)
Impartment of Goodwill	$80	$ -	$ -	$ -	$ -	$ -	$ -
Change in Acc. Receivable (1)	$40	($6)	($34)	$190	$67	$41	$58
Change In Inventories	$14	$3	$2	($3)	$2	$12	$13
Change in Acc. Payable	$11	$12	$108	($153)	-	$45	$45
Change in Deferred Revenue	$1	$115	$115	($62)	$4	($45)	($44)
Change in Other Net Operating Assets	($15)	$61	($52)	($37)	($208)	$9	($43)
Operating CF (2)	**$511**	**$354**	**$403**	**$232**	**$345**	**$392**	**$426**
% of revenue	*22%*	*16%*	*19%*	*12%*	*19%*	*27%*	*22%*
Cash Conversion Cycle	**64**	**80**	**63**	**63**	**56**	**18**	**32**
CAPEX (3)	-$53	-$78	-$153	-$54	-$44	-$19	-$30
% of revenue	**-2%**	**-4%**	**-7%**	**-3%**	**-2%**	**-1%**	**-2%**

Historical Balance Sheet	2016A	2017A	2018A	2019A	2020A	YTD
($m)						*9/30/21*
Cash And Equivalents (4)	$974	$1,089	$715	$494	$529	$613
NWC (5)	$479	$510	$475	$363	$310	$203
Total Assets	$2,413	$2,556	$2,360	$2,057	$2,193	$2,134
Net Debt	($406)	($551)	($218)	($15)	($74)	($189)
Total Liabilities	$1,442	$1,888	$1,865	$1,795	$1,793	$1,677
Shareholders' Equity	$971	$668	$495	$262	$400	$457
Current Ratio	2.22x	1.65x	1.42x	1.14x	1.10x	1.11x
Total Liabilities/Capital (6)	.37x	.42x	.44x	.47x	.45x	.44x
ROIC	13%	3%	3%	2%	3%	13%
ROE	14%	-8%	5%	-5%	39%	28%

Comments

(1) The changes in accounts receivable is due to the upfront billing of services due to the increase in recurring revenue and decrease in legacy revenues

(2) The decrease in Operating Cash Flow is expected from the reduction in sales and the depressed margins. 2019 see's a decrease despite an increase in adj. EBITDA due to the increased payments to termination of employees.

(3) Capex has remained stable with a spike in 2018 due to the transition of its corporate headquarters from Dayton, Ohio to San Diego, California. Teradata has performed 12 acquisitions since 2005 with the latest in 2017 in StackIQ.

(4) Cash and equivalents sees a reduction in 2018 due to the repayment of most principal from its $400m revolving credit facility which it did not draw down but has access to it if needed.

(5) A decrease in NWC demonstrates Teradata is more asset light in its day-to-day. This is reinforced by the 30% decrease in the cash conversion cycle, mainly due to **drop in the average collection period** from an average of 94 days to 65 in the period between 2017 and 2020.

(6) From a solvency standpoint, the company has slowly been increasing debt financing as seen from an increase in liabilities to capital. Regardless, it is still able to pay off all of its debt.

Sources: Annual Reports, Quarterly Reports, Broker Notes, News Reports, Proxy Statements

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Market Overview

01 **Segmentation and Trends**

02 **Growth and Recent Development**

03 **Value Chain Analysis**

04 **Competition and Future Trends**

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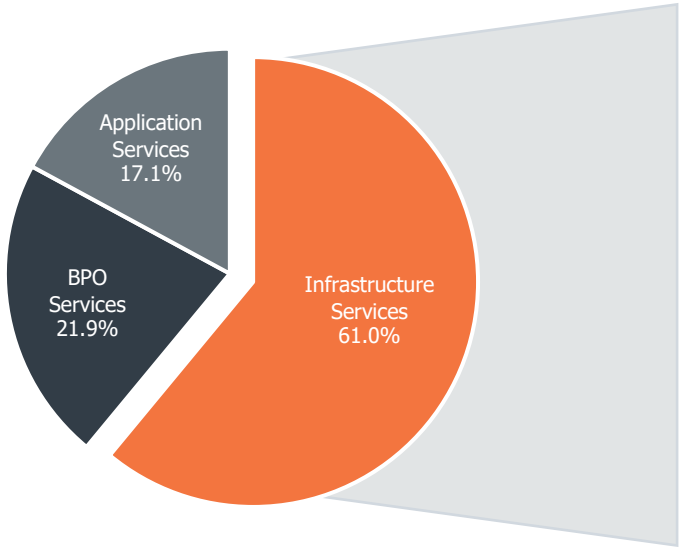
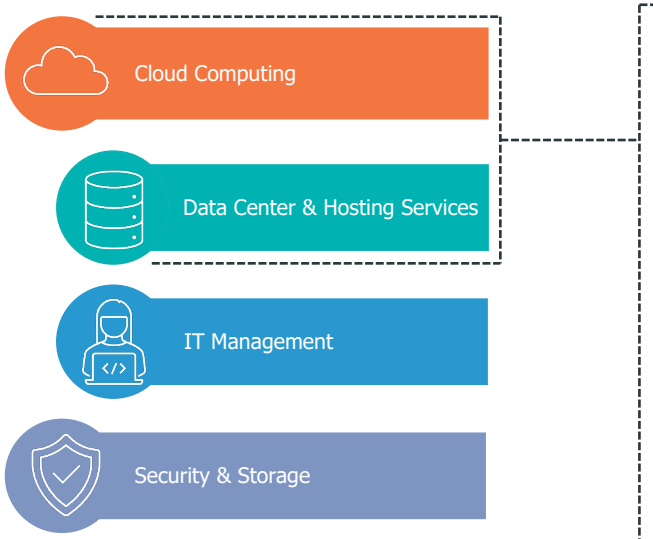
1/2 Segmentation and Trends

The segmentation approach to the overall market and the increased demand for cloud services and data centers
Teradata provides Software as a Service (SaaS) cloud service model for its customers

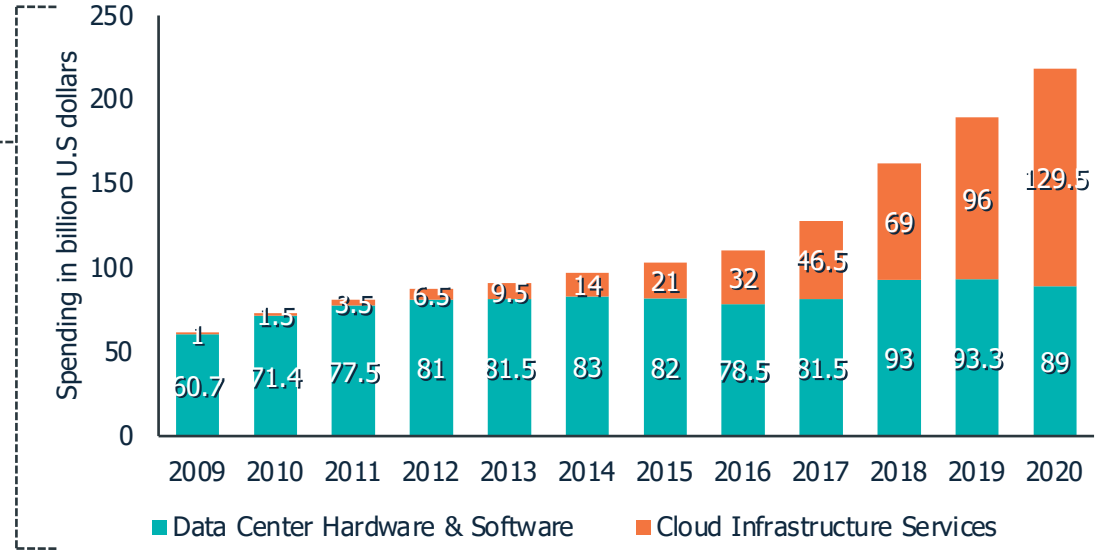
Global IT services industry



Infrastructure services segments



Enterprise spending on cloud and data centers



- **The global IT services industry grew by 4%** in 2020 to reach a **value of $1,327.7 billion**. In 2025, the global IT services industry is forecast to have a value of **$2,035.9 billion**, an increase of 53.3% since 2020.
- **Infrastructure services was the industry's most profitable segment** as IT infrastructure is necessary for the operation and management of a company's IT services, both internal and external. Essential to any organisation, fully functioning infrastructure delivers businesses' IT requirements to both employees and customers.

- Growth in **the Global cloud computing** industry is expected to record a **9.5% CAGR of 2019-2024**.
- Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS) are different types of cloud service models.
- **SaaS spending** is the largest segment with revenues of almost **$198 billion**. This growth is driven by organizations across the world replacing their legacy business applications with SaaS applications that are more data-driven and a more appropriate fit for modern cloud architectures.

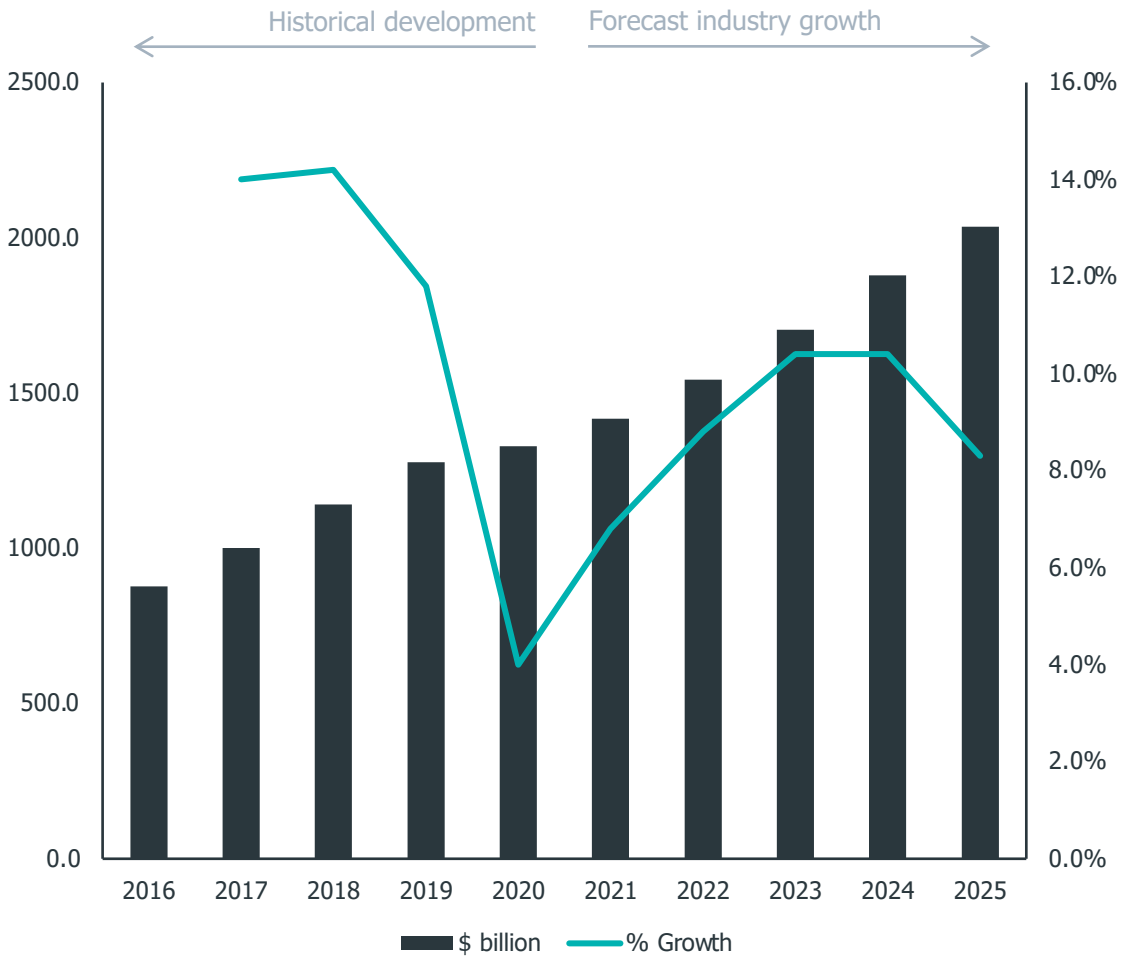
- **The PaaS segment**, which includes analytics, database, and internet of things (IoT) **has the highest growth rate** within the cloud infrastructure services market. IaaS remained relatively steady, with companies like Amazon, Microsoft and Google dominating the market.
- In 2020, enterprise spending on **cloud infrastructure services** amounted to almost **$130 billion**, a **growth of more than 34%** compared to the previous year. The growing market for cloud infrastructure services are driven by organizations' demand for modern networking, storage, and databases solutions.
- Enterprise **spending on data center hardware & software** on the other hand **declined in 2020** due to the decline in the hardware segment. Companies are spending more on cloud services instead.

Source: MarketLine, Statista

2/2 Growth and Development

The IT services market in US and Asia-Pacific are growing almost at the same pace until 2025 – while the market in Europe has higher growth rates

Global IT services industry development: value and growth



Analysis

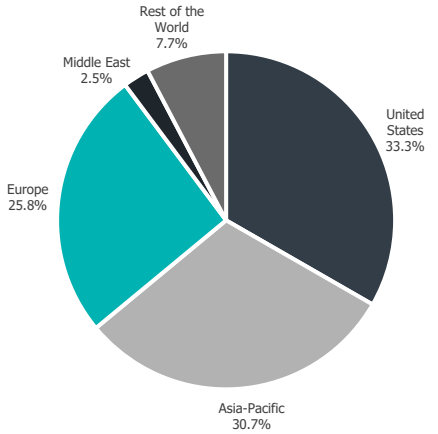
- The performance of the industry is forecasted to grow at a CAGR of 8.9% between 2020-2025, which is expected to drive the industry to a value of **$2,035bn.** Comparatively, the Asia-Pacific, US and Europe markets will grow with CAGRs of 8.7%, 8.1% and 10.4% respectively, over the same period, to reach respective values of $619.6bn, $652.7bn and $563.2bn.
- The multiple is currently high in the technology sphere. For example, average EBITDA multiples for Software-as-a-Service (SaaS) deals in 2021 is **18.6x**.

Growth drivers

- The industry is highly correlated with the **GDP** of a country.
- **R&D, strong partnership agreements, client services and geographical presences generate** organic growth.
- As technological advantages are increasing by the year, many businesses are employing IT services of some sort, most importantly Cloud **IT infrastructure services**, in order to be fully functional, competitive and scalable. **IT services industry will be growing at the same rate of technology advancements** with slight variations from country to country.
- Due to several high-level **cybersecurity** threats and the interconnected nature of network technologies, it has become critical for many businesses. This has driven growth in the service industry and encouraged innovation and development within the field. As a response to the increased threat of cyberattacks, many governments have strived to implement regulations and offer monetary support, encouraging a demand for services of this nature.

	CAGR 2020-2025	GDP Growth Forecast 2020-2025
Global	8.9%	4.2%
United States	8.1%	3.1%
Asia-Pacific	8.7%	4.4%
Europe	10.4%	2.7%

Geographic segments



Source: Marketline, OECD

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Investment Thesis

01 **Overview of Strategies**

02 **Buy and Build**

03 **Operational Improvements**

04 **Market Growth**

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1/2 Overview of Strategies

Value creation strategies for Teradata involve reframing its strategy and improving internal operations to combine top-line and bottom-line growth

Value Creation Strategies

Buy and Build

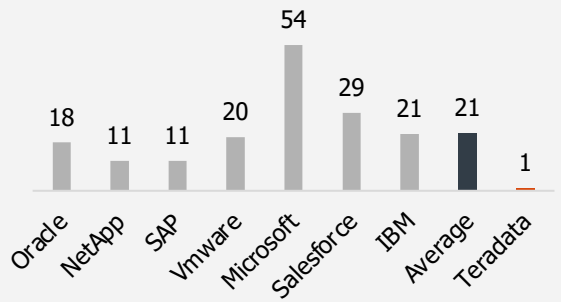
Strategic Acquisitions

- Acquire **IoT & Cybersecurity** companies in order to expand and diversify product offering

Rationale:
Teradata has made a single acquisition in the last 5 years compared to industry average of 21

Actions:
- **Step 1:** Develop **M&A strategy**
- **Step 2:** Acquire **Wireless Logic, Virtual Forge and Nixu**

Acquisitions in last 5 Years



Operational Improvements

Sell Hardware Business Unit

- Dispose of the Hardware Business Unit to free up cash and reduce operating costs

Rationale:
The Hardware Business unit is **operating at a loss**. Yearly revenue is only $34M where COGS are $75M, representing 9% of total COGS.

Actions:
- Increase gross margin by 4% from reducing cost of good sold by 9%
- Reduce other SG&A and R&D costs related to hardware business unit such as **rent, marketing and salaries.**
- Utilize cash for M&A acquisitions and increase R&D expenditure in cloud R&D projects

Margin Expansion

- Reach targeted metrics by 2027 in order streamline industry average

Rationale:
Benchmark analysis suggests Teradata's SG&A to revenue is 2x the industry average.

Targets:
- **Reduce employee headcount to 6400** in order to **reach industry average of 19% SG&A margin**
- Incorporate **terminal work from home for 25%** of employees to **reduce rent costs by $8.5M** and increase employee morale.
- **Reduce marketing costs by 20%** by partnering with warehouse providers such as AWS who are able to offer Teradata's unique data handling complexity.

Strong Market Growth

Six Main Markets

Core customer segments:

1. Retail
2. Healthcare and Life Sciences
3. Telecom
4. Industrials
5. Financial Services
6. Government

- Its customers operating in industries with **high revenue growth** and a shift towards **digital product offerings** will have a higher demand for Teradata products.
- These factors combine to help create **strong top-line growth** for Teradata over the holding period.

Note: Refer to slide #20 for M&A Strategy. Refer to Value Creation slide # 25 for overview of targets.

2/2 Operational Improvements | Hardware Business Unit Spin-Off

Sale of Hardware Unit will increase free up cash flow for debt pay down and acquisitions

Cost Benefit Analysis of Selling Hardware

Reduce COGS by 9%
- $580M saved

Sell PPE at Book Value
- $238M saved

Reduce Salary Expenditure
- $101M saved

Rent Reduction
- $3M saved

Revenue Loss
- $177M lost

Potential client loss

Assumptions for Cost Benefit Analysis

- One year to sell Hardware Unit
- Hardware revenue is **50%** of Legacy Revenue
- Analysis made until presumed **exit in 2027**
- Hardware PPE accounts **for 30% of total PPE**
- Hardware Unit accounts for **221 employees**

Analysis

- The sale of the Hardware Unit is a value creation move resulting in **5.2x ratio -** (Benefits/Costs)
- The total benefits of discontinuing and selling the business unit is $**922M**, which results in **a 4% better COGS margin.**
- This also decreases SG&A as % of revenue from **36% to 28%**
- The loss in hardware revenue analyzed over the 6 years is more than compensated for the reduction in COGS and SG&A
- The potential loss of customers would represent an insignificant amount as the legacy revenue has been decreasing at a **99% CAGR due to the migration to cloud.**

Potential Acquirors

Hewlett Packard Enterprise

HPE enables companies to work more efficiently by selling both hardware and software related products. It has made **several acquisitions since inception in 2016**.

Flex is Teradata's hardware supplier. They would be acquiring more revenues and **synergies would be easily extracted.**

Dell is a computer hardware and software provider. It has made several acquisitions in the hardware space and would be a good potential candidate.

Toshiba has made several acquisitions in the hardware space including **GP Strategies, acquired in May 2021**. They have a strong acquisitive profile.

Note: See Appendix part F for Sales breakdown

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Value Creation

01 **Acquisition Targets**

02 **Operational Restructuring**

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1/4 Buy & Build | Step 2: Acquire Wireless Logic, Virtual Forge in H1 2022 and Nixu in H1 2023

Wireless Logic

Description

- Founded in 2000 and headquartered in Berkshire, UK, the company has 3.5 million M2M & IoT subscribers and 11 data centres.
- Provides connectivity platform for IoT devices. Offers SIMPro, an IoT platform connecting globally, available on single and multi networks.

Key Financials

Metrics	Teradata	Target
EBITDA 2022E ($m)	$457	$60
EV/EBITDA	16.7x	10.5x
EV ($m)	$7,614	$635
Combined EBITDA ($m)		$518
Combined EV ($m)		$8,619
Value Creation ($m)		$371

Type

- Privately Owned Company
- Ownership: Montagu Private Equity

Rationale

- Integrate Teradata cloud offering with IoT connected devices.
- Entry into European IoT market.
- Wireless Logic still in expansion phase and customer base is low. Can benefit from Teradata existing customer base across several verticals.

Virtual Forge

Description

- Based in the UK, US, Canada, Portugal and UAE, the company works closely with leaders such as AWS, Google, and Azure.
- The Virtual Forge, provide the full range of technology services globally across UX design & development, data intelligence and cloud services.

Key Financials

Metrics	Teradata	Target
EBITDA 2022E ($m)	$457	$5
EV/EBITDA	16.7x	14.7x
EV ($m)	$7,614	$67
Combined EBITDA ($m)		$462
Combined EV ($m)		$7,691
Value Creation ($m)		$9

Type

- Privately Owned Company
- Ownership: Onapsis (Parent company)

Rationale

- Integrate Teradata cloud offering with cybersecurity services and data intelligence technology.
- Entry into Portugal and United Emirates markets.
- Consolidate the customer base in European market and benefit from the high growth.

Nixu

Description

- Founded in 1988 at the laboratory of Helsinki University of Technology in Finland. The organization is based in Finland, with other offices in Netherlands, Sweden and Denmark. And provides its products and services globally.
- The company specializes in areas such as cloud transformation, security engineering, digital identity, cyber defense, IoT, and Industrial Control Systems (ICS) security.

Key Financials

Metrics	Teradata	Target
EBITDA 2023E ($m)	$595	$4
EV/EBITDA	16.7x	14.5x
EV ($m)	$9,907	$61
Combined EBITDA ($m)		$599
Combined EV ($m)		$9,978
Value Creation ($m)		$9

Type

- Publicly Traded Company (NIXU:HEX)
- Notes: Nixu has a free float of 92%

Rationale

- Strengthen Teradata's offering of cybersecurity products and services, and cloud offering with IoT technology.
- Entry into Scandinavian markets.
- Nixu and Teradata have customers all over the world. Together, they can create operational synergies that will increase their market presence and lead to higher growth.

Source: Capital IQ, Company Websites
Note: Detailed description and projections of each target and valuation in the appendix.

2/4 Buy & Build | Step 1: Define M&A Strategy

Defining Teradata M&A strategy before making acquisitions

Market Definitions

IoT

The IoT market is human-free machine-to-machine communication.

Cybersecurity

Cybersecurity is the protection of data on computers and data storage centers.

Artificial Intelligence

Human intelligence created & processed by computers.

Cloud

A remote storage space for data, separate from hardware storage.

Key: ● = 100%

		Internet of Things	Cybersecurity	Artificial Intelligence	Cloud
Financial Metrics	Growth	●	◑	●	◑
	Size	◕	◑	◔	●
Integration Compatibility	Product Compatibility	◑	◕	◕	●
	Value- Add/ Expansion of Offering	◕	●	◑	◔
Target Actionability		High	High	Medium	Medium

Acquisition Strategy

- Target 4 acquisitions in the next 2 years
- Sector focus on IoT, & Cybersecurity
- Revenue increase of $50M
- Long term consolidation with no expected exit
- Geographical focus in high CAGR zones

	Current Market Size	CAGR %	Market Size 2027
IoT	$381Bi	25.4%	$1,482Bi
Cyber	$179Bi	14.5%	$402Bi
AI	$35Bi	33.6%	$1994Bi
Cloud	$445Bi	16.3%	$947Bi

Integration Compatibility

The team analyzed the potential for product intractability, compatibility and value-add to the existing product portfolio. This looks at what other areas Teradata vantage could be applied and how it can be more robust. IoT requires huge amounts of data storage and analytics to perform, and Teradata has those capabilities,

Source: Market Reports, Broker Reports

3/4 Strategic Positioning

Teradata can refocus its sales strategy to target the largest companies within industries that have a large need for the company's services and high growth rates of data

Organic Growth Rate Factors*

GDP Forecasts

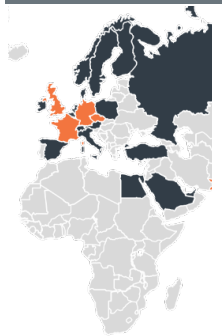
Americas

2022: **5.20%**

2023: **4.3%**

Long-run: **2%**

EMEA



2022: **4.30%**

2023: **3.7%**

Long-run: **2%**

APJ

2022: **6.30%**

2023: **5.3%**

Long-run: **3%**

Customer Industry Forecasts

Data Growth Forecasts

Retail	**18%**	Financials	**13%**
Industrials	**25%**	Healthcare	**30%**
Telecom	**22%**	Government	**15%**

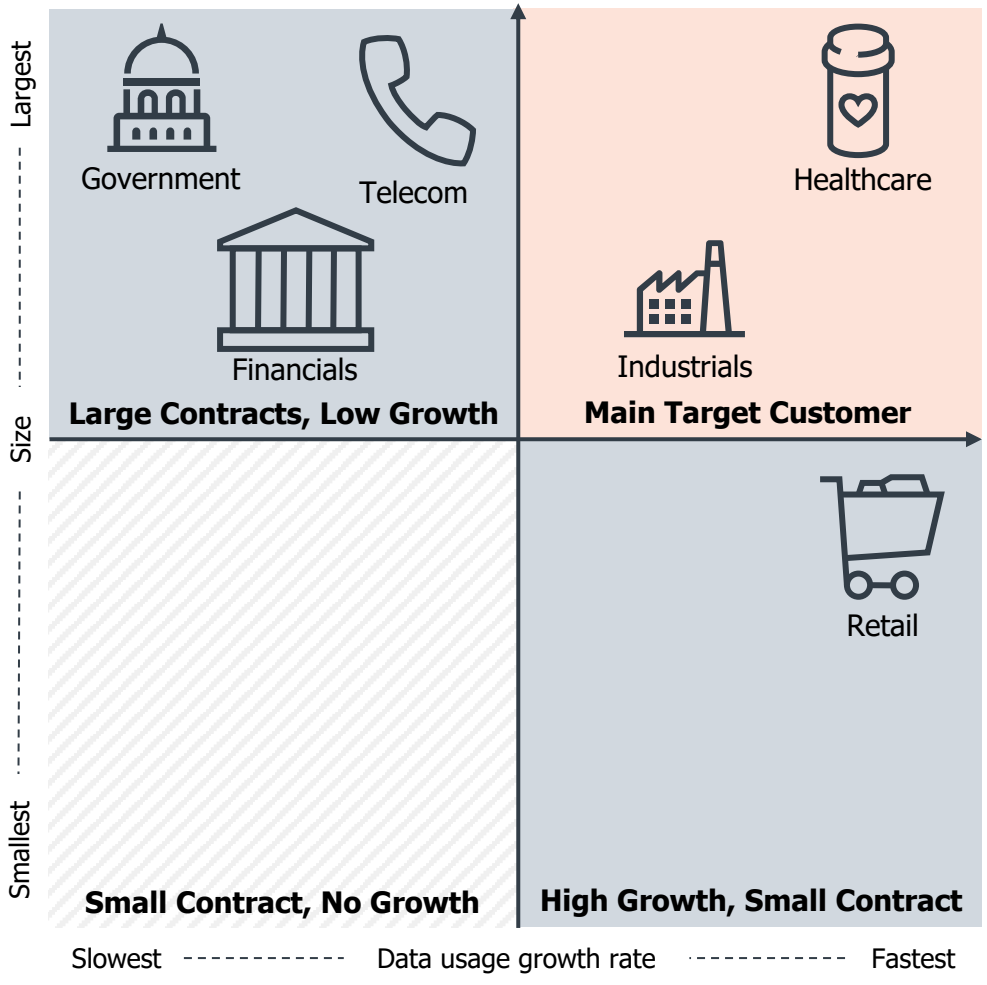
Industry Revenue Growth Forecasts

Retail	**13%**	Financials	**10%**
Industrials	**8%**	Healthcare	**7%**
Telecom	**5%**	Government	**2%**

Organic Growth Rate

Americas	EMEA	APAC
15%	**16%**	**15%**

Target Customers



Sources: IMF, Allied Research Insights, Mordor Intelligence, 360Research, HealthTech, Health Communications
Notes:

4/4 Other Operating Expenses

Salary reduction drives cost savings. R&D spend generates a 3.02x return over 2 years.

($M)	2019A	2020A		2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Acquired SG&A				$ -	$19	$62	$88	$92	$109	$127	$150
SG&A Pre- Acquisitions				$684	$665	$681	$717	$760	$806	$845	$883
% of Organic Sales			1	*32%*	28%	27%	26%	26%	26%	26%	26%
Selling, General and Admin Expenses	$618	$669		$684	$684	$743	$804	$851	$915	$973	$1,033
% of Total Revenue				*32%*	*29%*	*30%*	*29%*	*29%*	*30%*	*30%*	*30%*
Status Quo SG&A			2	$684	$741	$798	$856	$914	$970	$1,024	$1,077
				32%	32%	32%	32%	32%	32%	32%	32%
Total SG&A Savings				$ -	$75	$117	$138	$152	$162	$176	$191
Acquired R&D				$ -	$9	$31	$44	$46	$55	$64	$75
Research and Development Expenses	$327	$334		$344	$373	$409	$447	$473	$506	$539	$572
Status Quo R&D				*$344*	*$373*	*$402*	*$431*	*$460*	*$488*	*$516*	*$542*
R&D Savings			3		$9	$25	$28	$32	$36	$40	$45
Increase in Cloud Expenditure			4		$30	$21	$21	$20	$20	$19	$18
Adjusted EBITDA	**$304**	**$327**		**$354**	**$462**	**$603**	**$758**	**$858**	**$929**	**$1,007**	**$1,110**
margin	16%	18%		16%	19%	22%	24%	26%	26%	26%	27%
D&A	$150	$172		$167	$133	$126	$167	$180	$185	$195	$207
EBIT	$10	$16		$187	$329	$478	$590	$678	$744	$812	$903
Normalized EBIT	**$154**	**$155**		**$187**	**$329**	**$478**	**$590**	**$678**	**$744**	**$812**	**$903**
margin	8%	*8%*		*9%*	*14%*	*17%*	*19%*	*20%*	*21%*	*21%*	*22%*

Comments

1. Due to the proposed business plan changes, SG&A margins decrease from 28% at entry to 26% at exit. The majority of the gains are made by reducing salaries.

2. In order to calculate SG&A savings, we broke down each component of SG&A and forecasted a status quo and the business plan SG&A with the teams proposed changes. Further detail is in the appendix.

3. The majority of R&D savings are coming from salary reduction. The rest is from rent reduction. **The team believes increasing cloud R&D from 70% to 80%** is in line with revenue forecasts to stay ahead of the competition.

4. The average return on R&D spend was calculated at **3.02x** with a t-2 lag**.** The 10% increase in R&D translates to the increased revenue of $90M in the first year in 2024.

Note: please refer the breakdown in SG&A and R&D savings for a full detailed explanation

teradata.

Structure & Returns

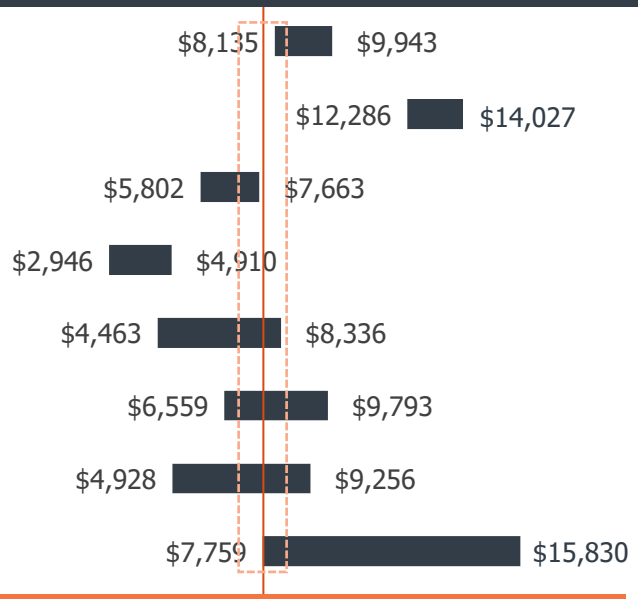
01 Valuation
02 Proposed LBO Structure
03 Target Exit
04 Sensitivity Analysis

NOVA SCHOOL OF BUSINESS & ECONOMICS

1/3 Valuation

Valuation methodologies suggest an EV value of $7,589m implying a 16.7x EV/EBITDA multiple

Football Field Valuation

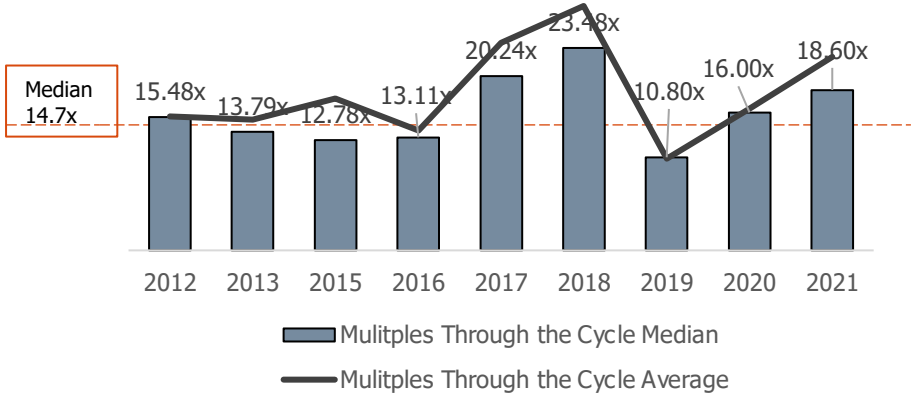


Regression 17.8x – 21.6x
DCF- Exit Multiple 26.9x – 30.7x
DCF – WACC ±10% 12.7x – 16.8x
'21 Consensus Share Price 6.4x – 10.7x
Quoted Comps TTC 9.8x – 18.2x
'21 Quoted Comps 14.3x – 21.4x
Precedent Transactions TTC 10.8x – 20.2x
2021 Precedent Transactions 17.0x – 34.6x

Summary Analysis

A selection of valuation methodologies were used to derive the EV and resulting entry EV/EBITDA multiple. The DCF's and the 2021 precedent transactions are suggesting Teradata is currently undervalued.. The consensus share price and through the cycle (TTC) valuations offer a lower perspective. This makes senses as the market for cloud and software has been ramping up, together with the number and size of acquisitions in the space.

Precedent Transaction Valuations



A total of 40 transactions in the cloud and software space were used to determine a **14.7x median TTC** valuation between 2012-2021. The market reached a peak in 2018 however the current market direction is headed towards another. The 2021 median transaction **EBITDA multiple is 18.6x**. All transaction underwent an outlier analysis to ensure quality valuations.

Valuation

Enterprise Value	**$7,589m**
EV/EBITDA Entry Multiple	**16.7x**
EBITDA	**$457**

Discounted Cash Flow

Two methods were employed. Both assumed a **WACC at 10.9%.** The Gordon Growth Model assumes a 2% growth rate. The **EV derived is $6,603** suggesting a multiple of 14.4x. The Exit Multiple DCF assumes a 16.7x exit multiple, resulting in an EV of **$13,118,** signifying a **28.7x EBITDA** multiple

Quoted Comparable Valuations

A TTC analysis suggests a **12.6x EBITDA** multiple while the 2021 analysis shows **a 19.2x multiple**. This is in line with the precedent transactions analysis, however, the quoted comparable analysis shows a peak in 2021.

Note: See valuation appendixes for more detailed analysis on each of the valuation methodologies

teradata.

2/3 Proposed Deal Structure

Teradata's financials support a debt to EBITDA multiple of 6.0x

Sources and Uses Table

Debt	Amount	%Total	%Debt	xEBITDA
TLA	-	-	-	-
TLB	$914	12%	33%	2.0x
TLC	$914	12%	33%	2.0x
High-Yield	$914	12%	33%	2.0x
Total	**$2,743**	**35%**	**100%**	**6.0x**

Equity	Amount	%Total	%Equity	xEBITDA
Sponsor Shares	$121	2%	3%	0.3x
Management Shares	$30	0%	1%	0.1x
FRI Shares	$4,261	55%	97%	9.3x
Total	**$4,412**	**57%**	**100%**	**9.7x**

Internal	Amount	%Total	%Used	xEBITDA
Cash	$613	8%	100%	1.3x
Total	**$613**	**8%**	**100%**	**1.3x**
Total	**$7,768**			

Uses	
xEBITDA	16.7x
EBITDA	$457
EV	$7,614
Less:	
Obligations	638
Plus:	
Cash	613
Equity Price	$7,589
	Amount
Financing	$27
Admin Agent	-
Bank Fees	152
Total Fees	$179
Total	**$7,768**

Chosen Base Case Financing Structure

The proposed financing structure takes on 6.0x EBITDA in debt evenly spread across three loans: Term Loan B, Term Loan C, and a High-yield loan. A study of previous leveraged buyouts of software as a service made by private equity funds.

Evaluated Financing Structures

Instrument	Structure 1	Structure 2	Structure 3	Structure 4	Structure 5
Term Loan A	1.0x	0.5x	7.0x	0.5x	0.0x
Term Loan B	1.5x	2.0x	7.0x	2.0x	2.0x
Term Loan C	1.5x	2.5x	1.0x	2.0x	2.0x
High-yield	1.5x	3.0x	0.0x	4.0x	2.0x

Terms of Funding

Instrument	Amount	Spread	Maturity	Cash Sweep	Repayment
Term Loan A	-	-	-	-	-
Term Loan B	914	440 bps	7 years	20%	Bullet
Term Loan C	914	675 bps	8 years	-	Bullet
High-yield	914	750 bps	10 years	-	Bullet

Sources: Bloomberg Loan Search, S&P Leveraged Loan Commentary
Notes: Breakdowns of previous deals and financing structures can be found in the Appendix.

3/3 Sensitivity Analysis

A holding period of 6 years, a Money Multiple of 4.4x and an IRR of 27.9% is generated

Exit Year 2027

MoM

Exit Multiple \ Entry Multiple	13.32x	14.99x	16.65x	18.32x	19.98x
13.32x	5.6x	4.4x	3.6x	3.1x	2.7x
14.99x	6.1x	4.8x	4.0x	3.4x	3.0x
16.65x	6.7x	5.3x	4.4x	3.7x	3.3x
18.32x	7.3x	5.7x	4.8x	4.1x	3.5x
19.98x	7.8x	6.2x	5.1x	4.4x	3.8x

IRR

Exit Multiple \ Entry Multiple	13.32x	14.99x	16.65x	18.32x	19.98x
13.32x	33.1%	28.0%	24.0%	20.8%	18.1%
14.99x	35.3%	30.1%	26.1%	22.8%	20.0%
16.65x	37.3%	32.0%	27.9%	24.6%	21.8%
18.32x	39.2%	33.8%	29.7%	26.3%	23.4%
19.98x	40.9%	35.5%	31.3%	27.9%	25.0%

Main Assumptions

Although the investment thesis does not consider a multiple arbitrage scenario, the team covered the possibility of entering and exiting an EV-to-EBITDA multiple range of -10% to +10% to the 16.73x currently applied.

The team also covered the possibility of exit over several multiple periods and found an exit in year 6 of holding period, the most opportune. The model covers MoM and IRR in exit scenario up until the 7th holding period year.

As can see, the entry and exit multiple have a significant influence on the Money- on-Money multiple and the IRR.

The current exit year assumes the acquisitions made, restricting changes applied and synergies extracted are implemented and extracted appropriately and efficiently.

Most of the value is derived from efficiency gains from sell off of the hardware business unit, resulting in a higher ROIC and ROE, as well as from the synergies extracted from Wireless Logic, Virtual Forge and Nixu.

Main Conclusions

At present, the fund stands to make a **4.4x MoM**, resulting in a **27.9% IRR** over the six-year holding period.

It is likely the exit will be ≈16.73x EBITDA multiple, however, as seen from the valuations exercise, the trend is for the multiples to increase.

Note: See appendix for more detailed analysis on each of the valuation methodologies

Historical Teradata M&A Analysis

Teradata M&A History							
Year	Target Company	Target Description	Deal Value $ (m)	Deal Decription	Country	Rationale	M&A Strategy
2017	StackIQ, Inc.	US-based developer of a multi-server management system for clusters and clouds	n.a.	Teradata Corporation, a listed US-based provider of data warehousing software and business analytics, has acquired StackIQ, Inc., the US-based developer of a multi-server management system for clusters and clouds, from a group of private equity investors for an undisclosed consideration.	USA	The acquisition includes StackIQ's team of engineers, who will jo	Vertical
2015	FLXone B.V.	Netherlands-based company engaged in operating online data management platform for marketing and advertising agencies	n.a.	Teradata Corporation, the listed US-based provider of data warehousing software and business analytics, has acquired FLXone B.V., the Netherlands-based company engaged in operating online data management platform for marketing and advertising agencies, for an undisclosed consideration.	Netherland	The acquisition will provide Teradata with a Data Management F	Horizontal
2015	Appoxee Ltd.	Israel-based company that develops and delivers software for mobile applications	20	Teradata Corporation, the listed US-based provider of data warehousing software and business analytics, has acquired Appoxee Ltd., the Israel-based company that develops and delivers software for mobile applications, from Cyhawk Ventures and Oryzn Capital Lp, the Israel-based venture capital	Israel	The acquistion will enable Teradata to improve its business in th	Vertical
2014	RainStor Ltd.	UK-based infrastructure software company that provides repository technology solutions for historical structured data	n.a.	Teradata, the US-based listed entity providing analytic data platforms, marketing, analytic applications, and related consulting services has acquired RainStor, the US-based company specializing in infrastructure software for online data retention and retrieval from US-based private equity players	USA	As a result of the acquisition, Teradata's enterprise-grade Hadoo	Vertical
2014	Hadapt, Inc.	US-based company that provides adaptive analytical platform to perform analytics on structured and unstructured data in private and public cloud environments	n.a.	Teradata Corporation, the listed US-based provider of data warehousing software and business analytics, has acquired Hadapt, Inc., the US-based company that provides adaptive analytical platform to perform analytics on structured and unstructured data in private and public cloud environments,	USA	The acquisition includes Hadapt assets along with experienced t	Firepower
2013	NewFrontiers Group B.V	Netherlands based management information solutions provider for SAP	n.a.	Teradata Corporation, the listed US based provider of data warehousing software and business analytics, has acquired NewFrontiers Group B.V., the Netherlands based management information solutions provider for SAP, for an undisclosed consideration.	Netherlands		Horizontal
2012	eCircle GmbH	Germany based company that provides software and services for digital dialog marketing	n.a.	Teradata Corporation, the listed US based provider of data warehousing software and business analytics and Aprimo, Inc., the US based company that provides marketing software, has agreed to acquire eCircle AG, the Germany based company that provides software and services for digital dialog	Germany	The acquisition of Teradata will enhance Aprimo's Integrated Ma	Horizontal
2011	Aster Data Systems, Inc	US-based company engaged in providing data management and advanced analytics solutions	263	Teradata Corporation, the listed US based provider of data warehousing software and business analytics, has acquired 88.6% stake in Aster Data Systems, Inc. US based company engaged in providing data management and advanced analytic solutions, from Sequoia Capital and Institutional	USA	The acquisition will enable the companies to unlock the importa	Horizontal
2010	Aprimo LLC	US-based provider of marketing management software solutions	525	Aprimo Inc. has agreed to be acquired by Teradata Corporation from Frazier Technology Ventures, Sigma Partners, The Jordan, Edmiston Group, Inc., and Blue Chip Venture Company.	USA		Horizontal
2010	Xkoto Inc	US based maker of database virtualization software	n.a.	Teradata Corporation, the listed US based provider of data warehousing software and business intelligence, has acquired Xkoto Inc, the US based maker of database virtualization software, from GrowthWorks Canadian Fund Inc, the Canada based venture capital firm and GrandBanks Capital, the	USA	The acquisition will allow Teradata to develop its product portfo	Horizontal
2008	Claraview, Inc.	US-based company engaged in providing business intelligence and data warehouse consulting services	n.a.	Teradata Corporation, the listed US-based provider of data warehousing software and business analytics, has acquired Claraview, Inc., the US-based company engaged in providing business intelligence and data warehouse consulting services, for an undisclosed consideration.	USA		Horizontal
2005	DecisionPoint Software	US based provider of financial performance management software.	n.a.	Teradata, the US based provider of data warehousing software and a subsidiary of NCR Corporation, the listed US based company that designs, develops and markets information technology products and services, has acquired DecisionPoint Software, the US based provider of financial performance	USA	The acquisition will extend Teradata's existing financial manage	Vertical

Source: MergerMarket

Wireless Logic

Great opportunity to enter in to IoT market and strengthen position in Europe

Overview

Relevance

Sales Growth	Increase ▲
Internationalization	Increase ▲
Diversifying Product Mix	Increase ▲
Market	IoT

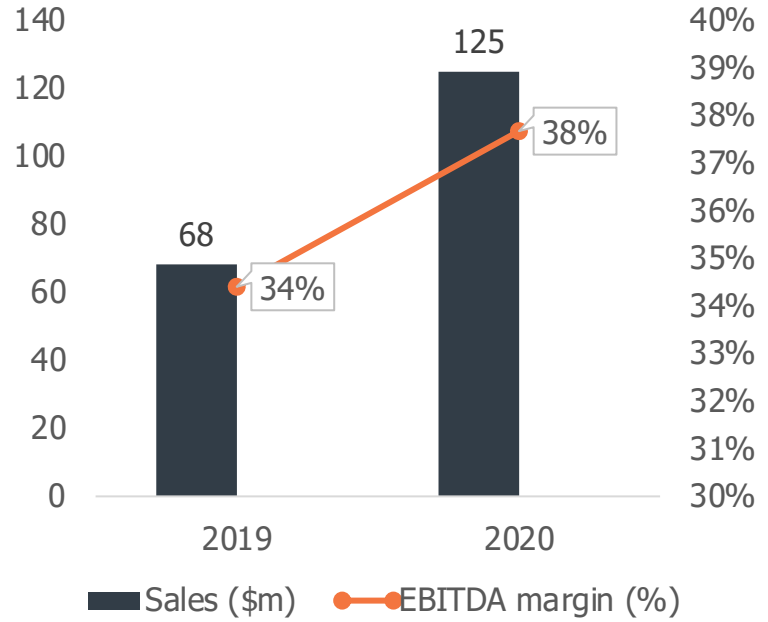
Type

- Privately Owned Company
- Ownership: Montagu Private Equity

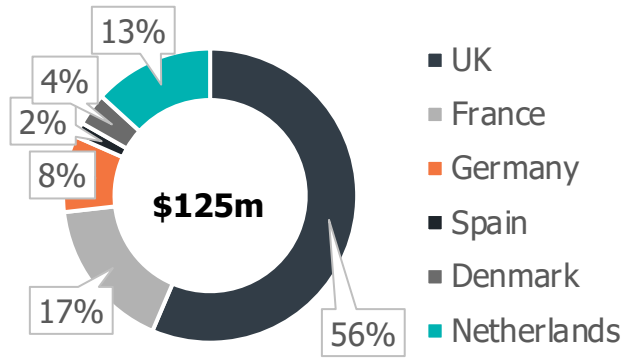
Business

- Founded in 2000 and headquartered in Berkshire, UK, the company employs 225 people in Europe.
- Today, the company has over 6 million IoT subscriptions active in 165 countries, with collaborative partnerships that provide reach into more than 750 mobile networks across the globe.
- It offers SIMPro, purpose-built IoT connectivity platform that connects (globally and locally) multiple mobile networks and technologies to give customers a single management window for their assets.
- **Management:** Oliver Tucker (Co-founder and CEO)
  Richard Miller (CFO)

Historical Financials



Sales Breakdown 2020



Company News

- **Jul-21:** Expands European footprint with the acquisition of Things Mobile
- **Mar-21:** Expands global LPWAN coverage to 45 countries (3 continents)
- **Jan-21:** Expanded European presence with the acquisition of COM4
- **Dec-20:** Acquires Arkessa, securing IoT leadership position

Products and Services Portfolio

- Managed IoT Connectivity (eSIM & M2M SIMs)
- Managed 4G/LTE Routers with Connectivity
- Private Networking through NetPro
- SIMPro - The smart connectivity management platform
- Low Power Wide Area Networks (LPWAN)
- 5G for IoT applications
- Mapping and geo-location solutions for M2M/IoT devices

Sources: Annual Reports, Company Website, press research

Virtual Forge

VIRTUALFORGE

Great opportunity to entry in a cybersecurity market and increase the market share

Overview

Relevance

Sales Growth	Increase
Internationalization	Increase
Diversifying Product Mix	Increase
Market	Cyber & AI

Type

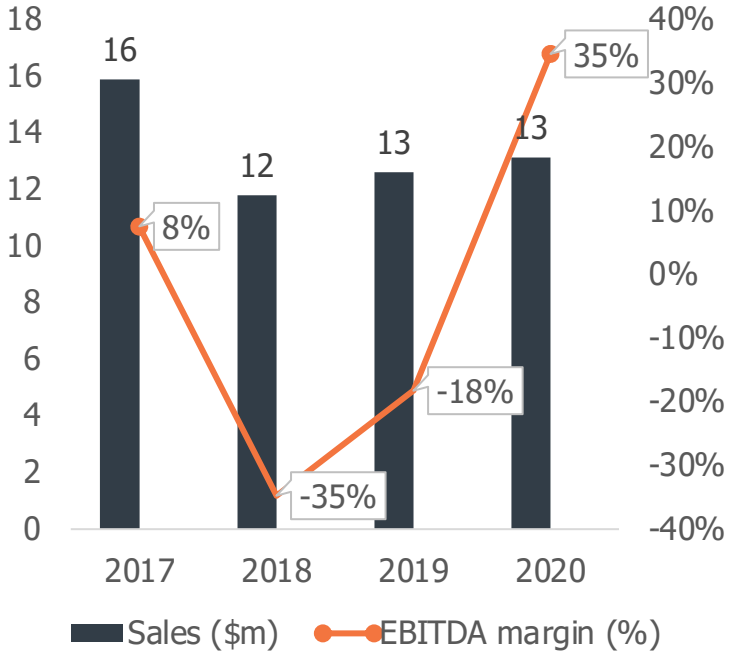
- Privately Owned Company
- Ownership: Onapsis (Parent company)

onapsis

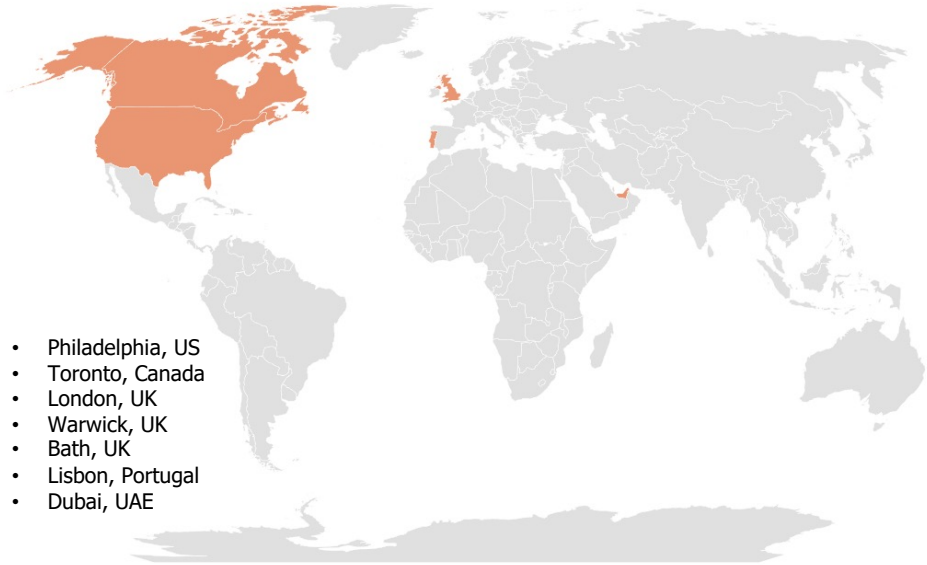
News

- **Jun-19:** Onapsis Completes Acquisition of Virtual Forge
- **Jan-06:** Start its operations as a provider of products intended for SAP systems

Historical Financials



Geographical Outreach



- Philadelphia, US
- Toronto, Canada
- London, UK
- Warwick, UK
- Bath, UK
- Lisbon, Portugal
- Dubai, UAE

Business

- Founded in 2006 and based in the UK, US, Canada, Portugal and UAE, the company employs 73 people globally.
- The company offers data intelligence, system design & architecture, system development, DevOps, cloud services and consultancy.
- It provides cost-effective, end-to-end technology services for companies of all shapes and sizes, all over the world.

- **Management:** Matt Wicks & Garrett Doyle (Co-CEO)
  Leonel de Oliveira (COO)

Products and Services Portfolio

Development & User Experience (UX):
- UX Design
- Software Development
- Testing
- Design Sprints
- Adobe XD Migration

Cloud Services:
- Cloud Hosting & Services
- Cyber Security
- DevOps
- Cloud Services Consultancy

Data Intelligence:
- Data Architecture
- Power BI
- Data Visualization
- Power BI Resourcing
- Splunk
- Mobility Data

Nixu

Strong strategic fit with solid financials

Overview

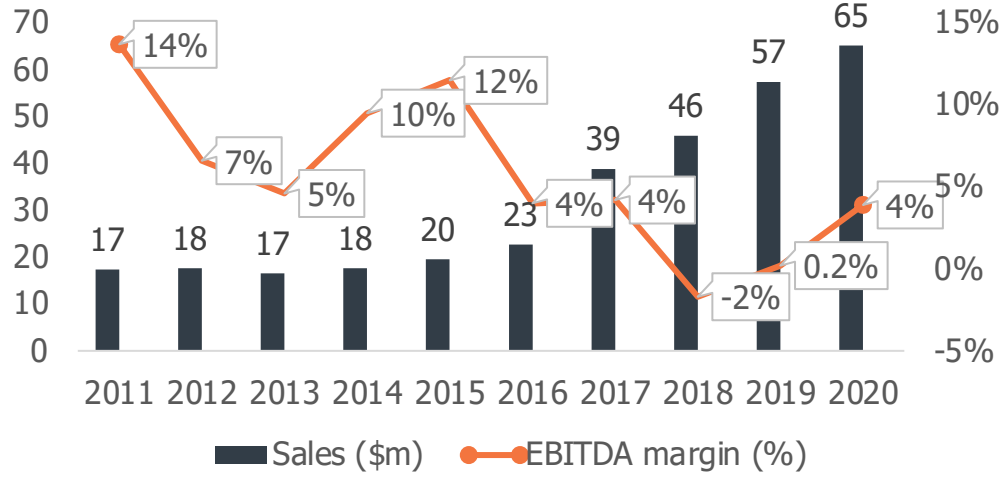
Relevance

Sales Growth	Increase
Internationalization	Increase
Diversifying Product Mix	Increase
Market	Cybersecurity

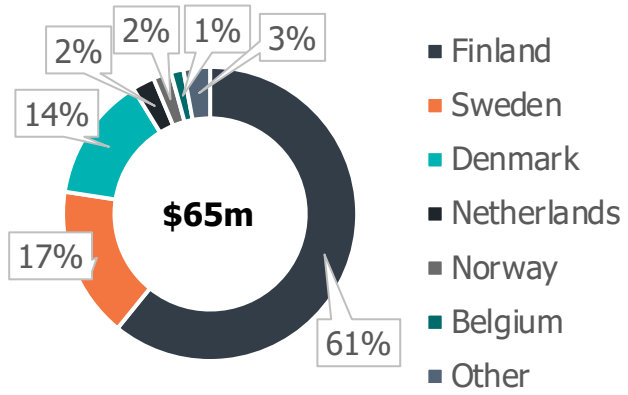
Type

- Publicly Traded Company (NIXU:HEX)
- Notes: Nixu has a free float of 92%
- Nixu shares are listed on the Nasdaq Helsinki stock exchange

Historical Financials



Sales Breakdown 2020



Business

- Founded in 1988 and headquartered in Espoo, Finland, the company employs 377 people in Europe.
- **Management:**
  Petri Kairinen (CEO)
  Janne Kärkkäinen (CFO)

Products and Services Portfolio

Cloud Transformation:
- Privacy Support
- Identity and Access Management in the Cloud
- O365 Security Review
- Cloud Threat Modeling
- Cloud Platform Security

Security Engineering:
- Penetration testing
- Security verification
- Threat modeling
- Secure software development
- DevSecOps maturity assessment
- DevSecOps as a Service

Digital Identity:
- Privacy Support
- Managed Identity and Access Management (MIAM)
- Managed Privileged Access Management (PAM)
- Business-to-business and business-to-consumer IAM
- Workforce IAM (IGA)
- Digital identity business advisory
- IAM Roadmap
- DPO as a Service

Cyber Defense:
- Nixu Cyber Defense Center
- Threat Hunting
- Threat Intelligence
- Digital Forensics and Incident Response (DFIR)
- Managed Security Information and Event Management (SIEM)
- Managed Detection & Response

Internet of Things (IoT):
- Penetration testing
- Secure Device Management
- IoT Security Monitoring & Incident Response
- DevSecOps as a Service
- IoT Cybersecurity Roadmap

Safety and Reliability:
- Secure Sourcing
- ICS Security Monitoring & Incident Response
- ICS Cybersecurity Roadmap
- ICS Security Assessments
- ICS Security Development as a Service

Cybersecurity Outsourcing:
- Dedicated support
- Nixu Cyber Defense Center
- Secure Software Development
- Continuous Vulnerability Status Measurement for Web Applications and Computing Platforms
- Cybersecurity Roadmap
- DPIA - Data Protection Impact Assessment
- Information Security Team as a Service

Wireless Logic

Wireless Logic Income Statement Projections

Date of Acquisition: 30/06/2022

For the Fiscal Period Ending ($m)	<---Historical 2019A	2020A	Forecasted--> 2021F	2022F	2023F	2024F	2025F	2026F	2027F
Revenue	68.3	125.0	144	167	195	228	258	289	324
growth %		*83%*	*15%*	*16%*	*17%*	*17%*	*13%*	*12%*	*12%*
Status Quo Revenue	68.3	125.0	144	164	185	209	232	255	278
growth %		*83%*	*15%*	*14%*	*13%*	*13%*	*11%*	*10%*	*9%*
revenue synergy				***3***	***10***	***19***	***26***	***33***	***45***
COGS	35.7	55.0	69	80	88	100	113	127	142
% of Sales	*52%*	*44%*	*48%*	*48%*	*45%*	*44%*	*44%*	*44%*	*44%*
Status Quo COGS	35.7	55.0	69	79	89	101	112	123	134
% of Status Quo Revenue	*52%*	*44%*	*48%*	*48%*	*48%*	*48%*	*48%*	*48%*	*48%*
margin expansion				***0%***	***3%***	***4%***	***4%***	***4%***	***4%***
Gross Profit	32.6	70.0	75	86	107	128	144	162	181
margin %			*52%*	*52%*	*55%*	*56%*	*56%*	*56%*	*56%*
SG&A & R&D	25	44	52	47	49	43	46	52	58
% of Revenue	*37%*	*35%*	*36%*	*28%*	*25%*	*19%*	*18%*	*18%*	*18%*
SG&A & R&D Status Quo	25	44	52	58	66	75	83	91	100
% of Status Quo Revenue	*37%*	*35%*	*36%*	*36%*	*36%*	*36%*	*36%*	*36%*	*36%*
margin expansion				***8%***	***11%***	***17%***	***18%***	***18%***	***18%***
EBITDA	23	47	52	61	88	103	116	116	129
Margin (Business Plan)	*34%*	*38%*	*36%*	*37%*	*45%*	*45%*	*45%*	*40%*	*40%*
EBITDA	23	47	52	60	67	77	85	93	102
Margin (Status Quo)	*34%*	*38%*	*36%*	*37%*	*36%*	*37%*	*37%*	*37%*	*37%*
margin expansion				***0%***	***9%***	***8%***	***8%***	***3%***	***3%***
Total Syngergies Extracted				***13***	***29***	***51***	***61***	***69***	***78***

Comments

- Wireless Logic would be able to use Teradata's client base and their international presence in order to sell IoT products and have Teradata generate.
- Teradata is a larger company therefore Wireless logic would be able to use their platform in order to sell their products and it will strengthen revenue synergy.
- Also, due to the large scale of Teradata, Wireless logic would be able to get economies of scale that would decrease their cost of goods sold.
- Wireless Logic would be able to use the Teradata expertise in Cloud computing and integrate it in their products which will increase the value of the products making them more competitive.
- Teradata has a very solid organizational structure which Wireless Logic would be able to use and because of that the SG&A would decrease.
- Overall, the value of the Wireless Logic would increase substantially because they would be integrated into a larger company with more solid organizational structure and presence in the market.

Value Creation

	Teradata	Wireless Logic	Combined Value
EBITDA	$457	$60	$518
EV/EBITDA	$16.7x	10.5x	16.7x
EV	$7,614	$635	$8,619
Value Generated	**$371**		

Virtual Forge

Virtual Forge Income Statement Projection

Date of Acquisition: 30/06/2022

	<---Historical			Forecasted-->						
For the Fiscal Period Ending ($m)	**2018A**	**2019A**	**2020A**	**2021F**	**2022F**	**2023F**	**2024F**	**2025F**	**2026F**	**2027F**
Revenue		12.6	13.1	14	14	17	21	25	27	28
% growth			*4%*	*4%*	*5%*	*20%*	*23%*	*18%*	*7%*	*6%*
Status Quo Revenue		12.6	13.1	14	14	15	16	17	17	18
% growth			*4%*	*4%*	*5%*	*5%*	*5%*	*5%*	*5%*	*5%*
revenue synergy						***2***	***5***	***8***	***9***	***10***
COGS		2.9	3.0	3	3	3	4	5	5	6
% of revenue		*23%*	*23%*	*23%*	*23%*	*20%*	*20%*	*20%*	*20%*	*20%*
COGS Status Quo		2.9	3.0	3	3	3	4	4	4	4
% of revenue		*23%*	*23%*	*23%*	*23%*	*23%*	*23%*	*23%*	*23%*	*23%*
margin expansion						***3%***	***3%***	***3%***	***3%***	***3%***
Gross Profit		9.7	10.1	11	11	14	17	20	21	23
margin %				*77%*	*77%*	*80%*	*80%*	*80%*	*80%*	*80%*
SGA, R&D		8	8	9	9	8	8	9	10	10
% of revenue		*66%*	*61%*	*63%*	*62%*	*45%*	*40%*	*37%*	*37%*	*37%*
Status Quo SGA, R&D		8	8	9	9	9	10	10	11	11
% of revenue		*66%*	*61%*	*63%*	*62%*	*63%*	*62%*	*63%*	*63%*	*63%*
margin expansion						***18%***	***22%***	***26%***	***26%***	***26%***
EBITDA	-2	-2	5	4	5	8	11	13	14	15
Margin (Business Plan)		*-18%*	*35%*	*32%*	*32%*	*49%*	*52%*	*53%*	*52%*	*52%*
EBITDA	-2	-2	5	4	5	5	5	5	5	5
Margin (Status Quo)		*-18%*	*35%*	*31%*	*32%*	*30%*	*30%*	*29%*	*28%*	*28%*
margin expansion				***0%***	***0%***	***19%***	***22%***	***24%***	***24%***	***24%***
Total Syngergies Extracted						***4***	***6***	***8***	***9***	***10***

Comments

- Virtual Forge will have access to a broader client base which they will be able to use to sell their products and this will create revenue synergies.
- Also, Virtual Forge will be able to increase its market share globally with Teradata's global presence.
- Teradata is a larger company therefore Virtual Forge would be able to use their platform in order to sell their products and it will strengthen revenue synergy.
- Virtual Forge will be able to decrease the Cost of Goods Sold due to the economies of scale achieved when integrated into Teradata business.
- The combined expertise in the cloud computing will decrease the Research & Development costs.
- Teradata has a very solid organizational structure which Virtual Forge would be able to use and because of that the Selling, General and Administrative Expenses would decrease.
- Virtual Forge would be able to decrease the Selling, General and Administrative Expenses because of a very solid organizational structure that Teradata has.

Value Creation

	Teradata	Virtual Forge	Combined Value
EBITDA	$457	$5	$462
EV/EBITDA	16.7x	14.7x	16.7x
EV	$7,614	$67	$7,691
Value Generated	**$9**		

Nixu

Nixu Oyj Income Statement Projection

Date of Acquisition: 30/06/2023

	2017A	2018A	2019A	2020A	2021F	2022F	2023F	2024F	2025F	2026F	2027F
			<---Historical		Forecasted-->						
Revenue	39	46	57	65	77	91	112	145	181	227	272
growth %		*19%*	*25%*	*13%*	*18%*	*18%*	*23%*	*30%*	*25%*	*25%*	*20%*
Status Quo Revenue	39	46	57	65	77	91	106	124	146	171	200
growth %		*19%*	*25%*	*13%*	*18%*	*18%*	*16%*	*17%*	*17%*	*17%*	*17%*
revenue synergy							***6***	***21***	***36***	***56***	***72***
COGS	3	5	11	15	16	20	24	30	38	48	57
% of revenue	*8%*	*11%*	*20%*	*23%*	*21%*	*22%*	*22%*	*21%*	*21%*	*21%*	*21%*
Status Quo COGS	3	5	11	15	16	20	23	27	32	37	44
% of revenue	*8%*	*11%*	*20%*	*23%*	*21%*	*22%*	*22%*	*22%*	*22%*	*22%*	*22%*
margin expansion							***0%***	***1%***	***1%***	***1%***	***1%***
Gross Profit	36	41	46	50	61	71	88	115	143	179	215
margin %					*79%*	*78%*	*78%*	*79%*	*79%*	*79%*	*79%*
SG&A, R&D	28	33	37	42	53	61	74	80	82	102	122
% of revenue	*72%*	*73%*	*65%*	*65%*	*69%*	*68%*	*67%*	*55%*	*45%*	*45%*	*45%*
Status Quo SG&A, R&D	28	33	37	42	53	61	70	83	98	115	134
% of revenue	*72%*	*73%*	*65%*	*65%*	*69%*	*68%*	*67%*	*67%*	*68%*	*67%*	*67%*
margin expansion								***12%***	***23%***	***22%***	***22%***
EBITDA	2	(1)	0	3	3	4	4	10	18	20	27
Margin (Business Plan)	*4%*	*-2%*	*0%*	*4%*	*4%*	*4%*	*4%*	*7%*	*10%*	*9%*	*10%*
EBITDA	2	(1)	0	3	3	4	4	5	6	7	8
Margin (Status Quo)	*4%*	*-2%*	*0%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*	*4%*
Total Syngergies Extracted					***0***	***0***	***1***	***21***	***46***	***58***	***70***

Comments

- Nixu will be able to use Teradata's client base and the international presence in order to sell cybersecurity products and services and this will create revenue synergies.
- Nixu will be able to increase its market share globally with Teradata's global presence.
- Nixu and Teradata will be able to integrate their products and services and make them more competitive
- Due to the large scale of Teradata, Nixu would be able to get economies of scale that will decrease their cost of goods sold.
- Teradata has a very solid organizational structure which Nixu would be able to use in order to decrease their SG&A expenses.
- Overall, the value of the Nixu will increase substantially because they would be integrated into a larger company with more solid organizational structure and presence in the market.

Value Creation

	Teradata	Nixu	Combined Value
EBITDA	$595	$4	$599
EV/EBITDA	16.7x	14.5x	16.7x
EV	$9,907	$61	$9,978
Value Generated	**$9**		

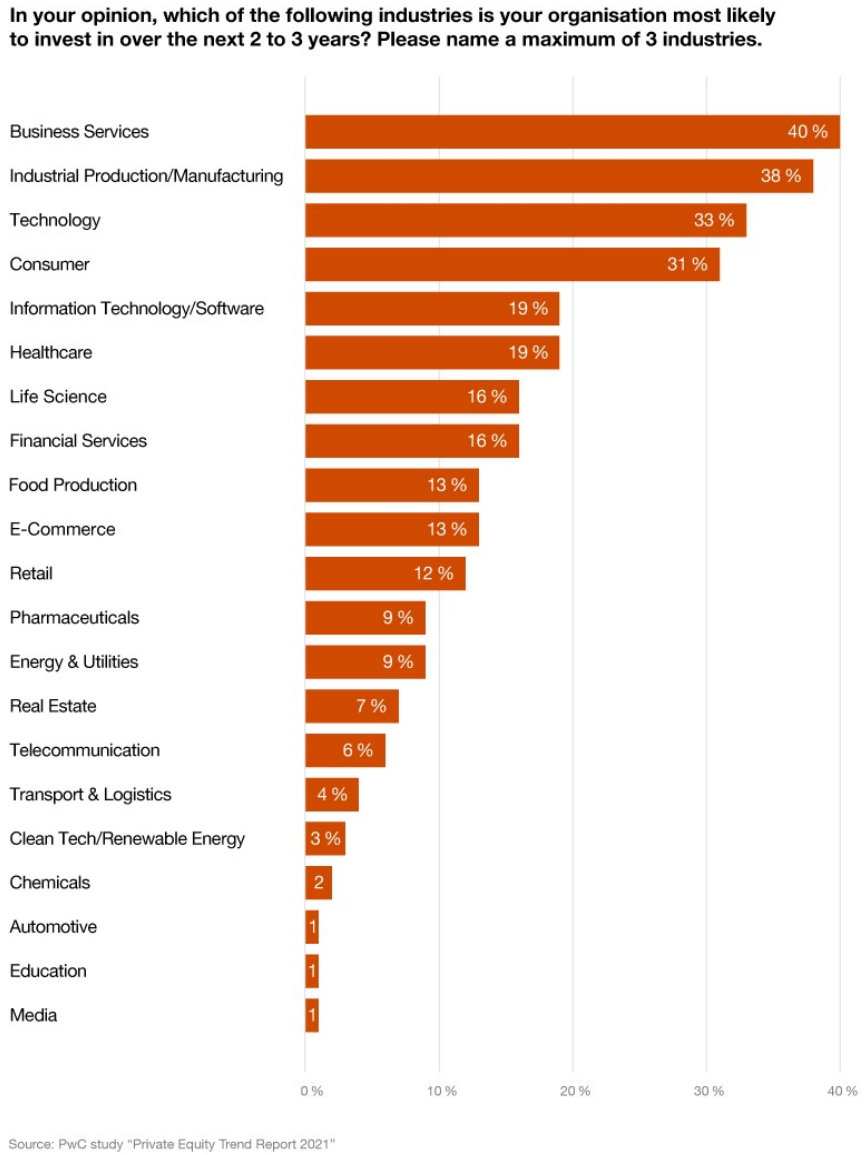
1/2 Private equity firms can extract value and growth from the IT and software market

Private Equity Challenge was the ideal choice that I did to put into practice everything that I have learned during the Masters in Finance. This was an opportunity to put my knowledge into practice but also at the same time to learn even more about the Private Equity industry and the LBO practice. I worked with amazing people with whom I learned a lot and with whom I had an amazing time working on the same project. Therefore, in my opinion, my last semester at Nova SBE could not end in any better way.

At the start it was challenging to find the best target for our project, so we decided first to find a sector in which PE firms have particular interest. Therefore, after our research, we found out that PE funds have high expectations about software companies. According to the BDO's annual Private Equity Perspective Survey, 92% of PE fund managers that focus on the technology sector expect an increase in the value of their portfolios in the coming years. Private Equity managers anticipate an increase in the valuations, 67% of all managers agree that the technology industry can expect the valuations to increase over the next 12 months, more than any other field. CFOs of technology companies point out to software field (including cloud computing) as the sector that will generate most deals in the next years. In the PE industry, which has hit a record more than $1 trillion in deals in 2021, buyouts of software firms have become a lasting gold mine for dealmakers. Therefore, after our research, we found Teradata, a cloud computing company, that was the best fit for our target criteria.

We took as an example the US based PE fund Thoma Bravo, which was able to grow from the small player with only $3.6 billions in assets under management into a large fund with over $70 billions assets under management in the period of a decade. During the past year, the PE company has taken six multi-billion-dollar public companies into private. The biggest ones were $10.2 billion buyout of real estate software company RealPage in April and the $12.3 billion buyout of a cybersecurity company Proofpoint in August, making it the most active public-to-private buyout investor globally. To obtain the deals, the Private Equity funds nowadays have hard competition. Therefore, Thoma Bravo has to compete with firms such as Vista Equity Partners, Hellman & Friedman, TPG, and others. These funds recently have gained large software windfalls and won megadeals such as McAfee and Athenahealth. Nowadays, to gain a software deal it is necessary to pay ever-higher prices that needs larger amounts of debt. As example, Thoma Bravo needed more than $15 billion in equity to get its buyouts of RealPage and Proofpoint, which is around 67% of the overall value.

Cybersecurity is another area where a lot of Private Equity funds inject their money. In 2020 the frequency and sophistication of cyberattacks have increased, and cybersecurity started being an important factor in order to maintain the status quo for governments and organizations. Therefore, it is natural that a huge amount of money will be injected into this sector. Private equity buyouts of cybersecurity companies are spiking and setting record high deals. An example of that is the Thoma Bravo acquisition of Proofpoint for $12.3 billion, the highest price so far paid by a PE firm to acquire a cybersecurity company. To get the sense of the deal size, the deal value was higher than all cybersecurity acquisitions done in the second half of 2020 combined. Until now, cybersecurity buyouts have totalled over $23 billion in 2021. The COVID-19 has boosted the developments in the cyber industry, and many analysts believe that this boost will bring large growth and returns in this market in the following 5 to 10 years. A market research company, Technavio, has anticipated that the cybersecurity sector will grow at an annual rate of 15% between 2021 and 2025. Therefore, these market drivers will accelerate the PE buyouts of tech companies in the following years.



Source: PwC study "Private Equity Trend Report 2021"

2/2 Cloud is the foundation in the management of IoT devices

IoT is another very interesting sector where PE firms have foreseen opportunities to create significant value. The IoT technology has evolved over the past 5 years, and each sub-segment has large market growth opportunities.

Cloud computing has developed very quickly in the past years and it is very connected to the IoT industry. The companies in both sectors have been working together, where big technological organizations provided their data-storage capacity and computing power as a fundamental fuel for the growth of IoT applications, which afterward helped to create a large number of sophisticated functionalities for security and analytics. These functionalities were supported by strategic and technical partnerships between special services providers that further increased the cloud computing value. For example, one provider of cloud infrastructure might work with a supplier of analytics solutions such as Teradata. In that sense, developments such as mobile edge computing, which improves application performance and reduces network congestion, can make IoT solutions easier to implement and use.

To give an example, GE and Microsoft teamed in October 2017 to allow industrial IoT solution developers (using GE's Predix platform) to build IoT apps using Microsoft cloud for business. With the IoT market likely to grow at an exponential rate in the next years, GE and Microsoft plan to build linked jet engines, turbines, and locomotives to help industrial firms monitor their machinery more readily. GE Predix customers will have access to real-time data and be able to smoothly transition between systems by cooperating in the cloud.

Cloud suppliers are now offering cloud IoT solutions to allow businesses to connect their IoT devices to the cloud. For example, in May 2017, Google launched Cloud IoT Core, a managed service that allows businesses to securely connect their scattered IoT devices in the cloud and construct IoT apps with integrated analytics features to compute insights from the data received by the IoT devices. In order to do this, businesses are cooperating with Google's Cloud IoT Core services to build IoT use cases for real-world applications. For example, Smart Parking, a parking management firm, began utilizing Google's Cloud IoT Core services in October 2017 to develop an updated parking process that uses sensors for vehicle identification and data analytics to track parking occupancy statistics at specific locations. The massive volume of data created by IoT devices and sensors is then evaluated in the cloud from a centralized location.

In addition, the market is seeing an increase in partnerships between IoT service providers and cloud service providers, to allow manufacturers to quickly and efficiently deploy smart products in the cloud. Enterprises wishing to implement IoT solutions are migrating to the cloud in order to grow their operations more cost-effectively and gain greater insights from their IoT data on the cloud. Enterprises using IoT solutions in their business context will increasingly use business analytics functionalities.

Markets for the IoT technology layers hold significant opportunities

IoT technology sub-segments	Description	Market size	Market growth outlook	Technology maturity
Business application	Customer- or device-facing functionality that uses insights for added value (e.g., dynamic dashboard, mobile app and embedded software).	High	Very high growth	Low
Enablement platforms and cloud computing	**Enablement platforms** Device-enablement platforms (including endpoint protection and access management) for obtaining, importing, and processing data. Analytics and visualization applications (including artificial intelligence) for insight generation, reporting, and complex event handling.	Low	Very high growth	High
	Cloud computing Data processing (usually in real time) within a central cloud server farm or with edge computing. Data storage and integration using standard protocols.	Low	Very high growth	High
Connectivity	Data transmission and basic device connectivity features with cellular networks, low-power wide-area networks, local wireless networks.	Low	High growth	Low
Devices	Connected devices (e.g., cars, buildings, equipment, wearables). Sensors providing environmental information (e.g., temperature, pressure, motion, filling level, pollution) and actuators.	High	High growth	High

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