CASE STUDY

Can TTM Technologies VALUATION MASTER CLASS

turn into a high profitable growth company?



Valuation Master Class



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This is not investment advice or a recommendation.



Can TTM Technologies turn into a high profitable growth company?





Sector: Info Tech



Leading global manufacturer of printed circuit boards (PCB) with 29 specialized factories in North America and China

My value estimate:

US\$15

(Upside 14%)

BUY



3 things to know about this company

- Growing US defense spending boosts core segment revenue
- Strategic divestments to drive future profitability
- China poised to win 5G race, providing a growth catalyst

Key statistics

Analyst consensus (6)

PB ratio

Dividend yield

US\$17

(Upside 29%)

0.9x

0%

BUY

Revenue breakdown 2020



Sales

Story

FVMR

Value

WCB

Risks

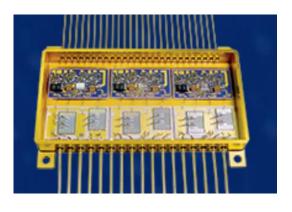
Printed circuit boards (PCB) 91%



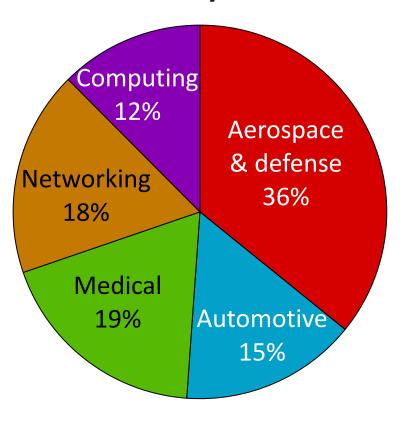
Electro mechanical solutions (E-MS) 2%



Radio frequency (RF) 7%

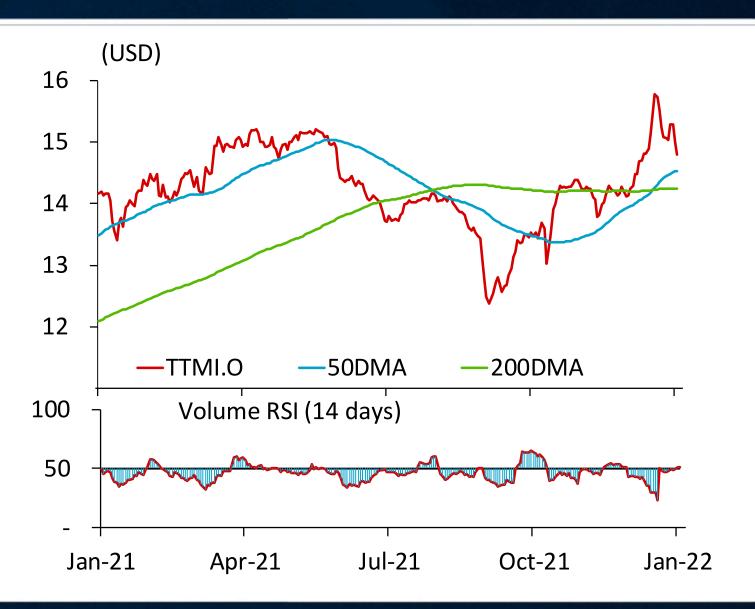


Breakdown by End Market



Price turned bullish, signal stays neutral



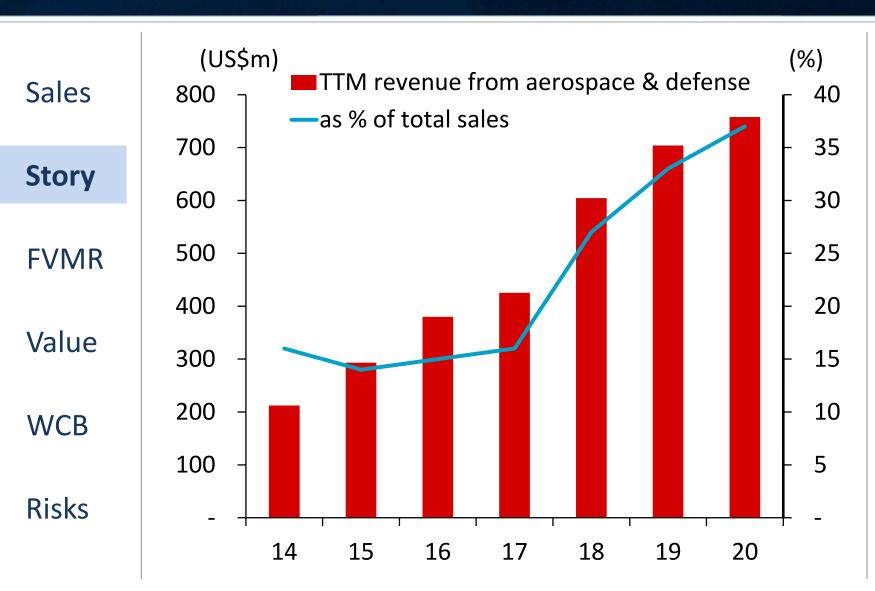


- Recently, the 50 DMA has crossed the 200DMA, which is a good sign
 - If the 50DMA were to continue that upward trend, it could turn into a bullish signal
- Throughout the past year, Volume RSI has mainly stayed below the 50%-line
 - So, volume is not a support yet for a bullish rally



Growing US defense spending boosts core segment revenue

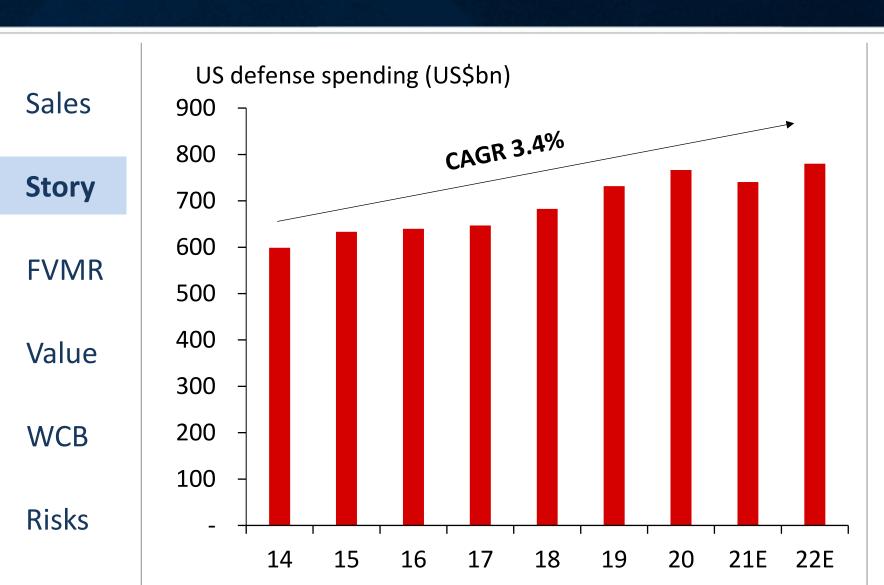




- TTM's recent focus on the fast-growing aerospace & defense segment has paid off
 - In 2020, the segment contributed 37% of total revenue, compared to 16% in 2014
- The company became an establish sub-contractor of the US gov't
 - Therefore, I expect improved earnings stability

Strategic divestments to focus on growth segments





- Defense spending in the US enjoys bipartisan support
 - to growth between 2-4%
- Another characteristic of the defense industry is an increased consolidation of suppliers
 - With strategic M&As, TTM could get further exposure to the resilient industry, driving stable revenue growth



Strategic divestments to drive future profitability



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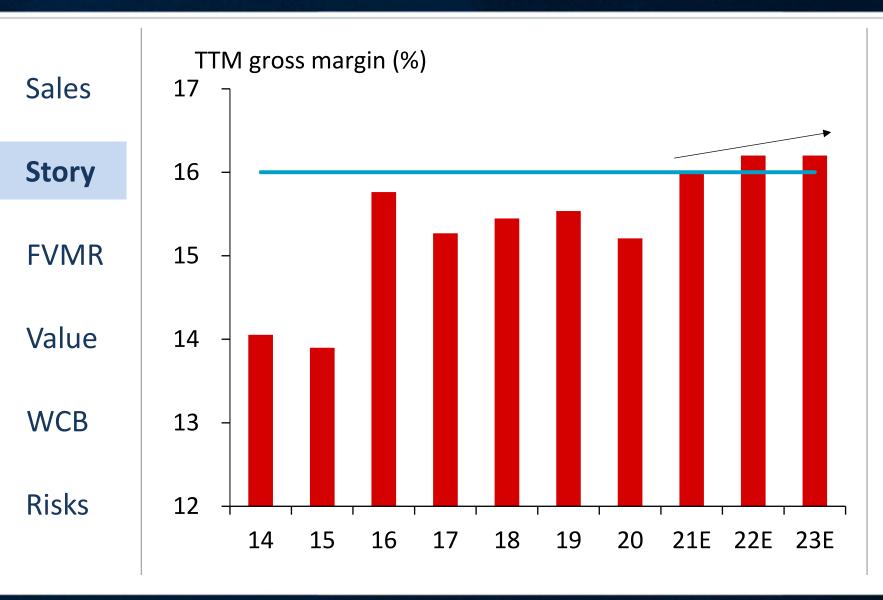
- * TTM continues to reduce exposure to sensitive consumer and commodity segments to build a more resilient business
 - In 2020, it divested its mobility business, which was highly capital-intensive
 - Also, it shut down two of its low-margin electro mechanical solution (E-MS) plants
- ★ As a result, 2020 revenue declined by 21% compared to its peak in 2017
 - However, net fixed assets shrunk by 36%, providing capital for profitable investments

Mobility Business Unit Divestment

Proceeds from sale of its 4 manufacturing plants: US\$550m

Rising profitability has more to give





- The success of the divestments should be already reflected in 21E
 - The gross margin is likely to reach 16%, which is 1bps higher YoY
- ★ Over time, the company still has the ability to further expand the margin
 - With a maximum of 16.5% in my forecast, I have been rather on the conservative side, leaving room for positive surprises



China poised to win 5G race, providing a growth catalyst



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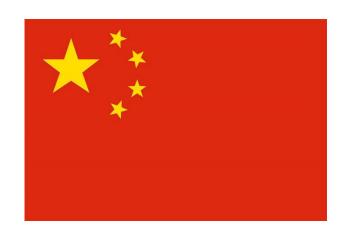
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- ★ As of 2021, China has built more than 1.1m base stations for 5G, equaling around 70% of global stations
- ★ Continued aggressive expansion of 5G network could already lead to nationwide coverage by 2025
 - Therefore, we expect strong demand for TTM's printed circuit boards (PCB)
 - The management expects 5-8% growth rate for this end market, which seems realistic



Networking end market could become 2nd largest segment



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- ★ TTM has 5 factories in China specialized in the production of PCBs
- ★ Besides aerospace & defense, its products applied in the network industry could provide a growth catalyst for the midterm future
 - I think it's a great opportunity for TTM to beat current market expectations





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Testimonials



What Is Going to Happen with Inflation?

By Valuation Master Class Student

Many forces at work impact inflation.
There are current trends that cause both inflationary and deflationary measures.
Whether we'll see inflation or deflation in the future depends on which of these forces dominate.

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How to Value a Startup

By Andrew Stotz

This story started when Dan, a podcast listener, replied to my recent weekly email with this question, "How do you value a startup, especially if there is no revenue?"

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By Andrew Stotz

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What Does It Mean to Be

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*It's usually up within 24h.



FVMR Scorecard

- Measures a stock's
 attractiveness relative to all
 other companies
- * Attractiveness is based on four elements
 - Fundamentals, Valuation,
 Momentum, and Risk
- *Scale from 1 (Best) to 10 (Worst)



Valuation appears favorable, so does risk



Sales

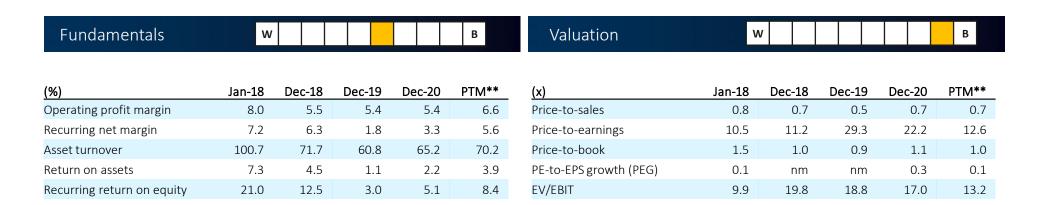
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Momentum	W				В	Risk	W				В
(%)	Jan-18	Dec-18	Dec-19	Dec-20	PTM**	(x)	Jan-18	Dec-18	Dec-19	Dec-20	PTM**
Revenue growth	4.9	(15.8)	(4.7)	(1.3)	2.7	Current ratio	1.7	1.8	1.4	2.4	2.5
Recurring EPS growth	134.5	(28.0)	(66.2)	85.1	245.7	Net debt-to-equity (%)	56.4	100.7	84.1	27.1	27.1
Operating profit margin chg. (bps)	125	(252)	(13)	3	164	Times-interest-earned	4.0	1.6	1.4	1.6	3.0
	6mth	3mth	1mth	3wk	1wk		5yr	3yr	1yr	6mth	3mth
Price change	(7.8)	1.2	(0.8)	(1.8)	(0.6)	Beta	1.2	1.1	0.8	0.7	0.4

Note: Benchmarking against 2,160 non-financial companies in USA.

Recently, I created a short online course explaining my FVMR investing approach

I usually sell it for \$97 but for a limited time I am offering it for FREE





Analysts see a right time to buy



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Analyst consensus valuation					
Recommendation	Oct-21	Nov-21	Dec-21	Current	
Strong buy	1	1	1	1	
Buy	5	5	5	5	
Hold	-	-	-	-	
Sell	-	-	-	-	
Strong sell	-	-	-	-	
Average score	1.8	1.8	1.8	1.8	
Price target	Oct-21	Nov-21	Dec-21	Current	
Median	18	17	17	17	
Mean	19	18	18	18	

6 analysts



Upside: 29%

- All 6 analysts have a BUY recommendation with an average upside of 29%
- Consensus expects a robust revenue growth over the next few years
 - Also, they believe that the company can expand its margin significantly

Analyst consens	us 3-year fo	orecast				
(%)	18	19	20	21E	22E	23E
Revenue growth	2.5	(4.7)	(1.3)	4.6	3.5	5.4
Gross margin	15.4	15.5	15.2	17.3	18.0	17.5

Profit & loss statement



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Profit and loss statement

(YE Dec, US\$ m)	2019A	2020A	2021E	2022E
Revenue	2,133	2,105	2,200	2,244
Cost of goods & services	(1,802)	(1,785)	(1,848)	(1,881)
Gross profit	331	320	352	364
SG&A	(216)	(206)	(202)	(202)
Other operating (exp)/inc	(0)	(0)	-	-
EBIT	115	114	150	162
Interest expense (net)	(82)	(73)	(47)	(47)
Other non-operating inc/(exp)	7	(1)	3	3
Earnings before taxes (EBT)	40	40	106	117
Income tax	(2)	30	(9)	(11)
Earnings after taxes (EAT)	37	70	96	107
Equity income/Minority interest	-	-	-	-
Earnings from cont. operations	37	70	96	107
Forex/Exceptionals before tax	4	108	-	-
Net profit	41	178	96	107

- The management plan to focus on more profitable and less cyclical end markets should pay off
 - 2020 net profit is distorted by gains from divestiture
 - I expect consistent growth in profits 21E onward

Balance sheet - assets



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(YE Dec, US\$ m)	2019A	2020A	2021E	2022E
Cash & short-term investments	400	452	522	521
Accounts receivable	792	654	703	748
Inventories	122	116	133	131
Other current assets	29	27	37	38
Total current assets	1,343	1,249	1,396	1,438
Long-term investments	-	-	-	-
Net fixed assets	1,047	675	689	705
Intangible assets	332	281	256	238
Goodwill	775	637	644	650
Other long-term assets	64	54	49	50
Total assets	3,561	2,896	3,034	3,082

- Net fixed assets decreased as a result of its divestments
 - This leads to a solid cash position, providing funds for expansion of its core segments

Balance sheet - liabilities



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(YE Dec, US\$ m)	2019A	2020A	2021E	2022E
Overdrafts & short-term loans	250	-	-	-
Accounts payable	596	437	467	486
Other current liabilities	101	81	84	85
Total current liabilities	947	518	551	571
Long-term debt	1,226	843	902	857
Other long-term liabilities	109	91	86	88
Total liabilities	2,282	1,452	1,539	1,516
Minority interest	-	-	-	-
Paid-up capital - Common shares	815	831	831	831
Paid-up capital - Preferred shares	-	-	-	-
Retained earnings	474	652	748	854
Revaluation/Forex/Others	(10)	(39)	(84)	(120)
Total equity	1,279	1,444	1,495	1,566
Total liab & shareholders' equity	3,561	2,896	3,034	3,082

- ★ TTM has a healthy balance sheet
 - Its net-debt to equity ratio stood at 0.3x in 2020 and should decrease further over time



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(YE Dec)	2019A	2020A	2021E	2022E
General growth (YoY, %)				
Revenue	(4.7)	(1.3)	4.5	2.0
Assets	3.0	(18.7)	4.8	1.6
Gross profit	(4.1)	(3.4)	9.9	3.3
Operating profit	(7.0)	(0.8)	31.2	8.0
Attributable profit	(76.2)	329.9	(45.9)	11.0
EPS	(76.6)	323.6	(45.5)	13.9
Recurring EPS	(55.1)	27.1	102.9	13.9
Du Pont analysis (%)				
Net profit margin	1.9	8.4	4.4	4.7
Revenue per US\$100 of assets	60.8	65.2	74.2	73.4
Assets/equity (x)	2.8	2.4	2.0	2.0
Return on equity	3.3	13.0	6.5	7.0

★ TTM's focus on higher segments translates into improved efficiency

Ratios (cont.)



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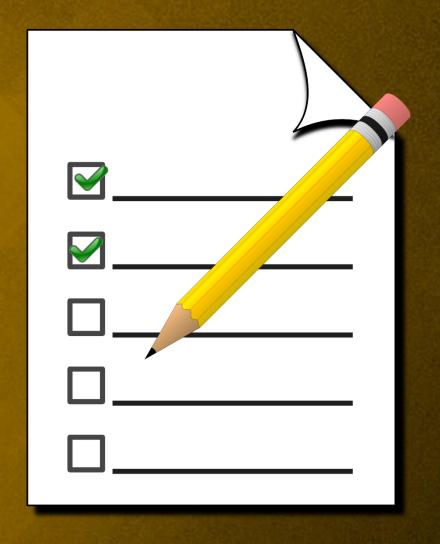
(YE Dec)	2019A	2020A	2021E	2022E
Internal liquidity (x)				
Current ratio	1.4	2.4	2.5	2.5
Quick, or acid test ratio	1.3	2.2	2.3	2.3
Working cap. mgmt (Days)				
Inventory conversion period	23	24	24	25
Receivables collection period	135	124	111	116
Days from raw mat to coll	158	148	135	142
Payables deferral period	121	104	88	91
Cash conversion cycle	37	43	47	50
Profitability ratios (%)				
Gross profit margin	15.5	15.2	16.0	16.2
EBIT margin	5.4	5.4	6.8	7.2
EBIT return on avg assets	3.3	3.5	5.0	5.3
Return on average assets	1.2	5.5	3.2	3.5
Financial risk (x)				
Liabilities-to-assets (%)	64.1	50.1	50.7	49.2
Debt-to-equity	1.2	0.6	0.6	0.5
Net debt-to-equity	0.8	0.3	0.3	0.2
Times-interest-earned	4.1	3.8	6.2	6.6
Effective interest rate (%)	5.5	6.3	5.4	5.4

★ Gross margin in 21E and 22E could pass 16% and I expect the company to maintain it over time

A. Stotz Investment Research
Stock Picking Checklist

*Inspired by Peter Lynch's ten baggers (A stock that has gone up 10x)

- * Based on our extensive research
- * 9 factors that drive long-term share price performance



Long-term share price performance potential



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A. Stotz Investment Research			Good
Stock Picking Checklist	Potential	Comment	←
1. Management – Management has a proven commitment to growth	Good	The management has aligned its focus on fast- growing and more profitable segments	-
2. Growth – Product and industry can support a decade of 10%+ annual growth	Moderate	Most of the end markets TTM serves are resilie could expect mid single-digit growth	ent; we
3. Sustainable – Competitive strategy creates sustainably high gross margin	Good	Divesting low-margin segments and shutdown unprofitable factories can lead to margin expa	
4. Quality – Good earnings quality, non-core items are small or non-existent	Weak	In the past, earnings fluctuated quite a lot	
5. Efficiency – In the long run sales grow faster than assets	Weak	The company is characterized by a low efficien asset turnover is around 60-75%	ncy;
6. Tight – Relatively low cash conversion cycle, negative is best	Moderate	Cash conversion is moderately high and stood days in 2021	at 43
7. Cash flow – Operating cash flow is consistently positive	Good	Operating cash flows have been consistent over and were able to cover investing outflow	er time,
8. Capacity – Company has access to capital to fund growth	Moderate	Leverage is moderately high	
9. Inexpensive – Valuation is reasonable, avoid very expensive stocks	Good	Cheap on both 21E PE and PB compared to US Tech companies, but low on ROE	Info

Free cash flow



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(YE Dec, US\$ m)	2019A	2020A	2021E	2022E
EBIT	115	114	150	162
Est tax rate (%)	6	-	9	9
NOPAT	109	114	136	147
Add: Depre & amort	220	166	141	152
Less: CAPEX	(136)	(103)	(121)	(132)
Chg in A/R	19	138	(48)	(45)
Chg in inventory	(13)	6	(18)	3
Chg in oth curr assets	2	1	(10)	(1)
Chg in A/P	(23)	(158)	30	19
Chg in oth curr liabs	77	(20)	3	2
Less: Chg in working cap	62	(33)	(44)	(23)
Less: Chg in invest cap				
Free cash flow to firm	254	144	112	144

★ FCFF likely to grow consistently over time in line with higher profits

Value estimate



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Forecast assumptions

3-year average	Consensus	My assu	mptions
Revenue growth (CAGR)	4.5		4.5
Gross margin	17.6		16.1
EBIT margin	not comparable		7.1
Net margin	not comparable		4.5

8.7

2.0

My valuation method

WACC

Terminal growth rate

Sources: A. Stotz Investment Research, Refinitiv

Market: United States of America	
Market risk-free rate	2.0
Market equity risk premium	9.0
Market return	11.0
Company beta (x)	1.0
COE	11.0

Valuation Method: FCFF

- I expect a similar revenue growth compared to the consensus
- However, my margin forecast is rather conservative
 - **Despite the management's** effort to become more profitable, I think it still has a long way to go
 - Still, any positive surprise would add additional upside

Value estimate



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Bear **US\$13** (Upside 0%)



Base **US\$15** (Upside 14%)



Bull **US\$17**

(Upside 29%)



World Class Benchmarking Scorecard

- We identify a company's competitive position relative to global peers
- * We use a composite rank of profitability and growth, called "Profitable Growth"
- Scale from 1 (Best) to 10 (Worst)



Strong growth is dragged by below-average profitablity



Sales

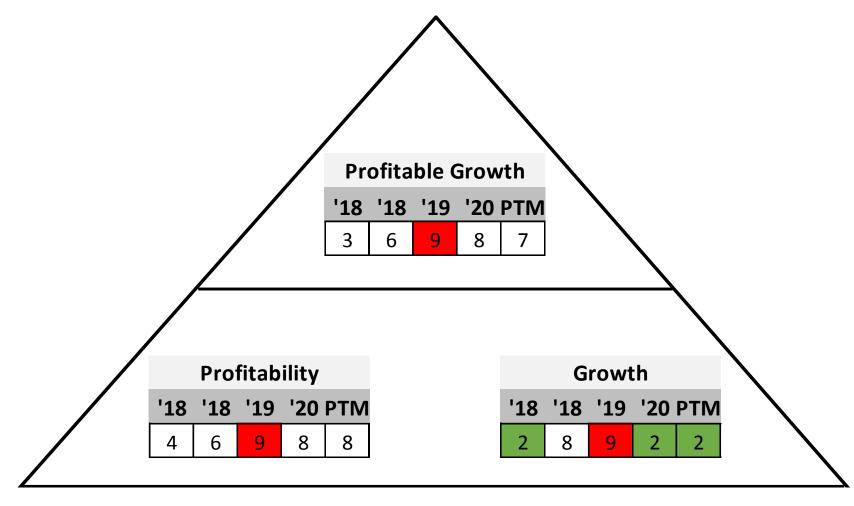
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Benchmarked against 700 large Info Tech companies worldwide.

Sources: A. Stotz Investment Research, Refinitiv

Key risk is high dependency on demand side



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- ★ Adverse regulatory changes, especially in China, could hamper the business
- ★ Failure to meet quality standards and reliance on suppliers
- ★ Dependency on top 5 customers which make up 1/3 of total sales

CONCLUSION

- Management strategy could lead to higher profitable growth
- Healthy balance sheet can support expansion of core segments
- Valuation is attractive; might be a cheap opportunity to buy

