

For Institutional Use Only

Name	
TWILIO INC	

Sector Name:	Information Technology
Group Name:	Software & Services
Industry Name:	IT Services
Sub-industry Name:	Internet Services & Infrastructure

Pricing as of: 08.31.2021	
Price	\$356.96
Market Cap (\$m)	62,801
Proper Peers	
Top Miss or Top Beat	Top Beat
Agg Rank	515

Valuation Quintile		1
Current Div to Price	0	
Current Book to Price	48	
Current Sales to EV	5	
Current Earn to Price	9	
E/P 3 Yr Avg	13	
E/P 5 Yr Avg	12	
Current FCF/P	14	
FCF/P 3-Yr Avg	14	
FCF/P 5-Yr Avg	14	
Current FCF/EV	14	
FCF/EV 3 Yr Avg	14	
FCF/EV 5 Yr Avg	14	
Earn 1 Yr Grth	7	
Earn 3 Yr Grth (Inv)		
Earn 5 Yr Grth (Inv)	99	
Sales 1 Yr Grth (Inv)	5	
Sales 3 Yr Grth (Inv)	1	
Sales 5 Yr Grth (Inv)	1	
Theoretical Growth		
Theoretical Growth Diff		

Balance Sheet Quintile		4
Current CAPX/Total Assets (Inv)	65	
CAPX/Total Assets 3 Yr Chg (Inv)	14	
Div 1 Yr Grth		
Div 3 Yr Grth		
Div 5 Yr Grth		
Current Buyback Yield	5	
Current GW/Total Assets (Inv)	15	
Current Debt/EBITDA (Inv)		
Current Net Cash/EV	93	
Current R&D/Sales	88	
Current CAPX/Sales (Inv)	53	
CAPX/Sales 3 Yr Chg (Inv)	81	
CAPX/Sales 5 Yr Chg (Inv)	89	
WCap 3 Yr Grth (Inv)	2	
WCap 5 Yr Grth (Inv)	1	
Quick Ratio	98	
Current Ratio	98	
Rec/Sales 1 Yr Chg (Inv)	72	
Rec/Sales 3 Yr Chg (Inv)	61	
Rec/Sales 5 Yr Chg (Inv)	24	
BV Grth 3 Yr Disp (Inv)	3	
BV Grth 5 Yr Disp (Inv)	4	

Earnings Quality Quintile		1
Curr. Accruals/Assets (Inv)	71	
Current Inv/Sales	0	
Inv/Sales 1 Yr Chg (Inv)	56	
Inv/Sales 3 Yr Chg (Inv)	65	
Inv/Sales 5 Yr Chg (Inv)	61	
Current Op Margin	5	
Current Gross Margin	64	
Op Margin 1 Yr Chg	11	
Op Margin 3 Yr Chg	7	
Op Margin 5 Yr Chg	4	
Gross Margin 1 Yr Chg	11	
Gross Margin 3 Yr Chg	38	
Gross Margin 5 Yr Chg	37	
Current ROA	7	
ROA 1 Yr Chg	53	
ROA 3 Yr Chg	74	
ROA 5 Yr Chg	75	
Current ROE	12	
ROE 1 Yr Chg	46	
ROE 3 Yr Chg	81	
ROE 5 Yr Chg	60	
ROA 5 Yr Disp (Inv)	32	
ROE 5 Yr Disp (Inv)	47	
Current XI/Net Income (Inv)	100	
Current Dep/CAPX	87	
Dep/CAPX 3 Yr Avg	81	
Dep/CAPX 5 Yr Avg	75	

Market Quality Quintile		1
Volume (Inv)	29	
3-Mo Mom	44	
6-Mo Mom	17	
9-Mo Mom	41	
12-Mo Mom	38	
36-Mo Mom (Inv)	1	
3-Mo Bat Avg	57	
6-Mo Bat Avg	68	
9-Mo Bat Avg	91	
12-Mo Bat Avg	80	
3-Mo/6-Mo Breakout	80	
6-Mo/12-Mo Breakout	37	
CAPM Ret Diff (Inv)	34	
Negative 24-Mo Skewness		
24-Mo Kurtosis (Inv)	4	
Extreme 6-Mo Momentum		
Extreme 24-Mo Skewness	Y	
Extreme 24-Mo Kurtosis	Y	
Low Mom High Vol		
Broken Chart	Y	
Hi 6-Mo Mom/Hi 9-Mo Bat Avg		

Analyst Quality Quintile		1
LTG Est (Inv)	10	
Shr of Est Rising	6	
LTG Disp (Inv)	1	
Surp Score	29	
PEG Ratio (Inv)		

### Ranking Metric Glossary

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Valuation Metrics	Formal Name	Description	Higher is Viewed:
Current Div to Price	Current Dividend to Price	The rolling four quarter dividends paid divided by the most recent market cap.	Favorably
Current Book to Price	Current Book to Price	Last stated book value from balance sheet divided by the most recent market cap.	Favorably
Current Sales to EV	Current Sales to Enterprise Value	Sum of the trailing four quarters' revenues divided by the most recent enterprise value.	Favorably
Current Earn to Price	Current Earnings to Price	Sum of the trailing four quarters' income before XO divided by the most recent market cap.	Favorably
E/P 3 Yr Avg	Average Three Year Earnings To Price	The average of the rolling four quarter earnings for the past 12 quarters divided by the most recent market cap.	Favorably
E/P 5 Yr Avg	Average Five Year Earnings to Price	The average of the rolling four quarter earnings for the past 20 quarters divided by the most recent market cap.	Favorably
Current FCF/P	Current FCF to Price	Sum of the trailing four quarters' free cash flow divided by the most recent market cap.	Favorably
FCF/P 3-Yr Avg	Average Three Year FCF to Price	Average of rolling 4 quarters FCF over the last 12 quarters divided by the most recent market cap.	Favorably
FCF/P 5-Yr Avg	Average Five Year FCF to Price	Average of rolling 4 quarters FCF over the last 20 quarters divided by the most recent market cap.	Favorably
Current FCF/EV	Average One Year FCF to Enterprise Value	Sum of the last 4 quarters FCF divided by the most recent enterprise value.	Favorably
FCF/EV 3 Yr Avg	Average Three Year FCF to Enterprise Value	The average of the rolling four quarter FCF for the past 12 quarters divided by the most recent enterprise value. FCF is defined as cash flow from operations less CAPEX and adding back in sales of PP&E.	Favorably
FCF/EV 5 Yr Avg	Average Five Year FCF to Enterprise Value	The average of the rolling four quarter FCF for the past 20 quarters divided by the most recent enterprise value. FCF is defined as cash flow from operations less CAPEX and adding back in sales of PP&E.	Favorably
Earn 1 Yr Grth	One Year Earnings Growth	The percent change in this quarter's rolling four quarter earnings compared to the same quarter in the prior year's rolling four quarter earnings.	Favorably
Earn 3 Yr Grth (Inv)	Three Year Earnings Growth (Inverted)	The percent change in this quarter's rolling four quarter earnings compared to the same quarter three years prior rolling four quarter earnings.	Negatively
Earn 5 Yr Grth (Inv)	Five Year Earnings Growth (Inverted)	The percent change in this quarter's rolling four quarter earnings compared to the same quarter five years prior rolling four quarter earnings.	Negatively
Sales 1 Yr Grth (Inv)	One Year Sales Growth (Inverted)	The percent change in this quarter's rolling four quarter sales compared to the same quarter one year prior rolling four quarter sales.	Negatively
Sales 3 Yr Grth (Inv)	Three Year Sales Growth (Inverted)	The trailing four quarter's sales divided by the same period three years prior.	Negatively
Sales 5 Yr Grth (Inv)	Five Year Sales Growth (Inverted)	The trailing four quarter's sales divided by the same period five years prior.	Negatively
Theoretical Growth	Theoretical Growth	The expected growth for the shares based upon the retention rate and return on common equity.	Favorably
Theoretical Growth Diff	Theoretical Spread	We analyze the spread between the implied growth rate calculated using the retention rate and the return on common equity [Defined as $1 - D / E * ROE$ ] and the consensus growth rate of analysts.	Favorably

Balance Sheet Metrics	Formal Name	Description	Higher is Viewed:
Current CAPX/Total Assets (Inv)	Current CAPEX to Total Assets (Inverted)	Trailing four quarter capital expenditure divided by the most recent quarter's total assets.	Negatively
CAPX/Total Assets 3 Yr Chg (Inv)	Three Year $\Delta$ CAPEX to Total Assets (Inverted)	Trailing four quarter capital expenditure divided by the most recent quarter's total assets minus the same metric three years ago.	Negatively
Div 1 Yr Grth	One Year Growth in Dividends Paid	Calculated using the direct method from the cash flow statement. The rolling four quarter sum of dividends paid divided by the rolling four quarter sum from the year ago period.	Favorably
Div 3 Yr Grth	ThreeYear Growth in Dividends Paid	Calculated using the direct method from the cash flow statement. The rolling four quarter sum of dividends paid divided by the rolling four quarter sum from the three year ago period.	Favorably
Div 5 Yr Grth	Five Year Growth in Dividends Paid	Calculated using the direct method from the cash flow statement. The rolling four quarter sum of dividends paid divided by the rolling four quarter sum from the five year ago period.	Favorably
Current Buyback Yield	Current Buyback Yield	The most recent quarter's rolling four quarter share repurchase divided by the current equity market capitalization.	Favorably

Current GW/Total Assets (Inv)	Current Goodwill to Total Assets (Inverted)	The most recent quarter's goodwill divided by the most recent quarter's total assets.	Negatively
Current Debt/EBITDA (Inv)	Current Debt to EBITDA (Inverted)	Most recent quarter's long- and short-term debt divided by the rolling four quarter EBITDA.	Negatively
Current Net Cash/EV	Current Net Cash to Enterprise Value	Most recent net cash divided by enterprise value.	Favorably
Current R&D/Sales	Current Research & Development to Sales	Sum of the most recent four quarters R&D/sum of the most recent four quarters revenue.	Favorably
Current CAPX/Sales (Inv)	Current CAPEX to Sales (Inverted)	The most recent quarter's rolling four quarter CAPEX divided by the rolling four quarter sales minus the same metric one year ago.	Negatively
CAPX/Sales 3 Yr Chg (Inv)	Three Year $\Delta$ CAPEX to Sales (Inverted)	The most recent quarter's rolling four quarter CAPEX divided by the rolling four quarter sales minus the same metric three years ago.	Negatively
CAPX/Sales 5 Yr Chg (Inv)	Five Year $\Delta$ CAPEX to Sales (Inverted)	The most recent quarter's rolling four quarter's CAPEX divided by the rolling four quarter sales minus the same metric five years ago.	Negatively
WCap 3 Yr Grth (Inv)	Three Year Growth in Working Capital (Inverted)	Current assets less current liabilities from the most recent quarter divided by the same figure in the three year prior period.	Negatively
WCap 5 Yr Grth (Inv)	Five Year Growth in Working Capital (Inverted)	Current assets less current liabilities from the most recent quarter divided by the same figure in the five year prior period.	Negatively
Quick Ratio	Quick Ratio	The difference between current assets minus inventories divided by current liabilities.	Favorably
Current Ratio	Current Ratio	Current assets divided by current liabilities.	Favorably
Rec/Sales 1 Yr Chg (Inv)	One Year $\Delta$ Receivables to Sales (Inverted)	The current quarter's accounts receivables divided by the rolling four quarter sales less the same figure from the year ago period.	Negatively
Rec/Sales 3 Yr Chg (Inv)	Three Year $\Delta$ Receivables to Sales (Inverted)	The current quarter's accounts receivables divided by the rolling four quarter sales less the same figure from the three year ago period.	Negatively
Rec/Sales 5 Yr Chg (Inv)	Five Year $\Delta$ Receivables to Sales (Inverted)	The current quarter's accounts receivables divided by the rolling four quarter sales less the same figure from the five year ago period.	Negatively
BV Grth 3 Yr Disp (Inv)	Consistency of the Three Year Trailing, One Year Growth in Book Value (Inverted)	For each quarter in the prior three years, we calculate a rolling four quarter rate of growth in book value over the prior year, then calculate the standard deviation for the twelve observations.	Negatively
BV Grth 5 Yr Disp (Inv)	Consistency of the Five Year Trailing, One Year Growth in Book Value (Inverted)	For each quarter in the prior five years, we calculate a rolling four quarter rate of growth in book value over the prior year, then calculate the standard deviation for the twenty observations.	Negatively

Earnings Metrics	Formal Name	Description	Higher is Viewed:
Curr. Accruals/Assets (Inv)	Current Accruals to Total Assets (Inverted)	Rolling four quarter's net income less cash flow from operations divided by the most recent quarter's total assets.	Negatively
Inv/Sales 1 Yr Chg (Inv)	One Year $\Delta$ in Inventory to Sales (Inverted)	The most recent quarter's inventory divided by the rolling four quarter sales less the same figure from the year ago period.	Negatively
Inv/Sales 3 Yr Chg (Inv)	Three Year $\Delta$ in Inventory to Sales (Inverted)	The most recent quarter's inventory divided by the rolling four quarter sales less the same figure from the three year ago period.	Negatively
Inv/Sales 5 Yr Chg (Inv)	Five Year $\Delta$ in Inventory to Sales (Inverted)	The most recent quarter's inventory divided by the rolling four quarter sales less the same figure from the five year ago period.	Negatively
Current Op Margin	Current Operating Margin	Operating profit from the trailing four quarters divided by sales from the same period.	Favorably
Current Gross Margin	Current Gross Margins	Sales minus Cost of Goods Sold (COGS) divided by sales for the trailing four quarters.	Favorably
Current Inv/Sales Op Margin 1 Yr Chg	Current Inventory to Sales One Year $\Delta$ Operating Margin	The most recent quarter's inventory divided by the rolling four quarter Operating profit from the trailing four quarters divided by sales from the same period, less the same figure from the year ago period.	Favorably
Op Margin 3 Yr Chg	Three Year $\Delta$ Operating Margin	Operating profit from the trailing four quarters divided by sales from the same period, less the same figure from the three year ago period.	Favorably
Op Margin 5 Yr Chg	Five Year $\Delta$ Operating Margin	Operating profit from the trailing four quarters divided by sales from the same period, less the same figure from the five year ago period.	Favorably
Gross Margin 1 Yr Chg	One Year $\Delta$ Gross Margin	Sales minus COGS divided by sales for the trailing four quarters, less the same figure from the year ago period.	Favorably
Gross Margin 3 Yr Chg	Three Year $\Delta$ Gross Margin	Sales minus COGS divided by sales for the trailing four quarters, less the same figure from the three year ago period.	Favorably
Gross Margin 5 Yr Chg	Five Year $\Delta$ Gross Margin	Sales minus COGS divided by sales for the trailing four quarters, less the same figure from the five year ago period.	Favorably
Current ROA	Current Return on Assets	Trailing twelve month earnings before extraordinary items divided by most recent total assets.	Favorably
ROA 1 Yr Chg	One Year $\Delta$ in ROA	The trailing four quarter earnings before extraordinary items divided by the most recent total assets less the same figure from the prior year.	Favorably
ROA 3 Yr Chg	Three Year $\Delta$ in ROA	The trailing four quarter earnings before extraordinary items divided by the most recent total assets less the same figure from three years earlier.	Favorably
ROA 5 Yr Chg	Five Year $\Delta$ in ROA	The trailing four quarter earnings before extraordinary items divided by the most recent total assets less the same figure from five years earlier.	Favorably
Current ROE	Current Return on Equity	Trailing twelve month earnings before extraordinary items divided by most recent shareholders equity.	Favorably
ROE 1 Yr Chg	One Year $\Delta$ in ROE	The trailing four quarter earnings before extraordinary items divided by the most recent shareholder's equity less the same figure from the prior year.	Favorably

ROE 3 Yr Chg	Three Year $\Delta$ in ROE	The trailing four quarter income before extraordinary items divided by the most recent shareholder's equity less the same figure from three years earlier.	Favorably
ROE 5 Yr Chg	Five Year $\Delta$ in ROE	The trailing four quarter income before extraordinary items divided by the most recent shareholder's equity less the same figure from five years earlier.	Favorably
ROA 5 Yr Disp (Inv)	Standard Deviation of Five Year Trailing ROA (Inverted)	The standard deviation of the rolling four quarter ROA for the prior 20 quarters.	Negatively
ROE 5 Yr Disp (Inv)	Standard Deviation of Five Year Trailing ROE (Inverted)	The standard deviation of the rolling four quarter ROE for the prior 20 quarters.	Negatively
Current XI/Net Income (Inv)	Current Extraordinary Items to Income (Inverted)	The sum of extraordinary items and discontinued operations for the most recent rolling four quarters divided by the magnitude of net income [Absolute value].	Negatively
Current Dep/CAPX	Current Depreciation to CAPEX	The trailing four quarter depreciation expense divided by rolling four quarter CAPEX.	Favorably
Dep/CAPX 3 Yr Avg	Long Term Average Depreciation to Long Term Average CAPEX	The average of the last 12 trailing four quarters of depreciation divided by the average of the last 12 trailing four quarters of CAPEX.	Favorably
Dep/CAPX 5 Yr Avg	Five year Average Depreciation to Long Term Average CAPEX	The average of the last 20 trailing four quarters of depreciation divided by the average of the last 20 trailing four quarters of CAPEX.	Favorably

Analyst Metrics	Formal Name	Description	Higher is Viewed:
LTG Est (Inv)	Long Term Growth Estimate (Inverted)	Analyst estimate of the long term growth rate for the company.	Negatively
Shr of Est Rising	Share of Earnings Estimates Rising	Most recent quarters percentage of analyst earnings estimate that are rising.	Favorably
LTG Disp (Inv)	Long Term Growth Dispersion (Inverted)	The standard deviation of analysts current quarter estimates.	Negatively
Surp Score	Earnings Surprise Score	The ratio of surprise (actual - estimated) divided by the dispersion of estimates.	Favorably
PEG Ratio (Inv)	Price Earnings to Growth Ratio (Inverted)	The most recent rolling four quarters P/E divided by analysts' long-term growth estimates.	Negatively

Market Metrics	Formal Name	Description	Higher is Viewed:
Volume (Inv)	Volume (Inverted)	Liquidity, lower is better (i.e. illiquid stocks get higher scores).	Negatively
3-Mo Mom	Three Month Momentum	The three month return with dividends reinvested with a one month lag.	Favorably
6-Mo Mom	Six Month Momentum	The six month return with dividends reinvested with a one month lag.	Favorably
9-Mo Mom	Nine Month Momentum	The nine month return with dividends reinvested with a one month lag.	Favorably
12-Mo Mom	Twelve Month Momentum	The twelve month return with dividends reinvested with a one month lag.	Favorably
36-Mo Mom (Inv)	Thirty-Six Month Momentum (Inverted)	Three year price change, higher is worse (i.e. the best performing stocks on a three year basis get penalized/lower scores).	Negatively
3-Mo Bat Avg	Three Month Trailing Batting Average	The percent of months in the prior three months that a security has outperformed the market.	Favorably
6-Mo Bat Avg	Six Month Trailing Batting Average	The percent of months in the prior six months that a security has outperformed the market.	Favorably
9-Mo Bat Avg	Nine Month Trailing Batting Average	The percent of months in the prior nine months that a security has outperformed the market.	Favorably
12-Mo Bat Avg	Twelve Month Trailing Batting Average	The percent of months in the prior twelve months that a security has outperformed the market.	Favorably
3-Mo/6-Mo Breakout	Short Term Breakout Factor	The three month return, lagged by a month, less the six month return lagged by a month.	Favorably
6-Mo/12-Mo Breakout	Mid Term Breakout Factor	The six month return, lagged by a month, less the twelve month return lagged by a month.	Favorably
CAPM Ret Diff (Inv)	CAPM Expected Return Less 12 Month Momentum (Inverted)	Capital Asset Pricing Model (CAPM) expected return less the stock's 12 month return lagged by a month. This is the differential between the calculated expected return and realized return; when stocks outperform the CAPM expectation, this is viewed negatively. CAPM Expected Return is defined as the approximation $(8\% * \beta)$ .	Negatively
Negative 24-Mo Skewness	Negative Skewness of Returns	The distribution of returns over multiple trailing periods is calculated. Equities that have a small number of large left tail observations in concert with a large number of small right tail observations are viewed very favorably.	100/Y = True 0 = False
24-Mo Kurtosis (Inv)	Kurtosis of Returns (Inverted)	A measurement of the likelihood of extreme movements. Securities whose performance distributions show central tendencies are favored over those with excessive observations at the tails.	Negatively
Extreme 6-Mo Momentum	Extreme Six Month Momentum	The very highest performers on the six month rank receive a positive weighting.	100/Y = True 0 = False
Extreme 24-Mo Skewness	Extreme Positive Skewness (Right Tail)	All highly right-skewed stocks are penalized as they have few observations of significant excess returns—a sign that past excess performance was driven by a one-off event rather than a consistent improvement in fundamentals. Infrequent large right tail events with a large number of below-average observations.	100/Y = True 0 = False
Extreme 24-Mo Kurtosis	Extreme Positive Kurtosis (Fat Tails)	All stocks with extremely fat tails are penalized as it is a sign that investors and the market cannot understand or forecast fundamentals.	100/Y = True 0 = False

10/1/2021

Low Mom High Vol	Low Momentum & High Volume	Securities with atypically large volumes and poor momentum scores are viewed unfavorably as this may signal that the "story is over."	100/Y = True 0 = False
Broken Chart	Broken Charts Factor	A combination of price-driven observations which seeks to identify securities whose chart patterns tend to produce significant negative	100/Y = True 0 = False
Hi 6-Mo Mom/Hi 9-Mo Bat Avg	High Six Month Momentum and High Nine Month Batting Average	Securities that fall in the top quintile of high six month momentum and top quintile of high nine month batting average.	100/Y = True 0 = False

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## KAILASH CONCEPTS

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### RESEARCH

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