

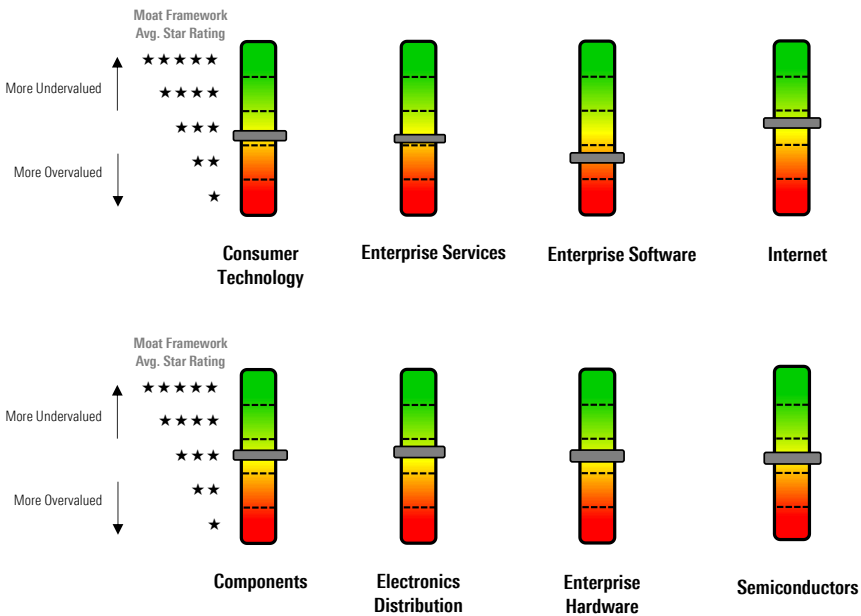
Moat Framework: Technology

The Morningstar economic moat framework collection is a critical tool we employ to fine-tune our economic moat analysis across different industries. In this report, we reiterate the key considerations for moat frameworks applicable to our technology coverage, and we highlight one compelling investment idea from each framework.

Despite recent volatility, particularly among some of our large-cap names, technology sector valuations remain elevated. Enterprise software names trade in 2-star territory on average. Although companies under this umbrella boast the largest premiums to our fair value estimates, we believe wide-moat ServiceNow offers upside that has not been fully priced in. Internet content and information companies are trading in a range that we consider fairly valued. Regardless, we highlight Tencent as an anomaly trading in 5-star territory.

Valuation multiples look reasonable across the hardware supply chain, with companies falling under the components, electronics distribution, enterprise hardware, and semiconductor moat framework umbrellas trading in 3-star territory on average. However, we still see value, particularly in the semiconductor space, as market overreactions to headline risk have caused a few of our Best Ideas to be oversold. Intel and Microchip Technology exemplify this dynamic, and we highlight both names as they trade in deep 4-star territory.

Exhibit 1 Moat Framework: Technology



Source: Morningstar. Data as of Sept. 11, 2018.

## Best Ideas

Company and Industry	Morningstar Rating	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price / Fair Value	Market Cap (B)	Analyst
<b>Basic Materials</b>								
Cameco (CCJ)	★★★★★	\$17	\$9.67	High	Narrow	0.57	3.83	Inton
Compass Minerals International (CMP)	★★★★	\$83	\$62.9	High	Wide	0.76	2.13	Goldstein
Martin Marietta Materials (MLM)	★★★★	\$265	\$193.13	High	Narrow	0.73	12.17	Inton
<b>Communication Services</b>								
BT Group (BT.A)	★★★★	GBX 360	GBX 223.8	High	Narrow	0.62	22.21	C. Nichols
China Mobile (941)	★★★★	HKD 100	HKD 76.9	Medium	Narrow	0.77	1574.56	Baker
Comcast (CMCSA)	★★★★	\$42	\$37.04	Medium	Wide	0.88	169.71	Macker
Telefonica (TEF)	★★★★★	\$13	\$6.68	High	Narrow	0.51	34.69	C. Nichols
Telstra (TLS)	★★★★	AUD 4.4	AUD 3.19	Medium	Narrow	0.73	37.94	Han
<b>Consumer Cyclical</b>								
Alibaba Group Holding (BABA)	★★★★	\$240	\$165.53	High	Wide	0.69	425.73	Hottovy
Bayerische Motoren Werke (BMW)	★★★★	EUR 117	EUR 82.47	High	Narrow	0.70	53.59	Hilgert
Expedia Group (EXPE)	★★★★	\$185	\$130.41	High	Narrow	0.70	19.49	Wasiolek
General Motors (GM)	★★★★	\$45	\$34.25	High	None	0.76	48.32	Whiston
Hanesbrands (HBI)	★★★★★	\$27	\$17.57	Medium	Narrow	0.65	6.33	Hottovy
InvoCare (IVC)	★★★★	AUD 17	AUD 12.5	Medium	Wide	0.74	1.38	Ragonese
Mattel (MAT)	★★★★	\$21.5	\$16.11	High	Narrow	0.75	5.54	Katz
Norwegian Cruise Line Holdings (NCLH)	★★★★	\$69	\$53.99	High	Narrow	0.78	11.96	Katz
Walt Disney (DIS)	★★★★	\$130	\$110.67	Medium	Wide	0.85	164.59	Macker
WPP (WPP)	★★★★	GBX 1500	GBX 1125	Medium	Narrow	0.75	14.19	Mogharabi
<b>Consumer Defensive</b>								
G8 Education (GEM)	★★★★★	AUD 3.5	AUD 1.97	High	None	0.56	0.90	James
General Mills (GIS)	★★★★★	\$59	\$47.59	Low	Wide	0.81	28.36	Vora
Imperial Brands (IMB)	★★★★★	GBX 3700	GBX 2624	Low	Wide	0.71	25.03	Gorham
Kao (4452)	★★★	JPY 8800	JPY 8885	Low	Wide	1.01	4330.73	Wei
Mondelez International (MDLZ)	★★★★	\$52	\$43.87	Medium	Wide	0.84	64.34	Lash
PepsiCo (PEP)	★★★★	\$123	\$114.99	Low	Wide	0.93	162.63	Vora
Procter & Gamble (PG)	★★★★	\$97	\$83.45	Low	Wide	0.86	207.72	Lash
Reckitt Benckiser Group (RB.)	★★★★	GBX 7300	GBX 6506	Low	Wide	0.89	45.99	Gorham
<b>Energy</b>								
Cenovus Energy (CVE)	★★★★	\$21	\$11.66	Very High	None	0.56	14.33	Gemino
Enbridge (ENB)	★★★★	\$64	\$44.43	Medium	Wide	0.69	76.22	Gemino
Enterprise Products Partners (EPD)	★★★★	\$35.5	\$29.07	Low	Wide	0.82	63.25	Ellis
Royal Dutch Shell (RDS.B)	★★★★	\$83	\$66.86	Medium	Narrow	0.81	268.90	Good
Total (TOT)	★★★★	\$77	\$62.85	Medium	None	0.82	163.14	Good
Woodside Petroleum (WPL)	★★★★	AUD 46.5	AUD 36.91	High	None	0.79	34.55	Taylor
<b>Financial Services</b>								
Agricultural Bank of China (601288)	★★★★	CNY 4.2	CNY 3.63	High	Narrow	0.86	1257.20	Tan
American International Group (AIG)	★★★★	\$76	\$52.67	Medium	None	0.69	46.79	Horn
Capital One Financial (COF)	★★★★	\$127	\$97	Medium	Narrow	0.76	46.41	Plunkett
Credit Suisse Group (CSGN)	★★★★	CHF 22	CHF 14.47	High	Narrow	0.66	36.90	Scholtz

## Best Ideas

Company and Industry	Morningstar Rating	Fair Value Estimate	Current Price	Uncertainty Rating	Moat Rating	Price / Fair Value	Market Cap (B)	Analyst
<b>Financial Services (cont.)</b>								
Invesco (IVZ)	★★★★★	\$35	\$23.36	Medium	Narrow	0.67	9.60	Warren
Mitsubishi UFJ Financial Group (8306)	★★★★	JPY 880	JPY 680.6	Medium	None	0.77	8901.35	Wu
Pendal Group (PDL)	★★★★	AUD 11	AUD 9.18	Medium	Narrow	0.83	2.58	Likos
Westpac Banking (WBC)	★★★★	AUD 35	AUD 27.76	Medium	Wide	0.79	94.00	Ellis
<b>Healthcare</b>								
Allergan (AGN)	★★★★★	\$263	\$190.08	Medium	Wide	0.72	64.52	Waterhouse
McKesson (MCK)	★★★★★	\$210	\$129.61	Medium	Wide	0.62	25.89	Lekraj
Medtronic (MDT)	★★★★	\$105	\$96.95	Medium	Wide	0.92	130.93	Wang
Ramsay Health Care (RHC)	★★★★	AUD 76	AUD 54.98	Medium	Narrow	0.72	11.11	Kallos
Roche Holding (ROG)	★★★★★	CHF 337	CHF 238.4	Low	Wide	0.71	203.95	Andersen
<b>Industrials</b>								
Anixter International (AXE)	★★★★★	\$107	\$70.95	Medium	Narrow	0.66	2.37	Bernard
Beijing Enterprises Holdings (392)	★★★★★	HKD 58	HKD 39.15	Medium	Narrow	0.68	49.41	Song
CK Hutchison Holdings (1)	★★★★	HKD 118	HKD 91.15	Medium	None	0.77	351.50	Tan
G4S (GFS)	★★★★	GBX 337	GBX 233.2	Medium	None	0.69	3.62	Field
GEA Group (G1A)	★★★★★	EUR 47	EUR 30.81	Medium	Wide	0.66	5.56	Molina
General Dynamics (GD)	★★★	\$220	\$198.57	Medium	Wide	0.90	58.83	Higgins
Grupo Aeroportuario del Pacifico (GAP B)	★★★	MXN 217	MXN 202	High	Wide	0.93	113.32	Higgins
Guangshen Railway (525)	★★★★★	HKD 6.5	HKD 3.28	High	None	0.50	27.33	Song
Johnson Controls International (JCI)	★★★★	\$53	\$37.94	High	Narrow	0.72	35.09	Bernard
Kion Group (KGX)	★★★★★	EUR 90	EUR 53.56	Medium	Narrow	0.60	6.31	Molina
Royal Philips (PHIA)	★★★	EUR 42	EUR 39.3	Medium	Narrow	0.94	36.61	Vonk
Sodexo (SW)	★★★★	EUR 110	EUR 89.94	Medium	Narrow	0.82	13.10	Field
Stericycle (SRCL)	★★★★	\$86	\$60.92	High	Narrow	0.71	5.23	Young
<b>Real Estate</b>								
Aveo Group (AOG)	★★★★	AUD 2.8	AUD 2.22	Medium	None	0.79	1.29	Sherlock
Sun Hung Kai Properties (16)	★★★★	HKD 153	HKD 117.2	Medium	Narrow	0.77	339.53	Zhong
Welltower (WELL)	★★★	\$74	\$67.15	High	None	NA	24.98	Brown
<b>Technology</b>								
Intel (INTC)	★★★★	\$65	\$45.57	Medium	Wide	0.70	210.12	Davuluri
Microchip Technology (MCHP)	★★★★	\$112	\$83.77	Medium	Wide	0.75	19.73	Colello
MYOB Group (MYO)	★★★★	AUD 3.82	AUD 2.95	Medium	Narrow	0.77	1.77	James
Synaptics (SYNA)	★★★★	\$64	\$45.49	Very High	None	0.71	1.61	Davuluri
TDK (6762)	★★★	JPY 12500	JPY 11670	High	None	0.93	1473.28	Ito
Tencent Holdings (700)	★★★★★	HKD 590	HKD 330	High	Wide	0.56	3142.32	Tam
<b>Utilities</b>								
Dominion Energy (D)	★★★★	\$84	\$72.18	Low	Wide	0.86	47.19	Fishman
Enel (ENEL)	★★★★	EUR 5.7	EUR 4.52	Medium	None	0.79	46.01	Fulop
FirstEnergy (FE)	★★★★	\$41	\$37.79	Low	Narrow	0.92	18.37	Fishman
Scana (SCG)	★★★★★	\$56	\$35.48	Medium	Narrow	0.63	5.06	Miller