

Rating Methodology

Moody's Global Corporate Finance

December 2007

Global Telecommunications Industry

Summary

This rating methodology explains Moody's approach to assessing credit risk in the global telecommunications industry. It replaces Moody's Rating Methodology for the Global Telecommunications Industry that was published in February 2005. While reflecting the same core principles of the former methodology, it incorporates refinements that better reflect the changing telecommunications landscape and the way that Moody's applies its industry methodologies.

The goal of this report is to help issuers, investors and other interested market participants understand how Moody's assesses credit risk for companies in this industry, and to explain how key quantitative and qualitative risk factors map to specific rating outcomes. Our objective is for readers to be able to gauge the likely credit rating for a telecommunications company within two notches.

We have a single rating methodology for the different sectors of this industry because there is a common set of credit considerations underlying the wide range of rating outcomes for telecommunications providers. We have distilled these considerations into five key rating factors, outlined below:

1. Size, scale, business model and competitive environment
2. Operating environment
3. Strategy and financial policies
4. Operating performance
5. Financial strength

These five rating factors encompass 13 specific elements or sub-factors and financial metrics, which map to specific letter-ratings, as discussed in detail in this report.

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In an effort to promote transparency, we also include in Appendix I and Appendix II a detailed rating grid for a representative sample of 42 companies. The grid maps each key rating factor and sub-factor and shows the indicated alpha-numeric rating that results from the overall combination of factors.

The purpose of the rating grid is to provide issuers, investors, and other parties with a reference tool when comparing credit profiles within the telecom sector. While the grid aims to offer robust guidelines as to how we assign ratings to telecom companies, we would nonetheless caution that no company's assigned rating is likely to match every factor outlined for a given rating category within the rating grid. In other words, a Baa-rated company will not score a Baa in every single factor. Rather, the indicated final rating is a balance of all the rating scores achieved by the company within the rating grid.

Readers should also note that this methodology is not an exhaustive treatment of every factor considered in Moody's ratings of telecommunications companies — Moody's also analyzes additional factors that are common across all industries (such as ownership, liquidity and legal structure in the corporate organization). In addition, for illustrative purposes, the methodology relies upon historic financial results, while ratings incorporate our expectations for future performance.

This methodology includes:

- An overview of the telecommunications industry and challenges that its companies face
- A description of our rating methodology
- A detailed explanation of each of the key rating factors that drive ratings quality
- Tables that illustrate Moody's application of the rating framework on a sample of 42 telecommunications companies
- A summary discussion of our results

Reasons for Updating the Rating Methodology

Since publication of the initial Rating Methodology for the Global Telecommunications Industry in February 2005, the industry's landscape has changed considerably, generally in ways that we had anticipated. Competition, extensive M&A activity, rapid advances in technology and regulatory policy evolution have altered market dynamics, and are changes which our methodology should reflect.

Most of the methodology refinements focus on the descriptions of the qualitative factors. The financial strength factors are the same, with the exception that the Return-on-Assets ratio has been eliminated due to distortions that result from the combination of accounting rules and industry restructuring. In its place as a return metric, we have substituted EBITDA margin and EBITDA trends. In addition, the Size and Scale factor has replaced the Market Growth factor, since total revenue correlates better with our ratings than market growth and is also more quantifiable. Finally, some of the bands for the financial strength sub-factors have been tightened to reflect the heightened business risk within the industry and our view that ongoing industry consolidation activity is likely to escalate the operating pressures faced by smaller operators.

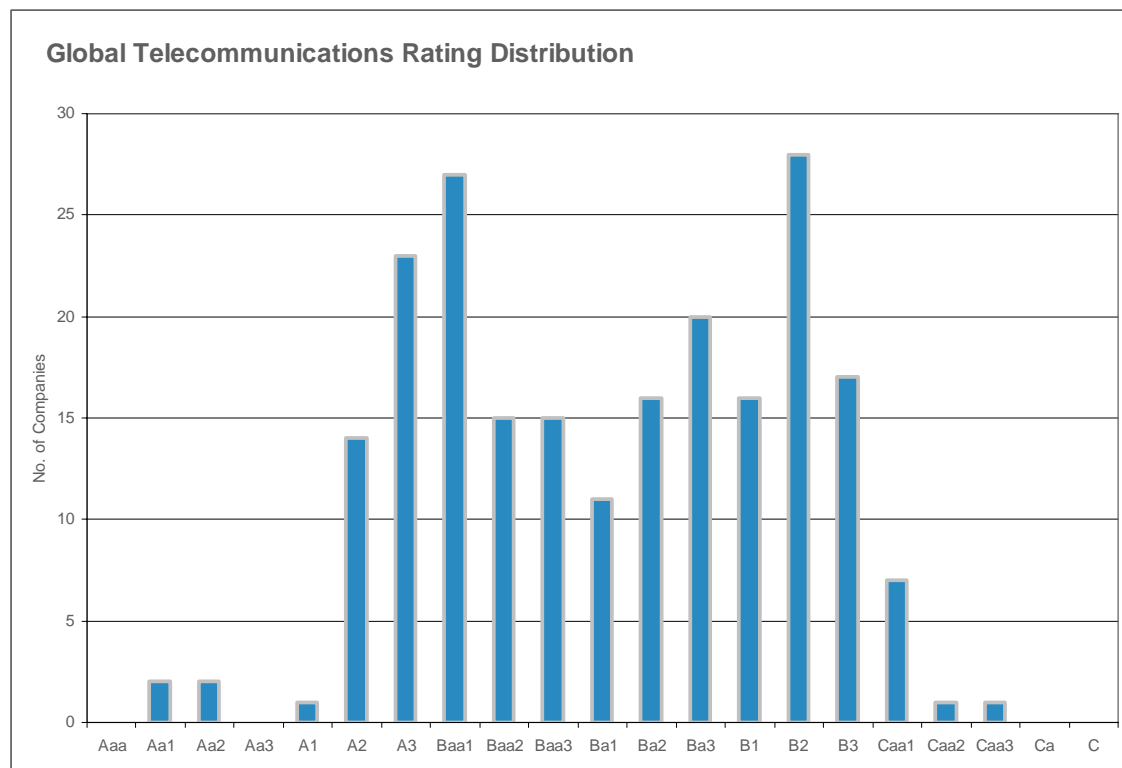
About the Rated Universe

Global telecommunications service providers are a broadly diverse group of companies, differentiated by operating history, products and services and customer and service areas. Higher investment grade-rated companies tend to be large diversified carriers that evolved from historic monopoly providers, or major wireless-only companies with significant financial resources. Speculative-grade issuers typically are smaller, more recent industry participants, which have limited product diversity and are more leveraged.

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Globally, Moody's maintains ratings on 230 telecommunications companies that had approximately \$691 billion in total debt as of FYE 2006.¹ Moody's telecommunications companies' ratings cover operators in 48 countries, with local currency ratings ranging from Caa3 to Aa1. Geographically, 55% of rated issuers are headquartered in the Americas, 25% in Europe, and 14% in Asia Pacific. Moody's rates 46% of the telecommunications universe as investment grade. Approximately 81% of ratings have a stable outlook; 11% either have a positive outlook or are on review for possible upgrade, and 8% either have a negative outlook or are on review for possible downgrade. As illustrated in Table 1, investment grade ratings are clustered in the Baa1 range and speculative ratings gather around the B2 rating level.

Table 1



Companies Used as Examples in this Rating Methodology

Table 2 lists the 42 telecommunications companies that we present as examples by showing their complete mappings on the rating methodology grid. These companies represent a wide range of credit ratings, size, operating characteristics, and geographic locations. The representative companies listed below comprise roughly \$539 billion or 78%, of the total debt of the 230 rated issuers in the telecommunications industry.

¹ All quantitative measures incorporate Moody's standard adjustments to income and cash flow statements, and balance sheet amounts for (among other things) off-balance sheet accounts receivable securitization programs, under-funded pension obligations, and recurring operating leases.

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Table 2

Sample Global Telecommunications Companies					
Company	Current Rating ¹	Outlook	Domicile	Business Model	Total ² Approximate Debt (\$Millions)
America Movil	A3	Stable	Mexico	Wireless	8,579
AT&T	A2	Stable	U.S.	Diversified	60,611
AT&T Mobility	A3	Positive	U.S.	Wireless	21,602
Axtel	Ba2	Stable	Mexico	Wireline	711
BCE / Bell Canada	Baa1	RUR-	Canada	Diversified	12,396
Broadview	B3	Stable	U.S.	Wireline	236
Cable & Wireless	Ba3	Stable	U.K.	Wireline	658
Centennial	B2	Stable	U.S.	Wireless	2,048
CenturyTel	Baa2	Stable	U.S.	Wireline	3,246
Cincinnati Bell	Ba3	Stable	U.S.	Wireline	1,989
Citizens	Ba2	Stable	U.S.	Wireline	4,728
City Telecom	B2	Positive	Hong Kong	Wireline	122
Colt	B2	Stable	Luxembourg	Wireline	374
Dobson	Ba3	Stable	U.S.	Wireless	2,665
France Telecom	A3	Stable	France	Diversified	61,697
GoldenTelecom	Ba3	Stable	Russia	Wireline	230
Hawaiian Telcom	B2	Stable	U.S.	Wireline	1,385
Impsat Fiber Networks	B3	Stable	U.K.	Wireline	225
Indosat	Ba1	Stable	Indonesia	Wireless	1,270
iPCS Inc	B3	Developing	U.S.	Wireless	476
KT Corp	A3	Positive	Korea	Diversified	8,209
Millicom Int'l Cellular	Ba2	Stable	Luxembourg	Wireless	1,494
NTT	Aa1	Stable	Japan	Diversified	41,150
NTT DoCoMo	Aa1	Stable	Japan	Wireless	5,107
Nuvox	B2	Stable	U.S.	Wireline	264
PCCW	Baa2	Positive	Hong Kong	Wireline	3,784
Rural Cellular	B3	RUR+	U.S.	Wireless	1,745
Singtel	Aa2	Stable	Singapore	Diversified	4,260
Softbank	Ba2	Stable	Japan	Diversified	21,066
Sprint Nextel	Baa3	Stable	U.S.	Wireless	22,152
Telecom Italia	Baa2	Negative	Italy	Diversified	61,259
Telefonica	Baa1	Stable	Spain	Diversified	77,876
Telekom Slovenije	A3	Stable	Slovenia	Diversified	382
Telemar	Baa2	Stable	Brazil	Diversified	4,294
Telesp	Baa2	Stable	Brazil	Wireline	1,156
Telmex	A2	Stable	Mexico	Wireline	10,399
Telus	Baa1	Stable	Canada	Diversified	4,531
TPSA	Baa1	Stable	Poland	Diversified	2,291
True Move	B1	Stable	Thailand	Wireless	991
Verizon Communications	A3	Stable	U.S.	Diversified	31,447
Vodafone	Baa1	Stable	U.K.	Wireless	44,356
Windstream	Ba2	Stable	U.S.	Wireline	5,699
Total Debt					\$539,161

¹ Senior Unsecured Rating or Corporate Family Rating
Ratings as of November 28, 2007

² Debt numbers are from the latest reported quarterly period available

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Moody's rates 12 Government Related Issuers ("GRI") in this sector. We have included five of them in the mapping examples to illustrate this rating methodology: NTT, SingTel, France Telecom, Telekom Slovenije and Indosat.

The BCAs for Telekom Slovenije (9, which is equivalent to Baa2), NTT (2; equivalent to Aa1), Indosat (15; equivalent to Ba2) and France Telecom (8; equivalent to Baa1) are expressed as integers on a scale from 1 to 21 where 1 represents the equivalent risk of Aaa and 21 represents the equivalent risk of C. The integers translate directly to an alphanumeric rating, which will form the basis of the comparison to the Methodology indicated rating. The BCA for SingTel is published as a range rather than as an integer. For illustrative purposes in this methodology document, we are using the mid point of SingTel's range (e.g. 6 for its BCA range of 5 – 7 which is equivalent to A2) to express the notches of difference between its BCA and its methodology indicated rating. The rating methodology is used to derive the BCA for each issuer and the final ratings are determined after taking into account support and dependence factors as well as the rating of the relevant GRI shareholder.²

In Table 2, shown on the previous page, all ratings reflect the equivalent of the senior unsecured or Corporate Family Rating ("CFR"). However, for illustrative purposes, in the mapping grids shown later in this rating methodology, we show the senior unsecured (domestic currency rating in instances in which there is a domestic and foreign currency rating) rating for investment grade companies, the CFR for non-investment grade companies and the Baseline Credit Assessment ("BCA") for GRIs.

Industry Overview

The telecommunications industry roots are in government-sanctioned (and in some cases, government-owned) monopolies. Now, following a worldwide move to deregulate and privatize the dominant national carriers, along with the proliferation of wireless technologies and the global adoption of Internet Protocol ("IP") transmissions, intense competition and growing fragmentation are rapidly reshaping an industry that had been highly stable for over a century.

Telecommunications is a highly capital intensive industry. The significant investment in network infrastructure for maintenance and the introduction of new services to replace declining legacy products is likely to be a permanent characteristic of all sectors of the telecommunications industry, worldwide. Despite the expanding use of telecommunications networks to deliver a broader array of service offerings, telecom revenue growth rates are unlikely to deviate much from GDP growth levels in the developed markets, while the expanding capital spending to elevate the standards of emerging markets will hinder free cash flow growth for the global telecommunications industry. Furthermore, fast moving technological trends have generally reduced asset life cycles. Together with increased competition, the return on investment is less certain than has been the case for the industry historically. As a result, wholesale ratings improvement is not expected.

While the industry's participants range from strong incumbent carriers to upstart competitors, we believe that the factors identified in our methodology affect the entire industry and those that are most important for ratings.

Key Rating Issues Going Into the Next Decade

Competition will only intensify

Technological developments have created new competitors and have accelerated provisioning of new products and services over recently upgraded networks. The standard PTT (Postal Telephone and Telegraph) moniker of the telecommunications industry has given way to diversified communications providers, which can offer the same level of service over copper, fiber or through the air. The double-edged sword of IP standards presents operators with a tremendous opportunity to deploy new products and features to their customers, as well as adding a new threat by allowing quicker competitive entry, evidenced by the success of Voice Over Internet Protocol (VOIP) offerings by cable operators and broadband resellers.

² Please refer to Moody's Rating Methodology entitled "The Application of Joint Default Analysis to Government Related Issuers, published April 2005.

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In the U.S., for example, cable TV providers are on pace to capture almost 5 million residential telephony customers and to grow market share thereafter. To meet this competitive threat, the incumbent telcos continue to upgrade their networks to provide higher speed data services and offer a video product in addition to their core telephony offerings. Still, the cross industry competition for customers is expected to limit pricing flexibility, which in combination with the incremental product development costs and higher marketing expenses, can lead to margin pressure.

The competitive wireline operators that have emerged in the past decade have undergone significant restructurings, as their business models have been rationalized. The survivors tend to be operators with significant facilities-based infrastructure, which have taken a disciplined approach to capital spending and growth, and have implemented targeted sales and marketing campaigns aimed at the weak spots in the incumbents' areas.

In markets where wireless networks are well established, the wireless operators have been eroding access line counts of the wireline incumbents. In emerging markets, wireless operators have gained substantial share given their speed to market advantages and will likely leapfrog the deployment of traditional wireline infrastructure altogether.

Wireless operators are themselves being impacted by additional spectrum sales that can increase the overall number of competitors or provide the foundation for the introduction of potentially competing technologies, like WiMAX. As well, the rapid growth in wireless usage over the past decade has resulted in some countries reaching near-terminal penetration levels, changing the competitive dynamics from a foot race to a tug-of-war, which will escalate competitive pressures for all players. Moody's expects competition to remain fierce over the next decade, as overall industry growth slows down, new licenses are auctioned off, and operators brace for another level of capital spending to migrate to 3G and 4G technologies.

Regulation remains important

Regulations under which a telecommunications issuer operates are a major influence on credit quality, as they determine the barriers surrounding the competitive environment and form the foundation for the operators to generate returns on their investments. Nearly all countries have liberalized their telecommunications policies in one way or another. In Moody's rated universe of telcos, therefore, few true monopolies still exist, although in isolated instances a company may enjoy a near-monopoly in a discrete business line.

In certain regions, such as Canada and Mexico, regulators favor industry stability over wide-open competition. European regulators continue to favor expanding competition. For example, the French regulator Arcep's opening of that country's retail fixed telephony market has exerted downward pressure on interconnection and broadband pricing. Arcep has also warned that it would oppose the creation of a broadband monopoly that could emerge from the construction of a fiber-optic network by France Telecom ("FT"). In the mobile market, downward pressure on mobile termination rates has been championed by regulators in Europe.

Foreign investment limits also help to protect domestic operators from incursions from larger and better-capitalized multi-national telcos. Nevertheless, economic globalization and rapid technological advances are providing regulators with an opportunity to review previous telecommunications mandates.

Capital intensity will persist

Telecommunications is a highly capital intensive industry as providers continue to modernize their networks to meet the rapidly increasing demands for bandwidth, driven by expanding usage of data products, both from residential and business customers. The proliferation of video on the Internet further strains the operators' bandwidth demands. Consequently, telecommunications providers have increased network spending on the last mile and distribution facilities. This is the remaining piece of the telecommunications infrastructure that needs to be upgraded following the long haul network expansions in the late 1990s. Wireline operators have a choice of upgrading the last mile copper wire connections to their end users, or

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deploying fiber connections. While upgrading the copper plant is generally less expensive and quicker to deploy, fiber-based networks are seen as "future proof" and are significantly less expensive than copper facilities to operate and maintain, once in place.

Similar to their wireline brethren, wireless operators are facing a tremendous bandwidth surge, as data and video applications migrate onto wireless networks. Capital deployments in the wireless sector will generally be directed toward acquiring new licenses and enhancing coverage in the developed markets, and to expand coverage in emerging markets.

We consider payments made to acquire spectrum licenses to be differentiated from regular capital expenditures. Spectrum license acquisitions tend to be large, infrequent occurrences and are directly linked to the company's long-term business strategy. The cash may be spent on directly acquiring the license at auction, or via the purchase of a company that holds an existing license, such as AT&T's recently announced acquisition of Aloha Partners. In assessing such spend, we focus on the impact on leverage, the strategic rationale for the acquisition, and the likelihood of significant future spend.

Moody's Basic Definitions for Credit Statistics define Capital Expenditures as gross expenditures for plant and equipment and intangible assets, per the Investing Activities section of the Cash Flow statement. There is a divergence in practice in where companies classify spectrum license payments within the Investing Activities section. For example, some companies classify such spend as Plant and Equipment and Intangible Assets; others classify it within Acquisitions and Investments; whilst others may display the payment as a separate line-item. Where there is sufficient information available to identify these payments we will reclassify them into Other Investing cash flows. This allocation, still within the Investing Activities section of the Cash Flow statement, would remove the spend from being included in CAPEX.

Mergers and acquisition activity expected to remain high

We expect continued high merger and acquisition activity in the telecommunications sector for several reasons:

- The benefits of scale and expansion into new markets (either geographically or product wise) will prompt more companies to supplement internal growth and development with acquisitions.
- The high fixed-cost nature of the industry offers tremendous synergy opportunities for acquirers, while industry consolidation still has ample capacity following a decade-long investment cycle and emergence of new competitors.

While M&A activity can lead to revenue diversity and improved margins, debt-financed acquisition activity is a key credit risk that is likely to put pressure on ratings.

Shareholder pressure is likely to increase

Established telecommunications companies have the capacity to generate significant cash flow, even in the face of declining access lines and challenges to growing revenue. Shareholder activism to direct a good portion of the available cash to the equity side can weaken a company's credit profile in an environment of increasing competitive challenges and high capital intensity. This can take the form of dividends, equity recapitalizations, or buybacks in a manner that diminishes financial flexibility.

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About This Rating Methodology

This rating methodology for telecommunications companies takes readers through five steps:

1. Identification of the Key Rating Factors

As noted, Moody's ratings focus primarily on the following key factors:

1. Size, scale, business model and competitive environment
2. Operating environment
3. Strategy and financial policies
4. Operating performance
5. Financial strength

The discussion begins with a review of each factor and an explanation of its importance to the rating. Additional factors that apply more generally to most companies (as opposed to only the telecommunications sector) are explained near the end of this report. These include ownership, liquidity, and the corporate legal structure.

2. Measurement of the Key Rating Factors

We next explain the metrics or "sub-factors" we use to define each of the five rating factors cited. There are a total of thirteen such sub-factors. These employ a combination of historical financial information with other measurements. The historical financials in this rating methodology are based upon financial statement periods that are not identical.

We note Moody's ratings are forward looking and incorporate our expectations of future financial and operating performance. The rating process makes use of both historical and projected financial results. Historical results of operations help us understand the pattern of a company's performance and how it compares to its peers. Historical data help us to, among other things, look through the earnings volatility associated with the business cycle and evaluate whether projected future results are realistic. While the rating process makes use of both historical and projected financial results, this document makes use of only historical data and does so for illustrative purposes.

Table 3 below shows the weighting that is assigned to each broad rating factor and sub-factor. The weights on the factors and sub-factors sum to 100% and produce a methodology indicated rating.

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Table 3

Rating Factor / Sub-Factor Weighting			
Broad Rating Factors	Broad Rating Factor Weighting	Rating Sub-Factor	Sub-Factor Weighting
1) Size, Scale, Business Model and Competitive Environment	25%	A) Size and Scale (Total Revenues)	15%
		B) Business Model and Competitive Environment	10%
2) Operating Environment	20%	A) Regulatory and Political	8%
		B) Technology Risk	7%
		C) Market Share	5%
3) Strategy and Financial Policies	5%	A) Management's Financial Strategy	5%
4) Operating Performance	10%	A) EBITDA Margin	6%
		B) EBITDA Trends	4%
5) Financial Strength	40%	<u>Leverage & Cash Flow:</u>	
		A) Debt/ EBITDA	7%
		B) FCF/Debt	7%
		C) RCF/Debt	10%
		<u>Coverage:</u>	
		D) FFO+Int.Exp./Gross Int. Exp.	8%
		E) EBITDA-CAPEX/Gross Int. Exp.	8%
Total	100%	Total	100%

Measurements are quantitative where we can define an appropriate metric. However, for some sub-factors, qualitative judgment or empirical observation is necessary to determine the appropriate category. Of the thirteen sub-factors, four are qualitative and nine are quantitative. However, it is important to note that two of the qualitative sub-factors (*Business Model and Competitive Environment*, and *Technology Risk*) articulate quantitative measures that guide the ultimate qualitative assessment.

- The nine quantitative sub-factors taken together are assigned a weight of approximately 70%, with *Size and Scale (Total Revenues)* carrying the most weight at 15% and *RCF/Debt* next at 10%.
- The remaining 30% is allocated over the four qualitative sub-factors (*Business Model and Competitive Environment*; *Regulatory and Political Framework*; *Technology Risk*, and *Management Financial Strategy*), each with weights ranging from 5% to 10%.

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3. Mapping Factors to Rating Categories

After identifying the measurement criteria (i.e. Aaa, Aa, A, Baa, Ba, B, or Caa) for each sub-factor, the weighted average of each sub-factor rating is calculated. As illustrated in the chart below, each sub-factor input has an assigned value as follows:

Aaa	Aa	A	Baa	Ba	B	Caa
1	3	6	9	12	15	18

4. Outlier Discussion

If a company is positioned higher or lower on a specific factor than its actual rating would otherwise indicate, it is identified as an "outlier" for that factor. Specifically, a company whose performance on a specific rating factor is two or more rating categories higher than the actual rating, is deemed to be a *positive* outlier for that factor. Similarly, a company whose performance is two or more categories below the actual rating is deemed a *negative* outlier.

This document provides discussion of the general reasons for such outliers for each factor.

5. Determining the Final Rating

To determine the final indicated rating, the weighted average of all of the company's sub-factors is summed to produce a total numerical score. This total numerical score is then mapped to an alphanumeric rating based on the grid below. Non-integer numerical values are mapped to alphanumeric ratings based on where the score falls within the following grid.

Factor Numerics			
Composite Rating		Sub-Factor Rating	
Indicated Rating	Aggregate Weighted Factor Score	Indicated Rating	Factor Score
Aaa	$x < 1.50$	Aaa	1
Aa1	$1.50 \leq x < 2.50$	Aa	3
Aa2	$2.50 \leq x < 3.50$		
Aa3	$3.50 \leq x < 4.50$		
A1	$4.50 \leq x < 5.50$	A	6
A2	$5.50 \leq x < 6.50$		
A3	$6.50 \leq x < 7.50$		
Baa1	$7.50 \leq x < 8.50$	Baa	9
Baa2	$8.50 \leq x < 9.50$		
Baa3	$9.50 \leq x < 10.50$		
Ba1	$10.50 \leq x < 11.50$	Ba	12
Ba2	$11.50 \leq x < 12.50$		
Ba3	$12.50 \leq x < 13.50$		
B1	$13.50 \leq x < 14.50$	B	15
B2	$14.50 \leq x < 15.50$		
B3	$15.50 \leq x < 16.50$		
Caa1	$16.50 \leq x < 17.50$	Caa	18
Caa2	$17.50 \leq x \leq 18.00$		

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Rating Factor Discussion

Rating Factor 1: Size, Scale, Business Model and Competitive Environment

Why it Matters

A company's size, scale, business model and competitive position are among the key distinguishing factors of its profile and are important rating considerations. Moreover, we have found that a company's size correlates highly with credit quality and therefore ratings in the telecommunications sector. Specifically, larger companies are generally more broadly diversified, which can reduce volatility and provide flexibility to generate cash from the divestiture of certain operations, if needed. Larger companies also benefit from greater financial resources and economies of scale.

Size and Scale

Larger scale, which usually goes hand in hand with geographic and business diversity, reduces the risks of a regional weakness or a business downturn. Scale also enhances a company's ability to absorb a temporary disruption, acquisition or a capital investment mistake. Larger scale enhances access to capital markets and increases financing flexibility. Finally, scale enhances a company's ability to bundle products, increasingly a competitive advantage and confers a sense of market leadership that can bring superior access to customers.

Business Model and Competitive Environment

A telecommunications company's business model dictates to a large degree its ability to generate and sustain operating cash flows and the stability of those flows.

Diversification has several different dimensions: product lines, customer segments and geographic reach, all of which can enable a company to mitigate the effects of variation in demand or pricing in a given product or market.

International diversification is usually not a strong positive rating differential unless the investment is in one of the leading service providers in a highly rated country. A large amount of diversification (especially if debt financed) into emerging markets, which generally offer the highest growth opportunities but also the most risk, can have a negative credit impact.

The competitive environment is a key driver of credit quality because the degree of competition a company faces directly impacts its pricing power and marketing expenses, and hence the quality and level of its operating margins. It also will likely drive the level and pace of capital spending on adopting new technologies, either as a means to differentiate product offerings or reduce costs.

How We Measure It

1. **Size and Scale:** Total annual (LTM) revenues in U.S. dollars. In some limited circumstances the benefits of being a large player in a small primary market of operations may be underestimated by the revenue metric. This will be particularly so for ex-incumbent telcos that remain leading players in markets with GDPs that are relatively small by global standards. Where that is the case, a rating committee may raise the scoring under the total revenues factor by one rating category to better reflect the reality of significant size in the company's primary market.

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- 2. Business Model and Competitive Environment:** The key metrics for measuring a firm's business model are expanse of service territory (i.e. international, domestic, regional) and revenue mix (i.e. wireless and wireline, voice, data and video (if applicable), business and residential). The assessment of the competitive environment takes into account market structure, customer count and revenue trends. (The rating input for this factor may be adjusted up or down by 1 rating category based on rating committee's assessment of below-average competitive challenge or some significant, non-described revenue source.)

The *Size and Scale (Total Revenues)* sub-factor has a weight of 15% while the *Business Model and Competitive Environment* sub-factor has a weight of 10%.

Notes on Measurement Criteria

Moody's views a diversified business model as more robust than either a stand-alone fixed-line operation or wireless business because technological changes continue at a fast pace and an operator with strong fixed-line and wireless businesses is best positioned to evolve with such changes. The diversified player has a sounder platform for adopting a range of new products. It can strategically invest in emerging technologies and raise investments, depending on market acceptance of the new technologies, widening the opportunity for success.

In assessing the level of competitive challenge (minor, moderate or high) Moody's looks at, among other things, revenue trends, number of players, rate of access line change relative to demand growth and, for wireless carriers, gross additions, churn levels and ARPU trends.

In Moody's model, the highest ratings (Aaa and Aa) relative to this sub-factor are only achieved by operators that are, within their regions, dominant providers of voice and data, with a heavy composition of enterprise customers; and with strong representation in the wireless market. A business model with "A" characteristics is most likely to represent a pure play wireless operator with a strong established position or a diversified player with a good, but not a leading position in the wireless segment. A "Baa" business model may either constitute an incumbent wireline operator facing a moderate competitive threat or a diversified player operating in an intensely competitive market. Business models representative of "Ba" business risk would include those operators across all industry sectors facing heavy competitive pressures, and, in the case of incumbents, experiencing operating difficulties. Start up and competitive operators such as CLECs would rank in the "B" and "Caa" business risk scores, depending on the scope of their network investment.

Factor Mapping

The mapping criteria for the *Size, Scale, Business Model and Competitive Environment* factor ("Factor 1") are shown in the following table.

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Rating Factor: I. Size, Scale, Business Model and Competitive Environment (25% Weighting)

Key Considerations	Aaa	Aa	A	Baa	Ba	B	Caa	Wt.
A. Total Revenues (1)	>\$80B	>\$40B-\$80B	>\$20B-\$40B	>\$5B-\$20B	>\$2B-\$5B	≥\$0.5B-\$2.0B	<\$.5B	15%
B. Business Model (2)								10%
Diversified	Dominant incumbent national provider of voice and data services with large business revenues > 25% and wireless revenues > 50% of total revenues AND wireline and wireless businesses exposed to minor competitive challenges. Successful expansion outside its national franchise area. Competitive video product offering in its service area.	National incumbent provider of voice and data services with large business revenues 15% - 25% and wireless revenues 30% - 50% of total revenues AND wireline and wireless businesses exposed to moderate competitive challenges. Successful expansion outside its national franchise area. Competitive video product offering in its service area.	National incumbent provider of voice and data services with large business revenues < 15% and wireless revenues 15% - 30% of total revenues AND wireline and wireless business segments exposed to increasing competitive challenges. Regional provider of voice and data services with large business revenues > 15% and wireless revenues > 50% of total revenues. Wireline and wireless business segments exposed to moderate competitive challenges.	National provider of voice and data services with wireless revenues < 15% and substantial competitive challenges. Regional provider of voice and data services with wireless revenues 30% - 50% of total revenues and increasing competitive challenges.	Regional provider of voice and data services with wireless revenues < 30% of total revenues. Increasing competitive challenges.	Regional provider of voice and data services with wireless revenues < 15% of total revenues. Substantial competitive challenges.		
Wireless			Multi-national operator with a successful expansion outside its national franchise area, with stable business. Established national or super-regional operator with stable business. Emerging operator in developing markets with high growth potential and limited existing competition.	Multi-national operator expanding in emerging markets with existing competition. National operator with stabilizing business OR established regional operator with stable business and <20% dependence on roaming. Emerging operator in developing markets with high growth potential and moderate existing competition.	National operator with below industry-average performance OR established regional operator with below average performance.	Emerging regional operator OR established regional operator with deteriorating performance	MVNO or affiliate without spectrum	
Wireline				Incumbent exposed to moderate competitive challenges.	Incumbent with steadily increasing competitive challenges OR non-incumbent provider with significant end-to-end network infrastructure.	Incumbent with rapidly declining business (i.e. revenues declining by 10% per yr.) OR non-incumbent based operator with significant core network infrastructure.	Competitive entrant reliant on other providers for significant portion of final termination OR reseller.	

(1) Moody's notes that in some limited circumstances a telco may be a more significant player in its primary market of operations than our revenue metric score gives credit for. This will be particularly so for ex-incumbent telcos who remain dominant players in markets with GDPs that are relatively small by global standards. Where that is the case a rating committee may adjust – by up to one rating band – the score the telco would otherwise score under the total revenues sub-factor to better reflect the reality of significant size in their primary market.

(2) Rating input for this sub-factor can be shaded up 1 notch based on rating committee's assessment of below average competitive challenge or another significant non-described revenue source; or down 1 notch based on rating committee's assessment of above average competitive challenges.

Global Telecommunications Industry

Factor 1: Ratings Mapping

	Current Rating / BCA ¹	Mapped Rating For Factor 1: Size, Scale, Business Model and Competitive Environment (25%)	Sub-Factors For Factor 1: Size, Scale, Business Model and Competitive Environment (25%)	
			Size & Scale (Total Revenues) (15%)	Business Model and Competitive Environment (10%)
America Movil	A3	A	A	A
AT&T	A2	Aa	Aaa	Aa
AT&T Mobility	A3	Aa	Aa	A
Axtel	Ba2	B	B	Ba
BCE / Bell Canada	Baa1	Baa	Baa	A
Broadview	B3	B	B	B
Cable & Wireless	Ba3	Baa	Baa	Baa
Centennial	B2	B	B	Ba
CenturyTel	Baa2	Ba	Ba	Ba
Cincinnati Bell	Ba3	B	B	B
Citizens	Ba2	Ba	Ba	Ba
City Telecom	B2	B	Caa	Ba
Colt	B2	Ba	Ba	B
Dobson	Ba3	B	B	Ba
France Telecom*	Baa1	Aa	Aa	Aa
GoldenTelecom	Ba3	B	B	B
Hawaiian Telcom	B2	B	B	Ba
Impsat Fiber Networks	B3	B	Caa	Ba
Indosat*	Ba2	Ba	B	Baa
iPCS Inc	B3	Caa	Caa	Caa
KT Corp	A3	A	A	Aa
Millicom Int'l Cellular	Ba2	Ba	Ba	Baa
NTT*	Aa1	Aa	Aaa	Aa
NTT DoCoMo	Aa1	Aa	Aa	Aa
Nuvox	B2	B	B	B
PCCW	Baa2	Baa	Baa	A
Rural Cellular	B3	B	B	B
SingTel*	A2	A	A	Aa
Softbank	Ba2	A	A	Aa
Sprint Nextel	Baa3	A	Aa	Baa
Telecom Italia	Baa2	Aa	Aa	Aa
Telefonica	Baa1	Aa	Aa	Aa
Telekom Slovenije*	Baa2	Ba	B	A
Telemar	Baa2	Baa	Baa	Baa
Telesp	Baa2	Baa	Baa	Ba
Telmex	A2	A	A	Baa
Telus	Baa1	Baa	Baa	A
TPSA	Baa1	A	Baa	Aa
True Move	B1	B	B	Ba
Verizon Communications	A3	Aa	Aaa	Aa
Vodafone	Baa1	Aa	Aa	A
Windstream	Ba2	Ba	Ba	Ba

Negative Outlier Positive Outlier

*GRI Issuer

¹Senior Unsecured Rating, Corporate Family Rating, or BCA is Base Line Assessment for GRI (Government Related Issuers)

Global Telecommunications Industry

Observations

All five outliers for this factor are positive (the factor rating is higher than the overall rating of the issuer) and four of the five are rated investment grade. The outliers are all very large companies where strong scoring in this factor is counterbalanced by lower scoring on other factors, most often Financial Strength.

Factor 2: Operating Environment

Why it Matters

The operating environment exerts external pressures on a company's performance and hence its credit quality. For telecommunications companies, the operating environment has several different dimensions: regulatory and political framework, technology risk and market share.

Regulatory and Political Framework

Regulation impacts ratings primarily because it can help or hinder the ability of a company to predictably grow its return on investment. Its impact is primarily felt in the way it influences the competitive environment. In particular, we focus on the potential for new concessions or licenses and the way regulation enables prospective carriers to build new networks, access other carriers' networks, interconnect their networks with incumbents, and obtain "equitable" access pricing.

Adapting to the transition from government-sanctioned (and in some cases, government owned) monopolies to competitive enterprises remains one of the dominant challenges facing former wholly-government-owned incumbent telecom companies. Governments in these regions balance the difficult decisions between increasing competition in their markets and protecting employment and price levels in the former monopolies.

Technology Risk

Moody's ratings consider how exposed a company may be to technological advancement and how well positioned it may be in handling such developments. The global telecommunications industry has evolved significantly over the last 10 years, spurred on by regulatory liberalization, technological advancements and the availability of capital. Liberalization and technology have created an environment where a host of competitors threaten the value of incumbents' assets while seeking to create value for the new technology being employed. We expect that rapid technological changes will continue to pressure the capital budgets of telecom operators, which means increased risk of asset impairment or obsolescence, together with potentially poor investment decisions. The cost of adopting new technology can be significant, both in terms of capital required and the risk of failure. Alternatively, there may be a business cost for failing to quickly adopt a new technology before competition erodes the incumbent's position.

Market Share

The relative positioning of a telco within its market segments is important to its rating outcome because it is an indication of how sustainable its operating position is and whether it will be able to exercise control over the nature and pace of development in the industry. Furthermore, the strength of a telco within its markets can influence customer perceptions, ability to leverage existing capabilities to develop and support revenue, flexibility to innovate without having to make large bets, and degree of influence with regulators and politicians.

We note that incumbency still affords telcos a significant operating advantage. Even as competition has risen dramatically, the battle for market share in telecommunications requires significant capital to establish robust networks and to cover operating expenses until the investment provides a return. The marketing positions of existing operators, which may enjoy immense brand equity on quality of service and network coverage, can frustrate the ability of new entrants to build businesses in a timely fashion. In addition, existing operators enjoy well-developed distribution capabilities, through call-centers, retail stores, etc.

Global Telecommunications Industry

How We Measure It

Regulatory and Political Framework: Moody's considers four different aspects of the regulatory environment as the most useful measures for this sub-factor: (i) support for return on investment; (ii) regulatory barriers to entry, such as propensity for additional licenses or concessions to be issued; (iii) predictability; and (iv) level of reliance on a regulated revenue stream or service subsidies.

We also consider how the regulatory environment will handle the industry's convergence, and whether regulations tend to favor the incumbents or the competitors. We view a company's high reliance on a government regulated revenue stream negatively. The predictability of the regulatory environment is a key issue, and the uncertainty created by its absence will weigh on all players in that market.

The challenge in estimating the likely impact of regulatory action includes not only understanding the specific policies, but also assessing how regulatory change will affect the specific issuer. Moody's recognizes that two companies operating under the same regulatory regime may attain different scores on the Regulatory and Political sub-factor because of their respective histories and market positioning. For example, in the U.S., wireline incumbents generally produce investment grade scores in this sub-factor, while new competitors score "Ba" or lower, since many of them still require regulatory relief to execute on their business plans.

Technology Risk: Moody's assessment of a company's technology risk starts with an evaluation of the lifetime service capabilities and scalability of the company's existing network architecture. Because the telecom industry is very capital intensive and faces rapid technological innovation, a company's investment strategy is critical to its future prospects. In order to assess the risk associated with a company's ongoing infrastructure plans, we consider the technologies that the company is deploying, specifically with regard to whether it is a proven or unproven technology, time to market, the size of the investment required, and the technology's expected life-time. While this assessment is largely qualitative, a quantitative measure that can prove helpful in this evaluation is CAPEX/Revenues. In addition to the qualitative assessments, we also utilize the following grid to help us determine what rating group this sub-factor should fall under:

CAPEX/Revenues							
	Aaa	Aa	A	Baa	Ba	B	Caa
Wireline	N/A	N/A	15%-18%	12%-15% or 18%-21%	9%-12% or 21%-24%	6%-9% or 24%-27%	N/A
Wireless	N/A	N/A	12%-15%	9%-12% or 15%-18%	6%-9% or 18%-21%	3%-6% or 21%-24%	N/A

Market Share: Moody's definition of "market" is split between wireline and wireless markets to take into account the different nature of competition in these respective segments. We also take an "expanded" view of the market, focusing on revenue generating units (RGUs), meaning traditional wireline, competitive wireline and VoIP providers are all considered in the same market. In addition, in those markets where convergence is established, market share for telcos includes their share of the video market. In instances where an issuer offers wireless and wireline services, we take a weighted average position of market share between the two segments. However, the market includes only the geographic area where the company provides service.

The regulatory and political framework sub-factor has a weight of 8%, the technology risk sub-factor, 7% and the market share sub-factor, 5%.

Global Telecommunications Industry

Factor Mapping

The mapping criteria for *Operating Environment* ("Factor 2") are shown in the following table.

Rating Factor: II. OPERATING ENVIRONMENT (20% Weighting)

Key Considerations	Aaa	Aa	A	Baa	Ba	B	Caa	Wt.
A Regulatory and Political								8%
Support for return on investment and dependence on current regulatory policy	Strong ROI support for the incumbent from regulatory body/ Unlikely awards of new operating concessions/ Regulatory outlook is unlikely to change	Strong ROI support for the incumbent from regulatory body/ Unlikely awards of new operating concessions/ Regulatory outlook is stable and predictable	ROI support for the incumbent from regulatory body/ Potential awards of limited new operating concessions/ Regulatory outlook is stable, although change in administration may alter outlook	Regulatory support for increased facilities and non-facilities based competition/ Likely awards of new operating concessions/ Less than 10% revenues reliant on service subsidy/ Regulatory bodies in active deliberations to change regulatory framework	Regulatory support for non-facilities based competition/ Regulation favors new market entrants/ Company dependent on access to incumbents' network for less than 50% of revenues/ Potential regulatory change unfavorable to issuer/ Less than 20% revenues reliant on service subsidy	Strong regulatory support for non-facilities based competition/ Regulation favors new market entrants/ Company highly dependent on access to incumbents' network/ Greater than 30% revenues reliant on service subsidy	Risk of nationalization	
B Technology Risk ⁽¹⁾	Very Low	Low	Low - Moderate	Moderate	Moderate - High	High	Very High	7%
C Market Share								5%
Market Share - Wireline ⁽²⁾	>75%	>55%-75%	>45%-55%	>35%-45%	>25%-35%	≥15%-25%	<15%	
Market Share - Wireless ⁽²⁾	>50%	>40%-50%	>30%-40%	>20%-30%	>15%-20%	≥10%-15%	<10%	

(1) Please refer to Technology risk section and Capex/Revenues grid previously shown for additional information.

(2) Definition of "market" is split between wireline and wireless markets to take into account the different nature of competition in the respective segments. We also take an "expanded" view of the market, focusing on revenue generating units (RGUs), meaning traditional wireline, competitive wireline, and VoIP providers are all in the same market. In addition, in those markets where convergence is established, market share for telcos includes their share of video market. In instances where an issuer offers wireless and wireline services, the analyst is to take a weighted average position of market share between the two segments. However, market includes only those markets where company provides service.

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Factor 2: Ratings Mapping

	Current Rating / BCA ¹	Mapped Rating For Factor 2: Operating Environment (20%)	Regulatory & Political (8%)	Sub-Factors for Factor 2: Operating Environment (20%)	
				Technology Risk (7%)	Market Share (5%)
America Movil	A3	A	Baa	Baa	Aa
AT&T	A2	Baa	Baa	Baa	Baa
AT&T Mobility	A3	Baa	Baa	A	Baa
Axtel	Ba2	Ba	Baa	Ba	Caa
BCE/Bell Canada	Baa1	A	Baa	Baa	Aa
Broadview	B3	B	B	B	Caa
Cable & Wireless	Ba3	Ba	Baa	Ba	Ba
Centennial	B2	Ba	Ba	Ba	B
CenturyTel	Baa2	Baa	Baa	Baa	A
Cincinnati Bell	Ba3	Baa	Baa	Baa	Baa
Citizens	Ba2	Baa	Baa	Ba	Baa
City Telecom	B2	Baa	A	A	B
Colt	B2	Baa	Baa	A	Caa
Dobson	Ba3	Ba	Ba	Ba	Ba
France Telecom*	Baa1	Aa	Aa	A	Aa
GoldenTelecom	Ba3	Ba	B	A	Caa
Hawaiian Telcom	B2	Ba	Ba	B	Baa
Impsat Fiber Networks	B3	Ba	Ba	Ba	Caa
Indosat*	Ba2	Baa	Ba	Baa	Baa
iPCS Inc	B3	Ba	Ba	Baa	Caa
KT Corp	A3	Aa	A	Aa	Aa
Millicom Int'l Cellular	Ba2	Baa	Ba	A	A
NTT*	Aa1	Aa	Aaa	A	Aa
NTT DoCoMo	Aa1	Aa	Aaa	A	Aaa
Nuvox	B2	B	B	B	Caa
PCCW	Baa2	A	A	A	Aa
Rural Cellular	B3	Ba	Ba	Ba	B
SingTel*	A2	A	A	A	A
Softbank	Ba2	A	Aaa	Baa	B
Sprint Nextel	Baa3	Ba	Baa	Ba	Ba
Telecom Italia	Baa2	A	A	A	Aa
Telefonica	Baa1	A	A	A	Aa
Telekom Slovenije*	Baa2	A	A	A	Aa
Telemar	Baa2	Baa	Baa	Baa	A
Telesp	Baa2	A	Baa	Baa	Aa
Telmex	A2	A	A	Baa	A
Telus	Baa1	Baa	Baa	Ba	Aa
TPSA	Baa1	A	Baa	A	Aa
True Move	B1	Ba	Ba	Ba	B
Verizon Communications	A3	Baa	Baa	Baa	Baa
Vodafone	Baa1	A	A	A	A
Windstream	Ba2	Baa	Baa	Ba	Baa

Negative Outlier

Positive Outlier

*GRI Issuer

¹Senior Unsecured Rating, Corporate Family Rating, or BCA ie Base Line Assessment for GRI (Government Related Issuers)

Global Telecommunications Industry

Observations

France Telecom is a positive outlier for this factor. Moody's views the French regulatory environment as credit-supportive in terms of enabling FT to achieve adequate and predictable returns on investments. In addition, France Telecom is a positive outlier on the market share sub-factor.

Being an outlier is common to other European incumbent operators given their still strong market position. As the incumbent, FT still dominates the fixed-line residential and business services market. FT mobile (Orange) is the market leader in France with a subscriber market share of about 47%. FT's current domestic market share in terms of voice traffic is about 68%. Increased competition, combined with the continued decline in voice traffic, should lead to a gradual erosion of revenue. Nevertheless, Moody's believes that FT will largely retain its leading market position. In Moody's opinion, increased subscriptions to fixed-rate plans and broadband growth should help offset the negative pressure on fixed-line market share.

Softbank is a positive outlier for this factor because its Regulatory & Political sub-factor mapping is Aaa, as is the case for other major telecom operators in Japan. All the factor mappings are based on Softbank's consolidated financial statements, which includes Softbank Mobile. The acquisition of Softbank Mobile was financed by Whole Business Securitization under which the cash flow generated from the mobile telecom business is used only to service debt of the mobile business. Thus, Softbank cannot utilize the cash flow generated from the mobile business for its own debt repayment. Moody's rating on Softbank is based on our assessment of its cash flow generating ability of the non-mobile telecom businesses (i.e. ADSL business, fixed-line telecom business, and internet culture business etc.) and the debt associated with the mentioned non-mobile telecom businesses.

City Telecom and Colt are positive outliers for this factor since both operate under very open and transparent regulatory schemes that support competition and both have deployed advanced technology. In the specific case of City Telecom, its weak Operating Performance (Factor 4) is a function of its start-up nature and leads to weak scoring on Factor 5, Financial Strength, which offsets the strong score in Factor 2, Operating Environment.

Factor 3: Strategy and Financial Policies

Why it Matters

Management's strategy and its tolerance for financial risk will directly affect debt levels and credit quality and hence is a key rating determinant. This is especially true for the investment-grade rated telecommunications issuers, for which credit strength is largely discretionary.

A telco's financial policies provide a guide to management's appetite for future financial risk and the likely future direction for the company's capital structure. Key issues include leverage, coverage and return targets. Furthermore, dividend and share buyback policies play a significant role in this factor. Important issues are a company's public commitments in this area, whether it has a track record of changing such commitments, and the degree to which its targets appear to be realistic.

How we Measure It

1. Moody's assesses the issuer's desired capital structure or targeted credit rating relative to the history of prior actions and commitment to maintain the targets and the degree of operational and financial flexibility that management builds into the company's credit profile. Attention is paid to management's performance through different phases of the economic cycles, as well as technological, supply-demand, credit and other issues relevant to its industry. Also of interest is the way in which management responds to key events, such as tightened liquidity, legal actions, competitive challenges, regulatory pressures and labor disputes.
2. Management's appetite for M&A activity is also assessed with a focus on the type of transactions (i.e. core competency or new business) and funding decisions that management is most likely to make. Frequency and materiality of acquisitions and previous financing choices are reviewed. We use a company's M&A history as the basis for determining management's appetite for risk and, more

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importantly, in judging the quality of its track record integrating and enhancing the acquired business. A history of debt-financed or credit-transforming acquisitions increases risk.

- Track record of favoring shareholder returns at the expense of bondholders.

The factor has a weight of 5%.

Factor Mapping

The mapping criteria for *Strategy and Financial Policies* ("Factor 3") are shown in the following table.

Rating Factor: III. STRATEGY AND FINANCIAL POLICIES (5% Weighting)

Key Considerations	Aaa	Aa	A	Baa	Ba	B	Caa	Wt.
A Management's Financial Strategy	Very conservative - stable metrics, no financially transforming events; management targets Debt/EBITDA below 0.5x.	Conservative stable metrics, no financially transforming events; management targets Debt/EBITDA below 1.0x.	Predictable financial policy balanced between stockholders and creditors - no big shifts in public commitment to a strong investment grade rating.	Financial policies balanced between stockholders and creditors; potential for rating migration following acquisitions; public commitment to metrics that are consistent with investment grade.	History of debt funded acquisitions and/or returns to shareholders; track record of downward rating migration following acquisitions.	Financial policies leave very modest financial cushion for the debt holders.	Unmanageable debt burden; restructuring likely.	5%

Notes On Measurement

Commitment to specific ratings assumes management's targets are consistent with Moody's ranges.

Ratings Mapping

The mapping for *Factor 3*, along with its sub-factors, is shown in the following table.

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Factor 3: Ratings Mapping

	Current Rating / BCA ¹	Mapped Rating For Factor 3: Strategy and Financial Policies (5%)	Sub-Factor for Factor 3: Strategy and Financial Policies (5%)
America Movil	A3	Baa	Baa
AT&T	A2	A	A
AT&T Mobility	A3	Baa	Baa
Axtel	Ba2	Ba	Ba
BCE / Bell Canada	Baa1	A	A
Broadview	B3	B	B
Cable & Wireless	Ba3	Ba	Ba
Centennial	B2	B	B
CenturyTel	Baa2	A	A
Cincinnati Bell	Ba3	Ba	Ba
Citizens	Ba2	Ba	Ba
City Telecom	B2	Baa	Baa
Colt	B2	B	B
Dobson	Ba3	B	B
France Telecom*	Baa1	A	A
GoldenTelecom	Ba3	A	A
Hawaiian Telcom	B2	B	B
Impsat Fiber Networks	B3	B	B
Indosat*	Ba2	Ba	Ba
iPCS Inc	B3	B	B
KT Corp	A3	A	A
Millicom Int'l Cellular	Ba2	Ba	Ba
NTT*	Aa1	Aa	Aa
NTT DoCoMo	Aa1	Aaa	Aaa
Nuvox	B2	B	B
PCCW	Baa2	Baa	Baa
Rural Cellular	B3	B	B
SingTel*	A2	A	A
Softbank	Ba2	Baa	Baa
Sprint Nextel	Baa3	Baa	Baa
Telecom Italia	Baa2	Baa	Baa
Telefonica	Baa1	Baa	Baa
Telekom Slovenije*	Baa2	A	A
Telemar	Baa2	Baa	Baa
Telesp	Baa2	Baa	Baa
Telmex	A2	A	A
Telus	Baa1	A	A
TPSA	Baa1	Baa	Baa
True Move	B1	B	B
Verizon Communications	A3	A	A
Vodafone	Baa1	Baa	Baa
Windstream	Ba2	Ba	Ba

Negative Outlier

Positive Outlier

*GRI Issuer

¹Senior Unsecured Rating, Corporate Family Rating, or BCA ie Base Line Assessment for GRI (Government Related Issuers)

Global Telecommunications Industry

Observations

This factor maps well to the ratings with only two positive outliers, Golden Telecom and City Telecom. While Golden Telecom has conservative financial policies, its small size, limited market share and the fact that it competes in a relatively fragmented yet consolidating market offsets currently strong financial policies. City Telecom, another new market entrant, has a stated policy to reduce leverage and indenture protections restrict dividends, allowing it to score high in Strategy and Financial Policies. However, this strength is offset with weak scoring in Financial Strength, including a couple of Caa inputs.

Factor 4: Operating Performance

Why it Matters

The level and stability of operating margins is a key consideration in assessing risk to debt holders. The breadth of business models in the telecommunications sector (i.e. diversified, wireline, wireless, regional, national, postpaid, prepaid, etc.) makes margin comparisons complex. When considering the scores for this factor, Moody's reviews the EBITDA margin trend, as well as the absolute level. The trend in EBITDA margin measures the direction of earnings (stable, improving or declining), as it is a leading indicator of the company's business trajectory.

How we Measure It

1. EBITDA/Revenue (LTM)
2. EBITDA trend over the past two-years, with the trend indexed to the company's base EBITDA margin.

The EBITDA margin sub-factor has a weight of 6% while the EBITDA trend sub-factor has a weight of 4%.

Notes on Measurement Criteria

EBITDA margin captures all product margins in a blended fashion and considers management's skill in growing revenues, retaining customers and controlling costs, as well as attaining operational efficiencies from the network.

All metrics are MFM adjusted.

Factor Mapping

The score for the EBITDA margin sub-factor maps directly to the grid ranges, while the EBITDA trends sub-factor is indexed to the EBITDA margin input. Therefore, the company would receive a benefit or a decline relative to where its base *EBITDA margin* rating lies.

Example: Company X has a 48% EBITDA margin, that is expected to remain stable, while Company Y has a 40% EBITDA margin that is expected to increase by 200 bps/yr. Under the methodology, Company X would receive "Aa" and "Aa" scores for the *EBITDA margin* and *trends* sub-factors, respectively; while Company Y would receive "A" and "Aa" scores, respectively on those factors.

The mapping criteria for *Operating Performance* ("Factor 4") are shown in the following table:

Global Telecommunications Industry

Rating Factor: IV. OPERATING PERFORMANCE (10% Weighting)

Key Considerations	Aaa	Aa	A	Baa	Ba	B	Caa	Wt.
A EBITDA MARGIN	>50%	>45%-50%	>40%-45%	>30%-40%	>25%-30%	≥20%-25%	<20%	6%
B EBITDA Trends								
2-year EBITDA Margin Trend	Input							
Stable	Same as base EBITDA Margin score							
Improving by less than 300 bp/yr	Base score, plus 1 rating category							
Improving by 300-500 bp/yr	Base score, plus 2 rating categories							
Improving by greater than 500 bp/yr	Base score, plus 3 rating categories							
Deteriorating by less than 300 bp/yr	Base score, minus 1 rating category							
Deteriorating between 300-500 bp/yr	Base score, minus 2 rating categories							
Deteriorating by more than 500 bp/yr	Base score, minus 3 rating categories							

Ratings Mapping

The mapping for *Factor 4*, along with its sub-factors, is shown in the following table.

Global Telecommunications Industry

Factor 4: Ratings Mapping

	Current Rating / BCA ¹	Sub-Factors for Factor 4: Operating Performance (10%)		
		Mapped Rating For Factor 4: Operating Performance (10%)	EBITDA Margins (6%)	EBITDA Trends (4%)
America Movil	A3	A	A	Aa
AT&T	A2	Baa	Baa	Baa
AT&T Mobility	A3	Baa	Baa	A
Axtel	Ba2	Baa	Baa	Baa
BCE / Bell Canada	Baa1	Baa	Baa	Ba
Broadview	B3	Caa	Caa	B
Cable & Wireless	Ba3	B	B	B
Centennial	B2	Baa	Baa	Baa
CenturyTel	Baa2	Aa	Aa	Aa
Cincinnati Bell	Ba3	Baa	Baa	Baa
Citizens	Ba2	Aa	Aaa	Aa
City Telecom	B2	Ba	B	Baa
Colt	B2	Caa	Caa	B
Dobson	Ba3	Baa	Baa	Baa
France Telecom*	Baa1	Baa	Baa	Baa
GoldenTelecom	Ba3	Ba	Ba	Ba
Hawaiian Telcom	B2	Ba	Ba	Baa
Impsat Fiber Networks	B3	B	B	B
Indosat*	Ba2	Aaa	Aaa	Aaa
iPCS Inc	B3	B	B	Ba
KT Corp	A3	Ba	Baa	B
Millicom Int'l Cellular	Ba2	Aa	Aa	A
NTT*	Aa1	Baa	Baa	Ba
NTT DoCoMo	Aa1	Baa	Baa	Ba
Nuvox	B2	Caa	Caa	B
PCCW	Baa2	Ba	Ba	Ba
Rural Cellular	B3	A	A	Baa
SingTel*	A2	Aa	Aaa	Aa
Softbank	Ba2	B	B	B
Sprint Nextel	Baa3	Baa	Baa	Ba
Telecom Italia	Baa2	A	A	Baa
Telefonica	Baa1	Baa	Baa	Ba
Telekom Slovenije*	Baa2	Baa	Baa	A
Telemar	Baa2	Baa	Baa	Ba
Telesp	Baa2	Baa	Baa	Ba
Telmex	A2	A	A	A
Telus	Baa1	A	A	Baa
TPSA	Baa1	A	A	Baa
True Move	B1	Caa	Caa	B
Verizon Communications	A3	Baa	Baa	Baa
Vodafone	Baa1	A	A	Baa
Windstream	Ba2	Aa	Aa	A

Negative Outlier

Positive Outlier

*GRI Issuer

¹Senior Unsecured Rating, Corporate Family Rating, or BCA ie Base Line Assessment for GRI (Government Related Issuers)

Global Telecommunications Industry

Observations

This factor has the most factor outliers, with seven positive, three negative and the highest percentage of sub-factor outliers (26%).

The rural wireline operators in the U.S. (CenturyTel, Citizens and Windstream) are positive outliers for this factor because of the healthy returns on the core incumbent business. Their lower ratings reflect their inclination toward high shareholder returns and growth through debt financed acquisitions.

Rural and Centennial both score as positive outliers on this factor due to strong EBITDA margins, which in part arise from the contribution of high-margin roaming revenues. The actual ratings are significantly lower due to the high debt burdens that each of these companies carry, which, together with meaningful capital expenditures, hinders their ability to convert good operating profits into free cash flow.

High margins and strong EBITDA trends result in Millicom and Indosat being positive outliers, which is counterbalanced by high capital spending that leads to weak FCF generation (both score Caa in the FCF/Debt sub-factor).

The common characteristic of the negative outliers is that they are all large, dominant incumbents with very strong business models that are under attack from a whole host of competitors. Consequently, they are investing significant sums in their businesses, which is currently negatively impacting EBITDA margins and trends. Strong scores in most other factors offset low scoring in this Factor.

For example, NTT and NTT DoCoMo are negative outliers on this factor due to their modest EBITDA margins and EBITDA trends, compared with their global peers. However, their EBITDA margins are the highest in Japan's telecom industry. The actual ratings are significantly higher at Aa1, because of very conservative financing policy and strong overall credit profile.

Factor 5: Financial Strength

Why it Matters

A key component of Moody's analytical process is a review of a telco's financial strength, which is essentially its ability to generate cash, service debt, and generate sufficient return to enable continuous access to the capital markets.

Leverage and Cash Flow

The strength of the balance sheet is a key indicator of risk because it measures the degree to which a company has borrowed against future cash flow. A strong balance sheet enhances a company's ability to sustain its competitive position and grow in the future. Financial strength can mitigate other risks and provides greater operational flexibility with which to combat competition. A moderate level of leverage as measured by Debt/EBITDA is critical to maintaining investment grade status as it improves a company's ability to repay debt while continuing to fund capital projects necessary for growth opportunities and provide adequate returns to shareholders. Conversely, high leverage will constrain a company's ability to fund the projects that would improve its product offerings and services, and will constrain its ability to pursue acquisitions and other growth and value enhancing strategies.

The degree to which an enterprise is able to generate sufficient cash flow to allow for reinvestment and debt service is a fundamental underpinning of risk assessment. We look at cash flow from both a retained cash flow and a free cash flow point of view. While both of these metrics gauge the company's cash flow generation, they offer separate insights to the investor. Retained cash flow is a useful guide for investment grade companies that have greater discretion on how to allocate available cash flow, while free cash flow is paramount for assessing speculative grade companies, where the confluence of business risk, leverage and capital requirements point to the sustainability of the company in the marketplace.

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Coverage

Interest coverage is a basic measure of a company's ability to cover the cost of its borrowed capital and is particularly meaningful for speculative grade companies especially in an environment of rising interest rates.

How We Measure It

Leverage and Cash Flow (Based on LTM)

1. Debt/EBITDA
2. Free Cash Flow (FCF)/ Debt
3. Retained Cash Flow (RCF)/ Debt

Coverage (Based on LTM)

1. (Funds from Operations (FFO) + Gross Interest Expense)/Gross Interest Expense
2. (EBITDA-Capex)/Gross Interest Expense

The Debt/EBITDA sub-factor has a weight of 7%, the FCF/Debt sub-factor 7%, the RCF/Debt sub-factor 10%, while FFO interest coverage and (EBITDA-Capex)/Gross Interest Expense both have 8% weightings.

Notes on Measurement Criteria

Leverage and Cash Flow

1. **Debt/EBITDA** – provides a general indication of the level of debt relative to operating cash flows or earnings before the cost of investment in the business (depreciation and amortization), interest costs and taxes. EBITDA is not consistent with GAAP in the U.S. or in some other jurisdictions; nevertheless, this metric has broad market currency among debt investors in the telecommunications industry. This metric is less volatile than FCF/Debt and enables Moody's to determine dependable operating and leverage trends for a debt issuer.
2. **Free Cash Flow (FCF)/Debt** – indicates the ability to repay debt after all other commitments, including capital expenditures and dividends.
3. **Retained Cash Flow (RCF)/Debt** – indicates the ability of a telco to repay debt from funds from operations before working capital changes and reinvestment in the business after deducting dividends. We look at available cash flow to repay debt after dividend payments, as we believe most companies are reluctant to reduce or discontinue dividend payments.

Coverage

1. **(Funds from Operations (FFO) + Gross Interest Expense)/Gross Interest Expense** – provides a measure of a telco's ability to fund interest expenses from operational cash flow prior to payment of dividends, working capital movements, and capital expenditure investment.
2. **(EBITDA-Capex)/Gross Interest Expense** – this ratio considers the ability of a telco to cover interest expenses after it has made the necessary re-investments into its core operations. The concept represents the need to maintain/sustain operating cash flow, while servicing ongoing interest payments. It is important in the telecommunications industry as substantial investments in evolving and existing technology are required.

Debt – Net v. Gross

There may be an analyst adjustment to debt for calculating this factor in cases in which a company has pre-funded debt maturities and holds a substantial amount of cash on its balance sheet that is expected to be used for business enhancing activities. Furthermore, the choice of keeping cash on hand is often a managerial decision. Analysts have the ability to adjust positively for cash and cash equivalents when calculating real debt burdens. Many companies have a long track record of maintaining those cash

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balances, i.e. they are not dedicated to a specific investment purpose but rather provide a safety cushion. Companies may maintain high cash balances due to:

1. less liquidity in local debt markets, leading companies to be more conservative in managing liquidity
2. tax reasons: there may be an advantage to keep debt in one region, while keeping cash in another
3. pre-funding of capex: gross debt has been increased in advance of the actual need.

All metrics are MFM adjusted.

Factor Mapping

The mapping criteria for *Financial Strength* ("Factor 5") are shown in the following table.

Rating Factor: V. FINANCIAL STRENGTH (40% Weighting)									
Key Considerations	Aaa	Aa	A	Baa	Ba	B	Caa	Wt.	
Leverage and Cash Flow									
A Debt/EBITDA	≤0.5x	>0.5x-1.0x	>1.0x-2.0x	>2.0x-3.0x	>3.0x-4.0x	>4.0x-6.5x	>6.5x	7%	
B FCF/Debt	>25%	>20%-25%	>15%-20%	>10%-15%	>6%-10%	2%-6%	<2%	7%	
C RCF/Debt	>60%	>45%-60%	>35%-45%	>25%-35%	>15%-25%	5%-15%	<5%	10%	
Coverage									
D FFO+Int. Exp./Gross Int. Exp.	>12x	>9x-12x	>7x-9x	>5x-7x	>3x-5x	2x-3x	<2x	8%	
E EBITDA-CAPEX/Gross Int. Exp.	>8.0x	>6.5x-8.0x	>5.0x-6.5x	>3.5x-5.0x	>2.0x-3.5x	1.0x-2.0x	<1x	8%	

Ratings Mapping

The mapping for *Factor 5*, along with its sub-factors, is shown below:

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Factor 5: Ratings Mapping

	Current Rating / BCA ¹	Mapped Rating For Factor 5: Financial Strength (40%)	Sub-Factors for Factor 5: Financial Strength (40%)				
			Debt/EBITDA (7%)	FCF/Debt (7%)	RCF/Debt (10%)	(FFO+Int Exp) / Int Exp (8%)	(EBITDA - Capex) / Int Exp (8%)
America Movil	A3	A	A	Aa	Aa	A	Baa
AT&T	A2	Baa	Baa	B	Ba	Aa	Aa
AT&T Mobility	A3	Baa	Baa	B	A	A	Ba
Axtel	Ba2	Ba	Baa	Caa	A	Ba	Caa
BCE / Bell Canada	Baa1	Ba	Baa	B	Ba	B	Ba
Broadview	B3	Caa	Caa	Caa	B	Caa	Caa
Cable & Wireless	Ba3	Ba	Baa	Caa	Ba	Baa	B
Centennial	B2	B	B	Caa	B	Caa	B
CenturyTel	Baa2	Baa	Baa	A	Baa	Baa	Baa
Cincinnati Bell	Ba3	B	B	B	B	B	B
Citizens	Ba2	B	B	B	B	Ba	Ba
City Telecom	B2	B	Ba	Caa	Ba	Ba	Caa
Colt	B2	Ba	Baa	Caa	Baa	Ba	B
Dobson	Ba3	B	B	Caa	B	Caa	B
France Telecom*	Baa1	Baa	Baa	Ba	Ba	Baa	Baa
GoldenTelecom	Ba3	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa
Hawaiian Telcom	B2	Caa	Caa	Caa	B	B	Caa
Impsat Fiber Networks	B3	Caa	B	Caa	B	Caa	Caa
Indosat*	Ba2	Ba	A	Caa	Baa	Ba	B
iPCS Inc	B3	B	B	Caa	Ba	B	Caa
KT Corp	A3	A	A	A	Aa	Aa	Baa
Millicom Int'l Cellular	Ba2	Ba	Baa	Caa	Baa	Ba	B
NTT ^{*2}	Aa1	A	Baa	Caa	Aa	Aaa	Aa
NTT DoCoMo ²	Aa1	Aa	Aa	Caa	Aaa	Aaa	Aaa
Nuvox	B2	Ba	Baa	Caa	Baa	Ba	B
PCCW2	Baa2	B	B	Caa	B	Ba	B
Rural Cellular	B3	Caa	Caa	B	Caa	Caa	Caa
SingTel*	A2	A	A	Ba	A	A	Aa
Softbank ²	Ba2	B	B	Caa	Ba	Ba	B
Sprint Nextel	Baa3	Baa	Baa	Ba	A	Baa	B
Telecom Italia ²	Baa2	Ba	Ba	Caa	Ba	Ba	Ba
Telefonica	Baa1	Baa	Baa	Ba	Ba	Baa	Baa
Telekom Slovenije*	Baa2	Aa	A	Aa	Aaa	Aaa	Aaa
Telemar	Baa2	A	A	Aa	Aa	Baa	Ba
Telesp	Baa2	A	Aa	B	Aaa	Aa	Aa
Telmex	A2	A	A	Aaa	Aa	A	A
Telus	Baa1	Baa	Baa	Baa	Baa	Baa	Ba
TPSA	Baa1	A	A	Aaa	Aa	Aa	A
True Move	B1	B	B	Caa	B	B	Caa
Verizon Communications	A3	Baa	A	Caa	A	A	Ba
Vodafone ²	Baa1	Baa	Baa	Baa	Baa	A	A
Windstream	Ba2	Ba	Ba	Ba	B	Ba	Ba

Negative Outlier

Positive Outlier

*GRI Issuer

¹Senior Unsecured Rating, Corporate Family Rating, or BCA ie Base Line Assessment for GRI (Government Related Issuers)²Net Debt Used for FCF/Debt and RCF/Debt, Gross Debt used for Debt/EBITDA

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Observations

While *Factor 5* had a relatively low number of factor outliers, 7% (two positive and one negative), 25% of the individual sub-factors were outliers. Of the sub-factor outliers:

- 25 were positive outliers; 27 negative
- 63% were in investment grade; 37% in high yield
- FCF/Debt, sub-factor B, had 40% of the outliers (21) with negative outliers outnumbering positive outliers by about 3:1
- RCF/Debt, sub-factor C, had 19% of the outliers (10) with the positive outnumbering the negative outliers by 4:1

The long established operators in developed markets are investing significant capital to modernize their networks (wireless and wireline) and also generally pay out large dividends which weakens the free cash flow metric. However, because of their strong earnings generating capacity and manageable debt levels none of these large operators score as outliers in the overall Factor.

Golden Telecom is a positive outlier for this factor because its strong credit profile and very low leverage are outweighed by its position as an alternative operator in an emerging market characterized by a less developed regulatory framework for new competitors contributing to the execution risk that is associated with the launch of new services reflected by the ratings.

Telekom Slovenije is a positive outlier for this factor because its assigned rating prospectively factors in substantial financial flexibility to accommodate the company's various strategic initiatives, which could extend to strategic acquisitions. This is not explicitly reflected in the ratios, which are based on historical financial information.

PCCW ranks as a negative outlier in the Financial Strength factor. Its financial metrics have typically been below its final assigned rating level as its relatively weak financial profile is somewhat mitigated by the extremely strong operating profile which sees PCCW, as the ex-incumbent, maintain a dominant market share across fixed line as well as a fast growing IPTV and mobile business.

Other Rating Considerations

Several generic factors that could affect credit ratings are not included in the factor mapping because their importance to a rating is extremely uneven and they apply across the corporate finance franchise. These include liquidity, corporate governance, management strength, event risk and the quality of financial disclosure. However, liquidity deserves some discussion because it is especially critical to the success of the business plans of many of the recent industry participants.

Liquidity

Moody's analysis of liquidity risk is both quantitative and qualitative, and avoids predetermined liquidity calculations because we recognize significant differences in liquidity needs across industries and issuers. Our issuer-by-issuer approach entails a review of all liquidity sources and their maturities, market sensitivity analysis, and a review of each issuer's contingency plans. In evaluating an issuer's liquidity risk insurance, potential near-term claims on the issuer are considered, and findings are compared against all likely near-term cash sources. Commercial paper represents one component of near-term claims, and bank facilities are just one component of other potential near-term sources of cash.

Moody's analysis begins with a critical evaluation of an issuer's sources and uses of cash. It then analyzes a series of reasonable stress scenarios, and assesses a company's ability to meet both operating needs and debt obligations under these scenarios. This is followed by a close examination of the company's contingency funding plans for a period of stress caused either by company-specific concerns or by a general market disruption.

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Acceptable liquidity is a benchmark for all investment-grade issuers, and having ample liquidity is not expected to lift the fundamental rating. On the other hand, ratings can be negatively impacted in situations where liquidity is weak, especially for non-investment grade companies that may have limited access to alternative sources of finance. In this regard, Moody's pays close attention to short-dated maturities and refinancing/repayment arrangements.

Final Mapping Data

In the Appendix, we show the mapped rating for each of the 5 rating factors and 13 sub-factors along with the mapped composite and actual Moody's rating for each of the 42 companies in the sample. The sub-factor and factor weightings are also provided. Mapped results for each of the sub-factors and factors that vary from the actual rating by two or more rating categories are highlighted.

The model indicated ratings deviate from the current assigned ratings as follows:

- 7 companies (~17% of the sample) map to their assigned rating
- 23 companies (~55% of the sample) have indicated ratings that are either one notch above or below their rating
- 9 companies (~21% of the sample) have indicated ratings that are two notches above or below their rating
- 3 companies (~7% of the sample) have indicated ratings that are three or more notches above or below their existing ratings.

The differentials of three or more notches reflect the following considerations:

- Telecom Slovenije's Methodology indicated rating is 3 notches higher than its Baa2 BCA because the BCA factors substantial financial flexibility to accommodate the company's strategic initiatives such as potential acquisitions and various privatization scenarios. Additionally it reflects Telekom Slovenije's relatively protected position of an incumbent telecom operator in the market with gradually increasing competition.
- Golden Telecom (its methodology indicated rating is 5 notches higher than its Ba3 rating) reflects its position as an alternative operator on the emerging market with unbundled local loop and remaining uncertainty of the political and economic environment
- NTT's Methodology indicated rating is 3 notches lower than its Aa1 BCA, because the BCA incorporates NTT's vital role in Japan's telecoms industry, and its importance to Japan's telecom policy and national security.

Overall, the methodology output indicates that there are more companies whose methodology indicated rating is above their rating (26) than companies whose methodology indicated rating is below their rating (9). This results from the fact that the financial factors in the grid are based on historical data, thus failing to capture the general trend toward increasing competition and escalating shareholder activism. Moody's ratings are forward looking and incorporate our expectations of future financial and operating performance. Ratings for a significant number of companies are restrained by expectations that free cash flow will be returned to shareholders or deployed for acquisitions.

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Appendix I: Model Output Rating

	Current Rating / BCA ¹	Methodology Indicated Rating	Variance
America Movil	A3	A2	-1
AT&T	A2	A3	1
AT&T Mobility	A3	Baa1	1
Axtel	Ba2	Ba2	0
BCE / Bell Canada	Baa1	Baa3	2
Broadview	B3	B3	0
Cable & Wireless	Ba3	Ba2	-1
Centennial	B2	B1	-1
CenturyTel	Baa2	Baa2	0
Cincinnati Bell	Ba3	Ba3	0
Citizens	Ba2	Ba1	-1
City Telecom	B2	Ba3	-2
Colt	B2	Ba3	-2
Dobson	Ba3	B1	1
France Telecom* ²	Baa1	A3	-1
GoldenTelecom	Ba3	Baa1	-5
Hawaiian Telcom	B2	B1	-1
Impsat Fiber Networks	B3	B3	0
Indosat* ³	Ba2	Ba1	-1
iPCS Inc	B3	B2	-1
KT Corp	A3	A2	-1
Millicom Int'l Cellular	Ba2	Baa3	-2
NTT* ⁴	Aa1	A1	3
NTT DoCoMo	Aa1	Aa3	2
Nuvox	B2	B1	-1
PCCW	Baa2	Ba1	2
Rural Cellular	B3	B2	-1
SingTel* ⁵	A2	A1	-1
Softbank	Ba2	Baa3	-2
Sprint Nextel	Baa3	Baa2	-1
Telecom Italia	Baa2	Baa1	-1
Telefonica	Baa1	A3	-1
Telekom Slovenije* ⁶	Baa2	A2	-3
Telemar	Baa2	Baa1	-1
Telesp	Baa2	A3	-2
Telmex	A2	A2	0
Telus	Baa1	Baa2	1
TPSA	Baa1	A2	-2
True Move	B1	B2	1
Verizon Communications	A3	A3	0
Vodafone	Baa1	A3	-1
Windstream	Ba2	Ba1	-1

Negative Outlier

Positive Outlier

*GRI Issuer

¹Senior Unsecured Rating, Corporate Family Rating, or BCA ie Base Line Assessment for GRI (Government Related Issuers)²France Telecom's BCA is a 8, equivalent to a Baa1 rating, making the variance between the model indicated rating and the BCA 1 notch.³Indosat's BCA is a 12, equivalent to a Ba2 rating, making the variance between the model indicated rating and the BCA 1 notch.⁴NTT's BCA is a 2, equivalent to a Aa1 rating, making the variance between the model indicated rating and the BCA 2 notches.⁵SingTel's BCA is expressed as a range. The midpoint of this range is equivalent to an A2 rating, making the variance between the model indicated rating and the BCA 1 notch.⁶TeleKom Slovenije's BCA is a 9, equivalent to a Baa2 rating, making the variance between the model indicated rating and the BCA 3 notches.

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Appendix II

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	Factor 1: Size, Scale, Business Model, and Competitive Environment (25%)						Factor 2: Operating Environment (20%)			Factor 3: Strategy and Financial Policies (5%)	
	Current Rating / BCA ¹	Model Indicated Rating	Total Mapped Rating for Size, Scale, Business Model, and Competitive Environment (25%)	Sub-Factor A: Size & Scale (Total Revenues) (15%)	Sub-Factor B: Business Model & Competitive Environment (10%)	Total Mapped Rating For Factor 2: Operating Environment (20%)	Sub-Factor A: Regulatory & Political (8%)	Sub-Factor B: Technology Risk (7%)	Sub-Factor C: Market Share (5%)	Total Mapped Rating For Factor 3: Strategy and Financial Policies (5%)	Sub-Factor A: Management Financial Strategy (5%)
America Movil	A3	A2	A	A	A	A	Baa	Baa	Aa	Baa	Baa
AT&T	A2	A3	Aa	Aaa	Aa	Baa	Baa	Baa	Baa	A	A
AT&T Mobility	A3	Baa1	Aa	Aa	A	Baa	Baa	A	Baa	Baa	Baa
Axtel	Ba2	Ba2	B	B	Ba	Ba	Baa	Ba	Caa	Ba	Ba
BCE / Bell Canada	Baa1	Baa3	Baa	Baa	A	A	Baa	Baa	Aa	A	A
Broadview	B3	B3	B	B	B	B	B	B	Caa	B	B
Cable & Wireless	Ba3	Ba2	Baa	Baa	Baa	Ba	Baa	Ba	Ba	Ba	Ba
Centennial	B2	B1	B	B	Ba	Ba	Ba	Ba	B	B	B
CenturyTel	Baa2	Baa2	Ba	Ba	Ba	Baa	Baa	Baa	A	A	A
Cincinnati Bell	Ba3	Ba3	B	B	B	Baa	Baa	Baa	Baa	Ba	Ba
Citizens	Ba2	Ba1	Ba	Ba	Ba	Baa	Baa	Ba	Baa	Ba	Ba
City Telecom	B2	Ba3	B	Caa	Ba	Baa	A	A	B	Baa	Baa
Colt	B2	Ba3	Ba	Ba	B	Baa	Baa	A	Caa	B	B
Dobson	Ba3	B1	B	B	Ba	Ba	Ba	Ba	Ba	B	B
France Telecom*	Baa1	A3	Aa	Aa	Aa	Aa	Aa	A	Aa	A	A
GoldenTelecom	Ba3	Baa1	B	B	B	Ba	B	A	Caa	A	A
Hawaiian Telcom	B2	B1	B	B	Ba	Ba	Ba	B	Baa	B	B
Impsat Fiber Networks	B3	B3	B	Caa	Ba	Ba	Ba	Ba	Caa	B	B
Indosat*	Ba2	Ba1	Ba	B	Baa	Baa	Ba	Baa	Baa	Ba	Ba
iPCS Inc	B3	B2	Caa	Caa	Caa	Ba	Ba	Baa	Caa	B	B
KT Corp	A3	A2	A	A	Aa	Aa	A	Aa	Aa	A	A
Millicom Int'l Cellular	Ba2	Baa3	Ba	Ba	Baa	Baa	Ba	A	A	Ba	Ba
NTT*	Aa1	A1	Aa	Aaa	Aa	Aa	Aaa	A	Aa	Aa	Aa
NTT DoCoMo	Aa1	Aa3	Aa	Aa	Aa	Aa	Aaa	A	Aaa	Aaa	Aaa
Nuvox	B2	B1	B	B	B	B	B	B	Caa	B	B

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	Current Rating / BCA ¹	Model Indicated Rating	Factor 1: Size, Scale, Business Model, and Competitive Environment (25%)			Factor 2: Operating Environment (20%)			Factor 3: Strategy and Financial Policies (5%)		
			Total Mapped Rating for Size, Scale, Business Model, and Competitive Environment (25%)	Sub-Factor A: Size & Scale (Total Revenues) (15%)	Sub-Factor B: Business Model & Competitive Environment (10%)	Total Mapped Rating For Factor 2: Operating Environment (20%)	Sub-Factor A: Regulatory & Political (8%)	Sub-Factor B: Technology Risk (7%)	Sub-Factor C: Market Share (5%)	Total Mapped Rating For Factor 3: Strategy and Financial Policies (5%)	Sub-Factor A: Management Financial Strategy (5%)
PCCW	Baa2	Ba1	Baa	Baa	A	A	A	A	Aa	Baa	Baa
Rural Cellular	B3	B2	B	B	B	Ba	Ba	Ba	B	B	B
SingTel*	A2	A1	A	A	Aa	A	A	A	A	A	A
Softbank	Ba2	Baa3	A	A	Aa	A	Aaa	Baa	B	Baa	Baa
Sprint Nextel	Baa3	Baa2	A	Aa	Baa	Ba	Baa	Ba	Ba	Baa	Baa
Telecom Italia	Baa2	Baa1	Aa	Aa	Aa	A	A	A	Aa	Baa	Baa
Telefonica	Baa1	A3	Aa	Aa	Aa	A	A	A	Aa	Baa	Baa
Telekom Slovenije*	Baa2	A2	Ba	B	A	A	A	A	Aa	A	A
Telemar	Baa2	Baa1	Baa	Baa	Baa	Baa	Baa	Baa	A	Baa	Baa
Telesp	Baa2	A3	Baa	Baa	Ba	A	Baa	Baa	Aa	Baa	Baa
Telmex	A2	A2	A	A	Baa	A	A	Baa	A	A	A
Telus	Baa1	Baa2	Baa	Baa	A	Baa	Baa	Ba	Aa	A	A
TPSA	Baa1	A2	A	Baa	Aa	A	Baa	A	Aa	Baa	Baa
True Move	B1	B2	B	B	Ba	Ba	Ba	Ba	B	B	B
Verizon Communications	A3	A3	Aa	Aaa	Aa	Baa	Baa	Baa	Baa	A	A
Vodafone	Baa1	A3	Aa	Aa	A	A	A	A	A	Baa	Baa
Windstream	Ba2	Ba1	Ba	Ba	Ba	Baa	Baa	Ba	Baa	Ba	Ba

Negative Outlier Positive outlier

*GRI Issuer

¹Senior Unsecured Rating, Corporate Family Rating, or BCA ie Base Line Assessment for GRI (Government Related Issuers)

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	Factor 4: Operating Performance (10%)			Factor 5: Financial Strength (40%)					
	Mapped Rating For Factor 4: Operating Performance (10%)	EBITDA Margins (6%)	EBITDA Trends (4%)	Total Mapped Rating For Factor 5: Financial Strength (40%)	Sub-Factor A: Debt/EBITDA (7%)	Sub-Factor B: FCF/Debt (7%)	Sub-Factor C: RCF/Debt (10%)	Sub-Factor D: (FFO+Int Exp) / Int Exp (8%)	Sub-Factor E: (EBITDA - Capex) / Int Exp (8%)
America Movil	A	A	Aa	A	A	Aa	Aa	A	Baa
AT&T	Baa	Baa	Baa	Baa	Baa	B	Ba	Aa	Aa
AT&T Mobility	Baa	Baa	A	Baa	Baa	B	A	A	Ba
Axtel	Baa	Baa	Baa	Ba	Baa	Caa	A	Ba	Caa
BCE / Bell Canada	Baa	Baa	Ba	Ba	Baa	B	Ba	B	Ba
Broadview	Caa	Caa	B	Caa	Caa	Caa	B	Caa	Caa
Cable & Wireless	B	B	B	Ba	Baa	Caa	Ba	Baa	B
Centennial	Baa	Baa	Baa	B	B	Caa	B	Caa	B
CenturyTel	Aa	Aa	Aa	Baa	Baa	A	Baa	Baa	Baa
Cincinnati Bell	Baa	Baa	Baa	B	B	B	B	B	B
Citizens	Aa	Aaa	Aa	B	B	B	B	Ba	Ba
City Telecom	Ba	B	Baa	B	Ba	Caa	Ba	Ba	Caa
Colt	Caa	Caa	B	Ba	Baa	Caa	Baa	Ba	B
Dobson	Baa	Baa	Baa	B	B	Caa	B	Caa	B
France Telecom*	Baa	Baa	Baa	Baa	Baa	Ba	Ba	Baa	Baa
GoldenTelecom	Ba	Ba	Ba	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa
Hawaiian Telcom	Ba	Ba	Baa	Caa	Caa	Caa	B	B	Caa
Impsat Fiber Networks	B	B	B	Caa	B	Caa	B	Caa	Caa
Indosat*	Aaa	Aaa	Aaa	Ba	A	Caa	Baa	Ba	B
iPCS Inc	B	B	Ba	B	B	Caa	Ba	B	Caa
KT Corp	Ba	Baa	B	A	A	A	Aa	Aa	Baa
Millicom Int'l Cellular	Aa	Aa	A	Ba	Baa	Caa	Baa	Ba	B
NTT*	Baa	Baa	Ba	A	Baa	Caa	Aa	Aaa	Aa
NTT DoCoMo	Baa	Baa	Ba	Aa	Aa	Caa	Aaa	Aaa	Aaa
Nuvox	Caa	Caa	B	Ba	Baa	Caa	Baa	Ba	B
PCCW	Ba	Ba	Ba	B	B	Caa	B	Ba	B
Rural Cellular	A	A	Baa	Caa	Caa	B	Caa	Caa	Caa
SingTel*	Aa	Aaa	Aa	A	A	Ba	A	A	Aa
Softbank	B	B	B	B	B	Caa	Ba	Ba	B
Sprint Nextel	Baa	Baa	Ba	Baa	Baa	Ba	A	Baa	B
Telecom Italia	A	A	Baa	Ba	Ba	Caa	Ba	Ba	Ba

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	Factor 4: Operating Performance (10%)			Factor 5: Financial Strength (40%)					
	Mapped Rating For Factor 4: Operating Performance (10%)	EBITDA Margins (6%)	EBITDA Trends (4%)	Total Mapped Rating For Factor 5: Financial Strength (40%)	Sub-Factor A: Debt/EBITDA (7%)	Sub-Factor B: FCF/Debt (7%)	Sub-Factor C: RCF/Debt (10%)	Sub-Factor D: (FFO+Int Exp) / Int Exp (8%)	Sub-Factor E: (EBITDA - Capex) / Int Exp (8%)
Telefonica	Baa	Baa	Ba	Baa	Baa	Ba	Ba	Baa	Baa
Telekom Slovenije*	Baa	Baa	A	Aa	A	Aa	Aaa	Aaa	Aaa
Telemar	Baa	Baa	Ba	A	A	Aa	Aa	Baa	Ba
Telesp	Baa	Baa	Ba	A	Aa	B	Aaa	Aa	Aa
Telmex	A	A	A	A	A	Aaa	Aa	A	A
Telus	A	A	Baa	Baa	Baa	Baa	Baa	Baa	Ba
TPSA	A	A	Baa	A	A	Aaa	Aa	Aa	A
True Move	Caa	Caa	B	B	B	Caa	B	B	Caa
Verizon Communications	Baa	Baa	Baa	Baa	A	Caa	A	A	Ba
Vodafone	A	A	Baa	Baa	Baa	Baa	Baa	A	A
Windstream	Aa	Aa	A	Ba	Ba	Ba	B	Ba	Ba

Negative Outlier Positive outlier

*GRI Issuer

1 Senior Unsecured Rating, Corporate Family Rating, or BCA ie Base Line Assessment for GRI (Government Related Issuers)

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