

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Schedule 13G

Under the Securities Exchange Act of 1934
(Amendment No.)*

AMERICAN TOWER CORP.

(Name of Issuer)

Common Stock

(Title of Class of Securities)

029912201

(CUSIP Number)

Check the following box if a fee is being paid with this statement _____. (A fee is not required only if the filing person: (1) has a previous statement on file reporting beneficial ownership of more than five percent of the class of securities described in Item 1; and (2) has filed no amendment subsequent thereto reporting beneficial ownership of five percent or less of such class.) (See Rule 13d-7.)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

(Continued on following page(s))

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1 Name of Reporting Person
S.S. or I.R.S. Identification No. of Above Person

T. ROWE PRICE ASSOCIATES, INC.
52-0556948

2 Check the Appropriate Box if a Member of a Group*

NOT APPLICABLE

(a) _____
(b) _____

3 SEC Use Only

4 Citizenship or Place of Organization

MARYLAND

Number of	5	Sole Voting Power
	**	
Shares	14,156,143	
Beneficially	6	Shared Voting Power
	**	
Owned By Each	NONE	
Reporting	7	Sole Dispositive Power
	**	
Person	41,326,666	

NONE

9 Aggregate Amount Beneficially Owned by Each Reporting Person

41,594,666

10 Check Box if the Aggregate Amount in Row (9) Excludes Certain Shares*

NOT APPLICABLE

11 Percent of Class Represented by Amount in Row 9

9.7%

12 Type of Reporting Person*

IA

*SEE INSTRUCTION BEFORE FILLING OUT!

**Any shares reported in Items 5 and 6 are also reported in Item 7.

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Item 1(a) Name of Issuer:

Reference is made to page 1 of this Schedule 13G

Item 1(b) Address of Issuer's Principal Executive Offices:

116 Huntington Avenue, Boston, MA 02116

Item 2(a) Name of Person(s) Filing:

(1) T. Rowe Price Associates, Inc. ("Price Associates")

(2) _____

Attached as Exhibit A is a copy of an agreement between the Persons Filing (as specified hereinabove) that this Schedule 13G is being filed on behalf of each of them.

Item 2(b) Address of Principal Business Office:

100 E. Pratt Street, Baltimore, Maryland 21202

Item 2(c) Citizenship or Place of Organization:

(1) Maryland

(2) _____

Item 2(d) Title of Class of Securities:

Reference is made to page 1 of this Schedule 13G

Item 2(e) CUSIP Number: 029912201

Item 3 The person filing this Schedule 13G is an:

X Investment Adviser registered under Section 203 of the Investment Advisers Act of 1940

Investment Company registered under Section 8 of the Investment Company Act of 1940

CUSIP 029912201

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Item 4	Ownership		Deemed Outstanding And Beneficially Owned Directly	Subject to Warrants & Conversion Privileges		Total
	Units Deemed Beneficially Owned Directly					

(1) WITH RESPECT TO
PRICE ASSOCIATES
(includes shares
reported in
(2) below):

(a) Amount			
Beneficially			
Owned	41,119,057	475,609	41,594,666
(b) Percent of			
Class			9.7%
(c) Number of			
units as			
to which			
such			
person has: . . .			
(i) *sole power			
to vote or			
to direct			
the vote . . .	14,113,461	42,682	14,156,143
(ii) *shared power			
to vote or			
to direct			
the vote . . .	-0-	-0-	-0-
(iii) *sole power			
to dispose or			
to direct the			
disposition			
of	40,851,057	475,609	41,326,666
(iv) *shared power			
to dispose or			
to direct the			
disposition			
of	-0-	-0-	-0-

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Item 5 Ownership of Five Percent or Less of a Class.

X Not Applicable.

_____ This statement is being filed to report the fact that, as of the date of this report, the reporting person(s) has (have) ceased to be the beneficial owner of more than five percent of the class of securities.

Item 6 Ownership of More than Five Percent on Behalf of Another Person

(1) Price Associates does not serve as custodian of the assets of any of its clients; accordingly, in each instance only the client or the client's custodian or trustee bank has the right to receive dividends paid with respect to, and proceeds from the sale of, such securities.

The ultimate power to direct the receipt of dividends paid with respect to, and the proceeds from the sale of, such securities, is vested in the individual and institutional clients which Price Associates serves as investment adviser. Any and all discretionary authority which has been delegated to Price Associates may be revoked in whole or in part at any time.

Except as may be indicated if this is a joint filing with one of the registered investment companies sponsored by Price Associates which it also serves as investment adviser ("T. Rowe Price Funds"), not more than 5% of the class of such securities is owned by any one client subject to the investment advice of Price Associates.

(2) With respect to securities owned by any one of the T. Rowe Price Funds, only State Street Bank and Trust Company, as custodian for each of such Funds, has the

right to receive dividends paid with respect to, and proceeds from the sale of, such securities. No other person is known to have such right, except that the shareholders of each such Fund participate proportionately in any dividends and distributions so paid.

Item 7 Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company.

Not Applicable.

Item 8 Identification and Classification of Members of the Group.

Not Applicable.

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Item 9 Notice of Dissolution of Group.

Not Applicable.

Item 10 Certification.

By signing below I (we) certify that, to the best of my (our) knowledge and belief, the securities referred to above were acquired in the ordinary course of business and were not acquired for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired in connection with or as a participant in any transaction having such purpose or effect. T. Rowe Price Associates, Inc. hereby declares and affirms that the filing of this Schedule 13G shall not be construed as an admission that Price Associates is the beneficial owner of the securities referred to, which beneficial ownership is expressly denied.

Signature.

After reasonable inquiry and to the best of my (our) knowledge and belief, I (we) certify that the information set forth in this statement is true, complete and correct.

Dated: February 14, 2007

T. ROWE PRICE ASSOCIATES, INC.

By: /s/ Henry H. Hopkins
Henry H. Hopkins, Vice President

Note: This Schedule 13G, including all exhibits, must be filed with the Securities and Exchange Commission, and a copy hereof must be sent to the issuer by registered or certified mail not later than February 14th following the calendar year covered by the statement or within the time specified in Rule 13d-1(b)(2), if applicable.

12/31/2006