On August 24, 1897, in an editorial in the Hartford *Courant*, Mark Twain wrote,

“Everybody talks about the weather but nobody does anything about it!”

If Mr. Twain had lived long enough, he would have had to revise his quote.

One-hundred and two years after that famous quote was printed, the public was given the rare opportunity to do something, more about the weather than just talk about it. This Fundamental Business Driver provides the historical timeline of Weather product innovations by CME Group.

What is the difference between weather and climate?

Weather is the day-to-day state of the atmosphere, and is short-term (minutes to weeks) in variation. Universally, weather is thought of as the combination of temperature, humidity, precipitation, cloudiness, visibility and wind.

It is important to understand the difference between weather and climate when trading weather because it depends on the type of trade a user wants to establish. A weekly trader of weather is only concerned with the short-term outlook for weather. Monthly and seasonal traders will want to view long term climate patterns. Traders will look back at climate data from 10, 15, 30 or more years before initiating a position.

Climate is defined as statistical weather information that describes the variation of weather at a given place for a specified period. In popular usage, it represents the synthesis of weather; officially it is the weather of an area averaged over some time period plus statistics of weather extremes.

The weather futures markets available at CME began trading in 1999. At the initial launch, two standard temperature contracts -- Heating Degree Days (HDDs) and Cooling Degree Days (CDDs) --- were listed for trading for ten U.S. cities. (See Table 1 for current listings of all weather cities, which now includes nearly 50 locations worldwide.) These contracts were monthly futures and options, and reflected the accumulated differences between the average daily temperature and a “base” temperature of 65 degrees Fahrenheit for each day in a calendar month.

Any new and unique product has a steep learning curve, and weather fit the term “unique” perfectly. But as the marketplace began to realize the advantages of hedging weather exposure on a centralized market, trading began to increase and so too did the demand for additional locations and products. The collapse of Enron also encouraged the adoption of standardized exchange-traded futures and options by participants in the over-the-counter (OTC) market for weather.

By 2003, the CME Group weather market had gained modest traction among the 10 original locations and the market demanded an additional five U.S. locations. Additionally, seasonal strip contracts were introduced to allow market participants to hedge seasonal weather and have the flexibility to string together any combination of months, as long as there were a minimum of two consecutive and a maximum of seven months. In addition, market participants discovered that a “strip” of options for individual calendar months did not provide the same hedging performance as an option on the entire strip. As a point of reference, the heating season runs from November through March and the cooling season is May through September. There are also “shoulder months” that can either be a heating or cooling month, and those transition months are October and April.

It was also in 2003 that CME Group weather products went global, with the launch of monthly and seasonal (HDD) and cumulative average temperature (CAT) contracts for six European locations. In addition, contracts for two Pacific Rim locations were added to the product line-up.

More milestones for CME Group’s weather suite occurred in 2005 with the introduction of a Frost contract for Amsterdam. This contract was developed in response to contractual provisions of construction workers in the Netherlands that halt work based on frost events, and therefore Dutch construction firms face a specialized form of weather risk. CME Group’s suite of exchange-traded contracts were patterned after a large OTC deal that was done the previous year.

Market participation was gaining traction and the need for different types of weather contracts continued to grow. CME also launched the first precipitation contract based on snowfall for the U.S in 2005. In addition, more locations were added to the temperature-based product suite, bringing the U.S. total to 18 locations and the European total to nine. The following year, CME Group expanded its presence into Canada with six Canadian locations based on HDD, CDD and CAT (cumulative average temperature) contracts. CDD contracts were added to the European listings, and seasonal strip contracts were added for U.S. Snowfall.

The innovation continued in 2007 with the addition of Weekly Average Temperature contracts on 18 U.S. locations. These contracts were designed to capture shorter-term temperature variations during the work week, Monday through Friday.

Australian temperature-based contracts joined the CME Group product family in 2008, along with several more U.S. and European locations. Further enhancements and additions occurred in 2009, 2010 and 2011, including binary contracts for U.S. Snowfall that pay a fixed amount when a given amount of snowfall occurs, and U.S. Rainfall contracts that provide precipitation risk management during the spring, summer and fall months. New and innovative weather products are continually being researched and discussed with market participants, as shown in Table 2 below. Some of the ideas that are being actively discussed include solar radiation, wind and extreme temperature. CME Group is also investigating new locations in other parts of the world not already covered by current offerings.

The weather market is still quite young, but since the initial launch of the basic HDD and CDD contracts a little more than a decade ago, innovation has been a driving force in providing financial protection against weather conditions that people could only talk about 100 years ago.

For more information, please contact …

Charles Piszczor, Associate Director
Research & Product Development
312-930-4536, Charles.Piszczor@cmegroup.com

Paul Peterson, Director
Research & Product Development
312-930-4587, Paul.Peterson@cmegroup.com

Table 1
Current Cities Available for Trading

24 US Cities	6 Canadian Cities	11 European Cities	3 Japanese Cities
Atlanta	Calgary	London	Tokyo
Chicago	Edmonton	Paris	Osaka
Cincinnati	Montreal	Amsterdam	Hiroshima
New York	Toronto	Berlin	
Dallas	Vancouver	Essen	
Philadelphia	Winnipeg	Stockholm	
Portland		Barcelona	
Tucson		Rome	
Des Moines		Madrid	
Las Vegas		Oslo-Blindern	
Detroit		Prague	
Minneapolis			
Houston			
Sacramento			
Salt Lake City			
Baltimore			
Boston			
Kansas City		3 Australian Cities	
Colorado Springs			
Jacksonville		Bankstown, Sydney	
Little Rock		Brisbane Aero	
Los Angeles		Melbourne Regional	
Raleigh Durham			
Washington D.C			

Table 2
Examples of Potential Weather Risks

Economic Sector	Hedgeable Weather Risks
Energy	Reduced and/or excessive demand
Hedge Funds	Making profits on volatile markets
Agriculture	Crop yield, handling, storage, pests
Offshore	Storm frequency/severity
Insurance	Increased claims, premium diversification
Entertainment	Postponements, reduced attendance
Retailing	Reduced demand of weather-sensitive products
Construction	Delays, incentive/ disincentive clauses
Transportation	Budget overruns, delays
Manufacturing	Reduced demand, increased raw material costs
Governments	Budget overruns