Financial and Operational Risk Management at Molson Coors

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PEARSON CASES IN SUPPLY CHAIN MANAGEMENT AND ANALYTICS

The case is reprinted from The Supply Chain Management Casebook by Chuck Munson

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Published by Pearson Education, Inc.
Publishing as FT Press
Upper Saddle River, New Jersey 07458

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ISBN-10: 0-13-375739-0
ISBN-13: 978-0-13-375739-2

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Reprinted from *The Supply Chain Management Casebook* (ISBN: 9780133367232) by Chuck Munson.

Financial and Operational Risk Management at Molson Coors[1]

Dennis Kira[†], Ahmet Satir[‡], and Dia Bandaly[°]

Company Background

Formed by the merger of Molson Inc. and the Adolph Coors Company in 2005, the Molson Coors Brewing Company (the "Company") is the fifth largest brewer in the world by production volume. The Company brews and sells about 40 different beer products, in addition to selling beer via partnerships with companies like Heineken and Corona. Molson Coors thrives particularly in Canada, where it commands over 42% of the market, largely through sales of its flagship brands Coors Light and Molson Canadian.

In 2007, the Company announced a joint venture with SABMiller (LSE: SAB). The deal, forming the second-largest brewer in the U.S.

[1] The authors thank the executives and managers of Molson Coors for their full cooperation during the write-up by providing enterprise specific information and data, as well as verifying the final text in a thorough manner to ensure factual validity and data confidentiality. The authors express their gratitude to Export Development Canada (EDC) for initiating the idea for the case subject, providing feedback as to the context and content and sponsoring the case. All figures provided are distorted in a proportional manner to protect the confidentiality of the Company's data. Unless otherwise stated, all monetary figures are in U.S. dollars.

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after Anheuser-Busch Companies (NYSE: BUD), was completed on July 1, 2008. The joint venture encompasses only the Company's operations in the U.S.; its Canadian and UK businesses remain completely under the control of Molson Coors. The combined Company benefits greatly from logistical and transportation synergies realized through the joint-venture. The Company expects to realize ultimate cost savings of $500 million.

In 2009, Molson Coors posted a net income of $720.4 million. The increase in net income is attributable partly to $92 million of cost savings as part of its now-completed Resources for Growth (RFG) cost savings program. Over the past three years, the Company has delivered $270 million in cost savings through the RFG program, which significantly exceeded the Company's commitment of $250 million. MillerCoors also delivered incremental cost savings of $26 million in 2009, which are part of its $200 million of second-generation cost savings that are expected to be delivered by the end of 2012.

In a press release on the financial performance of the Company in 2009, Peter Swinburn, President and CEO of Molson Coors, stated: "Overall consumer demand remains sluggish, and we see these conditions continuing to impact volume and mix in the near term. Our strategy remains consistent, however. We are focused on investing in innovation and in our brands and ensuring we maintain a strong balance sheet, so that when market conditions improve we are better positioned to accelerate our growth and capitalize on opportunities. Looking to 2010, we expect volume to remain challenging, especially in the first half, but we are focused on continuing to establish a strong brand base to our business that ensures we not only manage the current market but that we take full advantage of revenue upsides when momentum improves."

Of the 40 different brands of beer sold worldwide (14 brands in the U.S.), the bulk of the Company's sales volume is concentrated in three different products across three countries: Coors Light in the U.S., Carling in the U.K. and Coors Light and Molson Canadian in Canada. Therefore, consumer preferences for these three products alone have a significant impact on the success of the Company. Especially in the U.S., Molson Coors competes with small, local breweries for consumers' tastes and preferences. There are approximately 1,500

small breweries in the U.S., and on average, each produces 5,600 barrels of beer a year. Although this pales in comparison to the 70 million barrels that MillerCoors produces in the U.S. alone, the Company must overcome staunch loyalties when marketing products in regions with strong local breweries.

Similar to all brewers, Molson Coors is exposed to raw materials costs as part of the brewing and packaging process. Not unlike many commodities, prices for the most important input materials, aluminum, barley, and grain, fluctuate widely. For example, aluminum prices have fallen more than 60% from their 2008 highs of $3,300/metric tonne to less than $1,430/metric tonne, although in 2010 the price of aluminum had recovered to above the $2,000/metric tonne threshold.

Competition

In 2009, Molson Coors was the fifth largest brewer in the world, as shown in Exhibit 1. Its sales are focused in three countries:

United States: Beer is the most preferred alcohol in the United States, with 42% of alcohol drinkers choosing it. Wine is the second most preferred, with 31%, followed by hard liquor at 21%. Although beer has been the historical preference of Americans, Molson Coors still has to compete with these other categories of alcohol. The MillerCoors joint venture is the second largest brewer in the U.S., with 29% of the market. The company trails its larger competitor Anheuser Busch owned by InBev (INB-BT), which has 49% of the U.S. market.

Canada: Molson Coors is the largest brewer in Canada with 42% of the market share by volume, although Labatt Breweries of Canada (owned by the world's largest brewer, ABI) is only a few percentage points behind. Of the two major brands, Coors Light has about 15% of the market share and Molson Canadian has about 10%. Canada is a mature market that is characterized by heavy competition among large-scale producers, regional breweries and microbreweries.

United Kingdom: Coors Breweries Limited is Molson Coors's arm in Western Europe. It has an approximate 25% market share of the British market, Europe's second largest market.

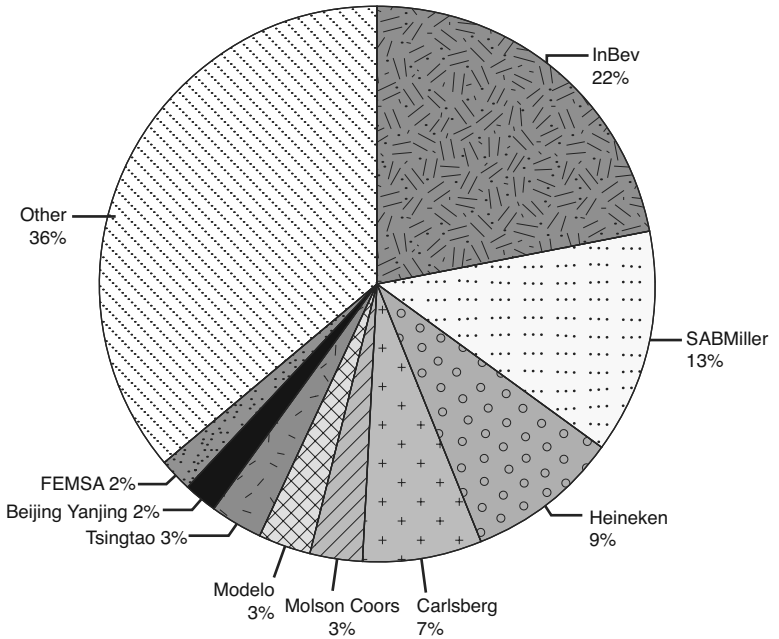

Exhibit 1 World beer market share by volume in 2009.

The Brewing Process

Brewing the perfect beer requires the brewer to use art, craft and science, in a balance of natural ingredients and processes. Some brewers embrace modern technology, while others use more traditional means. However, whether the brewery is large or small, old or new, the brewing process remains the same. The brewery industry includes over 10,000 breweries with combined annual revenue of over $50 billion worldwide. The major driver of demand is consumer leisure activity. The profitability of individual companies depends on marketing, distribution and operational efficiency.

Major brewery products are malt beverages, primarily beer and ale, packaged in cans, bottles, barrels or kegs. In Canada, canned beer accounts for about 35% of industry revenue; bottled beer for about 55% and kegs for about 10%. Additional products include other malt beverages, such as porter, stout and non-alcoholic beer, and brewing materials, such as brewers' grains and malt extracts.

The brewing process takes two to three weeks depending on the product. Breweries crack purchased malts by milling and then add water to form a mash, a mixture of hot water and crushed grain. The mash is heated and stirred in a mash tun (a large cask for liquids) to convert the mixture into fermentable sugars. The mixture is then strained and rinsed in a lauter tun to produce wort, a liquid with high levels of fermentable sugars. The wort flows from the wort receiver into a brew kettle that boils and concentrates the liquid. The resulting flavor of the wort depends on the hops additives, temperature, and length of brewing.

The next steps include straining, cooling, and storing in a fermentation cellar. Brewers add yeast to jump-start fermentation, which converts sugars into alcohol and carbon dioxide, the source of carbonation. The fermented beer cools for about a week until it clarifies and develops the desired flavor. Filtration, if used, removes extra yeast, after which the brew is ready to package for delivery to distributors. Breweries package beer in bottles or cans, typically in 6 or 12 packs, for delivery in cases for eventual retail sale and in barrels or kegs for on-premise draft sales. The brewing process is illustrated in Exhibit 2. The key beer industry production metric used globally for volume is measured in the number of hectoliters (HLs) a brewery produces or sells per year.

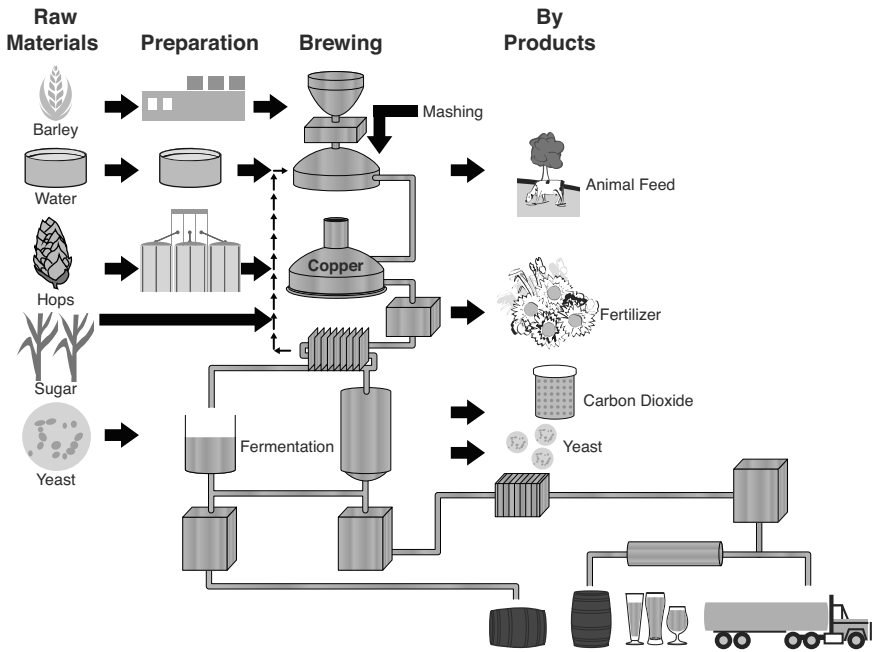

Exhibit 2 Brewing process.

It is typical for large brewing companies to strategically locate their breweries near major population centers to minimize the shipping costs associated with their finished products. Molson Coors has five breweries and 40 distribution centers within Canada. Within the Canadian market, the retail sales model for beer varies considerably by province, as alcohol sales are provincially regulated in Canada. The models include beer being sold through provincial liquor stores (Nova Scotia, Saskatchewan), within the grocery store or convenience store channel (Quebec, Newfoundland), in private liquor stores (Alberta) or in stores dedicated to the sale of beer (Ontario). Based on the "go to market" model that exists, breweries may alter their distribution model accordingly as well. For example, in the province of Quebec, each major brewery has established its own distribution operation for the shipment of beer to the retail and on-premise customer, while in the Western Provinces, Labatt and Molson have formed a joint-venture to distribute beer called Brewers Distribution Limited (BDL).

The brewery business is highly automated. Advanced process equipment and filtration systems monitor each batch to flag quality

control and mechanical problems. Environmental management systems control temperatures and minimize the amount of oxygen that enters the beer. Quality control labs are important. Some brewers have over 125 tests, tastings, and evaluations per batch to ensure that each conforms to company standards. Breweries use automated bottling and keg lines. Radio frequency identification (RFID) and other electronic codes identify products and shipping pallets. Production data feeds into back-office systems for analysis and inventory management, order fulfillment, and to monitor distributor sales commitments. Companies also use electronic data exchange with suppliers and distributors and electronic funds transfers to receive payments.

Breweries obtain raw materials through contractual agreements and on the open (spot) market. Grain crops are subject to adverse weather, so companies will develop secondary geographic sources as alternatives, especially for barley. In addition to purchasing malt (malt is a product of barley which is the basis of beer), brewers may purchase various other sugar sources to assist in the fermentation process such as rice, corn grits, or corn syrup. Packaging materials used by brewers include corrugated paper boxes, paperboard boxes, aluminum cans, bottles, labels, crowns, and kegs. The input costs for many of these materials, such as aluminum used for can production, can be volatile, and therefore brewers will look for ways to manage this volatility. Tools to manage this volatility in this case study include long-term supply contracts and commodity and currency hedging to help manage supply and costs. This study focuses on the financial and operational risk management techniques used for hedging in the context of aluminum cans.

Financial Risk Management Background

The corporate world has hedged its costs and revenues for decades. Through futures, forwards, options, and swaps, companies have hedged risks related to stock investments, commodities, interest rates, currency, and relevant indexes. A common feature for these types of risk is that the risks are mainly related to price. A "derivative" is defined as a financial instrument that has a value determined by the price of "something else." What is described as "something else" is more commonly called the "underlying asset." Before expiry,

other factors like time to expiry, volatility of the underlying asset, and expected development contribute to determine the value of a derivative. A derivative has an expiration date where the derivative ceases to exist. At that point, the value of the derivative is entirely determined by the price of the underlying asset.

Effective hedging requires a clear understanding of the relation between the hedged position and the hedging instrument. The strength and direction of the linear relation between two variables may be measured with the use of covariance and correlation statistics.

In order to assess costs and benefits, it is crucial that the company has expertise that understands the derivatives it is trading. Such expertise may come at a high cost through, for example, highly educated employers or expensive consulting firms. Derivatives also have implications after they are traded. Transactions need to be monitored to evaluate how the hedge is performing. Furthermore, derivative transactions have tax and accounting consequences. In particular, derivative transactions may complicate financial reporting. This might be both time consuming and costly.

Payoff on a derivative depends on the price of the derivative's underlying asset. If an asset and the underlying asset of a derivative are perfectly correlated, there is no basis risk. Basis risk arises as soon as an asset and the underlying asset of a derivative are not perfectly correlated. This imperfect correlation between the asset and the underlying asset of the derivative creates potential for excess gains or losses in a hedging strategy. Imperfect correlation reduces efficiency of the hedging instrument and increases risk of the total portfolio.

Commodity futures have been widely used as a risk management tool. A commodity future reduces risk by locking a future price, thereby removing price risk. As a result, if an energy reseller experiences a "normal" winter, a commodity future will work properly. On the other hand, should the winter be abnormally warm, demand for energy will fall. As a result, the energy reseller's revenues will decline. The commodity future hedge will probably work partly as energy prices tend to fall during a warm winter. However, the commodity future does not protect against the low demand, and the energy reseller may experience low revenues even though commodity futures were used to hedge risk.

For this reason, risk managers hedge non-core risks like foreign exchange, interest rates, commodities, equities, credit, natural catastrophes and, nowadays, the weather. The focal goal of risk management is to increase shareholder value. Shareholders prefer a less volatile earnings stream to a volatile one. Therefore, companies that minimize earnings volatility, mainly through removing non-core risk, accomplish higher equity multiples, stronger credit ratings, lower cost of debt, and improved access to funding.

Financial Risk Management at Molson Coors

Molson Coors utilizes a variety of agricultural and commodity products in brewing and bottling/canning its beverages. For beer, the most important inputs are barley and hops. Barley typically constitutes 15% of the brewing costs of beer, and a significant price increase in barley, for instance, would increase the cost of the company's goods sold and put pressure on margins. During 2007–2008, barley prices almost doubled because of dwindling supply caused by consecutively poor harvests and increasing global demand. Further pressure on barley prices has arisen since farmers are increasingly attracted to farming crops such as corn and soybeans instead of barley because of the burgeoning bio-fuel industry. During the commodities super spike of 2007 and 2008, the prices of these commodities rose drastically with the general commodities bubble and dramatically pressured beer company margins. They receded in late 2008, but remain at historically elevated levels. The possibility of another significant rise in commodities represents a constant threat to profits for beer companies globally.

For commodities traded internationally, the strength of producers' and consumers' currencies can affect the prices of commodities. For example, even if Brazil (the world's leading sugar producer) produces an abundance of sugar in any given year, sugar prices will probably remain inflated if the Brazilian Real is particularly strong relative to other currencies. Then, currency exchange rate hedging, such as currency options, provides further protection. Molson Coors records its financial information in U.S. dollars for corporate reporting but realizes significant portions of its revenues in other currencies such

as the Canadian Dollar and the British Pound Sterling. Like other multi-national companies, Molson Coors is naturally affected by the currency fluctuations for its revenue and cost reporting, as it trades its raw materials and products globally.

There are two committees at Molson Coors that deal with financial risk management: the Commodity Risk Management Team (CRMT) and the Financial Risk Management Committee (FRMC). The former, as its title suggests, largely deals with hedging against commodity (such as barley, corn, aluminum, energy) risks. Although currency exchange risk is considered by this committee as well, final decisions as to hedging against this risk are made by FRMC, which has a wider mandate in financial risk management. The composition of CRMT involves corporate team members (assistant treasurer, financial risk management manager, senior financial analyst) and members from local procurement (strategic sourcing manager, senior financial analyst). The FRMC is composed of a much broader group, including the chief financial officer, procurement officers, global treasurer, global controller, global assistant treasurer, financial risk management managers, and senior financial analysts.

A sample agenda for a typical CRMT meeting is given in Exhibit 3. Excerpts from a CRMT meeting are also provided below to give a sense of discussions that ensue in such meetings. Forward contracts data are provided in Exhibit 4 for the October 2008–December 2010 period. Exhibit 4 entries are aluminum futures long hedge positions where, for example, trade date 08/31/08 with exposure date Oct. 08 indicates that on 08/31/08, the Company took a long position for 200 metric tonnes of aluminum forward contracts to be exercised in October 2008. Exchange rate hedging data are presented in Exhibit 5 for the year 2009. An entry such as 01/15/09 with FX rate $1.0134 in Exhibit 5 indicates that the currency hedge position entered by the Company, at different trade dates within the previous two years, has a maturity date of 01/15/09 for $7.5 million to meet the payment of $9,208,859 at the average exchange rate of 1.0134. Exhibit 4 is the result of deliberations by the CRMT, whereas the data in Exhibit 5 originate from FRMC decisions.

CRMT Meeting–Agenda

- Market outlook summary
- Review current hedged positions–Summary
  - Annual Spend, Current Coverage, Price, Budget
- Market summary for each commodity position
  - Aluminum, Natural Gas, Barley, Corn
- Supplier Financial Risk Review

Exhibit 3 Typical agenda of a CRMT meeting

Exhibit 4 Forward aluminum contracts for October 2008–December 2010

Exposure Month	Trade Date				
	08/31/08	09/14/08	10/27/08	01/06/09	03/26/09
Oct-08	200				
Nov-08	190				
Dec-08	250				
Jan-09	100	75	75		
Feb-09	80	65	65		
Mar-09	150	90	90	90	
Apr-09	130	140	140	140	
May-09	110	165	165	165	165
Jun-09	150	250	250	250	250
Jul-09	50	350	350	350	350
Aug-09	90	110	110	110	110
Sep-09	80	90	90	90	90
Oct-09	40	65	65	65	65
Nov-09	70	65	65	65	65
Dec-09	60	65	65	65	65
Jan-10	40	40	40	100	100
Feb-10	40	40	40	100	100
Mar-10	90	40	40	100	100
Apr-10	90	40	40	100	100
May-10	90	40	40	100	100
Jun-10	90	40	40	250	250
Jul-10	55	40	40	250	250
Aug-10	50			250	250

Exposure Month	Trade Date				
	08/31/08	09/14/08	10/27/08	01/06/09	03/26/09
Sep-10	40			150	75
Oct-10	20			75	50
Nov-10	20			75	50
Dec-10	20			75	50
Total (Metric Tonnes)	**2,395**	**1,810**	**1,810**	**3,015**	**2,635**
Midwest Transaction Price (USD)	**$2,660**	**$2,400**	**$1,952**	**$1,744**	**$1,605**

Exhibit 5 Exchange rate hedging data for the year 2009.

Maturity Date	Average of FX Rate	Sum of Trade Amount (USD)	2009 Actual Exposure (USD)	Hedged Percentage
01/15/09	$1.0134	$7,500,000	$9,208,859	81.5%
02/17/09	$1.0098	$7,600,000	$8,224,438	92.4%
03/16/09	$1.0132	$9,100,000	$12,028,004	75.7%
04/15/09	$1.0089	$9,500,000	$12,312,554	77.2%
05/15/09	$1.0092	$12,400,000	$14,796,188	83.8%
06/15/09	$1.0352	$14,400,000	$19,792,246	72.8%
07/15/09	$1.0066	$12,900,000	$13,334,098	96.7%
08/17/09	$1.0101	$11,100,000	$13,647,706	81.3%
09/15/09	$1.0556	$9,800,000	$11,597,687	84.5%
10/15/09	$1.0351	$7,200,000	$9,098,632	79.1%
11/16/09	$1.0593	$9,150,000	$10,509,517	87.1%
12/15/09	$1.0198	$7,600,000	$10,372,095	73.3%
Averages and Totals	**$1.0240**	**$119,250,000**	**$144,922,024**	**82.3%**

Excerpts from a CRMT Meeting

Discussions focused on how to manage volatility of company earnings and cash flows due to exposure on commodity price fluctuation in the future. More specifically, the members dealt with possible use of commodity swaps and commodity forward contracts. Techniques such as VaR (Value at Risk) and its use in the assessment

of hedging decisions for each individual commodity attracted much heated discussion.

Following these discussions, the strategic sourcing manager stated:

> In recent months, we've all grown accustomed to a mixed bag of commodity prices. While there are important trends, risks and opportunities to be gleaned from economic changes, I don't want to be faced with drastic changes without some protection. So, the main question we need to address is: "We have few strategies that we can follow based on the past experience on commodity hedging, but we are not sure as to the best strategy to follow at this time." So prior to finalizing our strategy on barley and aluminum hedging for next year, I need some inputs concerning this matter.

At this point, the assistant treasurer indicated:

> The global boom in commodity prices in 2008—for everything from coal to barley—was fueled by heated demand from the likes of China and India, plus unbridled speculation in forward markets. That bubble popped in the closing months of 2008 across the board. As a result, farmers are likely to face a sharp drop in crop prices, after years of record revenue. Other commodities, such as aluminum, are also expected to tumble due to lower demand. This will be a rare positive for manufacturing industries, which will experience a drop in some input costs, partly offsetting the decline in downstream demand. Aluminum futures have settled below the symbolic $2,000/metric tonne mark on the London Metal Exchange for a full week of trading, suggesting that weak fundamentals might finally be catching up with the speculation-driven market.

To summarize, the senior financial analyst stated:

> Though price levels have in general dropped from their peak, volatility remains high and, as you are all aware, we have experienced hedging outcomes in the past that are as unexpected as they have been painful. Thus, we are under greater scrutiny from the Board, and complacency is not an option.

> We need to be able to achieve reliable, predictable raw material costs. Hence, for commodity procurement and hedging, we need to improve our efforts in bringing financial and treasury expertise into the procurement through creating a cross-functional team so that we can avoid the danger of physical purchasing and financial hedging decisions made in separate silos. Such an approach would minimize the potential for creating unexpected inventory and financial positions, as well as increasing basis risk.
>
> The chair of the committee then indicated:
>
> Why don't we proceed to establish an approved hedge profile to be maintained by traders and as a start we can develop a commodity spend baseline and quantify the risk exposure. We can follow up with performing scenario and sensitivity analysis and explore macro medium- and long-term trends that impact market fundamentals. We should also analyze the terms of contracts with our commodity suppliers to determine whether any revisions need to be incorporated to reflect our revised hedging practices. We can consider using VaR to quantify the trade-offs between long-term contracts, spot prices and financial hedging to manage supply and demand levers and assess financial capabilities. If the members have suggestions or comments prior to establishing our commodity hedge positions, then kindly submit your comments within the next two days to me.

Operational Risk Management

Molson Coors operates five breweries in Canada. The three larger breweries are in Ontario, Quebec, and British Columbia, and the two smaller breweries are in Eastern Canada. The aluminum cans that are the subject of risk management in this case are supplied by two suppliers, one in Ontario and the other in the western U.S. The same suppliers also supply aluminum cans to other beer and soft drink companies. Since space is limited at breweries, aluminum cans are shipped by the supplier to off-site warehouses located near the breweries or directly to the brewery on a just-in-time basis. Aluminum cans constitute about 24% of unit material cost of producing a can of beer.

Forecasting

Full Goods (FG) forecasting is conducted using a demand planning forecast package used by the Company that contains up to four years of weekly sales history by SKU/warehouse and produces 36 months (156 weeks) of forecast. The application provides several forecasting methods, among them: Box-Jenkins, exponential smoothing, simple moving average, and regression. It allows demand planners to manipulate the forecast by changing parameter settings, changing (correcting) history and direct volume adjustments as required in order to get the best fit. Most forecasting is done at the lowest level (SKU/warehouse), although the application allows adjustments at other levels, such as SKU/key accounts and SKU/province, which are useful for adding promotional activity volume. The most common method used is exponential smoothing. "Specified smoothing option" available is utilized that allows the user to specify the parameters (such as the smoothing constant) used in forecast calculations. This method is used extensively, since it has provided reliable forecasts in the past with "acceptable" forecast errors.

Independent demand forecasting is a weekly process beginning on Monday when the application has been loaded with the previous week's sales or shipments and a new SKU/warehouse forecast has been calculated. Whether to enter sales or shipments differs by province. Demand planners review the forecasts and make adjustments where necessary, such as incorporating any new promotional activity. The final forecast figures, which are a combination of model outcome, intuition, and experience, are uploaded to SAP on Friday to be used for production planning, scheduling, and material requirements planning (MRP).

The weekly forecasts are also uploaded to a data warehouse program for reporting and analysis. The rationale for updating forecasts weekly is that the beer business is highly competitive and the product has a relatively short shelf life (around 180 days). Less frequent updating, say on a monthly basis, would substantially increase the risk of stockouts or ending up with obsolete products. By tweaking the forecast weekly, a more stable demand line is sent to allow for timely adjustments to production plans.

Material Requirements Planning (MRP)

MRP is run nightly in SAP. A weekly update is provided to the supplier with a 52-week projected demand by material. Materials are ordered on a weekly basis. The delivery schedules are requested by date and time for materials.

Procurement

The evaluation of a supplier to initiate supply is based on a series of criteria around quality, service, and cost. For cans, an audit of potential supplier facilities would be part of the supplier qualification process. Quality Concern Reports are kept for ongoing assessment of supplier performance. Innovation would also be a part of the service evaluation of suppliers. One can cite thermo activated Coors Light cans in this context. The ink on parts of the can indicates when the beer is cold enough to drink by changing the color of the can when the pre-specified degree of coldness is achieved. One other criterion in evaluating suppliers is cost. The cost performance of suppliers would be evaluated based on a cost model developed over time in house for that specific category.

Planning for can procurement lot sizing is done daily at the pallet level. Lot sizes are typically based on full pallet quantities by material type. The quantity to be purchased is driven by the daily MRP output and then finalized based on the production schedule for that day. Procurement quantity is then rounded up to the pallet quantity.

Inventory levels at Molson Coors are dependent on material type. Cans are typically brought in just-in-time (daily for that day's production due to space constraints at breweries). Off-site inventory levels are specified in purchase contracts for each material type and limited to a maximum of three months. However, inventory levels for cans at the off-site warehouses are typically at two to four weeks. The cans in these warehouses are owned by the supplier.

Transportation

All cans are shipped into Molson Coors breweries via trucks except for shipments made to the St. John's brewery, which are shipped via containers from the Port of Montreal to St. John's. The latter accounts for a very small portion of the overall can volume at Molson Coors.

For deliveries into the Vancouver Brewery, shipments are made using a 3PL provider who contracts on behalf of the Company with a number of different carriers. These shipments are brought from the suppliers' facilities to a staging warehouse off-site. Full truckloads are then shunted into the brewery as required.

Shipments to Toronto are primarily made using a back haul from the Company's own fleet for deliveries into the Toronto Brewery. The trucks deliver full goods outbound and then pick up can orders on their way back to the brewery. An off-site warehouse is also used to store some of the 473 ml cans and ends with longer lead times. However, the vast majority of the volume is processed using the back haul scenario from the suppliers' location.

Exhibit 6 provides the usage forecast and shipment data for small (355 ml) and large size (473 ml) cans for a (representative) peak period (July–August 2009) and a slow period (January–February 2010). Usage forecast figures are transmitted from Molson Coors to the two can suppliers. The figures under the "Actual" column are the amounts shipped from the two suppliers to the off-site warehouses near breweries. All figures in Exhibit 6 are Canada-wide aggregate figures. The aggregate initial inventory levels at the off-site warehouses are: 14,000,000 (355 ml) cans and 1,000,000 (473 ml) cans on July 1, 2009; and 19,000,000 (355 ml) cans and 400,000 (473 ml) cans on January 1, 2010.

Exhibit 6 Canada-wide aggregate usage forecasts and actual shipments (in units)

	Usage Forecast	Actual Shipment	Variance
July 2009			
355 ml	52,418,820	67,043,220	14,624,400
473 ml	4,364,969	6,691,893	2,326,924
August 2009			
355 ml	47,213,380	46,651,797	(561,583)
473 ml	6,169,380	4,651,478	(1,517,902)
January 2010			
355 ml	30,685,319	22,001,991	(8,683,328)
473 ml	5,147,421	9,615,290	4,467,869

	Usage Forecast	Actual Shipment	Variance
February 2010			
355 ml	38,388,313	27,614,402	(10,773,911)
473 ml	3,131,391	2,053,025	(1,078,366)

Discussion Questions

1. In general, what are the fundamental steps that need to be considered for the risk management process? Speculate on one Molson Coors-specific aspect in this regard that the Company should pay extra attention to in managing integrated financial and operational risk.
2. Can the Company pass on increases in costs to the market price of the final product?
3. Identify one potential risk for each of the following functions in the context of how these functions are executed at Molson Coors: i) forecasting, ii) procurement and iii) transportation. Critique the process followed in each of these three functions.
4. Speculate on the possible reasons as to why there are significant positive and negative discrepancies in the usage forecast and actual shipment figures in Exhibit 6.
5. In light of the financial and operational information provided in Exhibits 4 to 6, critically evaluate the interfaces between financial and operational risk management techniques used at Molson Coors for the July–August 2009 and January–February 2010 time periods. Are there opportunities missed in risk management? What would you do differently to manage risks during these peak and low demand periods?
6. Suggest some actions that Molson Coors can undertake in order to manage the volatility in aluminum prices. Speculate on possible reasons why the Company hedges against aluminum prices itself rather than letting the aluminum can supplier conduct this hedging.
7. Comment on the committee structures of CRMT and FRMC. What can you suggest to improve the decision making process within these committees?