The University of Melbourne
Department of Computing and Information Systems

Overhill Winery Case Study

Introduction

Overhill Winery is a medium sized boutique winery located on the Bellarine Peninsula, about 150 km south west of Melbourne. The wines produced are sold locally in Melbourne, interstate in Australia and internationally in the United Kingdom. They specialise in cool climate wines and produce three varieties, pinot noir and merlot (red) and pinot grigio (white). Overhill Winery production and sales have grown dramatically in the last 3 years, and the managing director, Sane Yardman, believes that any future growth needs to be better managed, and based on a better understanding of sales trends. He has heard from vendors that data warehousing and business analytics will provide him with the capability to make more informed decisions. You have been hired as a consultant to propose a data warehousing solution to Sane.

The operations of Overhill Winery include growing the grapes, producing the wine and selling it. Currently there are 20 hectares of the pinot noir, 20 hectares of merlot and 15 hectares of the pinot grigio. Additional planting is possible but involves a long lead-time. Wine is produced by the winemaker, Rags Khamseen, who focuses particularly on quality. Overhill Winery wines can therefore be sold at premium prices. Three types of pinot noir are bottled and sold under separate brand names. Two types of pinot grigio, and two types of merlot are similarly produced. To increase production volume, Rags purchases additional high-quality grapes from surrounding vineyards. She Amido is the sales manager at the overhill winery. The winery works with sales agents to sell their products. A small amount of wine is sold directly through the cellar door, but almost all sales are to customers (wine merchants) in Melbourne, interstate and increasingly to the United Kingdom. Sales to wine merchants are in cases of 12 bottles.

The winery has two separate information systems to help manage production and sales to wine merchants. Information from these systems is difficult to aggregate as they have different data formats and use different database management systems.

The Business Problems

Decisions about the growth of the business, in terms of the production volumes of the red and white wine, which customers are important, profit maximization and which markets to focus on have been made by Sane, with input from She and Rags. The decisions have been made based on experience and “gut feel”. This has been effective previously but now that the business has grown, Sane wants evidence based on data to better inform decisions about customers, products, sales agents, sales time periods and markets.

1. *Which products are the most profitable?*

The data warehouse should provide information about unit sales and dollar sales, cost and margin for each product (base product and wine type), for various time periods (including year, season and month).

2. *Who are the key customers?*

The data warehouse should provide information about unit sales, dollar sales, cost and margin for each customer (only merchants), for each product (base product and wine type), for various time periods (including year and season – Autumn, Winter, Spring, Summer).

[Cost = average cost of production of a carton of wine]

[Margin = Dollar sales – Cost]

3. Which market is the most profitable?

The data warehouse should provide information about unit sales and dollar sales for each market for each month of the previous year. Currently there are three markets (Victoria, The rest of Australia, International) but this may change in the future.

4. *Which time periods are the most profitable?*

The data warehouse should provide information about the unit sales, dollar sales and margin for various time periods including Weekly, Monthly, Quarterly, and Yearly.

5. *Who are the Key sales agents?*

The data warehouse should be able to provide information about sales agent sales, including the amount of commission they earn for various time periods.

The Current Information Systems

Data for the data warehouse will be sourced from two of the existing operational systems, the production system and the merchant sales system. Direct sales have low volumes and will not be included in the data warehouse.

1. The Production System

The production system is a package based on an Oracle database and runs of a windows-based computer. A product code is used to identify base level products. Product groups may also be defined. The system also supports product cost history. Examples of data in relevant Oracle tables are shown below.

PRODUCT (sample data)

Code	***Description***	***Group***
1	Bellarine Pinot Grigio	White
2	Bellarine Pinot Noir	Red
3	Downunder Merlot	Red
4	Downunder Pinot Grigio	White
5	Downunder Pinot Noir	Red
6	Overhill Merlot	Red
7	Overhill Pinot Noir	Red

PRODUCTION HISTORY (sample data, incomplete)

Code	***Product***	***Year***	***Production Volume***	***$Cost per Dozen***
1	1	2010	1120	80
2	2	2010	1090	45
3	3	2010	1349	65
4	4	2010	423	41
5	5	2010	1422	60
6	6	2010	1187	58
7	7	2010	700	50
8	1	2011	3700	84
9	2	2011	3243	51
10	3	2011	4655	63

2. The Merchant Sales System

The merchant sales system is a package based on an SQL-Server database also running on a windows-based computer. Sales order, Product and Customer data are included in the system. Examples of data in relevant SQL-Server tables are shown below.

CUSTOMER (sample data, incomplete)

Customer ID	*Name*	*Address*	*Mkt*
1	Zelas Wines	Archway Road, London , London , N6 5AX	Int
2	Oz Wines	Little St., Richmond, Melbourne, 3121	Vic
3	London Wines	Eco Avenue, The Strand, London, SW1A 1LZ	Int
4	The Sussex Wine Company	Birdham Road, Chichester, West Sussex, PO20 7DU	Int
5	Merchant's Lair	Nepean Highway, Mentone, Melbourne, 3194	Vic
6	Australia Wines Direct	High St., Stourbridge, West Midlands, DY8 1TA	Int

PRODUCT (sample data, incomplete)

Product ID	*Description*	*Group*	*Year*	*Unit Price (Doz)*
18	Downunder Pinot Grigio	White	2012	87
21	Overhill Pinot Noir	Red	2012	125
22	Bellarine Pinot Grigio	White	2013	151
28	Overhill Pinot Noir	Red	2013	114
29	Bellarine Pinot Grigio	White	2014	167
36	Bellarine Pinot Grigio	White	2015	164

SALES ORDER (sample data, incomplete)

Sales Order	*Customer*	*Date*	*Sales Agent*
1	2	2/01/2012	D2
2	3	2/01/2012	D1
3	8	2/01/2012	S1
4	11	2/01/2012	B1

SALES ORDER LINE (sample data, incomplete)

Sales Order	*Line*	*Product*	*Qty (Doz)*	*Price (Doz)*
227	1	19	50	$160
228	1	13	82	$110
229	1	19	29	$110
230	1	10	69	$100
231	1	8	96	$150
231	2	20	94	$100
232	1	15	40	$100

SALES AGENT (sample data, incomplete)

ID	**Name**	**Commission rate**
B2	Arit Arubne	19%
S1	Willy Wonka	9%
B3	Flame Blower	3%