
QWT Business Intelligence Project Plan

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1 QWT Business Intelligence Project Requirements

Business Need:

QWT provides high quality sports and leisure clothing products for men, women, and children to a wide range of wholesale customers located throughout the world. QWT Business Intelligence should provide summary to detail level sales data analysis through an easy-to-use, yet robust and flexible interface capable of handling multiple levels of user expertise and requirements.

Analysis requirements include:

Multiple Key Business Indicators (KPI's)

Sales geographic analysis

Trend analysis covering a minimum of two years of detailed data.

Budget to Actual sales comparisons

Business analysis must include logical integration across multiple business data sources and functional areas. The presentation layer for this analysis should deliver this integrated data transparently to all users.

Document Summary:

This document contains general reporting requirements, key measurements, and available data element types and descriptions. Critical axis dimensions and filters are also listed. It should be noted that not all data elements are located in standard database format.

1.1 Key Measures

The following table lists the Key Measures to be included in the analysis application. Some of these measures will require calculation.

No.	Measure	Description
1.1.1.1	Net Sales	The Net amount of the sale on the [Order Details] level, calculated as: $(([\text{UnitPrice}] * [\text{Quantity}]) * (1 - \text{Discount}))$
1.1.1.2	Net Sales %	The relative percentage of Net Sales for a single value in a dimension field compared to the total of all other possible values in that field.
1.1.1.3	Total Unit Quantity	The sum of unit quantity over all possible data: [Order Details].[Quantity]
1.1.1.4	Total Orders	Count of distinct orders: [Orders].[OrderID]
1.1.1.5	Total Products Sold	Count of distinct products: [Order Details].[ProductID]
1.1.1.6	Total Employees	Count of distinct employees: [Employee].[EmpID]
1.1.1.7	SalesPerson	Count of distinct employees responsible for sales: <ul style="list-style-type: none"> [Orders].[EmployeeID] inner join to [Employee].[EmpID] - or - [Employee].[Title] begins with "Sal" or "President"
1.1.1.8	Average Annual Salary	Average of [Employee].[Year Salary]

1.1.1.9 Business Rules

- 1) The data should include detailed transaction level data for a minimum of 2 years, and preferably four years.
- 2) The Sales Force Structure is selectable from the Office City down to the Sales Person. This should allow drill down from the National level

Possible future enhancements:

Market Share

1.2 Key Performance Indicators

The following table lists the primary Key Performance Indicators (KPI's) to be included in the analysis application. Ideally these measurements will indicate compliance with business goals through an overall “dashboard” view, as well as detailed comparisons between company geography, customers, and products.

No.	KPI	Description
1.2.1.1	Net Sales Change	The amount of change in Net Sales value from previous year to current year by Customer
1.2.1.2	Net Sales Change %	The amount of change in Net Sales value from previous year to current year by Customer expressed as a percentage
1.2.1.3	Budget – Actual Revenue	The comparison of budget revenue amount to actual revenue amount by year
1.2.1.4	Budget – Actual Cost	The comparison of budget cost amount to actual cost amount by year
1.2.1.5	Budget – Actual Profit	The comparison of budget profit amount to actual profit amount by year. Profit is defined as revenue - cost

1.2.1.6 Business Rules

Possible future enhancements:

Market Share

ALERT: Provide Email notification for all products on backorder, along with their backorder amounts $([Products.UnitsOnOrder] - [Products.UnitsInStock]) > 0$

1.3 Key Dimensions

The following table lists the Key Dimensions to be included in the analysis application.

No.	Field	Description
1.3.1.1	Customer	[Customers].[CompanyName]
1.3.1.2	Customer Contact	[Customers].[ContactName]
1.3.1.3	Sales Office	[Office].[City]
1.3.1.4	SalesPerson	[Employee].[First Name] “ “ [Employee].[Last Name] for employees with sales responsibilities
1.3.1.5	Employee Hire Year	Year of [Employee].[HireDate]

1.4 Trends

The following table lists the Time Dimension Trending to be included in the analysis application.

No.	Field	Description
1.4.1.1	Order Date	[Orders].[OrderDate]
1.4.1.2	Month	Month of [Orders].[OrderDate]
1.4.1.3	Quarter	Quarter of [Orders].[OrderDate]
1.4.1.4	Year	Year of [Orders].[OrderDate]
1.4.1.5	Rolling Month	24 Rolling Months from last month of data for [Orders].[OrderDate]. Format should be : MMM-YYYY (e.g. Jan-2004)

1.4.1.6 Business Rules

- 1) Drill down of Order Date time should be possible from Year to Quarter to Month to Date.

1.5 Key Selection Filters

The following table lists the Key Selection Filters to be included in the analysis application.

No.	Field	Description
1.5.1.1	Customer	[Customers].[CompanyName]
1.5.1.2	Customer Country	[Customers].[Country]
1.5.1.3	Customer City	[Customers].[City]
1.5.1.4	Product	[Products].[ProductName]
1.5.1.5	Category	[Catagories].[CategoryName]
1.5.1.6	Year / Quarter / Month / Day / Date	Based on [Orders].[OrderDate]
1.5.1.7	Rolling Month	Based on [Orders].[OrderDate]
1.5.1.8	SalesPerson	Employees responsible for sales: <ul style="list-style-type: none"> • [Orders].[EmployeeID] inner join to [Employee].[EmpID] - or - • [Employee].[Title] begins with "Sal" or "President"
1.5.1.9	Sales Title	[Employee].[Title] begins with "Sal" or "President"
1.5.1.10	Sales Office	[Office].[City]
1.5.1.11	Supplier	[Suppliers].[CompanyName]

1.5.1.12 Business Rules

- 1) Drill down of Order Date time should be possible from Year to Quarter to Month to Date.

1.6 Security

This application will be distributed to employees involved in sales. Each salesperson, however, should not have access to data pertaining to their peers.

There should also be one or more administrators to manage the document. One of the salespersons, James Bosch, is also the Sales Manager of the company, and he should have access to the entire set of data. In addition, the Sales Coordinator in Lund should have access to the data on all salespersons in the Lund office.

1.7 Customers Data

1.7.1.1 File Information

Data Type -----MS Access

Database -----QWT.mdb

Table name -----Customers

Estimated Number of Records ----- 100

1.7.1.2 Record Information

Table 1 - Record Layout for Customers data

Field Name	Data Type (Max Size)	Indexed	Comment
CustomerID	Autonumber (Long Integer)	Y	Customer ID
CompanyName	Text (40)	Y	Full name of customer
ContactName	Text (30)		Name of primary contact at customer (First Last)
Address	Text (60)		Street or PO Box mailing address of customer
City	Text (15)	Y	City for mailing address of customer
StateProvince	Text (2)		State or Province code for mailing address of customer
PostalCode	Text (10)	Y	Postal code for mailing address of customer
Country	Text (15)		Country for mailing address of customer
Phone	Text (24)		Phone number includes country code or area code
Fax	Text (24)		Phone number includes country code or area code

1.7.1.3 Business Rules

- 1) Customers have single contact
- 2) State / Province code is optional as required
- 3) Customer data is updated weekly

1.8 Products Data

1.8.1.1 File Information

Data Type -----MS Access

Database -----QWT.mdb

Table name -----Products

Estimated Number of Records ----- 75

1.8.1.2 Record Information

Table 1 - Record Layout for Products data

Field Name	Data Type (Max Size)	Indexed	Comment
ProductID	Autonumber (Long Integer)	Y	Product ID
ProductName	Text (40)	Y	Full name of product
SupplierID	Long Integer	Y	Link to Supplier
CategoryID	Long Integer	Y	Link to product category
QuantityPerUnit	Long Integer		Count of product per unit
UnitCost	Double – Fixed 2 decimal		Current cost of product, including manufacturing costs plus Selling, General and Administrative (SG&A) expenses
UnitPrice	Double – Fixed 2 decimal		Current unit price (List) of product
UnitsInStock	Long Integer		Number of units in stock as of latest inventory
UnitsOnOrder	Long Integer		Number of units on order

1.8.1.3 Business Rules

- 1) Units on backorder defined as $[\text{UnitsOnOrder} - \text{UnitsInStock}] > 0$

1.9 Category Data

1.9.1.1 File Information

Data Type -----MS Access

Database -----QWT.mdb

Table name -----Categories

Estimated Number of Records ----- 10

1.9.1.2 Record Information

Table 1 - Record Layout for Category data

Field Name	Data Type (Max Size)	Indexed	Comment
CategoryID	Autonumber (Long Integer)	Y	Product Category ID
CategoryName	Text (25)	Y	Category name
Description	Memo		Category description

1.9.1.3 Business Rules

- 1) One-to-many relationship with [Products] table

1.10 Shipper Data

1.10.1.1 File Information

Data Type -----MS Access

Database -----QWT.mdb

Table name -----Shippers

Estimated Number of Records ----- 5

1.10.1.2 Record Information

Table 1 - Record Layout for Shipper data

Field Name	Data Type (Max Size)	Indexed	Comment
ShipperID	Autonumber (Long Integer)	Y	Shipper ID
CompanyName	Text (40)		Shipper name

1.10.1.3 Business Rules

- 1) One-to-many relationship with [Orders] table

1.11 Orders Data

1.11.1.1 File Information

Data Type -----MS Access

Database -----QWT.mdb

Table name -----Orders

Estimated Number of Records ----- 1000

1.11.1.2 Record Information

Table 1 - Record Layout for Orders data

Field Name	Data Type (Max Size)	Indexed	Comment
OrderID	Autonumber (Long Integer)	Y	Order ID
CustomerID	Long Integer	Y	Link to Customers
EmployeeID	Long Integer	Y	Link to Employee
OrderDate	Medium Date	Y	Date order was placed (DD-MMM-YY)
ShipperID	Long Integer	Y	Link to Shipper
Freight	Double – Fixed 2 decimal		Freight charges associated with this order

1.11.1.3 Business Rules

- 1) One-to-many relationship with [Order Details] table
- 2) Employee link determines company sales by office
- 3) Orders data is updated daily

1.12 Order Details Data

1.12.1.1 File Information

Data Type -----MS Access

Database -----QWT.mdb

Table name -----Order Details

Estimated Number of Records ----- 2500

1.12.1.2 Record Information

Table 1 - Record Layout for Order Details data

Field Name	Data Type (Max Size)	Indexed	Comment
OrderID	Long Integer	Y	Link to Orders
ProductID	Long Integer	Y	Link to Products
UnitPrice	Double – Fixed 2 decimal		Product unit price for this order
Quantity	Integer		Quantity of product ordered
Discount	Single – Percent (0 decimals)		Percent discount

1.12.1.3 Business Rules

- 1) OrderID must exist in [Orders] table
- 2) ProductID must exist in [Products] table
- 3) Quantity must be > 0
- 4) Discount must be between 0 and 1
- 5) Discount applies to [Order Details].[UnitPrice]
- 6) Order Details data is updated daily

1.13 Employee Data

1.13.1.1 File Information

Data Type -----MS Excel
 Database -----EmpOff.xls
 Table name -----Employee
 Estimated Number of Records ----- 50

1.13.1.2 Record Information

Table 1 - Record Layout for Employee data

Field Name	Data Type (Max Size)	Indexed	Comment
EmpID	Integer		Employee ID
Last Name	Text		Employee last name
First Name	Text		Employee first name
Title	Text		Employee title
Hire Date	Date (MM/DD/YY)		Date of hire for employee
Office	Integer		Link to Office
Extension	Integer (3 digits)		Telephone extension of employee
Reports To	Integer		Employee ID of Supervisor
Year Salary	Fixed 2 decimal		Annual salary of employee

1.13.1.3 Business Rules

- 1) Contains current employees only
- 2) [Reports To] field is subset of [EmpID] field
- 3) [Extension] is optional

1.14 Office Data

1.14.1.1 File Information

Data Type -----MS Excel
 Database -----EmpOff.xls
 Table name -----Office
 Estimated Number of Records ----- 5

1.14.1.2 Record Information

Table 1 - Record Layout for Office data

Field Name	Data Type (Max Size)	Indexed	Comment
Office	Integer		Office ID
Address	Text		Street or PO Box mailing address of office
Postal Code	Text		Postal code for mailing address of office
City	Text		City for mailing address of office
StateProvince	Text		State or Province code for mailing address of office
Phone	Text		Phone number includes country code or area code
Fax	Text		Phone number includes country code or area code
Country	Text		Country for mailing address of office

1.14.1.3 Business Rules

- 1) State / Province code is optional as required

1.15 Suppliers Data

1.15.1.1 File Information

Data Type -----DIF (text)

Database -----

Table name -----suppliers.dif

Estimated Number of Records ----- 30

1.15.1.2 Record Information

Table 1 - Record Layout for Suppliers data

Field Name	Data Type (Max Size)	Indexed	Comment
SupplierID	Integer		Supplier ID
CompanyName	Text		Full name of supplier
ContactName	Text		Name of primary contact at supplier (First Last)
Address	Text		Street or PO Box mailing address of supplier
City	Text		City for mailing address of supplier
PostalCode	Text		Postal code for mailing address of supplier
Country	Text		Country for mailing address of supplier
Phone	Text		Phone number includes country code or area code
Fax	Text		Phone number includes country code or area code

1.15.1.3 Business Rules

- 1) Suppliers have single contact

1.16 Budget Data

1.16.1.1 File Information

Data Type -----MS Excel
 Database -----Budget.xls
 Table name -----Sheet1
 Estimated Number of Records ----- 25

1.16.1.2 Record Information

Table 1 - Record Layout for Office data

Field Name	Data Type (Max Size)	Indexed	Comment
Office	Integer		Office ID
Year	Date – Year (YYYY)		Budget/Actual Year
Budget rev.	Integer		Budgeted yearly revenue
Budget cost	Integer		Budgeted yearly cost
Actual rev.	Integer		Actual yearly revenue
Actual cost	Integer		Actual yearly cost

1.16.1.3 Business Rules