

Sistemas de Informação

360° Company Dashboard

Group I

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Introduction

The present document serves as an overall presentation of the *360 Company Dashboard* project, to be developed during the Information Systems course.

The main purpose of this project is to understand the way an information system contributes to building value in an organization by means of its integration with an ERP, namely Primavera.

This report will consist of the project's information architecture and user interface mockups, followed by the functionalities and features to be implemented as well as the dashboard's interoperability with the aforementioned ERP.

Project overview

The purpose of this project is the development of a Dashboard, an information management tool used to track key performance indicators, metrics and other key data points relevant to a business. The objective of a dashboard is to simplify complex data sets through the use of data visualizations, in order to provide users a high-level awareness of a company's current performance.

Some main components also include the ability to identify and correct negative trends, measure efficiencies and inefficiencies, generate detailed reports showing new trends, identify data outliers and correlations, align strategies and organizational goals, provide total visibility of all of a company's systems instantly as well as gather a collection of business intelligence, thus providing the user with means to make informed decisions sparing him of the need to run multiple reports.

After a preliminary research, the group determined three key elements to include in the dashboard's design:

- Simple Interface with easy communication and no distractions;
- Organized business support with meaning and useful data;
- Apply human visual perception to visual representation of information.

Information Architecture

Regarding the project's core views, two main groups can be identified, the *Overall Enterprise View*, which contains all the important information for a quick performance analysis, serving as a summary of the remaining, more detailed, views: Financial, Customer, Supply and Human Resources.

1.1. [V_01] | Enterprise View

Being the objective of a dashboard to provide the user with an instant insight of the company, this main view resembles a *Balanced Scorecard*, a strategic planning and management system that is used extensively in business and industry to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals.

Therefore, all the information will be divided into these main perspectives:

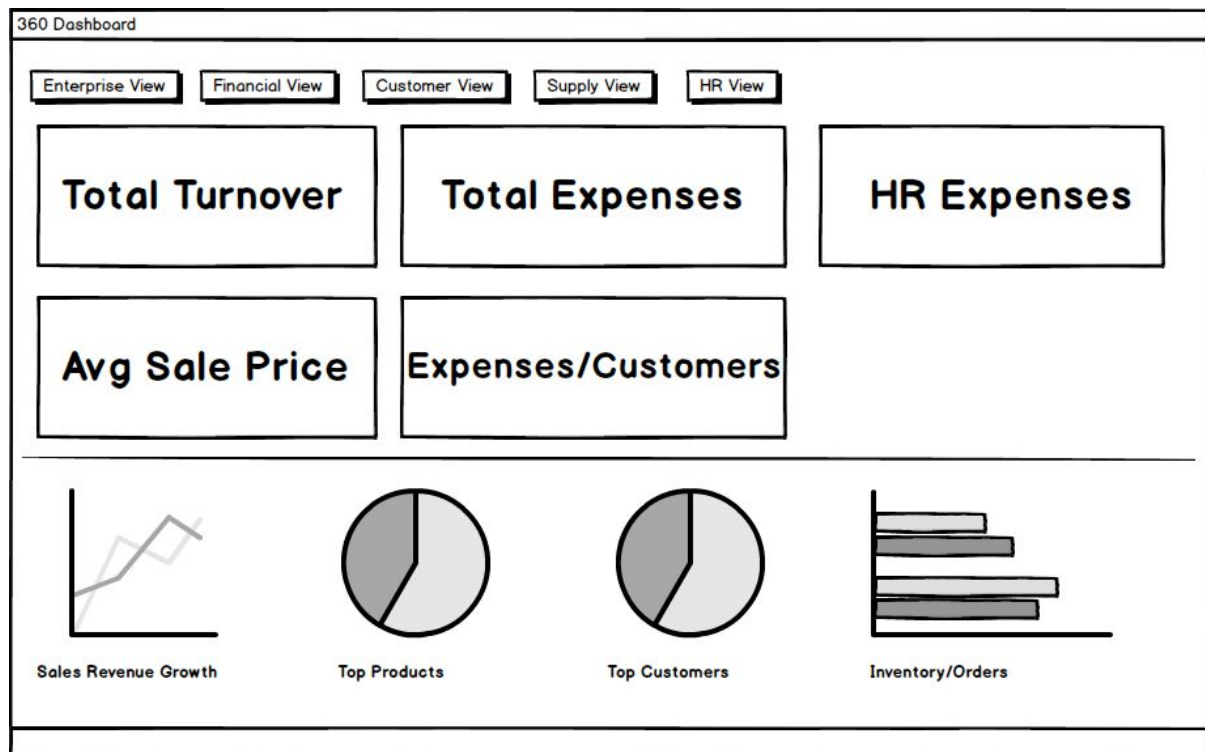
- Financial
- Customer
- Supply
- Human Resources

More detailed information regarding these perspectives can also be consulted on the latter views.

In order to secure a slick and minimalist interface, only key pointers will be included in this view, providing enough information for a quick check on the company's current situation while avoiding overwhelming the user with superfluous data.

Selected KPIs

- KPI_101 Total Turnover
- KPI_102 Total Expenses
- KPI_203 Top Customers
- KPI_204 Expenses per customer
- KPI_103 Average sale price
- KPI_507 Human Resources Spendings
- KPI_109 Sales Revenue Growth [Monthly]
- KPI_206 Top Products
- KPI_306 Orders/Inventory Ratio [for top 10 products]



Inward Paths: Homepage Button, Login Redirection

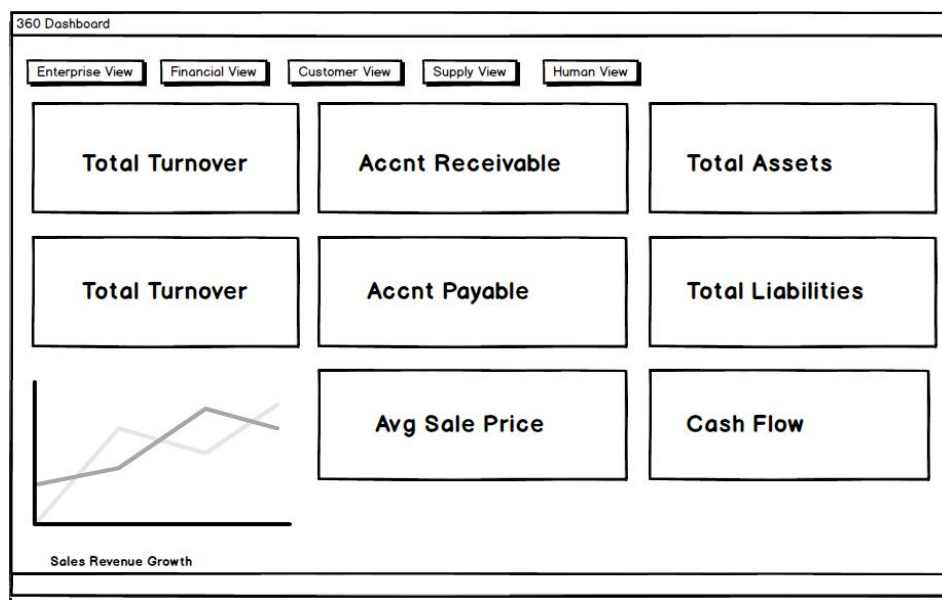
Outward Paths: Financial View, Customer View, Supply View and HR View buttons

1.2. [V_02] | Financial View

This view will focus on providing information to determine if the company's current strategy is contributing for its growth and expansion.

Bearing that in mind, the group decided on including the following Key Performance Indicators:

- KPI_101 Total Turnover
- KPI_102 Total Expenses
- KPI_103 Average Sale Price
- KPI_104 Accounts Payable
- KPI_105 Accounts Receivable
- KPI_106 Cash flow
- KPI_107 Total Assets
- KPI_108 Total Liabilities
- KPI_109 Sales Revenue Growth



Inward Paths: Enterprise View, Customer View, Supply View, HR View

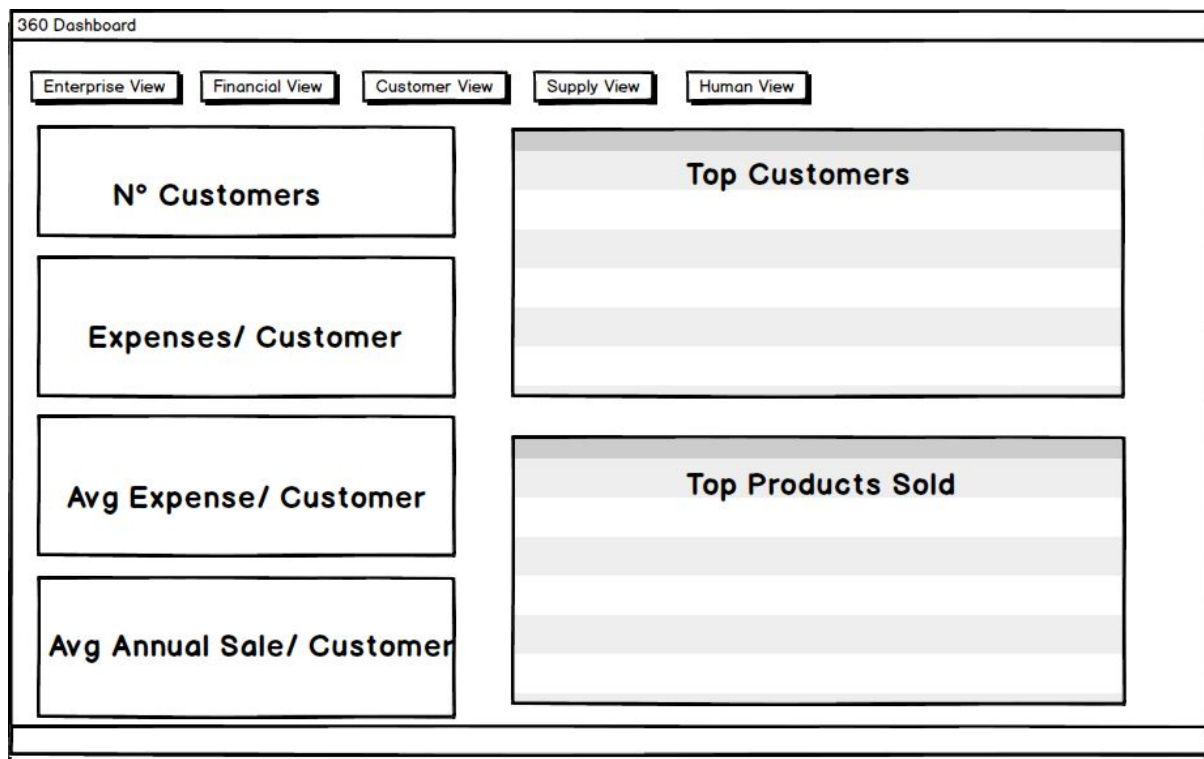
Outward Paths: Sales revenue growth analysis

1.3. [V_03] | Customer View

The main purpose of this view is to characterize the company's relationship with its customers, providing indicators that reflect both the incomes, such as average annual sales volume per customer, as well as the outcomes, such as average annual expenses to serve one customer.

The following *KPIs* have been selected:

- KPI_201 Number of customers
- KPI_202 Average annual sales volume per customer
- KPI_203 Top Customers
- KPI_204 Expenses per customer
- KPI_205 Average annual expenses to serve one customer
- KPI_206 Top Products Sold



Inward Paths: Enterprise View, Financial View, Supply View, HR View

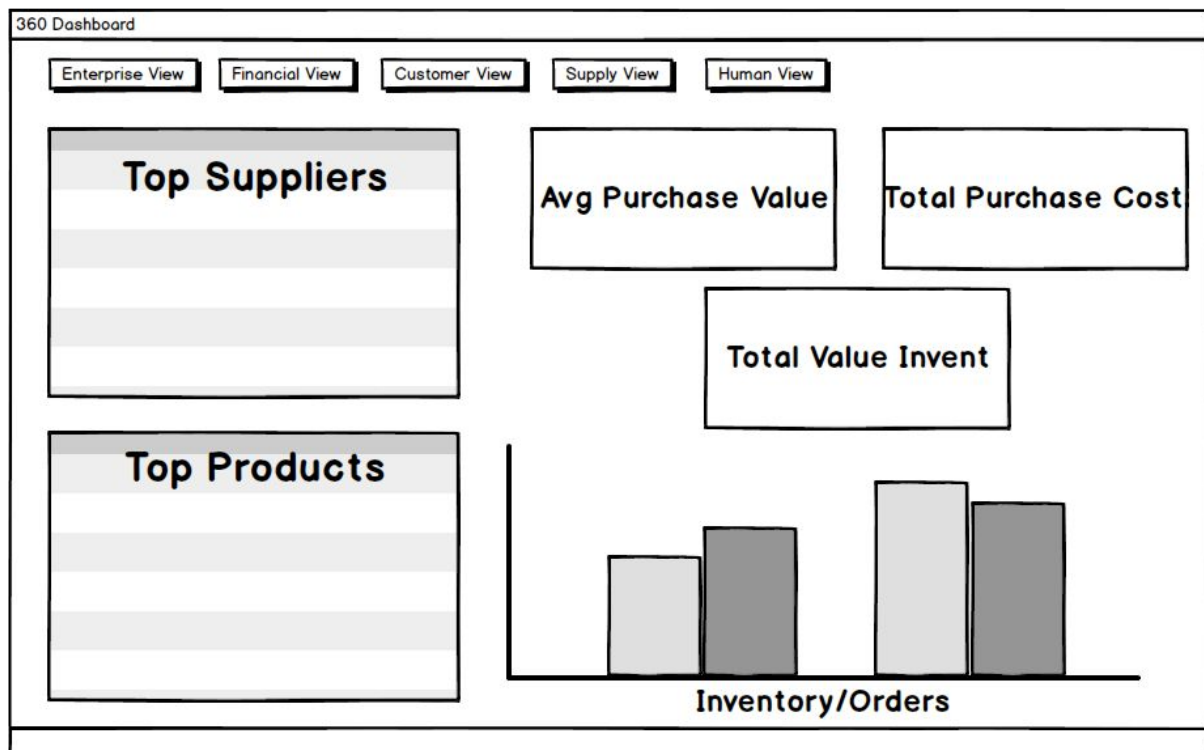
Outward Paths: Full customer list, Full Product List

1.4. [V_04] | Supply View

This view will provide information relative to both the company's relationship with its raw material suppliers, as well as its inventory and ability to fulfill customer orders.

The following KPIs have been selected:

- KPI_301 Top Products Purchased
- KPI_302 Top Suppliers
- KPI_303 Average purchase value
- KPI_304 Total Purchase Costs
- KPI_305 Total Value of Inventory
- KPI_306 Inventory / Orders ratio for top products



Inward Paths: Enterprise View, Financial View, Customer View, HR View

Outward Paths: Full Suppliers list, Full Product list

1.5. [V_05] | Human Resources View

This view will be focusing on the intangible assets of an organization, mainly on the internal skills and capabilities of the employees that are required to support the value-creating internal processes.

Selected KPIs:

- KPI_501 Revenue per employee
- KPI_502 Number of customers per employee
- KPI_503 Number of employees
- KPI_504 Average employment time in the company
- KPI_505 Average employee age
- KPI_506 Number of female employees
- KPI_507 Human resources expenses



Inward Paths: Enterprise View, Financial View, Customer View, Supply View,

Outward Paths: Full employee list

Functionalities and Features

This chapter contains all the functionalities and features, i.e. content inventory

Feature ID	Description	Purpose	Core View ID
F_001	Sign Up	Necessary to use the system	-----
F_002	Log In	Necessary to use the system	-----
F_003	Product Catalogue	Retrieve all the company's production	V_01, V_03, V_04
F_004	Search Product Catalogue	Necessary for customer relationship and supply analysis	V_01, V_03, V_04
F_005	Sales Catalogue	Retrieve all the company's sales	V_01, V_02
F_006	Search Sales Catalogue	Necessary for financial and customer relationship analysis	V_01, V_02
F_009	Customer List	Necessary for the Customer relationship analysis	V_01, V_03,
F_010	Search Customer List	Provides Customer details	V_01, V_03
F_011	Expense List	Retrieve the company's expenses	V_01, V_02, V_03, V_04, V_05
F_012	Search Expense List	Provides expense details for all the views	V_02, V_03, V_04, V_05
F_013	Employee List	Necessary for HR analysis	V_05
F_014	Search Employee List	Provides employee details	V_05
F_015	Balance Sheet	Necessary for the financial analysis	V_02

Interoperability with Primavera

This chapter contains a list of the project's web services needed for the aforementioned core views.

- ***getPurchases***

Description: Returns a list of purchases from a certain time period

Related Core Views: V_01, V_04

Route + Verbs: /api/primavera/purchase GET

Input: init=yyyy/mm/dd&end=yyyy/mm/dd

Expected Output: JSON array with each object representing a purchase, containing information such as due date, reception date, supplier, product and value

```
[
  {
    "ID": "",
    "PurchaseDate": "",
    "DueDate": "",
    "ReceptionDate": "",
    "Supplier": {
      "ID": "",
      "Name": ""
    },
    "Product": {
      "Id": "",
      "Brand": "",
      "Model": "",
      "Description": ""
    },
    "Value": {
      "Value":
      "Currency": "EUR"
    },
    "VAT":
  }
]
```

- **getSales**

Description: Returns a list of sales from a certain time period

Related Core Views: V_01, V_02, V_03, V_04, V_05

Route+Verbs: /api/primavera/sale GET

Input: init=yyyy/mm/dd&end=yyyy/mm/dd

Expected Output: JSON array with each object representing a sale, containing information such as order date, delivery date, customer, product, value and quantity

```
[
  {
    "ID": "",
    "SaleDate": "",
    "DueDate": "",
    "ReceptionDate": "",
    "Client": {
      "ID": "",
      "Name": ""
    },
    "Product": {
      "Id": "",
      "Brand": "",
      "Model": "",
      "Description": ""
    },
    "Value": {
      "Value": ,
      "Currency": "EUR"
    },
    "VAT":
  }
]
```

- ***getPayables***

Description: Returns a list of due payments to the suppliers

Related Core Views: V_02

Route+Verbs: /api/primavera/payable GET

Input: init=yyyy-mm-dd&end=yyyy-mm-dd

Expected Output: JSON array, with each object representing one payable, with ID, due date and amount

```
[
  {
    "DueDate": "",
    "State": "",
    "Entity": "",
    "PendingValue": {
      "Value": ,
      "Currency": ""
    }
  }
]
```

- ***getReceivables***

Description: Returns a list of due payments from customers

Related Core Views: V_02

Route+Verbs: /api/primavera/payable GET

Input: init=yyyy-mm-dd&end=yyyy-mm-dd

Expected Output: JSON array, with each object representing one receivable, with ID, due date and amount

```
[
  {
    "DueDate": "",
    "State": "",
    "Entity": "",
    "PendingValue": {
      "Value": ,
      "Currency": ""
    }
  }
]
```

- ***getEmployees***

Description: Returns a list of employees working for the company within the input date

Related Core Views: V_05

Route+Verbs: /api/primavera/employee GET

Input: init=yyyy-mm-dd&end=yyyy-mm-dd

Expected Output: JSON array, with each object representing one employee with ID, name, gender, hiring date, departure date

```
[
  {
    "ID": "",
    "Name": "",
    "Gender": "",
    "DateOfHiring": "",
    "Salary": {
      "Value": "",
      "Currency": ""
    }
  }
]
```

- ***getCustomers***

Description: Returns a list of customers of the company within a time frame

Related Core Views: V_01, V_03, V_04, V_05

Route+Verbs: /api/primavera/customer GET

Input: init=yyyy-mm-dd&end=yyyy-mm-dd

Expected Output: JSON array with each object representing a customer

```
[
  {
    "Client": {
      "ID": "",
      "Name": "",
      "TotalPurchases": "",
      "TotalPurchaseValue"
    },
  },
]
```

- ***getBalanceSheet***

Description: Returns a balance sheet for a given month

Related Core Views: V_01, V_02 , V_03

Route + Verbs: /api/primavera/balance_sheet GET

Input: year=xxxx&month=mm

Expected Output: JSON Object with the balance sheet represented in a matrix format

```
Expected output:
{
  "assets": [],
  "liabilities": [ ]
}
```

- ***getInventory***

Description: Returns a list of products

Related Core Views: V_01, V_02 , V_03

Route + Verbs: /api/primavera/balance_sheet GET

Input: year=xxxx&month=mm

Expected Output: JSON Array, with each object representing a product in the inventory

```
[
  {
    "Product":{
      "Id": "",
      "Brand": "",
      "Model": "",
      "Description": "",
      "Quantity": ""
    },
  }
]
```