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International collaborative ERP
education : development of SAP
exercises and an evaluation tool

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International Collaborative ERP Education: Development of SAP Exercises and an Evaluation Tool

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1 Abstract

Organizations increasingly operate in a global competitive environment using Enterprise Systems (ES) to support their operations. ES are complex systems and students struggle to grasp not only the underlying business concepts but also the technology involved. This working paper describes a set of exercises developed for a multinational cross-company collaboration assignment using a commercial ERP system from SAP. In addition we describe an evaluation tool used to assess the usage of the exercises in courses.

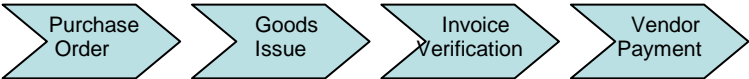
2 Introduction

The exercises are developed based on the SAP Global Bike Company setup provided by SAP University Alliances (SAP 2009). SAP University Alliances has preconfigured 100 identical Bike America companies. Each student is given the responsibility for one company for which the student can run his or hers own business processes as described in (Jaeger et. al 2010) and (Rudra et.al 2009).

3 Exercises

We developed two set of exercises; one for students acting as *customers* and one for students acting as *vendors*. This chapter contain a detailed description on both set of exercises.

3.1 Customer Exercises for SAP ERP



Bike America <nn>A1
SAP *Customer* Exercises –

(Version beta Perth Molde – Release April 2009)

Materials Management (MM) – “Buy”

Workshop Objectives

At the completion of this workshop you will be able to:

- **Create a Vendor for your Bike America company**
- **Create a Purchase Order**
- **Review Purchasing and Stock data**
- **Review Vendor and Purchasing evaluations**
- **Export Purchasing information to an Excel spreadsheet**

Scenario

Your Company has decided to do business with a new Vendor and their details (Vendor Master) have to be entered into SAP ERP.


The company has determined that it stocks of Mekena Bike product are insufficient. You need to order 10 more bikes from the new Vendor. You will create a Purchase Order to send to the Vendor via e-mail. The Vendor will deliver the products and send an Invoice to you via e-mail. You will need to perform a Goods Receipt and enter the Invoice. Once you have checked the Invoice against the Purchase Order you will make a payment to the Vendor. To notify the Vendor that the payment is completed you send the Vendor an e-mail with “Bank Statement: Transaction of funds to Vendor’s bank account completed”.

Exercise MM 1: Check Stock Status

Purpose of Exercise
Review the current inventory information about your Mekena bikes in Plant 03A2.

Menu Path	Logistics → Materials Management → Inventory Management → Environment → Stock → Stock Overview
Trans Code	

The **Stock Overview** screen appears. This enables you to select the materials which you want to determine stock levels.

1. Type **KB-0013-<NN>** in the **Material** field
2. Type **<NN>A2** in the **Plant** field.
3. Type **1** in the **Display version** field.
4. Click  to execute the report.

The **Stock Overview** appears on screen.


You can “drill down” for further details.

5. Double Click **30 Finished Goods.**

A pop-up window is displayed showing the details of the inventory by stock type at the plant.

6. Record the storage location and quantity of inventory the Mekena bikes:

Material	Storage Location	Stock Type		
		Unrestricted Use	Sales Orders	Scheduled for Delivery
KB-0013-<NN>				


1. 7. Click  until you are returned to the SAP main menu.

Exercise MM 2: Create a New Vendor

Purpose of Exercise
Create another Bike America company run by one of your fellow students as your Vendor.

Menu Path	Logistics → Materials Management → Purchasing → Master Data → Vendor → Central → Create
Trans Code	

The **Create Vendor: Initial Screen** appears.

8. Type **<NN>A1** (Bike America) in the **Company Code** field
9. Type **<NN>A1** (Americas) in the **Purchasing Organization** field.
10. Type **KRED** (Vendor internal assignment number) in the **Account Group** field.
11. Click  to proceed.

The **Create Vendor: Address** screen appears.

12. Type the following:

Name

Name Bike America <Name of your fellow student>

Search Term

Search term <NN>

Street Address

Postal code 68516



City Lincoln

Country US

Region NE


Communication

Language English






13. Click  or  to accept the entries and proceed to the next screen.

The **Create Vendor: Control** screen appears.

14. Type **12-34567<NN>** in the **Tax Number 2** field.


15. Click  to proceed to the next screen.

There is no data to enter on this screen.

16. Click  to proceed to the next screen (Create Vendor: Accounting Information Accounting).
17. Type **3001<NN>** in the **Recon. Account** field.
18. Click  to proceed to the next screen (Create Vendor: Payment Transactions Accounting).
19. Type **0001** (Payable immediately Due net) in the **Payment term** field.
20. Click **Chk double inv.** to select it.
21. Click  to proceed to the next screen (Create Vendor: Correspondence Accounting).
22. Type the name of your fellow student in the **Clerk at vendor** field.
23. Click  to proceed to the next screen (Create Vendor: Purchasing data).
24. Type **USD** in the **Order Currency** field.
25. Type **0001** (Payable immediately Due net) in the **Terms of payment** field.
26. Click  to save your new **Vendor**.

Record the system message:

Message


27. Click  until you have returned to the SAP Main Menu.

Exercise MM 2 Create a Purchase Order for your Vendor

Purpose of Exercise
When you checked the Stock Status above you decided that 10 new Mekena bikes was needed. Create a PO to be sent to your Vendor via e-mail. When received and accepted by the vendor, the PO creates a legally binding contract between the two parties.

Menu Path	Logistics → Materials Management → Purchasing → Purchase Order → Create → Vendor/Supplying Plant Known
Trans Code	

The **Create Purchase Order** screen appears.

1. Type the number of your vendor in the **Vendor** field (or search for it)
2. Click  **Header** to expand the Header details if it is not already displayed

3. Type the following:

Purchasing Org <NN>A1 (Americas Purch. org.)
Purch. Group <NN>A (Americas)
Company Code <NN>A1 (Bike America)

4. Click  to accept the entries.

4. Click  **Item Overview** to expand this area.

5. Type the following details:

Material	PO Quantity	Delivery Date	Net Price	Currency	Plant
KB-0013-<NN>	10	(a month from today)	185.00	USD	<NN>A2

6. Click  to accept the entries.

7. Click **Conditions** in the **Header** area to display this screen.

Record the Net value of the Purchase order \$_____

8. Click  **Item detail** to expand this area if it is not already displayed

9. Click **Conditions** in the **Item** area to display this screen.

Record the condition value of the Line Item for KB-0013-<NN> \$_____


10. Choose the function "Messages" above the menu "Header"

The **Create Pur. Order:: Output** screen appears.

11. Type NEU (Purchase Order) in the Output field.

12. Select Print output in the Medium field.

13. Click  to accept the entries.

14. Click  **Communication method**




A new screen appears.

15. Type **LOCL** in the **Logical destination:** field (or **LP01** or any other field if LOCL is not defined)

16. Click **Print immediately** to select it.

17. Click  to return to the previous screen.

18. Click **Further data**.

19. Select Send immediately (when saving the application) in the Dispatch time: field.
20. Click  twice
21. Click  to save your new **Purchase Order**.
22. Click  until you have returned to the SAP Main Menu.

Exercise MM 3: Print Preview of Purchase Order

Menu Path	Logistics → Materials Management → Purchasing → Purchase Order → Display
Trans Code	

Enter the Purchase Number if not already done

1. Click 

The Purchase Order is displayed.

2. Press the keyboard "Alt" and "Print Scr" simultaneously to make a copy of the active window, i.e. the Purchase Order.
3. Paste it into an e-mail that you send to your student fellow representing your Vendor. (Some e-mail programs does not allow paste of an image. If this is the case paste the Purchase Order into a Word file or similar and send that file to your vendor).

NOTE: The Material Number displayed on the Purchase Order KB-0013-NN is the *internal material number* for the company that creates the order. The Vendor receiving the Purchase Order will typically have another internal Material Number corresponding to the bikes ordered.

Exercise MM 4: Create a Goods Receipt

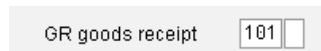
Purpose of Exercise	
The Mekena bikes requested in the Purchase Order have arrived from your Vendor. You now need to receive the stock items into your inventory. A Goods Receipt document must be created referencing your Purchase Order thereby ensuring that you receive the products ordered within the timeframes requested and in quality condition. Goods on hand will be increased and an Accounting Document will be generated recognizing the value associated with these goods.	

Menu Path	Logistics → Materials Management → Inventory Management → Goods Movement → Goods Receipt → For Purchase Order → GR for Purchase Order (MIGO)
Trans Code	

1.

The **Goods Receipt Purchase Order** screen appears.

1. Check that **GR goods receipt** 101 appears at the right in the Header.



2. Type your **Purchase Order number** in the **Purchase Order** field. You can find it in the e-mail you sent with the Purchase Order to the Vendor.




3. Click  to continue.

If a line is grayed out Minimize the Item Detail Data by selecting  (Close Detail Data)

4. Click the **OK** checkbox for the line item.

Checking the **OK** checkbox indicates that you want to adopt it into the goods receipt document.


5. Type **30** (Finished Goods) in the **Sloc** field and press ENTER

6. Click  to save your new **Goods Receipt**.

Record the system message:

Message

2.

7. Click  until you have returned to the SAP Main Menu.


Exercise MM 5: Create an Invoice Receipt

Purpose of Exercise
<p>After you received the bikes from your Vendor you also received an Invoice for payment. This invoice must be posted to an existing G/L expense account in your Chart of Accounts and saved as an Accounts Payable to your Vendor.</p> <p>It will be settled by issuing a cheque to your Vendor at a later date.</p> <p>The Invoice received via e-mail from your Vendor should contain similar elements as the one shown below.</p>


<p><u>IDEA HAKMER AG - BUNDESREPUBLIK DEUTSCHLAND</u></p> <p>Company Bike America 03A1 Bjorn 03 Ballarat Rd. PORTLAND OR 97204 USA</p>	<h2 style="margin: 0;">Invoice</h2> <p>Repeat Print</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left;">Payment Information</th> </tr> </thead> <tbody> <tr> <td>Doc. No./Date</td> <td style="text-align: right;">90000009/ 03/19/2009</td> </tr> <tr> <td>Delivery Note No./Date</td> <td style="text-align: right;">80000009/ 03/19/2009</td> </tr> <tr> <td>Order No./Date</td> <td style="text-align: right;">25/ 03/19/2009</td> </tr> <tr> <td>Reference No./Date</td> <td style="text-align: right;">BJ4500000004/</td> </tr> <tr> <td>Customer</td> <td style="text-align: right;">366</td> </tr> <tr> <td>Currency</td> <td style="text-align: right;">USD</td> </tr> <tr> <td>Invoice Amount</td> <td style="text-align: right;">1,000.00</td> </tr> </tbody> </table>	Payment Information		Doc. No./Date	90000009/ 03/19/2009	Delivery Note No./Date	80000009/ 03/19/2009	Order No./Date	25/ 03/19/2009	Reference No./Date	BJ4500000004/	Customer	366	Currency	USD	Invoice Amount	1,000.00
Payment Information																	
Doc. No./Date	90000009/ 03/19/2009																
Delivery Note No./Date	80000009/ 03/19/2009																
Order No./Date	25/ 03/19/2009																
Reference No./Date	BJ4500000004/																
Customer	366																
Currency	USD																
Invoice Amount	1,000.00																

Menu Path	Logistics → Materials Management → Logistics Invoice Verification → Document Entry → Enter Invoice
Trans Code	

The **Enter Incoming Invoice: Company Code** screen appears.

1. Check that your Company Code <NN>A1 is displayed in the Header.
2. Type today's date in the **Invoice date** field.
3. Type **Invoice from <your Vendor>** in the **Text** field.
4. Type your **Purchase Order** number in **Purchasing Order/Scheduling Agreement** field
5. Click  to accept the values.


The details of the **Purchase Order** and **Vendor** details appear on screen.

6. Type the amount from Vendor's invoice in the **Amount** field.
7. Check that **XI** (Input Tax) appears as the **Tax Code**.
8. Click  to accept the values.

If the transaction is entered correctly (in respect to Debits and Credits), you will have a green light with a \$0 balance.



You want to view what the actual postings will look like in the general ledgers. It is here that you can ensure that the Debit / Credit posting is correct, and that the accounts are affected correctly. Below we can see that our Vendor's liability is increasing.

9. Click  to check the proposed Postings.

Position	A	G/L	Act/Mat/Ast/Vndr	Amount	Cur...	Purchasing...	Item	T...
1	K	300159	Great Lakes Bike Supply / Mount Pleasant M	32,250.00-	USD			XI
2	S	310159	Goods Receipt / Invoice Receipt Account	30,000.00	USD	4500000000	10	XI
3	S	310159	Goods Receipt / Invoice Receipt Account	2,250.00	USD	4500000000	20	XI


As the **Postings** appear to be correct they need to be **Posted**.

10. Click  to Post the amount.

Record the system message:

Message

3.

11. Click  until you have returned to the SAP Main Menu.

Exercise MM 6: Post Payment to Vendor

Purpose of Exercise
You have created the Vendor Invoice and now you have to issue a Payment to the Vendor to settle the Accounts Payable. A journal entry is made to Accounts Payable for the Vendor and to the bank checking account in the G/L.

Menu Path	Accounting → Financial Accounting → Accounts Payable → Document Entry → Outgoing Payment → Post
Trans Code	

1.

The **Post Outgoing Payments: Header Data** screen appears.

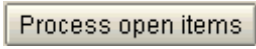
- Type today's date in the **Document date** field.
- Type the following details:

Bank Data

Account: **1001<NN>** (Bank - Checking)
 Amount: <the amount from invoice>
 Text: **Payment to Vendor for Mekena Bikes**

Open item selection


Account: Account # for your Vendor

- Click  to proceed.

A screen appears listing the **Open Items**, similar to:

Document ...	D	Document ...	P ...	Bus ...	Day ...	USD Gross	Cash discnt	Cash ...
5100000000	RE	02/11/2008	31		0	2,250.00-		

- Double Click the **USD Gross amount** (in the field where the amount in dollars are) which is the invoice you want to apply this payment towards. **NOTE:** The **amount in the USD Gross column** should be copied to the **Assigned** field. If not double click again. Not Assigned balance should equal 0.00.

- Click  to save your new **Goods Receipt**.

Record the system message:


Message

Exercise MM 7: Display Vendor Line Items

Purpose of Exercise
You now need to display and confirm the activity and associated balance for the Accounts Payable for your Vendor. You should see both a credit and debit posting indicating the receipt of the invoice and the issuance of a payment to settle this balance due to the Vendor.

Menu Path	Accounting → Financial Accounting → Accounts Payable → Account → Display/Change Line Items
Trans Code	

The **Vendor Line Item Display** screen appears.

1. Type the account number for your Vendor in **Vendor Account** field if it is not already there.
2. Type **<NN>A1** in the **Company code** field if it is not already there.
3. Click **All items** to select it.
4. Click  to proceed.

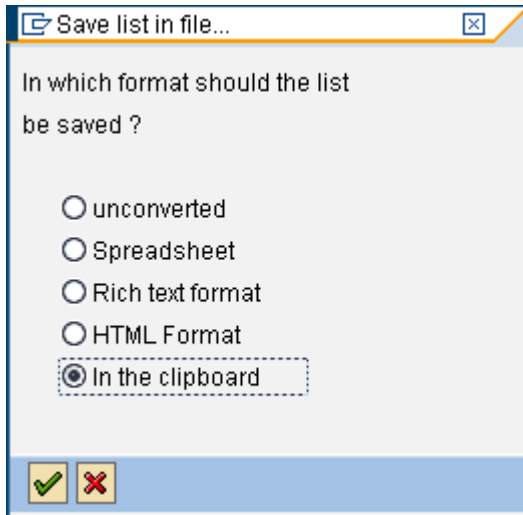
The Line Items for your vendor payment are displayed, similar to:

Vendor	100001									
Company Code	00A1									
Name	Great Lakes Bike Supply									
City	Mount Pleasant									
St	Assignment	DocumentNo	Type	Doc. Date	\$	DD	Amount in doc. curr.	Curr.	Clrng doc.	Text
<input type="checkbox"/>	<input checked="" type="radio"/>	1500000000	KZ	21.07.2008			32,250.00	USD	1500000000	
<input type="checkbox"/>	<input checked="" type="radio"/>	5100000000	RE	21.07.2008			32,250.00-	USD	1500000000	Invoice #0012300
*	<input checked="" type="radio"/>						0.00	USD		
** Account 100001							0.00	USD		

You can drill down by performing a double click on lines.

5. In the **List** header menu select **Export** and **Local File**.

The **Save list in file...** screen appears:




6. Select **In the clipboard** and ENTER

7 Paste it into an e-mail that you send to your student fellow representing your Vendor.

Write in front of the details pasted in the e-mail: **Bank Statement. Transaction of funds to <your vendor> completed, and Vendor Line Items Display Details.** The content of the e-mail will look similar to:

<u>Bank Statement</u>	
<u>Transaction of Funds to Amit's Account Completed</u>	
-	
<u>Vendor Line Item Display Details</u>	
Vendor	100309
Company Code	03A1
Name	Bike America Amit
City	Lincoln

St Assignment	DocumentNo Type Doc. Date S DD Amount in doc. curr. Curr. Clr
	1500000001 KZ 19.03.2009 1,000.00 USD 1500000001
	5100000001 RE 19.03.2009 1,000.00- USD 1500000001

8. Click  until you have returned to the SAP Main Menu.

3.2 Vendor Exercise



Sales



Bike America <nn>A1 SAP *Vendor* Exercises –

(Version beta Perth Molde – Release March 2009)

Sales and Distribution (SD)

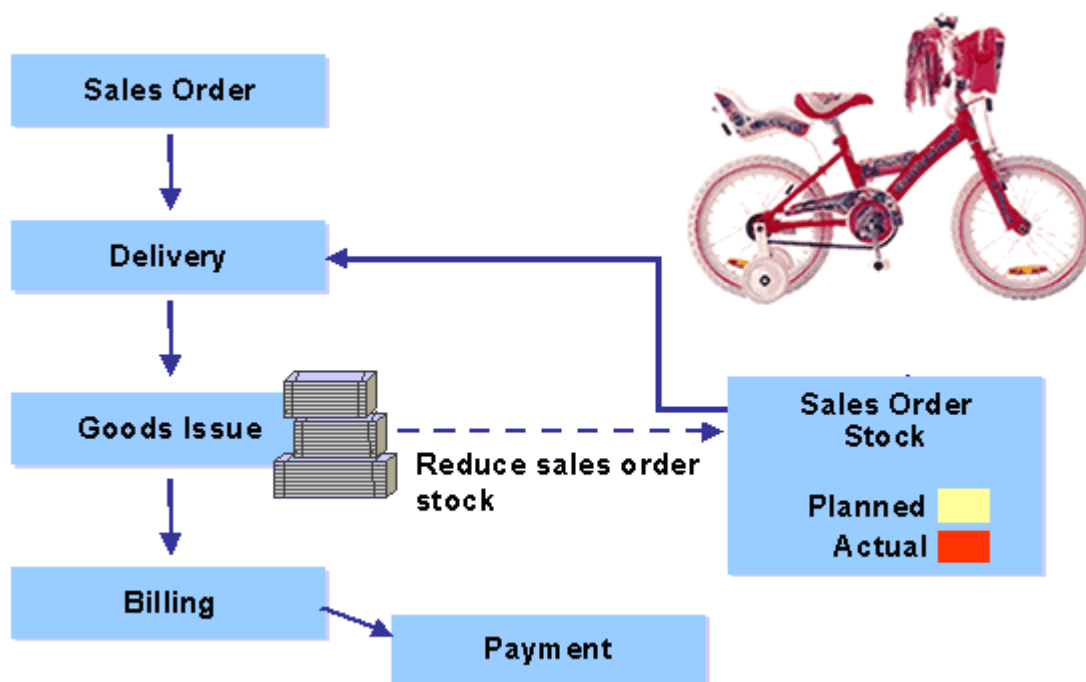
Workshop Objectives

At the completion of this workshop you will be able to:

- **Create a customer**
- **Create a customer order.**
- **Trigger delivery of the sales order**
- **Pick and post goods issue.**
- **Ship Goods**
- **Invoice Customer**

Scenario

A customer sends you a **Purchase Order** for Mekena bikes via e-mail. You create a Sales Order and commence the Delivery process. Once the goods have been issued, you create an Invoice that you send to the customer via e-mail. Later, when you receive an e-mail from the customer with a notification that the payment has been done you commence the Accounts Receivable process. Finally you send an e-mail to the customer informing that the amount is received.




Exercise SD 1: Create A Customer

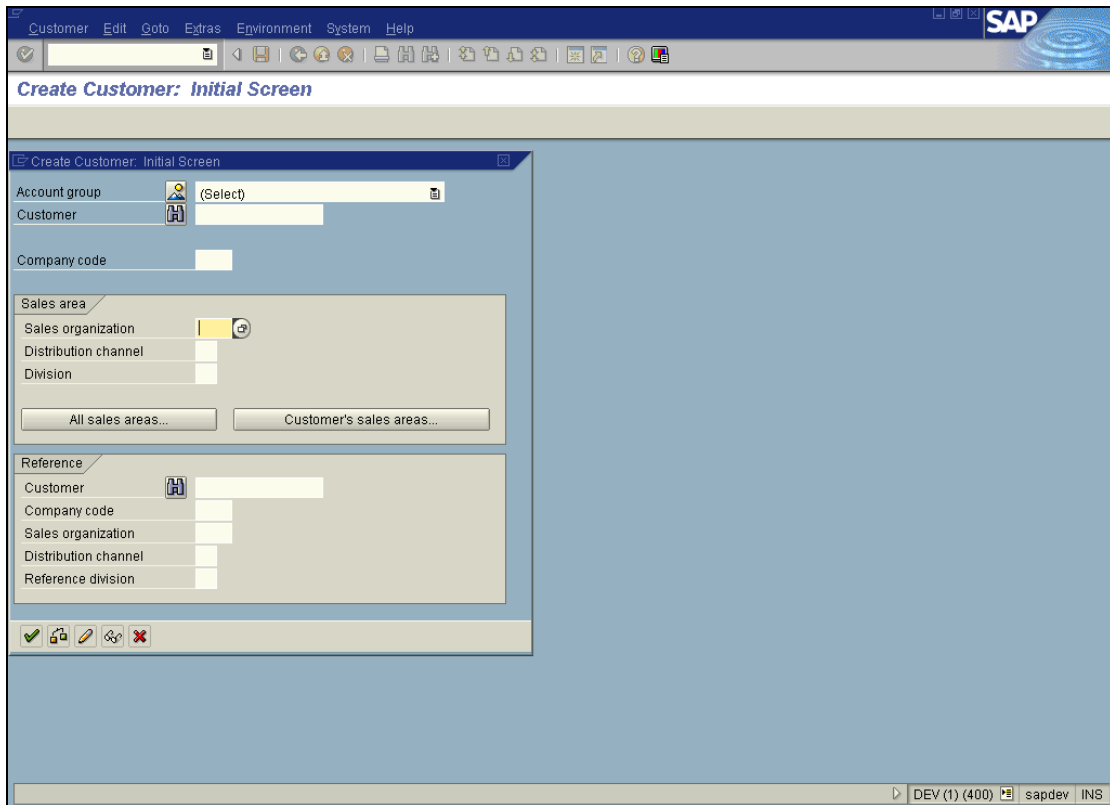
Purpose of Exercise

In this exercise, we will create the master data for a new customer represented by one of your fellow students. Two types of customer data are stored about the customer—sales data and accounting data. The customer master data is created in three groups, or views—general, accounting, and sales.

Navigation

Menu Path	Logistics → Sales and Distribution → Master Data → Business Partner → Customer → Create
Trans Code	

1. Double Click  Complete to move to the **Create Customer: Initial Screen**.




2. Select **Sold-to-party** for the **Account group** field.
3. Type **<NN>A1** (Bike America) for **Company code**.
4. Type **<NN>A1 (Bike – USA)** for the **Sales Organisation**.
5. Select **WH (Wholesale)** for the **Distribution Channel**
6. Select **01** (Bicycles) for the **Division**.


7. Click  to accept the values.

You now need to enter descriptive data about the new **customer**.

8. Select **Company** for the **Title**.

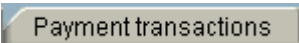
9. Type the following data:

Name:	Bike America <your customer>
Search Term	<NN>
Street:	<NN> Ballarat Rd
Postal Code:	97204
City:	Portland
Country	US
Region	Oregon (OR)
Transportation zone:	Region West (click  to display further details)

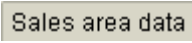
10. Click the  button on the **Application Toolbar** to move to this screen.

11. Type **1101<NN>** in the **Recon account** field.

12. Type **001** in the **Sort Key** field.

13. Click the  tab to move to this screen.

14. Type **0001** (Pay immediately due net) in the **Terms of Payment** field.

15. Click the  button on the **Application Toolbar** to move to this screen.

This screen enables you to enter data relevant to the sales organizations and distribution channels of your company. Data that is stored in this area includes, for example, data on order processing, shipping, and billing.

16. Type the following information:


Sales order

Currency: **USD**

Pricing/Statistics

Cust. Pric. Proc.: **1** (standard)

Cust. Stats. Grp: **1** ("A" material)

17. Click the  tab to move to this screen.

18. Type the following data:

Shipping

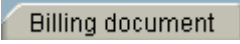
Delivery Priority **02** (Normal Item)

Shipping Condition **01** (Standard)

Delivery Plant **<NN>A2** (Bike DC San Diego)

Partial deliveries

Max.part.deliveries: **3**

19. Click the  tab to move to this screen.

20. Type the following information:

Delivery and payment terms

Incoterms

FOB (Free on Board) and **Origin Shipping Dock**

Terms of Payments

0001 (Payable immediately due net)

Accounting

Acct assignmt group

01 (Domestic Revenues)

Taxes

Tax Classification

0 for all 3 tax categories (Tax exempt)

21. Click  to save the data.




What message appears on the Status Bar?

Message

A screen appears requesting you to enter a Customer Number. You want the system to do this automatically for you.

22. Click  to accept the values.

23. Click  to return to the Main menu.



24. Click **NO** as the customer data has already been saved and return to SAP main menu.

Exercise SD 2: Create Contact Person for Customer



Purpose of Exercise
Establish a contact for The Bike Zone. You will reference the customer and create the person as a subordinate of the customer's company. This will give you a specific person to communicate with when dealing with The Bike Zone.

Menu Path	Logistics → Sales and Distribution → Master Data → Business Partner → Contact Person → Create
Trans Code	

The **Contact Person: Initial Screen** appears.

1. Click  of the **Customer** field to display the search screen.
2. Type **<NN>** in the **Search Term** field.
3. Click  to accept the values and start the search.

Your Customer **<NN> The Bike Zone** appears.

4. Click  to transfer the value.
5. Click .
6. Type the following:

VIP: **1** (Management)
 Department: **0002** (Purchasing)
 Function: **02** (Head of Purchasing)
 Gender: Your Choice
 Call frequency: **0002** (Weekly)

Person

Last name: <Last name of your fellow student>
 First name: <First name of your fellow student>


Communication

Language: **English**
 Telephone: **(503) 612-5555 Ext. 2532**
 E-Mail: Your Choice
 Comm. Meth: **Sales call**

7. Click  to save your changes.

Record the system message:

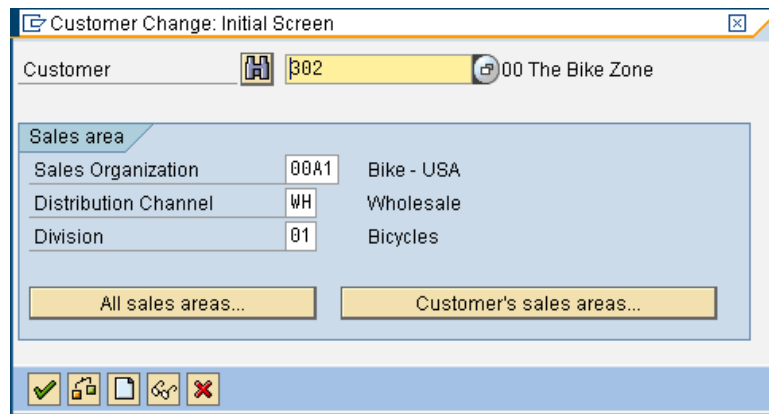
Message

8. Click  to return to the Main menu.


Exercise SD 3: Change Customer

Purpose of Exercise	
Now that we have a contact person created for your Customer, we need to assign that person as a business partner within the Customer Master. In addition, a sales person is assigned responsibility for communicating and working with this customer through the contact person.	
Menu Path	Logistics → Sales and Distribution → Master Data → Business Partner → Customer → Change → Sales and Distribution
Trans Code	


The **Change Customer Initial** screen appears with your Customer details.






If your Customer details are not inserted automatically then you will need to search for your Customer.

1. Click  to display the **Change Customer** screen.

Ensure that you are within the Sales Area Data section

2. Click **Partner Functions** to display this screen.
3. Type **CP** (Contact Person) in the first column under Ship-to party.
4. Press <TAB> to move to the **Number** field.
5. Click  to display the search screen.
6. Type your **Customer Number** if it is not already displayed.
7. Press <ENTER> to commence the search.

The **Contact Person** you just created is displayed.

8. Click  to transfer the value
9. Click  to save your changes.
10. Click  to return to the SAP main menu.

Record the system message:

Message

Exercise SD 4: Create Sales Order

Purpose of Exercise
Create a Sales Order for the bikes specified in the Purchase Order received by e-mail from your Customer.


Menu Path	Logistics → Sales and Distribution → Sales → Order → Create
Trans Code	

The **Create Sales Order: Initial Screen** appears.


- Type **OR** in the **Order Type** field.
- In case your organizational details are not transferred automatically you will need to enter them:
Organizational Data
Sales organization: **<NN>A1**
Distribution channel: **WH**
Division: **01**

- Press **<ENTER>**

The **Create Standard Order: Overview** screen appears


- Click the **Sold-to party** field to select it.
- Click  to display the search screen.
- Type **<NN>** in the **Search term** field.
- Select your Customer and press **<ENTER>** to transfer the selection to the **Sold-to party** field.
- Type **1234** in the **PO Number** field.
- Type today's date in the **PO date** field.
- Click the **Sales** Tab to display this screen if it is not already displayed.
- Enter **Req. deliv. date** Two months from today
- Type **<NN>A2** (San Diego) in the **Delivery Plant** field.

NOTE: The Material Number displayed on the Purchase Order you received by e-mail is the **internal material number** for your Customer. You as a Vendor must **use your own Material Number** corresponding to the bikes ordered.

- Type **KB-0013-<NN>** in the **Material** field
- Type **10** in **Order Quantity** field.
- Click  to accept the entries and ignore any warning messages.


What is the Net value of the order?

\$ _____

17. Click  to save your **Sales Order**.

Record the system message:

Message


18. Click  until you are returned to the SAP main menu.

Exercise SD 7: Check Stock Status

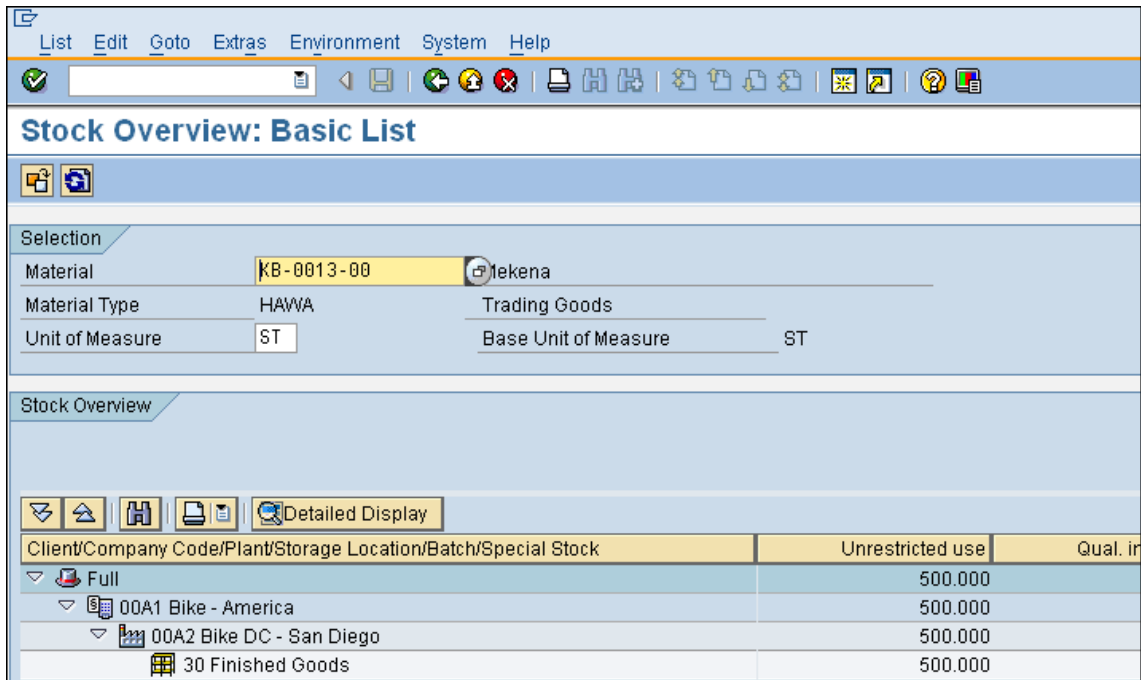
Purpose of Exercise
You now need to review the current inventory information about your products.

Menu Path	Logistics → Materials Management → Inventory Management → Environment → Stock → Stock Overview
Trans Code	

The **Stock Overview** screen appears. This enables you to select the materials which you want to determine stock levels.

1. Type **KB-0013-<NN>** in the **Material** field
2. Type **<NN>A2** in the **Plant** field.
3. Type **1** in the **Display version** field.
4. Click  to execute the report.

The **Stock Overview** appears on screen.




Similar to other reports you can “drill down” for further details.

5. Double Click **30 Finished Goods**.

A pop-up window is displayed showing the details of the inventory by stock type at the plant.

6. Record the storage location and quantity of inventory for each material:

Material	Storage Location	Stock Type		
		Unrestricted Use	Sales Orders	Scheduled for Delivery
KB-0013-<NN>				

7. Click  until you are returned to the SAP main menu.

Exercise SD 8: Display Sales Order

Purpose of Exercise

You need to display and review the sales order. There was a lot of activity taking place automatically like the availability check and price determination and you want to view this activity and review the rules by which it was carried out.


Menu Path

Logistics → Sales and Distribution → Sales → Order → Display



Trans Code

The **Display Sales Order: Initial Screen** appears.

The **Sales Order number** should appear automatically. If not you will need to search for it.

1. Click  to display the **Sales Order**.

The first thing you need to review is the **Availability to Promise** data that was used to confirm the material requested could be delivered by the requested delivery date.

2. Click  corresponding with material **KB-0013-<NN>** to select the row.
3. Click  to display availability.


A screen will appear that gives you a detailed analysis of the **Availability to Promise (ATP)** situation.

ATP situation						
	Date	MRP ...	MRP element data	Rec./reqd qty	Confirmed	Cum. ATP qty
	02/04/2008	Stock		400		400
	02/09/2008	----->	End lead time			
	05/01/2008	CusOrd	Totals record	5-	5	
	02/04/2008	SLocSt	30	500		500


The screen above indicates that you have physically have 500 bikes in Storage Location 30. The system indicates that we have one Customer Order for 5 bikes, and your stock level is 400 bikes.

Why is your stock level 400, 100 bikes below your physical inventory amount of 500?

It is possible to identify the individual sales orders associated with the stock levels.

4. Click  **Totals records** (item no 6 in the menu strip) to display the associated **Sales Orders** (shown as CustOrd).

The **Available to Promise (ATP)** quantity is calculated from the warehouse stock, the planned inward movements of stock and the planned outward movements of stock. This type of check is performed dynamically for each transaction, taking into account the relevant stock and planned goods movements with or without replenishment lead time. It is what is available to sell.


- Click  to return to the previous screen.

Document Flow

To view the overall processing status for your **Sales Order** you can use **Document Flow**. The **Document Flow** can be accessed from most transaction screens in the Sales process.

- Click  to display the **Document Flow** for your **Sales Order**.

What is the status of your order?

- Click  until you have returned to the SAP Main Menu.


Exercise SD 9: Start Delivery Process: Create Delivery Document

Purpose of Exercise
You have created a Sales Order. You now need to create a Delivery Document to initiate the shipping and transportation activities for this Sales Order. When a Delivery Document is created, the system re-determines the Stock Availability and the quantity of ordered items are placed in a Scheduled for Delivery status.

Menu Path	Logistics → Sales and Distribution → Shipping and Transportation → Outbound Delivery → Create → Single Document → With Reference to Sales Order
Trans Code	


The **Create Outbound Delivery with Order Reference** screen appears.

Your Order Number should be inserted automatically or you will have to type it in yourself.


- Type **<NN>A2** in the **Shipping Point** field.
- Type a date 2 months from today in the **Selection Date**:field.
- Click  to accept the entries.

The **Outbound Delivery Create: Overview** screen appears. The system has copied the items and quantities from the **Sales Order** that are scheduled to be delivered. You are able to view the status of each line item from this screen.


- Click line item 10 to select it.

- Click  to display the **Item Status** for this line item.

Here you can see the line item status and some specific information regarding the line item within the delivery document. What is the picking status?


- Click  to return to the previous screen.

You now need to specify the **Storage Location** for each item in the **Sales Order**. The **Storage Location** is where the material is stored. A **Plant** may contain one or more storage locations.

- Click **Picking** to display this screen.
- Type **30** (Finished Goods) in the **Sloc** (Storage Location) field for each **Material**.
- Click  to save your changes.

Record the system message:

Message


- Click  to return to the SAP Main Menu.

Exercise SD 10: Check Stock Status

Purpose of Exercise
Review current inventory information about your products to determine the impact of creating an Outbound Delivery.

Menu Path	Logistics → Materials Management → Inventory Management → Environment → Stock → Stock Overview
Trans Code	

The **Stock Overview** screen appears. This enables you to select the materials which you want to determine stock levels.

- Type **KB-0013-<NN>** in the **Material** field
- Type **<NN>A2** in the **Plant** field.
- Type **1** in the **Display version** field.
- Click  to execute the report.

The **Stock Overview** appears on screen.

Similar to other reports you can “drill down” for further details.

5. Double Click **30 Finished Goods.**

A pop-up window is displayed showing the details of the inventory by stock type at the plant.

Note that the quantity from "Sales Order" stock type has moved to the "Schd. For delivery" stock type.

Why has the Unrestricted Use level not changed? _____

Record the storage location and quantity of inventory for each material:

Material	Storage Location	Stock Type		
		Unrestricted Use	Sales Orders	Scheduled for Delivery
KB-0013-<NN>				

6. Return to the SAP main menu.

Picking

You now need to create a Transfer Request as a basis for goods movement in the warehouse and to print the picking list. The picking lists include all relevant orders. It can be organised by storage bin and material to relieve the work for the picker.


Exercise SD 11: Picking Materials on Delivery Document

Purpose of Exercise	
Pick the quantity of materials that have been proposed on the Delivery Document for the order from your Customer.	
Menu Path	Logistics → Sales and Distribution → Shipping and Transportation → Outbound Delivery → Change → Single Document
Trans Code	

The **Change Outbound Delivery** screen appears. Your **Outbound Delivery** document number should be automatically inserted. If not you will have to enter it yourself.

1. Click  to proceed.

The material delivery quantity is proposed. You now need to indicated the number of bikes that will be Picked.


2. Click **Picking** to display this screen if not already displayed
3. Type **10** in the **Picked Qty** field for material **KB-0013-<NN>**.
4. Click  to save your changes.

Record the system message:

Message

5. Click  to display the **Document Flow** for your **Sales Order**.

What is the status of your order?

6. Click  until you have returned to the SAP Main Menu.

Recheck the stock status of the materials. Note that no change has occurred in the stock status - the quantities are still in the "Schd. for delivery" stock type field.

Exercise SD 12: Post Goods Issue

Purpose of Exercise	
<p>Post Goods Issue reduces unrestricted stock to reflect the inventory shipped – an inventory control function. Legal ownership of the goods changes hands from you to the customer as the goods leave the plant (FOB shipping point) or when the goods are received by the customer (FOB destination). From an accounting perspective, both inventory and costs of goods sold are impacted by this transaction. The system reflects that the materials are no longer available in stock at the time of post good issue regardless of the shipping terms.</p>	

Menu Path	Logistics → Sales and Distribution → Shipping and Transportation → Outbound Delivery → Change → Single Document
Trans Code	

The **Change Outbound Delivery** screen appears. Your **Outbound Delivery** document number should be automatically inserted. If not you will have to enter it yourself.

1. Click Post Goods Issue

The system returns a message indicating a change was made to the delivery note.

Record the system message:

Message


Exercise SD 13: Check Stock Status

Purpose of Exercise	
<p>You now need to review current inventory information about your products to determine the impact that Post Goods Issue has on stock levels..</p>	

Menu Path	Logistics → Materials Management → Inventory Management → Environment → Stock → Stock Overview
Trans Code	

The **Stock Overview** screen appears. This enables you to select the materials which you want to determine stock levels.

1. Type **KB-0013-<NN>** in the **Material** field

2. Type **<NN>A2** in the **Plant** field.
3. Type **1** in the **Display version** field.
4. Click  to execute the report.

The **Stock Overview** appears on screen.


Similar to other reports you can “drill down” for further details.

5. Double Click **30 Finished Goods**.

Note that the quantity from “Schd. for delivery” stock type should have no balance. The total quantity you have available should have declined. Does this make sense? Why? _____

Record the storage location and quantity of inventory:

Material	Storage Location	Stock Type		
		Unrestricted Use	Sales Orders	Scheduled for Delivery
KB-0013-__				

6. Click  until you have returned to the SAP Main Menu.

Exercise SD 14: Create Billing for Customer

Purpose of Exercise


You have issued the goods and now they have to be paid for by the customer. To do this you need to create a billing document for your customer relative to the shipment. The billing document permits the recognition of revenue and its associated accounts receivable.
--

Menu Path



Logistics → Sales and Distribution → Billing → Billing Document → Create
--

Trans Code

The **Create Billing Document** screen appears. The **Delivery Document** number should atomically be inserted. If not you will have to enter it.

1. Click  to create the document.


The system displays the customer number and the material on the delivery with total values to be billed. You can view the **Pricing Conditions**.

2. Click **Mekena** to select this line item.
3. Click  to view the **Pricing Conditions** for this **Material**.
4. Click  to return to the previous screen.


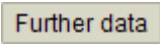
Often you would be required to **Print the Invoice** (billing document) so it can be delivered to the customer. The printing must be prepared by the following steps.

5. Choose the **GoTo** menu → **Header** → **Output**
6. Type RD00 (invoice) in the Output field.
7. Select Print output in the Medium field.


8. Click  to accept the entries.

9. Click  **Communication method**

A new screen appears.

10. Type **LOCL** in the **Logical destination:** field (or LP01 or any other field if LOCL is not defined)
11. Click **Print immediately** to select it.
12. Click  to return to the previous screen.
13. Click .


14. Select Send immediately (when saving the application) in the Dispatch time: field.

15. Click  twice

16. Click  to save your changes.

Record the system message:

Message

17. Click  to return to SAP main menu.

Exercise SD 15: Display Billing Document and Customer Invoice

Purpose of Exercise
You are now going to display an Invoice and send it via e-mail to your Customer.

Menu Path	Logistics → Sales and distribution → Billing → Billing document → Display
Trans Code	

The **Display Billing Document** screen appears. The **Billing Document** number should automatically be inserted. If not you will have to enter it.


1. Choose the **Billing Document** menu → **Issue output to**

Your Invoice should be selected. The system will default the last billing document created.


2. Click  to Print Preview your **Invoice**.


The Invoice is displayed.

3. Press the keyboard “Alt” and “Print Scr” simultaneously to make a copy of the active window, i.e. the Purchase Order.
4. Paste it into an e-mail that you send to your student fellow representing your Customer. (Some e-mail programs does not allow paste of an image. If this is the case paste the Purchase Order into a Word file or similar and send that file to your Customer). It will look similar to:

5. Click  to return to the previous screen.

<u>IDEA NUMBER AD: BUNWZ 15.05.08 D:60070Frankfurt</u>		Invoice
Company Bike America 03A1 Bjorn 03 Ballarat Rd. PORTLAND OR 97204 USA		Repeat Print
		Payment Information
Doc. No./Date	90000009/ 03/19/2009	
Delivery Note No./Date	80000009/ 03/19/2009	
Order No./Date	25/ 03/19/2009	
Reference No./Date	BJ4500000004/	
Customer	366	
Currency	USD	
Invoice Amount		1,000.00

6. Click  to close the Output screen.

7. Click  Accounting.

This is the accounting transaction that took place in the background. The transaction should contain a single posting to the customer's sub-ledger account increasing their liability to the company. We can also see our two revenue postings, one for each line item, and their corresponding posting to revenue deduction deriving from the discounts we entered. Do these match the conditions we recorded when you created your Sales Order? _____

8. Check the status of your **Document Flow**.

9. Click  twice to return to the SAP main menu.

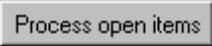
Exercise SD 16: Post Receipt of Customer Payment

Purpose of Exercise
The Customer has sent you a Payment notification as a "Bank Statement" via e-mail to show that funds for the payment has been transferred. You now need to Post a Receipt of the payment to settle the billing. A journal entry is made to Accounts Receivable for you Customer and to the bank checking account in the G/L.


Menu Path	Accounting → Financial accounting → Accounts receivable → Document entry → Incoming payment
Trans Code	

The **Post Incoming Payments** screen appears.

1. Type Today's date in the **Document Date** field.
2. Type **<NN>A1** (Bike America) in **Company Code** field if it is not already there.
3. Type **USD** in the **Currency/Rate** field if it is not already there.
4. Type the following:

<u>Bank data:</u>	
Account:	1001<NN> (Your Bank Account)
Amount:	Enter the amount of the payment
<u>Open item selection:</u>	
Account:	The Number of your Customer
5. Select  to Post amount.
6. Review the balance.
7. Double click the USD Gross **amount**.

The value should be transferred to the **Assigned** field automatically and the **Not Assigned** field should be **0.00**. (You might have to do this more than once).

8. Click  to save the changes and Post the amount.

Record the system message:

Message

9. Return to SAP main menu ignoring warnings.

Exercise SD 17: Display Document Flow and notify Customer

Purpose of Exercise
You want to verify that the Order has been completed and that the payment has been received. You send a e-mail to the Customer to complete this sale with the Customer.


Menu Path	Logistics → Sales and distribution → Sales → Order → Display
Trans Code	

1. Type your Order Number in the Order field if it is not already there.

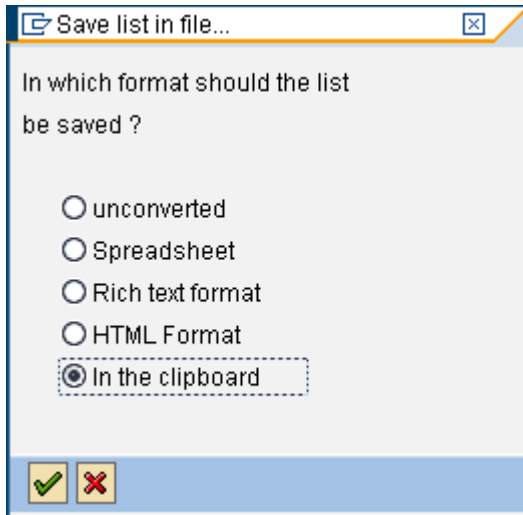
2. Click  to display the **Document Flow** for your **Sales Order**.

You can see there are no open documents and the business cycle is complete.

3. Double Click on the last row **Accounting document....**

4. In the lower part of the screen showing the accounting document status Select  (Export) and select **Local File** in the pop up.

The **Save list in file...** screen appears:




5. Select In the clipboard and ENTER

Now you have a copy of the details in your Clip Board.

6 Paste it into an e-mail that you send to your student fellow representing your Customer.

Write in front of the details pasted in the e-mail: **Payment Received. Thank you for shopping with us.**

7. Click  until you have returned to the SAP Main Menu.

You have now completed the Vendor exercises associated with the Sales and Distribution process. The following some review questions associated with this process.

3.3 Test of the Exercises in an International Context

The exercises developed were tested in a pilot study where students in Norway and Australia collaborated by buying and selling to and from each others company. The transactions were performed by using a common SAP server hosted by Queensland University of Technology in Brisbane. Communications between the companies in the form of sales order invoicing, purchase order, invoice payment and acknowledgement are effected via e-mail external to SAP. E-mail is used instead of the internal SAP messaging system since the collaborating students were in different time zones with eight hours apart from one another. By using e-mail, the participants do not need to log on to the SAP system to receive business messages.

3.3.1 Course at Curtin University of Technology, Australia

The master course Business & Technology Planning 652 is a new unit in Information Systems at Curtin University of Technology. This course teach ERP systems and use SAP to give students hands-on experience with a real ERP system. The learning objectives are to develop an understanding of how ERP systems improve the effectiveness of information systems in organizations by using SAP, to recognize the business benefits of ERP systems, to understand the history and evolution of ERP and to get hands-on experience in using the SAP ERP system.

3.3.2 Course at Molde University College, Norway

The master course Bøk700 Enterprise Resource Planning with SAP is an elective unit in the Master of Logistics programe at Molde University College. This course teach ERP systems and use SAP to give students hands-on experience with a real ERP system.

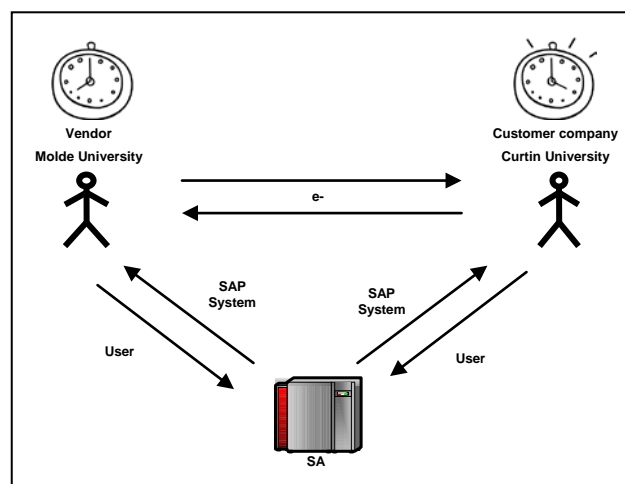


Figure 2: Communication between customer and vendor companies. The customer is played by a student in Australia and the vendor by one in Norway

4. Evaluation Tool

In order to run the development process as shown in Figure 5 we needed an evaluation tool. Developing such a tool is not straight forward given the distributed set up, the number of partners involved and the ongoing development of exercises, setup of labs, communication methods, learning goals and so forth. This called for a similar approach for developing the evaluation method as for the development of the assignment itself. Thus, as part of this project we decided to do a small research project with the goal to develop an evaluation tool. In this section we describe the first version of the pre- and post-survey tool. Note that since our goal for the pilot study was to get the logistics in place and to start developing the evaluation tool, we did not analyze the detailed results from the pilot study. The primary use of the results was for us to get feedback on the appropriateness of the evaluation tool itself. As a starting point a simple survey was chosen as a method for collecting the pre- and post-survey evaluation data. We decided to ask the student to evaluate their own knowledge of business processes and ERP systems, and SAP skills in particular before the unit was undertaken and then again after the unit was completed. The answers from the students are included below. We acknowledge that an individual perception of their knowledge and skills may be different from their actual knowledge and skills.

1. Questionnaire

Questionnaire

#	Question	None / Very Low	Low	Somewhat Below Average	Average	Somewhat Above Average	High	Very High
	GENERAL BACKGROUND (GB 1-8)							
1	Your general business work experience (not necessarily IS/IT work)							
2	Your education in ERP in previous courses or training							
3	Your work experience involving ERP (with SAP or other system)							
4	Your general understanding of how ERP systems work							
5	Your general understanding of the value of ERP systems to businesses							
6	Your knowledge of SAP							
7	Your knowledge of other ERP systems besides SAP							
8	Your ability to use an ERP system (like SAP but not necessarily SAP)							
	BUSINESS KNOWLEDGE (BK 1-4)							

1 Knowledge of business terminology in manufacturing and execution process(such as MRP, production plan etc.)

2 Knowledge of business terminology in sales and distribution process (such as sales order, discounts, inco terms, freight, transfer order, goods issue, etc.)

3 Knowledge of business terminology in financial accounting process (such as general ledger, cost centre, journal, adjustment, balance sheets etc.)

4 Knowledge of the inter-relationships and inter-dependencies between various functions (such as accounting, marketing, production etc.)

PROCESS KNOWLEDGE (PK 1-7)

1 Knowledge of the concept of business process

2 Knowledge of business processes and activities in materials mangement

3 Knowledge of business processes and activities in sales and distribution management

4 Knowledge of business processes & activities in financial accounting

5 Knowledge of business processes & activities in production management

6 Knowledge of the importance of the integrated nature of business processes

7 Ability to map organisational business processes with those in an enterprise system software

SAP TRANSACTION SKILLS (STS 1-9)

1 Ability to create master data in SAP - Materials management module

2 Ability to create master data in SAP - Sales and distribution module

3 Ability to create master data in SAP – Finance/Controlling module

4 Ability to carry out complete transactions in the SAP – Materials management cycle

5 Ability to carry out transactions in the SAP – Sales & distribution cycle

6 Ability to carry out transactions in the SAP - Account Receivable

7 Ability to carry out transactions in the SAP - Account Payable

8 Ability to carry out transactions in the SAP - General Ledger module

9 Ability to carry out transactions in the SAP - Production Planning module

GLOBAL BUSINESS KNOWLEDGE (GBK 1-4)

1 Knowledge of how ERP systems facilitate a Global Business Operations

2 Knowledge of issues associated with a Global Business Operations

3 Effectiveness of SAP practicals at helping you learn about ERP systems

4 Effectiveness of SAP practicals at helping you learn about Global Business Operations

UNIT AND DEGREE (UAD 1-4)

1 Undergraduate of Postgraduate (circle appropriate) UG PG

2 Involved with Cross-Company / Global Business Practicals (circle appropriate) Yes No

3 Country of Study (circle appropriate) Aus Nor USA

References

- Jaeger, B., A. Rudra, A. Aitken, V. Chang, and Helgheim, B. (2010). Teaching Business Process Concepts Using Enterprise Systems in a Globalized Context. Proceedings of the 43th Hawaii International Conference on System Sciences (HICSS43), January 5-8, 2010.
- Rudra, A., A. Aitken, V. Chang, and Jaeger, B. (2009). Teaching ERP using International Inter-Group Collaborative Learning Environment. 20th Australasian Conference on Information Systems (ACIS 2009). Melbourne, Australia.
- SAP. (2009). "Education Programs, SAP University Alliances." from <http://www.sap.com/about/csr/education/universityalliances.epx>.



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