

Starsearch Technologies: In Search Of Ways To Enhance Controls Using SAP In The Age Of A Risk-Based Approach To Auditing

Joseph M. Ragan, Saint Joseph's University, USA
Brian Perrotto, Saint Joseph's University, USA
Brian Rizman, Saint Joseph's University, USA

ABSTRACT

The Sarbanes-Oxley Act passed in 2002 now constitutes an important part of the audit of a public firm. This case looks at the processes to define, manage, and evaluate that process using an integrated enterprise resource planning system. This case can be used in a variety of ways to discuss issues associated with auditing and the test of internal controls. The case is appropriate for an undergraduate course in auditing and/or accounting information systems. The case does not require access to an SAP R/3 server. Student desires of real time learning can use either a live system or the practice capability within the case. The scenario demonstrated uses the current version (ECC 6.0) of SAP.

Keywords: Ethics; Systems, Risk and Compliance; Business Process Controls; Sarbanes-Oxley; ERP; SAP; AIS; Accounting Education

COMPANY INFORMATION

StarSearch Technologies is one of the fastest growing manufacturers and sellers of personal computers in the United States. It was established in 1991 and was run by just a few people who built personal computers for specialized purposes. For instance, a programmer in need of advanced technical specs for his PC would come to StarSearch and have a computer custom built to fit his needs. StarSearch Technologies grew quite a reputation and eventually started to manufacture more PC's for the general consumer.

After some time and ever increasing sales, StarSearch Technologies grew large and began to think about an IPO. This was a huge step for the company and with the reputation it had, the benefits it could gain from selling stock became clear. StarSearch Technologies went public in 2006. The company soon realized the added benefits of their ability to raise capital through the sale of stock, which enabled increased growth for StarSearch.

In January 2007, Todd Weber, a Senior Controller at the corporate headquarters for StarSearch Technologies, received a copy of the latest Auditing Standard No. 5 on his desk. Back when Sarbanes-Oxley was enacted, StarSearch Technologies was not a public company. However, for the first year of operation as a public company, StarSearch had to adhere to the Sarbanes-Oxley Act of 2002. Mr. Weber had heard of all the increased workloads that other internal audit staffs had gone through, but truthfully the initial impact of Sarbanes-Oxley was less than what the larger public companies felt when StarSearch Technologies was private. Now that they were public, there was definitely an increase in accounting and control work in 2006 as the company adjusted to being a public company governed by Sarbanes-Oxley.

The first year after going public, the company continued to do well and Mr. Weber's job as controller was filled with many challenges such as adjusting to what was required of him and his internal audit team under

Sarbanes-Oxley. Then, right when he felt he had it all figured out, Auditing Standard No. 5 was issued by the PCAOB. As this happened some of the tasks that Mr. Weber had to perform changed somewhat. He is now faced with fully complying with Sarbanes-Oxley and Auditing Standard No. 5 (AS5). While AS5 greatly reduced the original workload created by the Sarbanes-Oxley Act, Mr. Weber found that he still had too much work to do in analyzing the internal controls for his company.

StarSearch Technologies uses Enterprise Resource Planning software to integrate all the aspects of the business. Lucky for Mr. Weber, his job is made easier as many of the internal controls are automated within the system, or so he thinks. Mr. Weber has enough experience over the years that he is able to navigate and do some basic analysis of the ERP system, but he will most likely need to enlist the help of an ERP consultant to help him sort out where to look for all the relevant controls.

ORDERS TO CASH RECEIPTS

StarSearch Technologies is a company that specializes in manufacture and selling of personal computers. The sales to cash receipts process usually follows the steps as shown below:

1. A customer calls or emails a sales representative to place a sales inquiry. If the customer is a new customer, the sales representative must create a master file for the customer.
2. After the inquiry is created and the customer receives the quoted price, the customer will then place an order with an sales representative authorizing the creation of a sales order.
3. After the sales order is created, the next step is for the goods to be picked by an warehouse employee to fill the order.
4. The goods are then transferred out for delivery by the shipping personnel.
5. The customer receives the goods and is invoiced by the billing department.
6. The customer makes payment after receiving the goods and the invoice, and the accounts receivable clerk clears the customer's account.

As Controller, Mr. Weber knows the importance of segregation of duties and how good segregation of duties can mitigate risk to the firm. He thinks that his internal audit team has done a good job testing the segregation of duties. He decides to pull up a randomly selected employee within the ERP system, in order to analyze the steps the employee is allowed to perform within the process of taking a customers order to collecting the cash from that customer. Mr. Weber's main concerns are that the custody of the assets involved in the sale, the authorization of the transaction, verification of the transaction and the recording of the transaction are duties that are divided up amongst a number of employees.

Mr. Weber pulls up a listing of the roles assigned to Rob Smiley, an accounts receivable accountant. The first role that comes up, with no surprise to Mr. Weber, is that of the accounts receivable accountant. In this role, Rob Smiley has the ability to change or reverse entries made to accounts receivable, process customer payments, process invoices, and view various accounts receivable reports. Further inspection shows that Rob Smiley is also assigned a role that allows him to process sales orders. Another role assigned to him is that he has the ability to create a transfer order as well as change the customer master file.

One of the key internal controls under the COSO framework is supervision. As Controller, Mr. Weber plays an important role in this aspect as he is responsible for overseeing all of the controls the company implements. Mr. Weber wonders if there is a benefit to using an ERP system to achieve this control. He decides to inspect one of the journal entries created in the revenue cycle and see what information is logged about the person who made the entry, and to independently verify that the transaction was properly recorded.

PURCHASES TO PAYABLES

In order to make the products that StarSearch Technologies sells, it must procure the materials that go into making the product. Computers have hundreds of different components of hardware such as the screen, hard drive, motherboard, power supply, speakers, sound card, keyboard, and the list goes on and on. The steps for the process

of procuring and paying for these components are shown below:

1. As inventory levels for a given component (hard drives for example) reach a certain level, an inventory manager alerts the purchasing department via purchase requisition that materials are needed.
2. A purchasing clerk uses the purchase requisition in order to prepare a purchase order. Upon completion the same employee sends the purchase order to the correct vendor.
3. The components are shipped from the vendor to the receiving dock of StarSearch Technologies.
4. Receiving department personnel inspect the goods and mark the quantity and condition of the goods received.
5. An inventory management clerk matches the goods receipt information with the purchase requisition to make sure that the correct amount and type of components were ordered.
6. The invoice from the vendor is sent to the Accounts Payable department.
7. The Accounts Payable accountant matches a copy of the purchase order to the invoice. After the amounts are verified the voucher is sent to the Cash Disbursements Department.
8. The Cash Disbursements Clerk checks over the vouchers and then writes a check which is then mailed to the vendor.

Since Mr. Weber was not pleased with his findings on segregation of duties in the order entry to cash process, he decides it may be a good idea to take a look at the controls he has in place for the purchases to payables system. Since he is planning on enlisting the help of some very talented consultants, he finds that it is wise to explore the purchases to payables system for adequate segregation of duties, since it involves cash going out the door. Once again, he decides to select an employee within the ERP system that he knows works in the purchases to payables cycle to see if there are any conflicting duties.

Mr. Weber selects an accounts payable accountant named Mary Baylor. He decides to follow the same process as before and pulls up all the roles that Mary is authorized to perform within the system. The first role he notices is the most obvious one of accounts payable accountant. This role allows Mary Baylor to process invoices, process payments, process checks, correspond with vendors, and pull up accounts receivable reports. Mr. Weber finds some other roles also authorized to her username. He noticed that she is authorized as a buyer within the system. This allows her to process purchase orders, solicit vendor quotes, and maintain the data in the vendor's file.

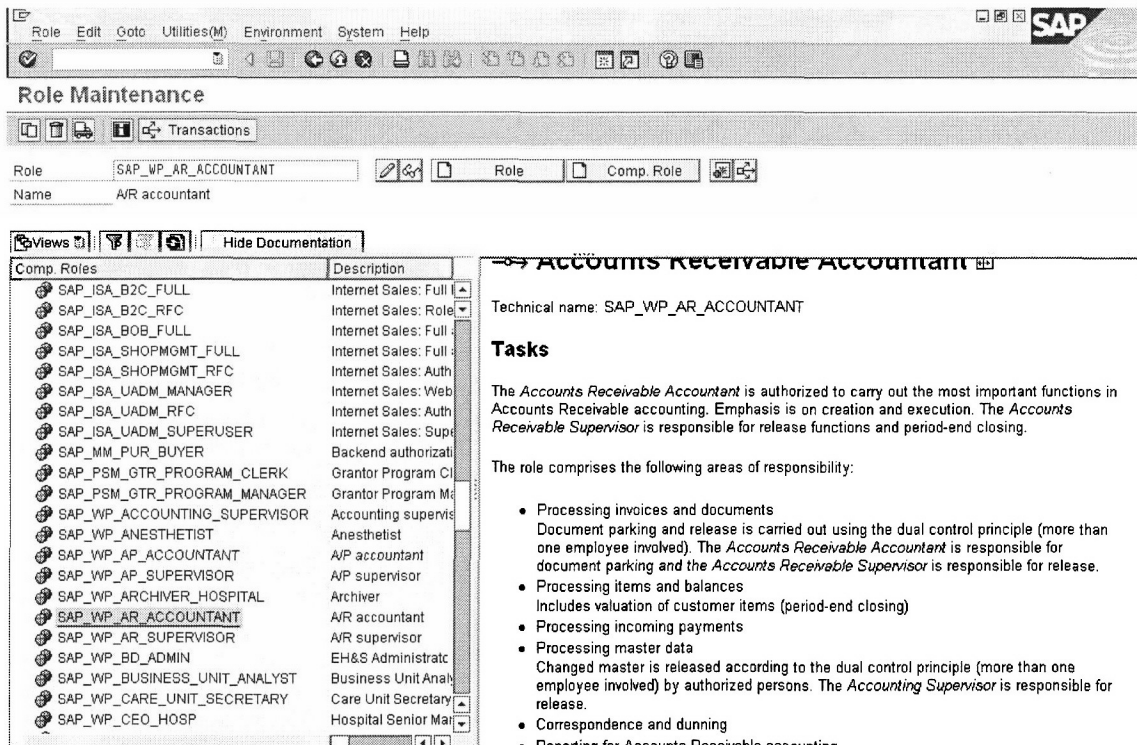
Mr. Weber asks the accounts payable accountant to show him how she utilizes the ERP system in order to debit the accounts payable account and credit the cash each for the amount used to pay the balance for the monthly rent. The company has a process in which the accounts payable accountant is supposed to go into a random sampling of journal entries each week to make sure that they are entered correctly and by the right person. The ERP system adds real value in this process in that it records electronically the user ID of the person who created the journal entry, as well as the time and date at which it was created.

APPENDIX A – ILLUSTRATING SEGREGATION OF DUTIES WITHIN SAP

SAP has preconfigured user roles built within the system that are ready to be assigned to user ID's. Roles have specific authorizations assigned to them. Follow the instructions below to see how to display different preconfigured user roles that are in the system:

- Enter Transaction Code: PFCG
- Click on the Views button and select Comp. Roles
- Find the role SAP_WP_AR_Accountant and click on it to bring up an explanation of that users tasks and abilities within revenue cycle.

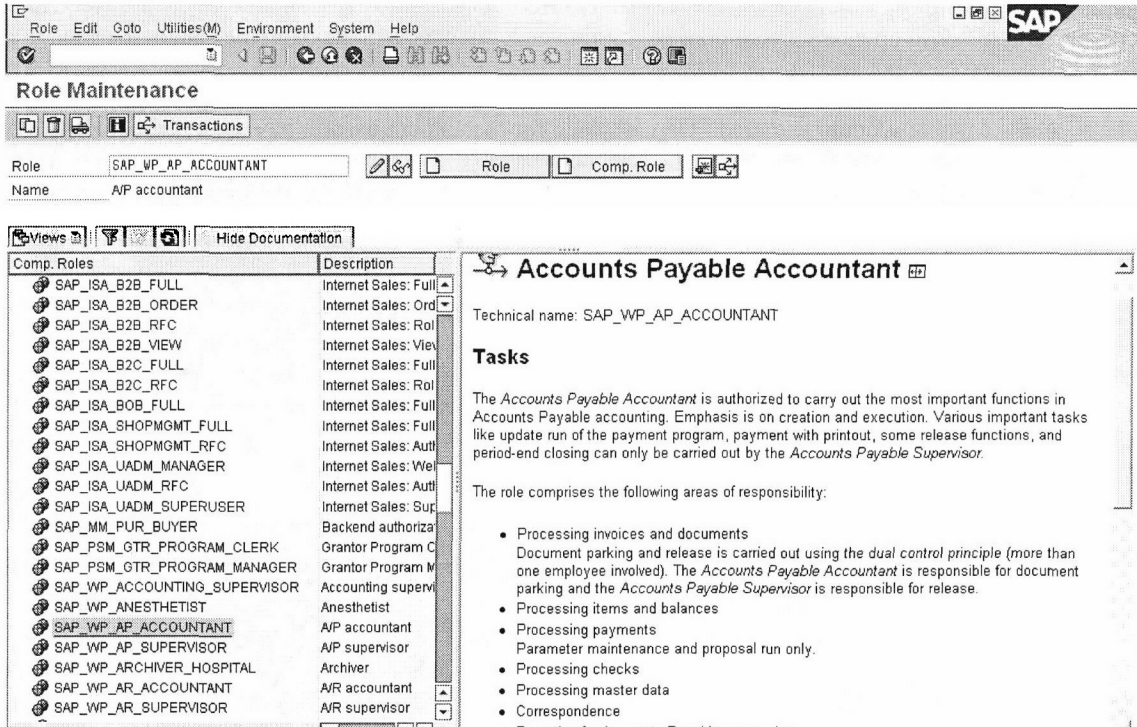




The screenshot shows the SAP Role Maintenance interface for the role **SAP_WP_AR_ACCOUNTANT**. The role name is **A/R accountant**. The main pane displays the **Accounts Receivable Accountant** tasks. The tasks are:

- Processing invoices and documents
 - Document parking and release is carried out using the dual control principle (more than one employee involved). The *Accounts Receivable Accountant* is responsible for document parking and the *Accounts Receivable Supervisor* is responsible for release.
- Processing items and balances
 - Includes valuation of customer items (period-end closing)
- Processing incoming payments
- Processing master data
 - Changed master is released according to the dual control principle (more than one employee involved) by authorized persons. The *Accounting Supervisor* is responsible for release.
- Correspondence and dunning
- Reporting for Accounts Receivable accounting

- Then find the role **SAP_WP_AP_Accountant** and click on it to bring up an explanation of that users tasks and abilities, specifically within the purchases to payables cycle.



The screenshot shows the SAP Role Maintenance interface for the role **SAP_WP_AP_ACCOUNTANT**. The role name is **AP accountant**. The main pane displays the **Accounts Payable Accountant** tasks. The tasks are:


- Processing invoices and documents
 - Document parking and release is carried out using the dual control principle (more than one employee involved). The *Accounts Payable Accountant* is responsible for document parking and the *Accounts Payable Supervisor* is responsible for release.
- Processing items and balances
- Processing payments
 - Parameter maintenance and proposal run only.
- Processing checks
- Processing master data
- Correspondence
- Reporting for Accounts Payable accounting

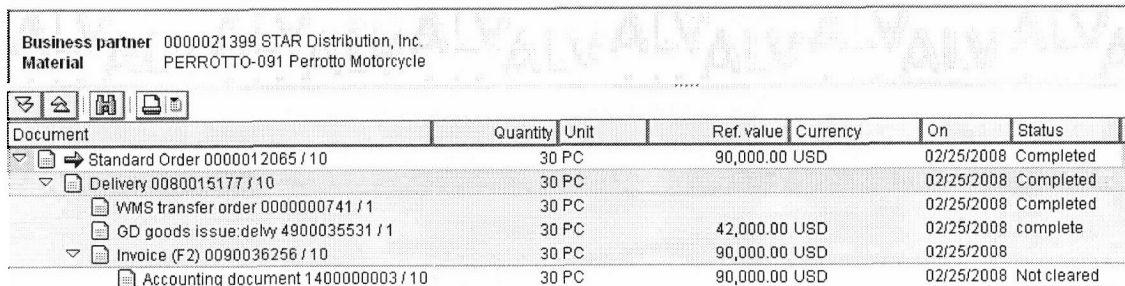


APPENDIX B – ILLUSTRATING SEQUENTIAL AUTHORIZATIONS WITHIN SAP

In SAP, there is a great display of sequential authorizations. In both the revenue cycle and purchases to payables cycle, one step cannot be done unless the step prior to it is done completely and accurately.

Follow the steps below to demonstrate sequential authorization in the revenue cycle.


- Enter Transaction Code: VA03 (Display a sales order)
- Enter a sales order number for a sale that has been completed in the Order field and hit enter.
- Click the display document flow icon in the upper left hand corner of the sales order ().
- The document flow will appear as shown below:

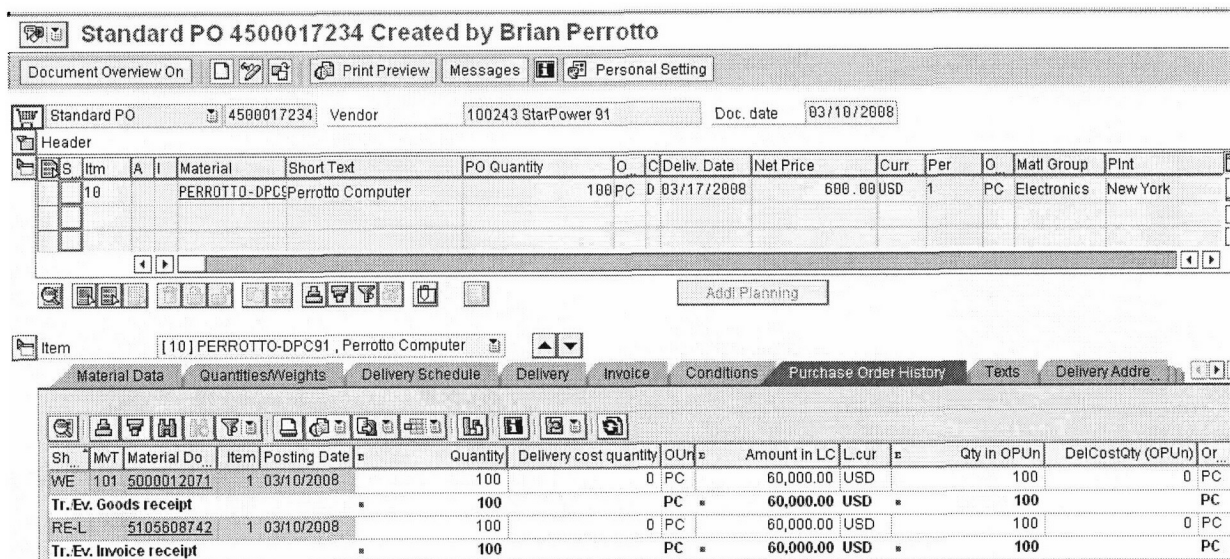


Document	Quantity	Unit	Ref. value	Currency	On	Status
Standard Order 0000012065 / 10	30	PC	90,000.00	USD	02/25/2008	Completed
Delivery 0080015177 / 10	30	PC			02/25/2008	Completed
WMS transfer order 0000000741 / 1	30	PC			02/25/2008	Completed
GD goods issue: delvy 4900035531 / 1	30	PC	42,000.00	USD	02/25/2008	complete
Invoice (F2) 0090036256 / 10	30	PC	90,000.00	USD	02/25/2008	
Accounting document 1400000003 / 10	30	PC	90,000.00	USD	02/25/2008	Not cleared

- The Document flow shows each step that was completed within the revenue cycle. Note the status “not cleared” indicates that cash has not yet been collected on the receivable generated by this sale.

Follow the steps below to demonstrate sequential authorization in the purchases to payables cycle.

- Enter Transaction Code: ME23N (Display a purchase order)
- Enter a purchase order number for a purchase that has been completed in the Standard PO field and hit enter.
- Towards the bottom of the purchase order, click the Purchase Order History Tab, after you have selecting the open item button at the bottom of the screen ():



Standard PO 4500017234 Created by Brian Perrotto

Document Overview On | Print Preview | Messages | Personal Setting

Standard PO 4500017234 Vendor 100243 StarPower 91 Doc. date 03/10/2008

Header

S	Item	A	I	Material	Short Text	PO Quantity	O	C	Delv. Date	Net Price	Curr	Per	O	Mat Group	Plnt
	10			PERROTTO-DPC91	Perrotto Computer	100	PC	D	03/17/2008	600.00	USD	1		PC Electronics	New York

Item [10] PERROTTO-DPC91, Perrotto Computer

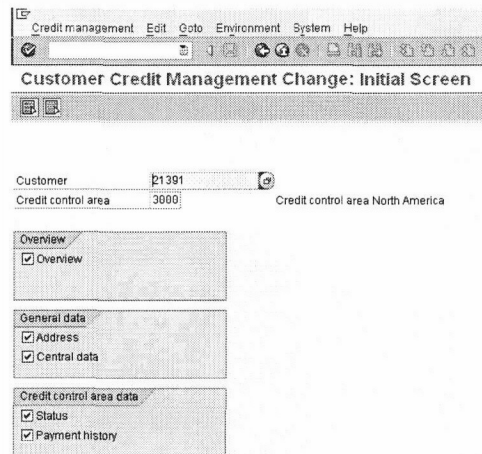
Material Data | Quantities/Weights | Delivery Schedule | Delivery | Invoice | Conditions | Purchase Order History | Texts | Delivery Address

Sh	MVT	Material Do	Item	Posting Date	Quantity	Delivery cost quantity	OUR	Amount in LC	L.Cur	Qty in OPUn	DelCostQty (OPUn)	Or
WE	101	5000012071	1	03/10/2008	100	0	PC	60,000.00	USD	100		0
					100		PC	60,000.00	USD	100		PC
					100		PC	60,000.00	USD	100		0
					100		PC	60,000.00	USD	100		PC

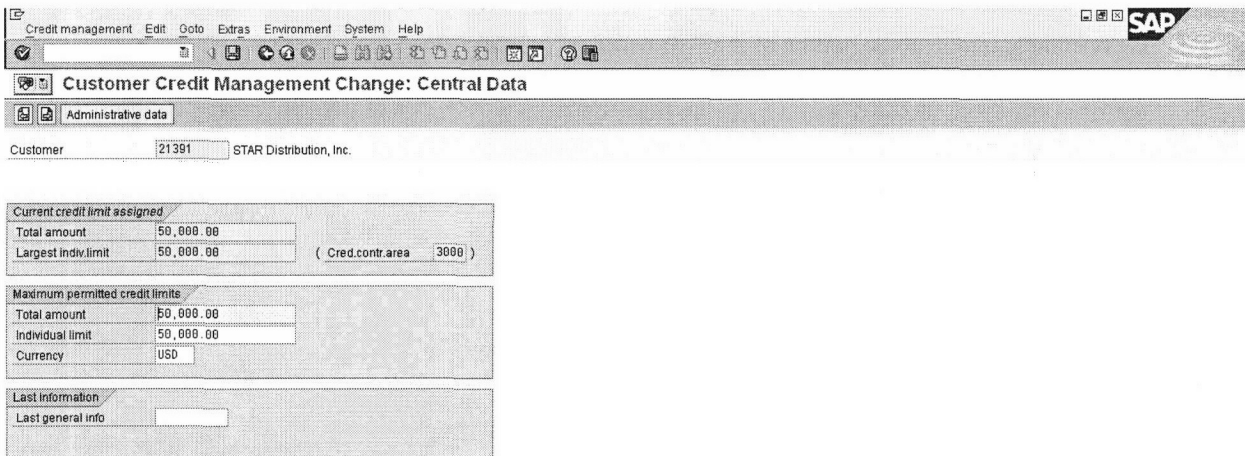
- The two documents created within the Purchase to Payables cycle show the steps that were completed sequentially within the process.

Another example of authorization would be the setting of credit limits for certain customer accounts. An illustration of how this is done within SAP is shown below:

- Enter Transaction Code: FD32 (Customer Credit Management Change)
- Enter your customer number and credit control area is 3000. Check all the boxes as shown below:



- Hit Enter to get to the next screen
- In the top toolbar, select goto > general data > central data
- The next screen will come up:




- Under the maximum permitted credit limits enter the total amount as \$50,000 and the individual limit as \$50,000. This creates a limit for the total account balance as well as the per sale amount at \$50,000.
- Click Enter
- For the Credit Limit enter \$50,000

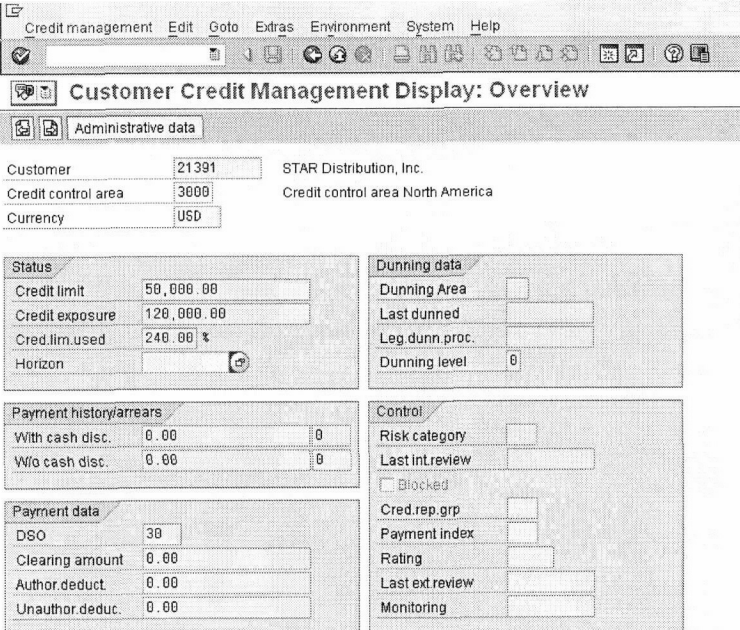


- For the Credit Horizon Date enter Today's Date and hit Save.

A credit limit has now been set for your customer. Therefore, when an amount is posted to this account for greater than the credit limit a warning message appears automatically from the system informing the person entering the sale that it is above the credit limit.

 Credit limit is exceeded for account 21391 area 3000

- Enter Transaction Code: FD33 (Customer Credit Management Display)
- Enter your customer number and control area 3000
- Check all of the boxes and hit Enter
- The following screen will appear:



Administrative data	
Customer	21391 STAR Distribution, Inc.
Credit control area	3000 Credit control area North America
Currency	USD

Status	
Credit limit	50,000.00
Credit exposure	120,000.00
Cred. lim. used	240.00 %
Horizon	[date]

Dunning data	
Dunning Area	[checkbox]
Last dunned	[date]
Leg. dunn. proc.	[checkbox]
Dunning level	0

Payment history/arrears	
With cash disc.	0.00 0
W/o cash disc.	0.00 0

Payment data	
DSO	30
Clearing amount	0.00
Author deduct.	0.00
Unauthor. deduct.	0.00

Control	
Risk category	[checkbox]
Last int. review	[date]
Blocked	[checkbox]
Cred. rep. grp	[checkbox]
Payment index	[checkbox]
Rating	[checkbox]
Last ext. review	[date]
Monitoring	[checkbox]

This screen provides an overview of the credit management for a given customer. You will notice the Credit Limit as well as the Credit Exposure. There is then a percentage provided to show the Credit Limit Used.

APPENDIX C – ILLUSTRATING SPECIAL AUTHORIZATIONS AND THE SPECIAL LEDGER IN SAP

In SAP, there is also a special authorization which can be illustrated. The scenario below illustrates the write-off of a receivable which is a special authorization within the revenue cycle.

- Enter Transaction Code: F-21 (Enter Transfer Posting)
- The data shown on the following screenshot must be entered:

- Hit Enter
- Enter the information as shown below on the next screen:

- Hit Enter
- On the next screen enter * for the Amount and click save.
- Return to the main-menu and run transaction code FD10N

The screenshot shows the SAP 'Customer Balance Display' interface. At the top, it identifies the customer as STAR Distribution, Inc. with company code IDES US INC and fiscal year 2008. Below this, a 'Special general ledger' is displayed with the following table:

Transaction	Bal Carried Fwd	Debit	Credit	Balance
Reserve for bad debt			120,000.00	120,000.00
Total			120,000.00	120,000.00
Account balance		120,000.00		120,000.00
Total		120,000.00	120,000.00	

Note that there is a special ledger created within the SAP system that shows the reserve for all the bad debts on a given account. The above screen shot shows a balance of \$120,000 which shows that there was another write-off prior to the \$60,000 just created. A credit manager who observes this would have good basis to investigate that account.

APPENDIX D – ILLUSTRATING RECORDS WITHIN SAP

Both of the document flows shown in Appendix B are linked to accounting records. In order to access the records follow the procedure described below:

From the document flow for the revenue cycle:

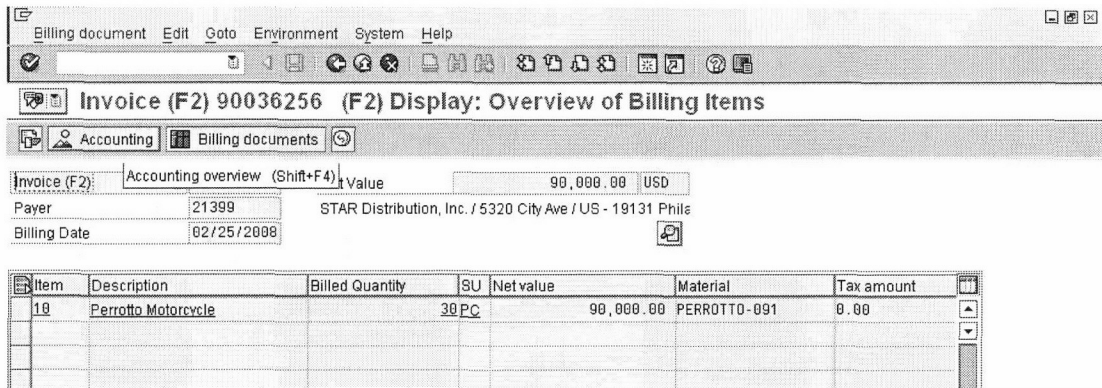
- Place the cursor on the Invoice line by clicking on it once

Document Flow

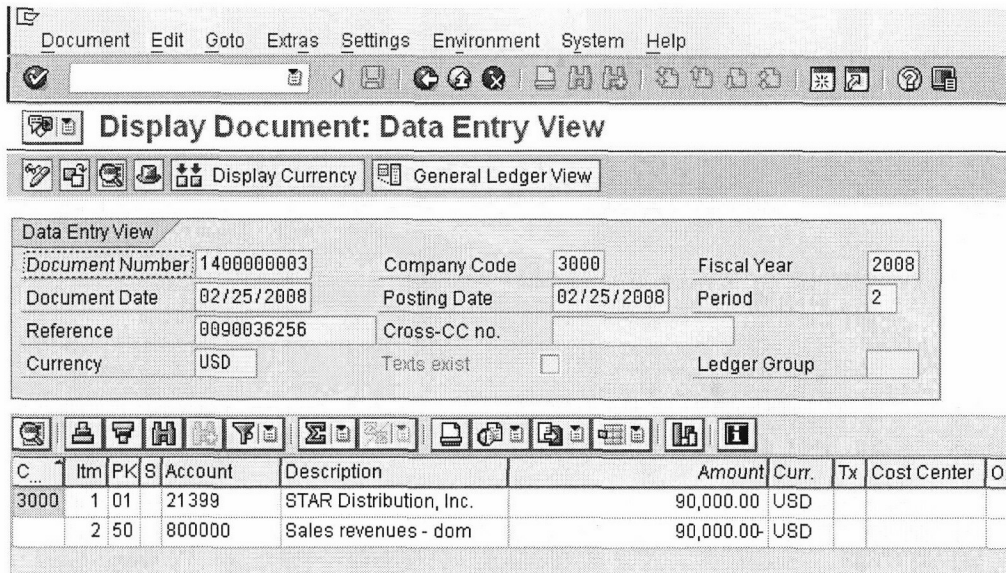
The screenshot shows the 'Document Flow' interface for business partner 0000021399 STAR Distribution, Inc. and material PEROTTO-091 Perrotto Motorcycle. The document list is as follows:

Document	Quantity	Unit	Ref. value	Currency	On	Status
Standard Order 0000012065 / 10	30	PC	90,000.00	USD	02/25/2008	Completed
Delivery 0080015177 / 10	30	PC			02/25/2008	Completed
WMS transfer order 0000000741 / 1	30	PC			02/25/2008	Completed
GD goods issue delvy 4900035531 / 1	30	PC	42,000.00	USD	02/25/2008	complete
Invoice (F2) 0090036256 / 10	30	PC	90,000.00	USD	02/25/2008	
Accounting document 1400000003 / 10	30	PC	90,000.00	USD	02/25/2008	Not cleared

- Click the display document icon at the top of the document flow.
- The following screen will be displayed:

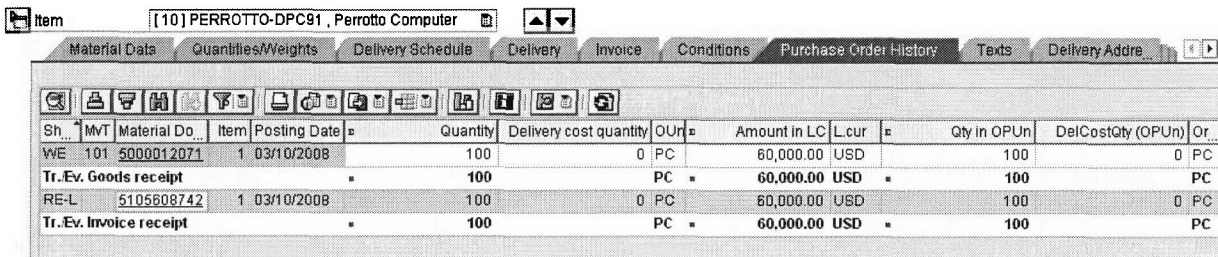


- Click on the Accounting icon in the upper left
- A pop-up will appear in which the document number for the accounting document will need to be double clicked.
- The journal entry is shown below:



From the document flow for the purchases to payables cycle:

- Click on material document number for the Invoice receipt as shown below:



- On the next screen, click the **Follow-On Documents** button.
- A pop-up will appear in which the document number for the accounting document will need to be double clicked.
- The journal entry is shown below:

The screenshot shows the SAP 'Display Document: Data Entry View' interface. At the top, there is a menu bar with options: Document, Edit, Goto, Extras, Settings, Environment, System, Help. Below the menu is a toolbar with various icons. The main area is titled 'Data Entry View' and contains a form with the following fields:

- Document Number: 5100000006
- Company Code: 3000
- Fiscal Year: 2008
- Document Date: 03/10/2008
- Posting Date: 03/10/2008
- Period: 3
- Reference: (empty)
- Cross-CC no.: (empty)
- Currency: USD
- Texts exist:
- Ledger Group: (empty)

Below the form is another toolbar with icons. At the bottom, there is a table showing the journal entry:

C...	Itm	PK	S	Account	Description	Amount	Curr.	Tx	Cost Center	Or
3000	1	31		100243	StarPower 91	60,000.00-	USD	10		
	2	86		191100	Goods Rcvd/Invoice R	60,000.00	USD	10		

APPENDIX F – ILLUSTRATING SUPERVISION WITHIN SAP

Everything that is done within SAP is logged. In Appendix C the accounting records were accessed. With the click of a button, a screen can be brought up to show who created the record, when it was created, and even what terminal it was created from.

The process is the same for both the revenue cycle and the purchases to payable cycle. Near the top, there will be a row of icons. The icon that shows information necessary for adequate supervision is an icon that looks like a hat:



Clicking the hat icon will bring up a screen as shown below:

The screenshot shows the 'Document Header: 3000 Company Code' window. It contains the following information:

- Document Type: RE Gross inv. receipt
- Doc. Header Text: (empty)
- Reference: (empty)
- Document Date: 03/10/2008
- Posting Date: 03/10/2008
- Currency: USD
- Posting Period: 03 / 2008
- Ref. Transactn: RMRP Invoice receipt
- Reference key: 51056087422008
- Log. System: IS1CLNT502
- Entered by: BPERROTTTO
- Parked by: (empty)
- Entry Date: 03/10/2008
- Time of Entry: 09:35:47
- TCode: MIRO
- Changed on: (empty)
- Last update: (empty)
- Ledger Grp: (empty)
- Ledger: (empty)
- Ref.key(head) 1: (empty)
- Ref.key 2: (empty)



REQUIREMENT

After a careful reading of the case, prepare a list of key controls present in the StarSearch Technologies control environment. You can analyze this by applying the COSO Framework (SPARCLE). After identifying the key controls, which do you think are operating effectively? Conversely, which do you think are a control weakness? Be prepared to engage in an interactive discussion with controls specialists on Tuesday and then prepare a detailed management letter advising management what needs to be done to comply with AS5's risk-based approach to auditing the ERP system.

AUTHOR BIOGRAPHIES

Joseph M. Ragan is a Professor and Chair for the Department of Accounting at St. Joseph's University. He is the author of several books and articles dealing with the implementation of SAP solutions within business systems. He is also the founder of the Philadelphia consulting Group and has served as a Systems Consultant to Fortune 500 companies. He is an educational thought leader for SAP America and currently teaches in the accounting information systems field.

Brian Rizman is in the field of Accounting and Consulting and works for PricewaterhouseCoopers in the area of Systems Process Assurance. Brian serves in the role of a STAR Alumni Leader.

Brian Perotto recently graduated as an accounting major from St. Joseph's University. He worked with SAP as a STAR Scholar at St. Joseph's University. He is currently employed with the public accounting firm PricewaterhouseCoopers.