

# Back Office Processes

Behind the scenes of a  
transactional website

What happens, in an office somewhere, when you order something on-line?

E entity  
P process  
D database

customer E  
browse P  
add items to basket P  
check <sup>log in</sup> stock D  
calculate price P  
customer books delivery P  
recalculates the cost P  
Takes financial details P  
E confirm order P  
dispatch item P  
E (Sign receipt?)

## What are back office processes?

- The information that you input on a transactional website is transferred back to the website's server for processing.
- It performs a number of different processes.
- These software systems are connected to other systems within the company some of which may pre-date the web system and also to systems outside the company such as credit card systems.

## WYNTL 2.4

- You must be able to draw diagrams to illustrate:
  - The chain of events leading up to an online purchase
  - The chain of events that an online purchase triggers
  - The information that flows into and out of the organisation and between areas as a result.

## WYNTL 2.4

- You need to learn the procedures for:
  - Maintenance of the virtual shopping basket
  - Identification and authentication of routes
  - Payment processing
  - Stock control
  - Despatch and delivery

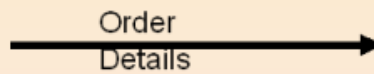
# Diagrams

- There are 2 types of diagrams that we can choose to show the various processes.
  - Information flow diagrams
  - Flow charts

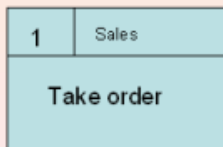
# Information Flow Diagrams



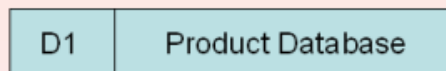
An entity- customer/  
supplier department



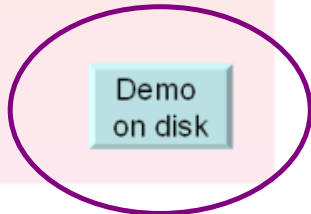
An Information Flow



A process



A data store



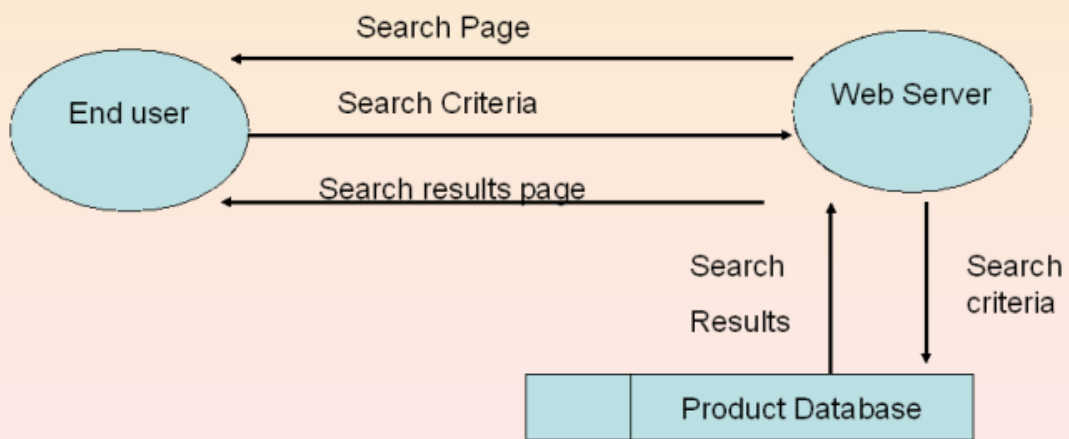
A light blue rectangular box containing the text "Demo on disk", which is circled in purple.

## Search procedures

- Whilst searching a database the users enter the information into the webpage.
- The data is sent back too the server used to query the product database.
- The resulting data is used to produce a webpage to display the products back to the user.
- A variety of information can be extracted this way; price information, stock and delivery dates

# Search procedures – simple flow diagram

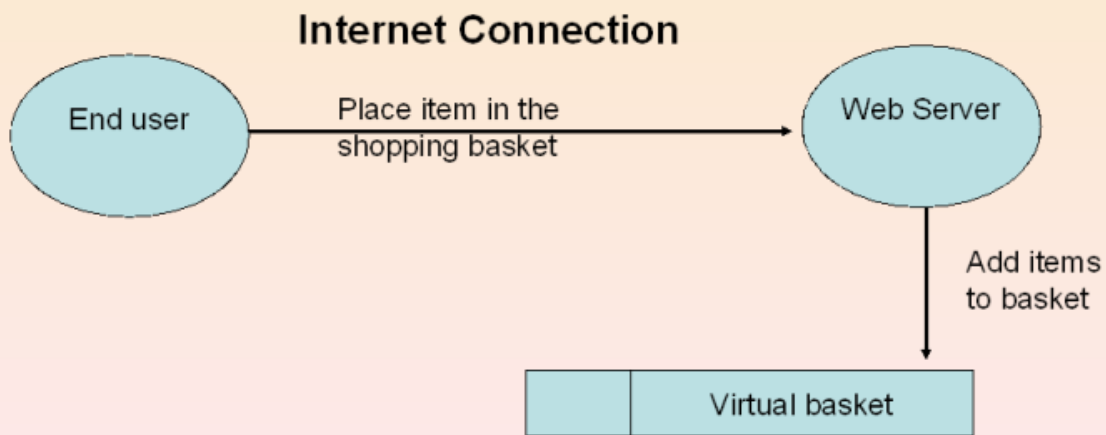
Internet Connection



## Maintenance of virtual shopping basket

- Having found the product, the user may then place it in the virtual basket. The details of the product chosen and the quantity required are recorded as part of the session data.
- The user may search for and place several different items in the basket.
- Some users may not end with a transaction and some sites allow the basket to be saved until the next visit.

# Maintenance of virtual shopping basket

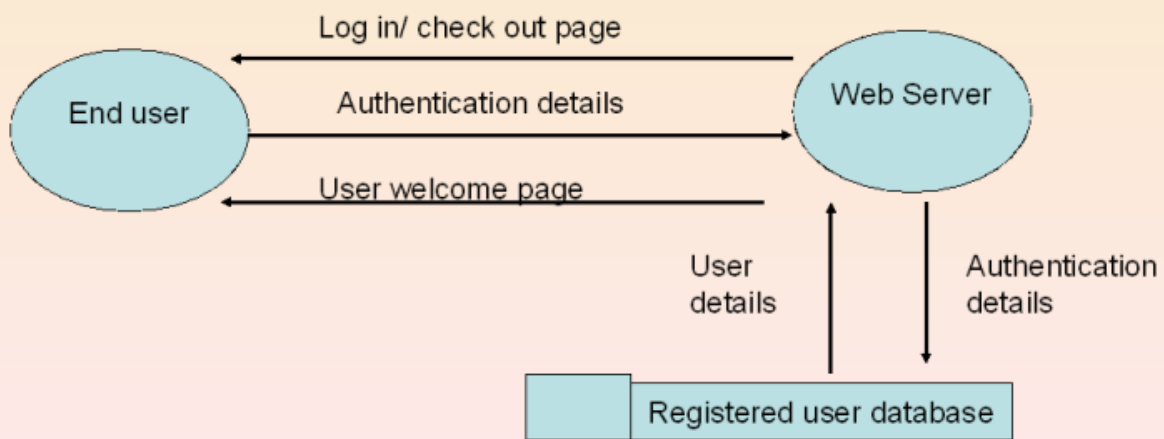


## Identification and authentication routines

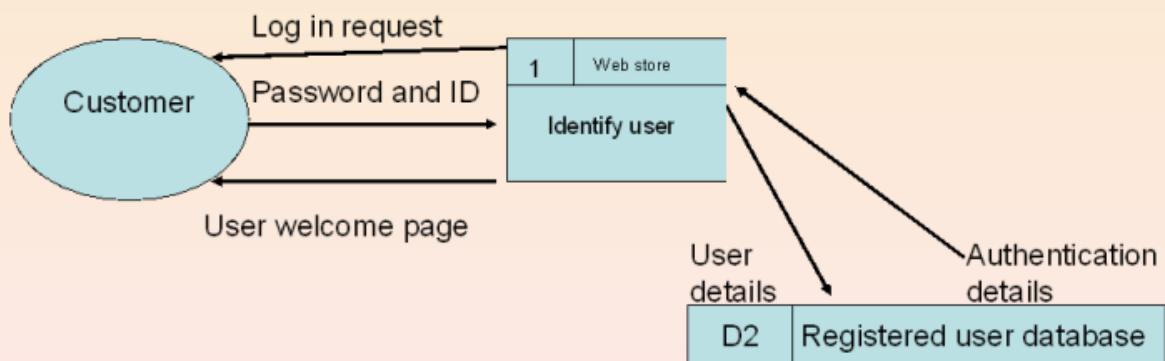
- When the user goes to the checkout page they must first log on.
- If they are a new user their details must first be entered onto the database.
- An existing customer will log straight in and the information is transmitted to the database and checked.
- They may then be changed to a secure site for payment.

# Log in-simple

## Internet Connection



# Log in-complex



## Stock control, despatch and delivery

- Stock items will then be updated.
- The server will also send a message to the warehouse for the goods for despatch.
- Using the details of the order the warehouse will print off a picking list and address labels.
- The order will then be parcelled and awaiting delivery

## Producing the diagrams

- The diagrams you have seen so far are Information flow diagrams. These show the information that flows in a system.
- We also need to consider flow charts as well. These show the flow of information in a process.

Page 140 Activity 1

Monday 27th September

## Complete the Sainsburys dfd.

Prepare to write dfd s for your own website:

1. Look through the 3 exemplar portfolios.
2. Go to your transactional website. Make a note in word or on paper of the processes involved in buying something.

The stages you need to consider:

- \* Maintenance of a virtual shopping basket
- \* Identification and authentication routines
- \* Payment processing
- \* Stock control
- \* Dispatch and delivery



Thursday 30th Sep

### Identification and authentication

1. Draw a dfd to show the processes involved. (see page 147)
2. Write a paragraph (or two) explaining the process.

Point out other options      At point of purchase  
When do you have to log in?      At the beginning  
How do you log in?      user name/email (optional)  
   password/PIN  
Why is an email address used?      To authenticate  
   Confirmation of order at beginning  
What happens to your data when you have registered?      Stored in a database  
What are the advantages of registering?      Save time  
   Receive promotional emails  
What are the disadvantages?      Security risks      Junk mail

## Maintenance of the virtual shopping basket.

Use search bar - advantages  
Wish list

How do you buy something from your site?

Browse thro' the departments eg mass/ipads etc.  
Use tabs on home page

What happens if you abandon the basket unexpectedly?

Different webstores have different routines. Some will save your shopping basket for another time.  
on line supermarkets will often withdraw delivery time after 2 hours away from the website.

## Payment Processing

- The server will calculate the total price using the stored session data.
- The sites rules about postage will be applied.
- Confirmation from the user will be sought before proceeding.
- Credit card details must be input and authorisation sought.
- Once authorisation is gained a new record will be created in the database with all the details of the sales.

Up to this point, the website is simply an e-store. At this point it becomes a "merchant".

A contract between the customer and merchant is formed.

How can you pay?

Paypal  
Debit card  
Credit card

This is a "card not present" transaction. What security issues arise from this?

Copied or stolen card  
No authentication

How do the credit card companies handle this?

Email to card holders address  
First delivery to card holders address  
Password  
Security question  
Pincode

Most credit card companies hire a "payment processor" to do their payment processing and be a link between them and the handling of finance. This means there is a new entity involved and an external database.

At the end of your order:  
what extra charges might there be?

Postage  
VAT?

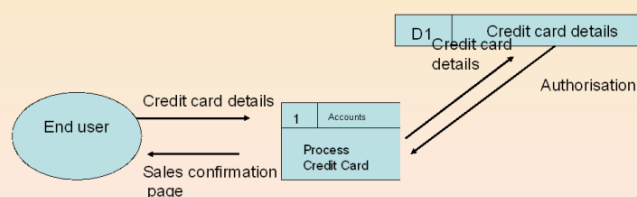
What happens if you change your mind?

Refund  
Confirmation

What details will you be required to give?

Name, address (email)  
card details + passwords

What happens on your website?  
Do you lock your basket?



Jack, we only got as far as this!  
Completing the sale- complex.

## Stock Control

It is imperative for stores to monitor their stock carefully. If they can't fulfil an order a customer may well look elsewhere.

If they keep too large a stock in the warehouse they are needlessly filling expensive shelf space. Perishables may get close to their use by date (this electronic items with batteries) and those lessen the value of their stock.

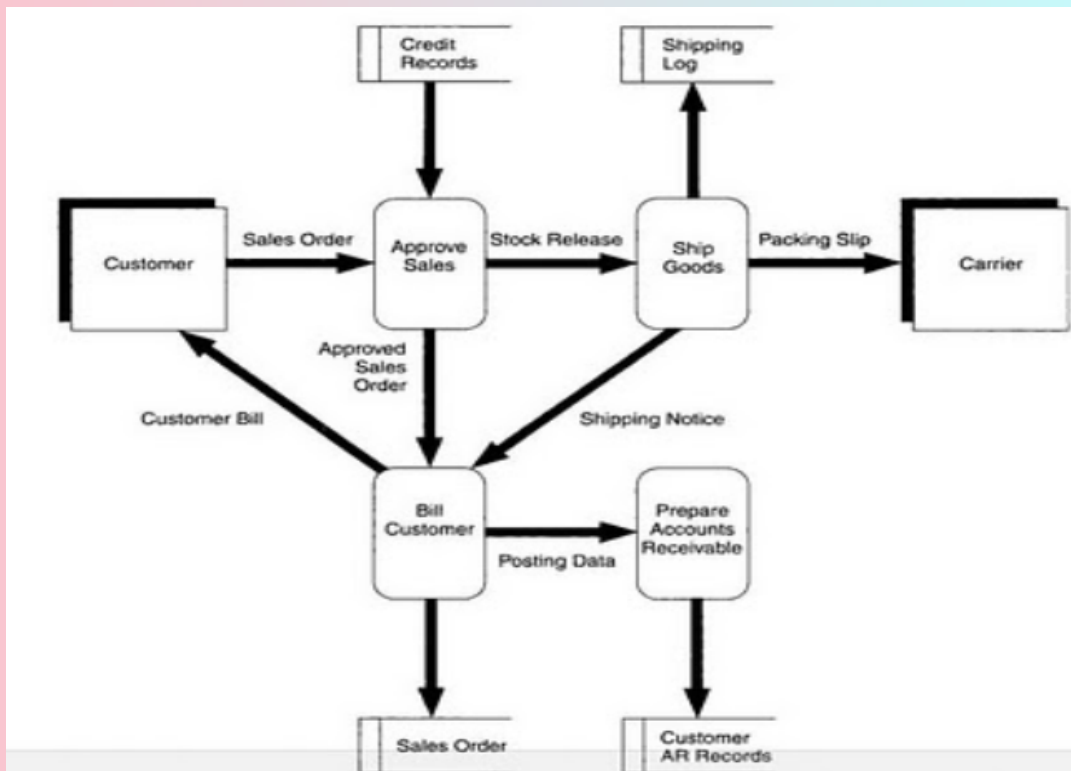
Most will have monitored previous sales carefully and have algorithms set up to ensure that at any particular season they have sufficient stock.

Many stores will have a minimum acceptable re-order level and once stock drops below that level an automatic message is conveyed to the supplier to provide more goods. This is clearly an easier process for e-stores than for shops. When a sale is made the stock database is automatically adjusted. High street shops have to allow for more human error in stock levels and also shop-lifting.

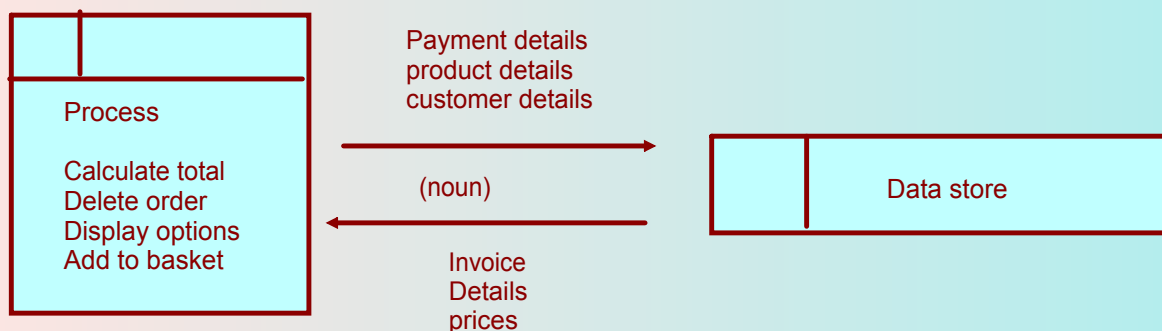
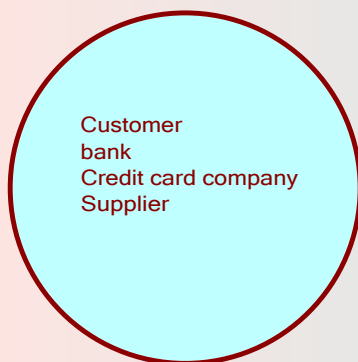
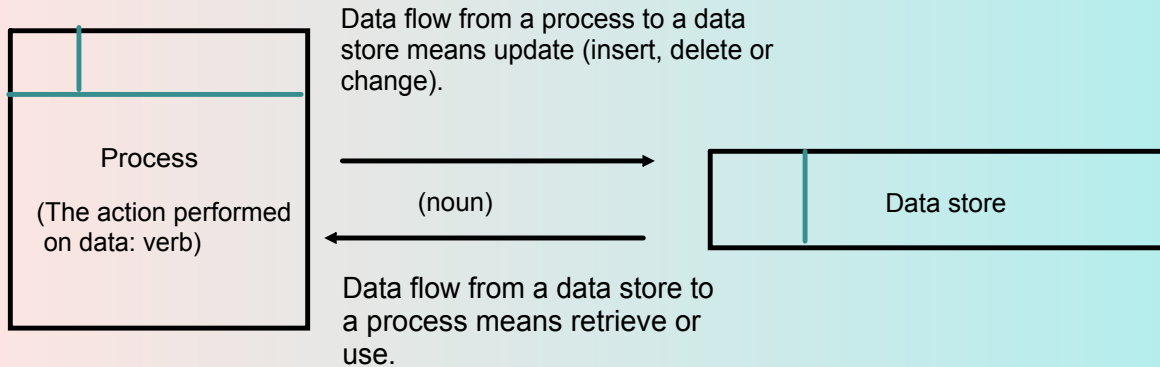
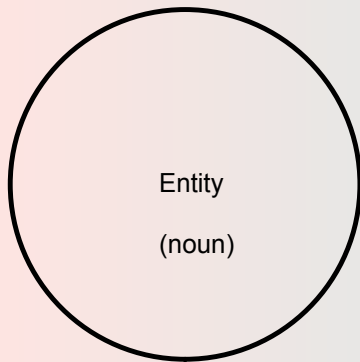
How does your transactional website handle out of stock goods?

## Dispatch and Delivery

Once the order has been confirmed the goods need to be sent from the warehouse to the customer. Address labels will need to be printed and the item(s) packaged. A date for delivery will need to be confirmed by the courier. Alternatively the mail service will be used. Usually an email is sent to the customer informing them once an item has been dispatched. Supermarkets tend to organise delivery before confirming the order.



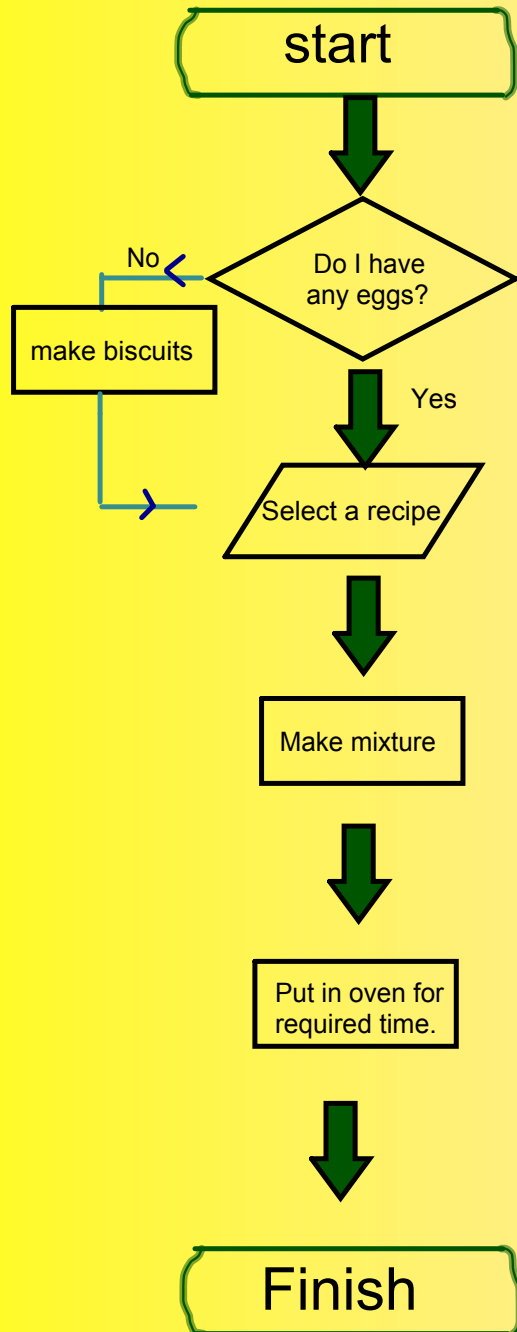
## DFDs : a summary





## Flow diagrams

### Baking day



Make up your own flow chart:  
How I spend Thursday evening????

for help with Word flowcharts

Do activity 2 on page 142

## Flow Charts

Customer logs in

A start or end symbol

Customer selects goods required

A process symbol

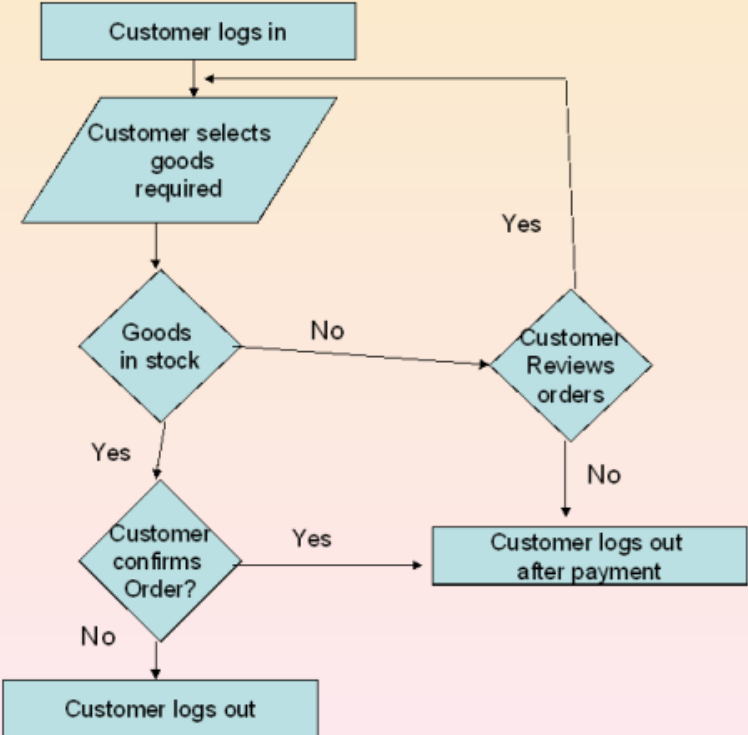
Goods in stock

A decision symbol



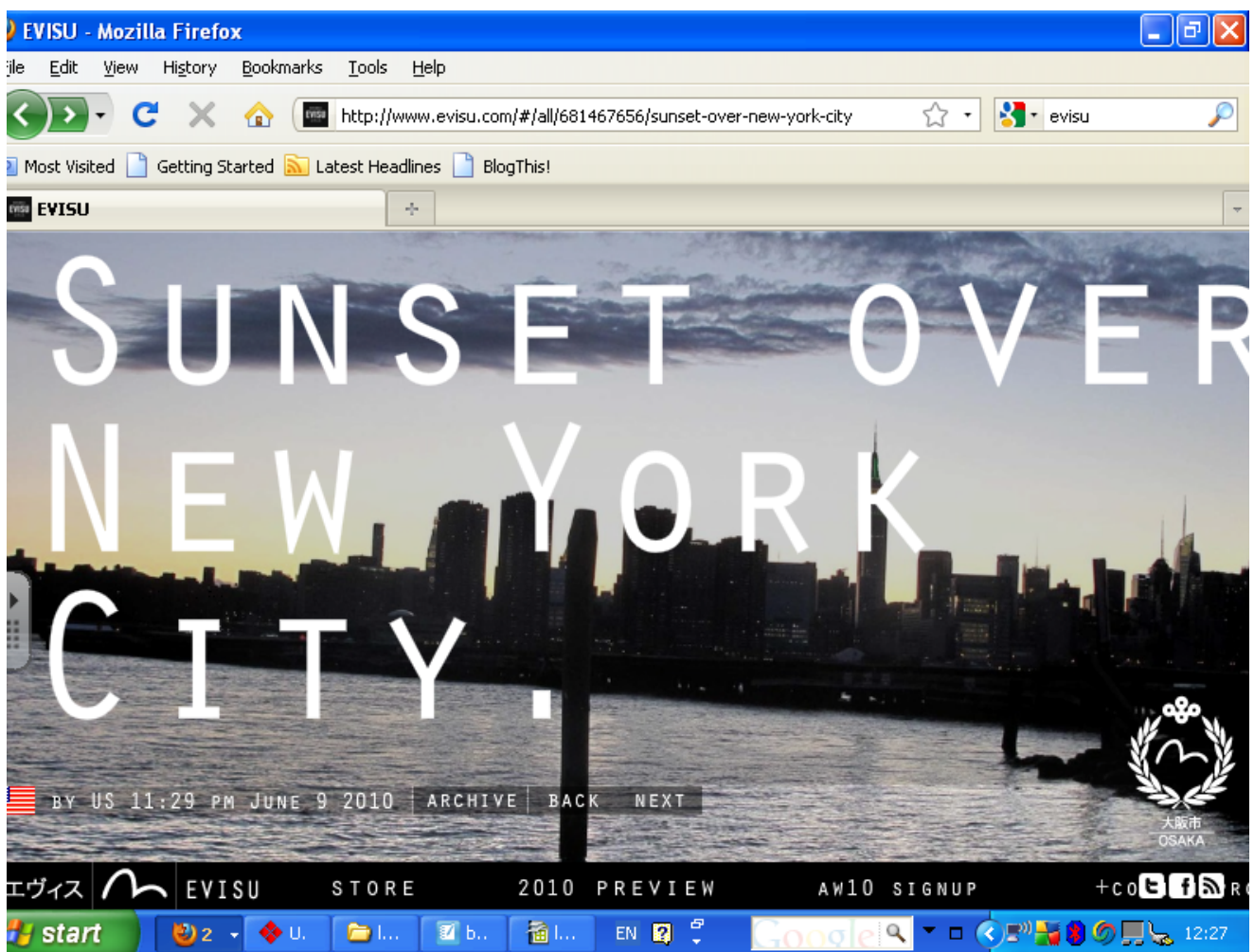
Arrow shows direction of the flow

# Events leading up to an online purchase flow chart



# Case study

Pages 144,145 using your ebook.



## Data flow diagrams - Activities

- Identification and authentication of routes –  
Read pages 146-147 Activity 5
- Track customer actions read pages 148-150
- Maintenance of the virtual shopping basket –  
Read pages 150-152 Activity 11
- Payment processing – Pages 153-155 Activity  
12, 13 and 17
- Stock control – pg 156-158 Activity 16
- Despatch and delivery – Case study pg 157

## Assignment

- Remember the more detail you use the better mark you will receive.
- Using the website you have reviewed construct a series of diagrams to show the following:
  - The chain of events leading up to an online purchase
  - The chain of events that an online purchase triggers
  - The information that flows into and out of the organisation and between areas as a result.