

# Systems Analysis and Design

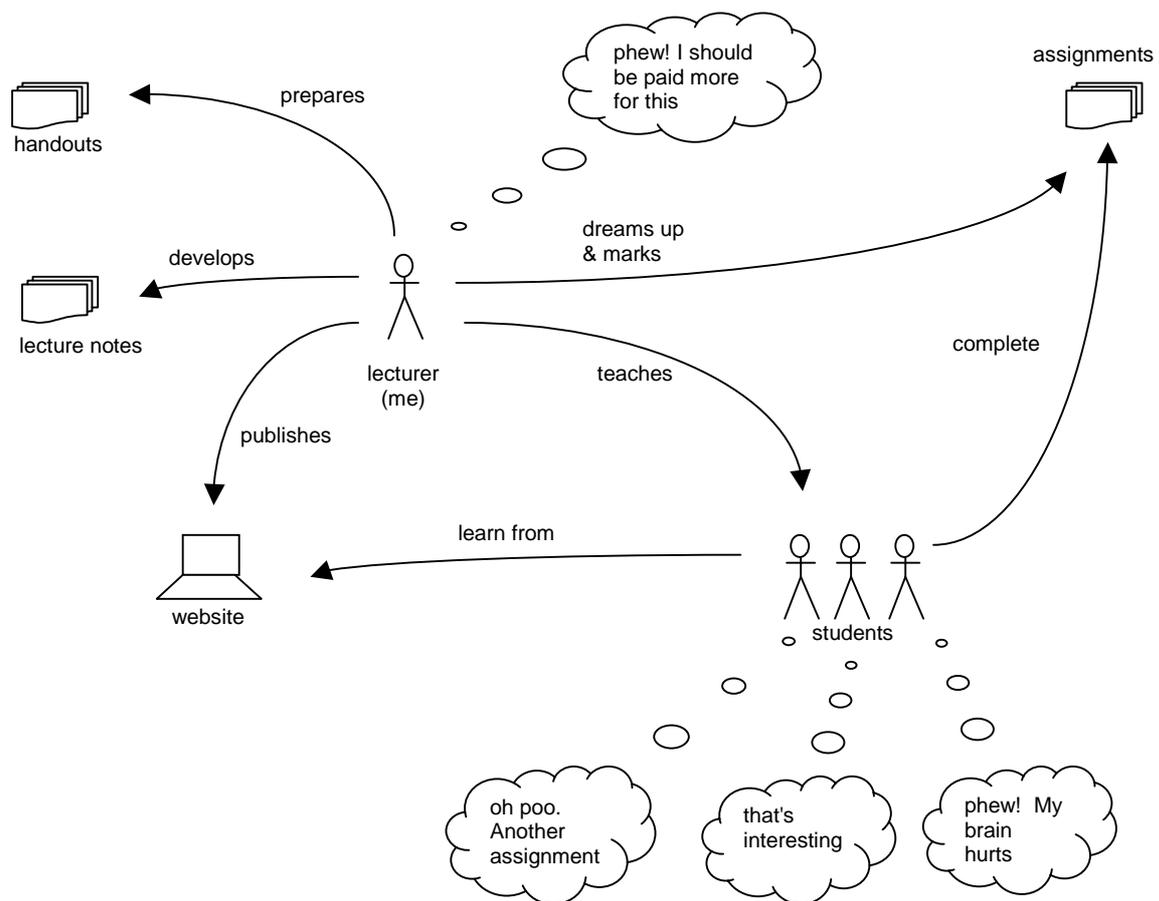
## 14 Rich Pictures

*A picture's meaning can express ten thousand words.* Chinese Proverb.

**Terry Marris April 2010**

We see how to visualise systems by using informal diagrams known as rich pictures.

### 14.1 The Life of Scholars



A lecturer prepares handouts, develops lecture notes, publishes material on the website, dreams up and marks assignments, and teaches students. Students learn from the website and complete assignments.

## 14.2 Rich Pictures

A rich picture tells the story of a system being used. A rich picture includes:

- symbols
- keywords
- cartoons
- sketches
- a title and descriptive text

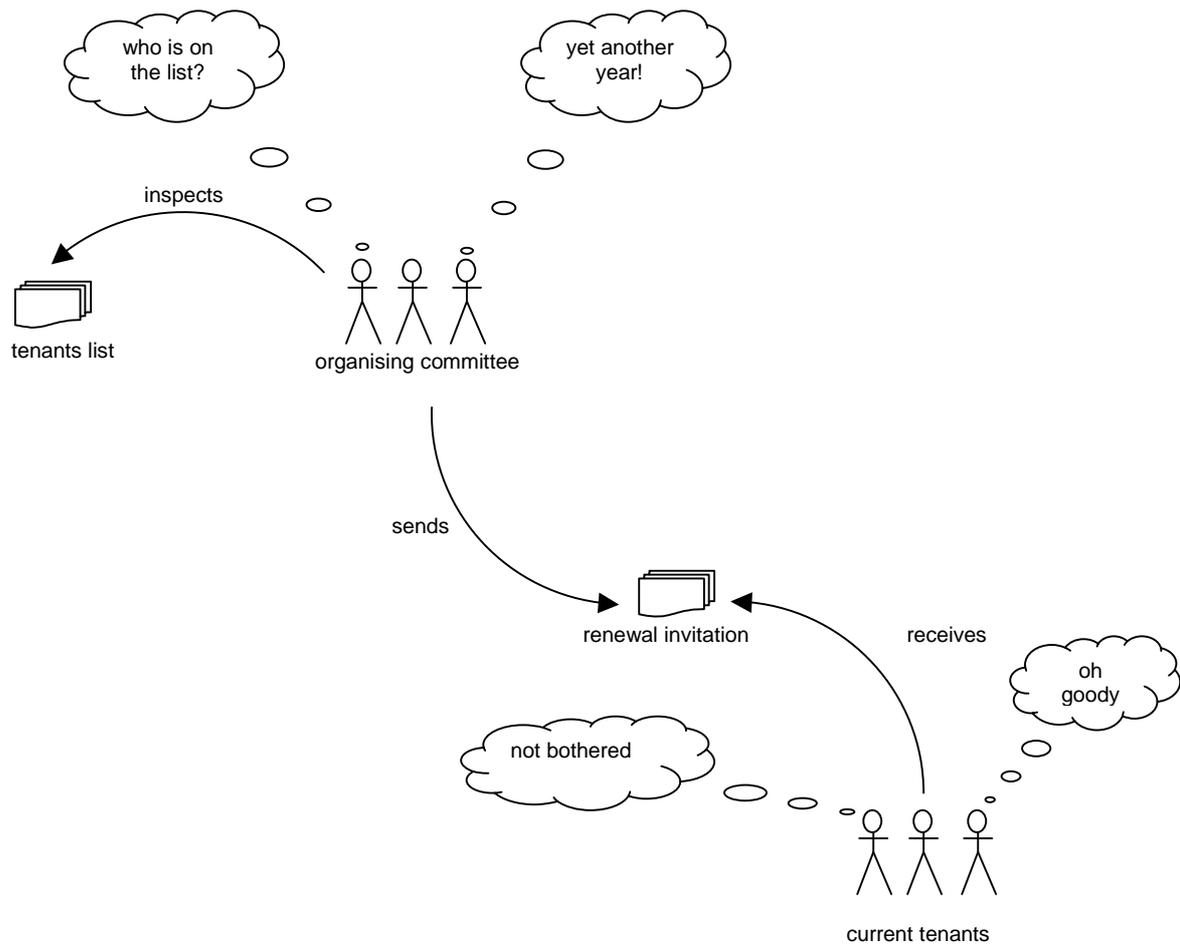
You

- draw the picture on one side of paper, either by hand or by computer
- include as much detail as you reasonably can
- name the people involved (known as the actors), what they do (i.e. the processes) and the results of what they do. You include yourself if you can.
- use curved arrows, label them with an action, and include what the actors might think
- and finally you provide a written summary of what the picture is all about

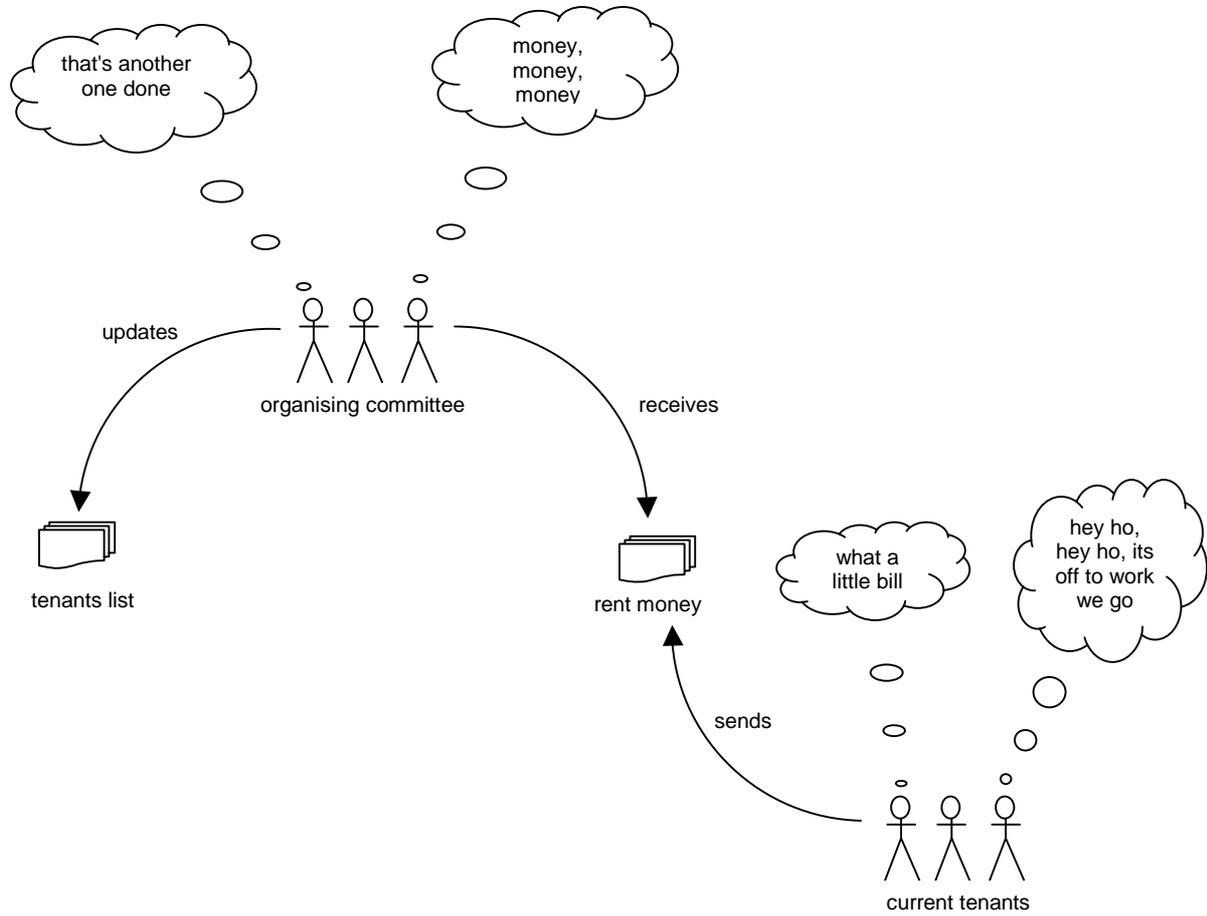
The best way to learn about rich pictures is to look at some examples and to draw some yourself.

### 14.3 Constructing a Rich Picture

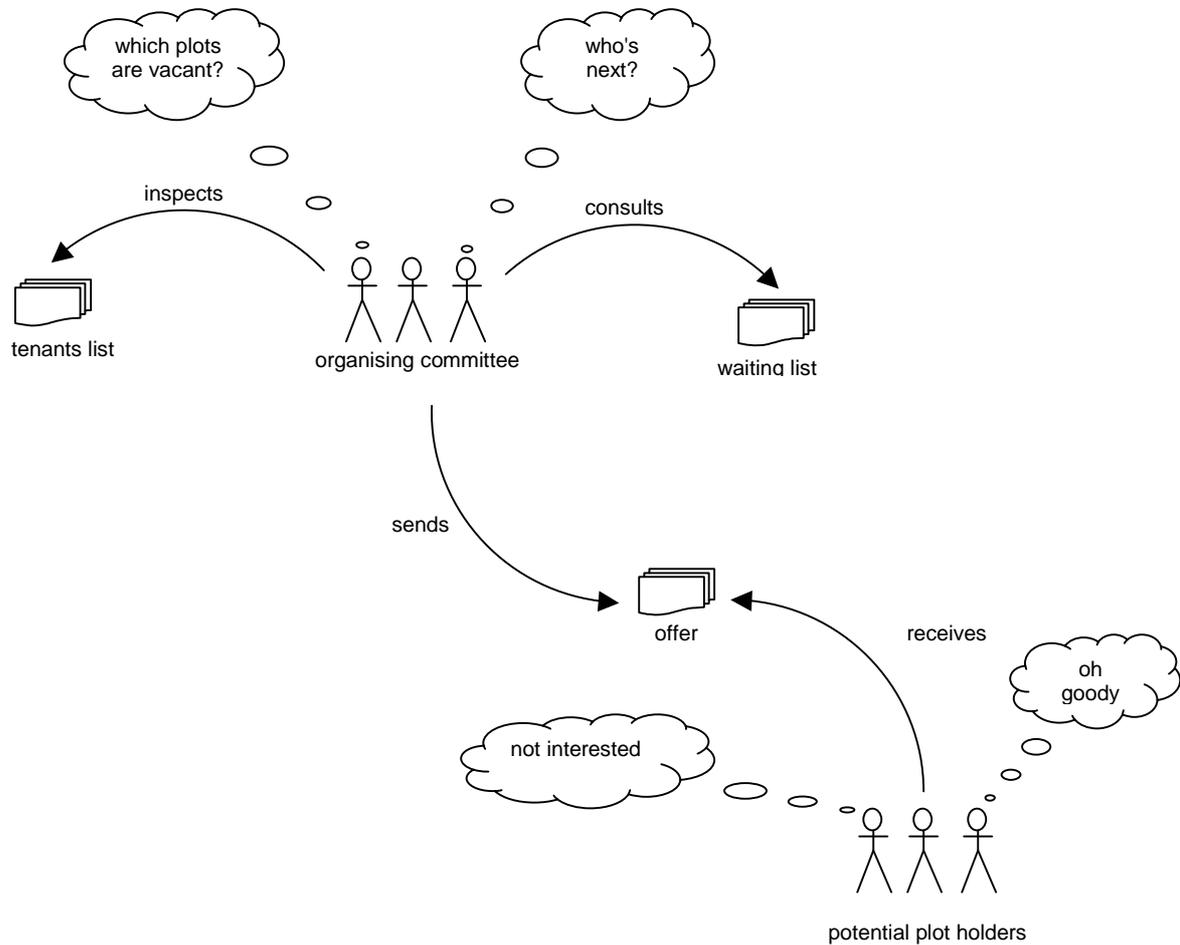
WeGrowItBig is an allotment society. Plots of land are leased to tenants who grow fruit and vegetables. At the end of the growing season the Organising Committee invite existing tenants to renew their lease for the coming year.



Plot holders confirm they want to be tenants for another year by forwarding their rent. The Organising Committee updates the tenants list - a list of plot numbers along with tenants names and addresses.



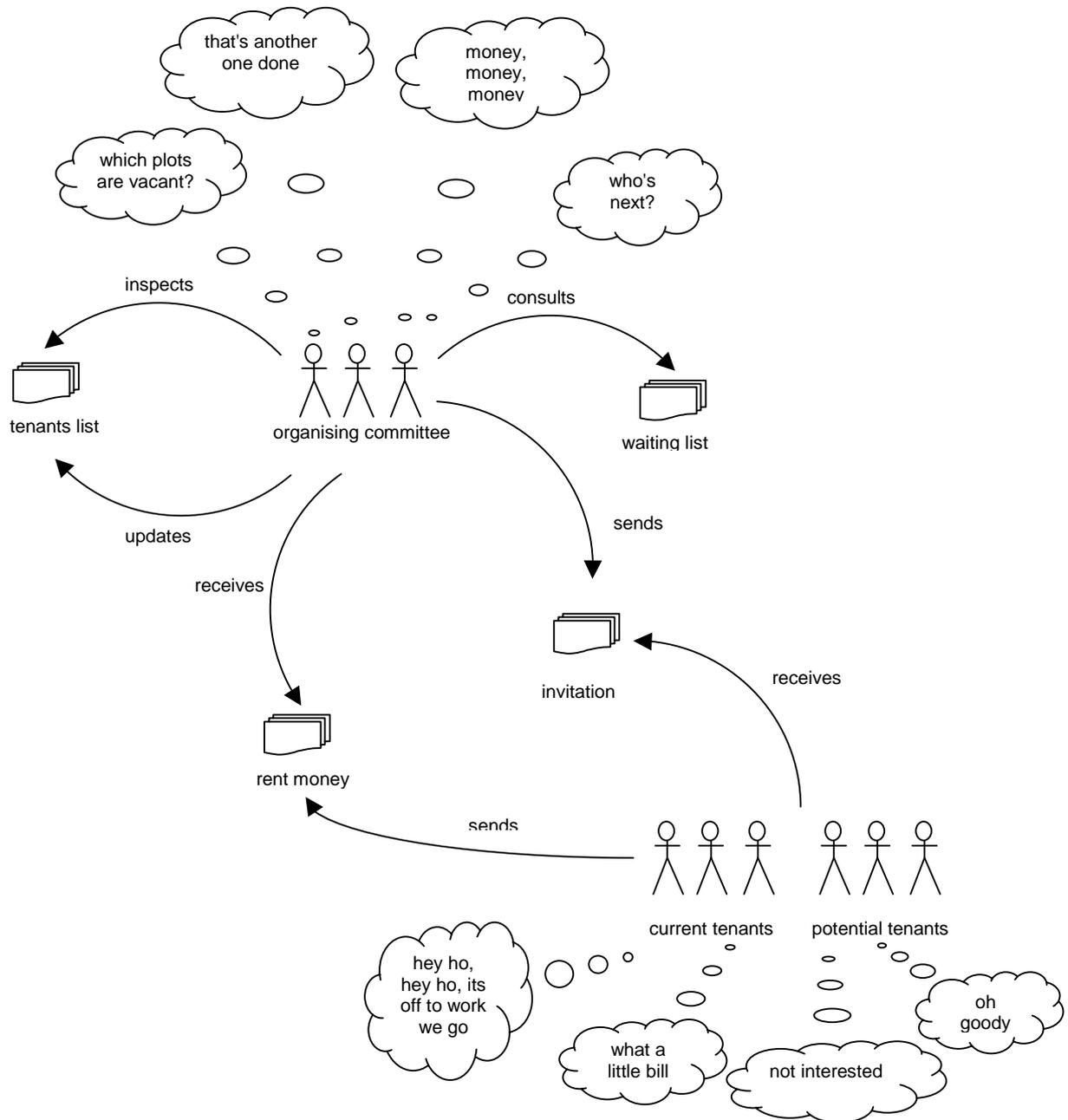
A month later the Organising Committee offer vacant plots to those on the waiting list.



The potential plot holders who accept the offer forward their rent and the Organising Committee update their tenant's list.

Now we combine the collection of small rich pictures into one larger picture.

## WeGrowItBig Allotment Society Tenants System



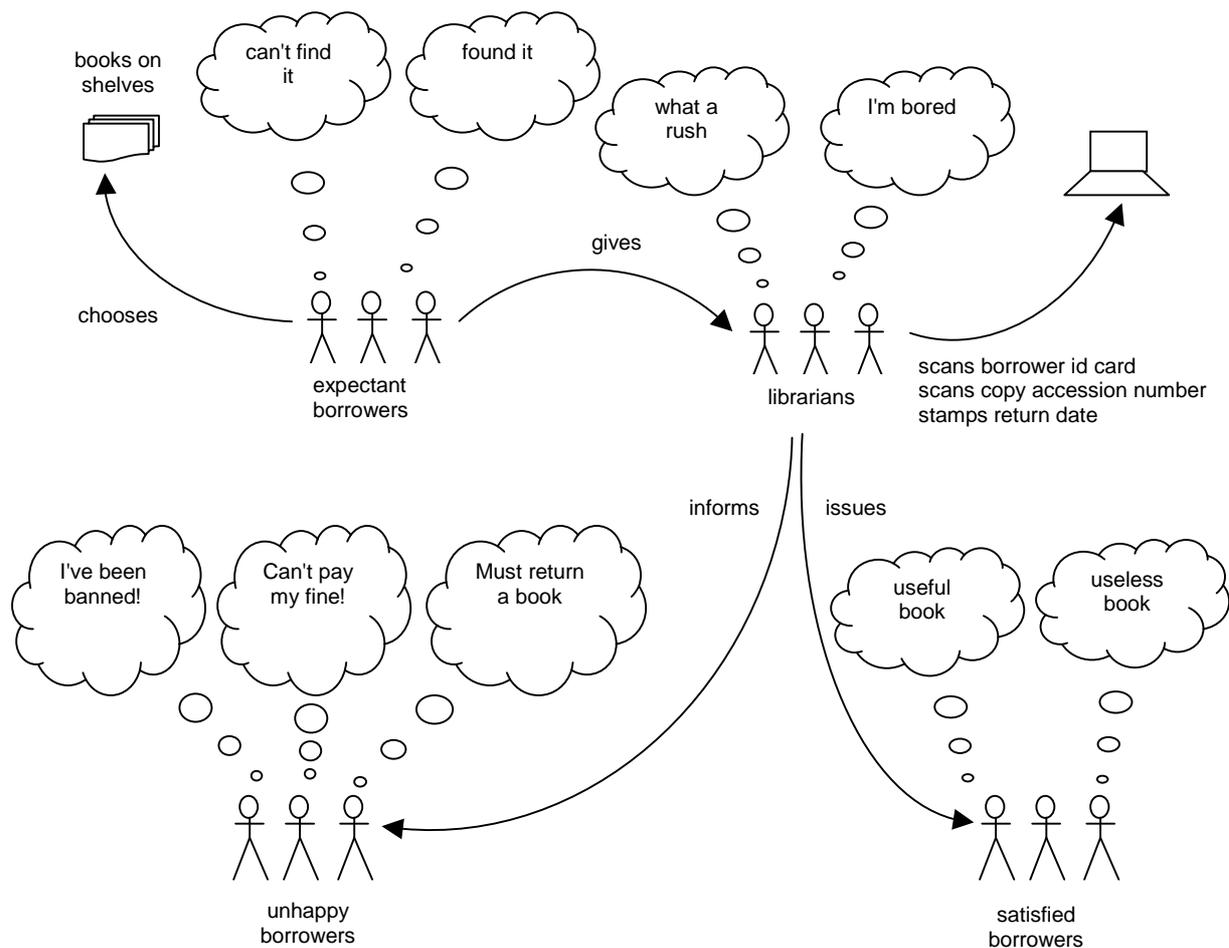
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The potential plot holders who accept the offer forward their rent and the Organising Committee update their tenant's list.

## 14.4 College Library Loans System



Borrowers select their chosen copy from the shelves and take it to the checkout desk. A librarian scans the borrowers id card to identify the borrower. The borrowers record appears on the screen. If the borrower has not been banned, has been registered, has no fines outstanding and has not reached their loan limit, the librarian scans the copy accession number to identify the copy of the book (books are known as titles by librarians) and stamps the return date on the copy. The borrower's loans record is updated with the new loan and the copy is issued to the borrower.

**Conflicts** include:

1. two borrowers want to borrow the same book and there is just one copy of that book on the shelves
2. library may not be open when borrowers want to borrow a book
3. banned and unregistered borrowers are prevented from borrowing a book
4. borrowers with fines outstanding, and those who have reached their loan limit, cannot borrow a book
5. borrowers who do not have their id card with them cannot borrow a book

**Harmonies** include:

1. a borrower has found the right book which turns out to be useful
2. the computerised loans system is working

**Concerns** include:

1. borrowers may not be able to find the book they want
2. texts recommended by lecturers are not always useful
3. when the library is busy the librarians are overworked, when the library is slack, the librarians may have little to do

**Evaluation.** How to write an evaluation is described in tmarris.com, under Sundries - well worth a read. You always start an evaluation with a definition of the term. An evaluation involves making informed judgements supported by reasons, about a product, against clearly stated criteria.

**Criteria.** A systems analyst tries to understand how a system works before designing improvements to it. It is no good if a brilliant system is designed and created but the user's hate it. Any method used by the systems analyst to help understand a system and to design improvements must:

- be easy for users to understand so that they can confirm that the systems analyst is understanding things correctly
- be complete so that no main point is left out
- enable the systems analyst to be creative

**Product.** A rich picture is a free format diagram that provides a model of the system. (A model is a representation of reality.) It focusses on the people and processes involved. It shows what the users think and how they interact. It includes user's problems.

**Judgement.** A rich picture is an ideal tool for the initial stages of both analysis and design because:

- easy for users to understand and advise the analyst because it is written in the users language and from the user's point of view. The cartoon like format is easier to understand than written text
- in constructing a rich picture, supported by descriptive text, and repeatedly improving it, the analyst gains understanding of the system
- the free format structure enables the analyst to be creative because their thinking is not constrained by rules for constructing diagrams

## 14.5 Exercises

Investigate your college library. Extend and improve the college library loans rich picture shown above so that it includes returns (where a borrower returns a book), fines (for overdue books), and what happens when books are lost or damaged beyond repair.

## Bibliography

*<http://systems.open.ac.uk/materials/t552/pages/rich/richAppendix.html> accessed 27 Dec 2007*

*<http://www.ise.canberra.edu.au/un6348/iso%201-07/Lectures/L04-richpictures.htm> accessed 27 Dec 2007*