

COMPUTERIZED VIDEO LIBRARY SYSTEM

A PROJECT PRESENTED TO

DEPARTMENT OF MATHEMATICS/COMPUTER SCIENCE
SCHOOL OF SCIENCE AND SCIENCE EDUCATION,
FEDERAL UNIVERSITY OF TECHNOLOGY,
MINNA.

BY

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MATHEMATICS/COMPUTER SCIENCE.

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CERTIFICATION

This is to certify that this project COMPUTERIZED VIDEO LIBRARY was carried out by Aniere Nnaemeka, T. of Department of Mathematics/Computer Science, School of Science and Science Education, Federal University Of Technology, Minna.

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DEDICATION

In memory of my late father Chief Gabriel Aniere.

ACKNOWLEDGEMENT

I am grateful to the Lord God almighty for the role which the following people played in my life throughout this struggle for success.

Mr. T. Bankefa (my project supervisor whose constructive criticism encouraged me to produce a fine work like this .) Sir, I am very much indebted to you.

Dr. O. F. Omenkukwu (For his love, understanding, moral and financial support throughout my academic career.)

Mrs. E. A. Aniere (My mother for her love) She is the best mother on earth.

My close colleagues, such as Thomas Gana, Alfa Dzykwi, Bola Adeniji, Ahmed Ibrahim, Emma, and a lot more whose names could not appear in this work because of space.

Above all I am grateful for what the Lord has done, not only in this project, but also in my life through the Fellowship of Christian Students, F.U.T. Minna.

CHAPTER FIVE

5.1 Conclusion 32
References 33
Appendices 34

ABSTRACT

Throughout history, people have searched for improved ways to process data and communicate information. Alphabets were developed to help people to record information for continuing processing and use. The computer is another, recent, development in the evolution of information processing systems.

The effectiveness with which information is generated and communicated determines the rate of progress of society and the fulfillment of its people. Modern society is information-driven. Putting it another way, information, today, is a universal need.

Thus, the project is based on improving the service and information storage of video library house.

CHAPTER ONE

PROPOSED TITLE : Computerized Video Library

SYSTEM ANALYZED BY : ANIERE THOMAS

SUPERVISED BY : TUNDE BANKEFA

1.1 BACKGROUND

The Sigma Video library is a small video tape hire company in Surulere Lagos. The company business is the hiring of video tapes to the public. The objective of the study is to look at their existing manual system with a view to transferring it to a computer.

1.2 INVESTIGATION REPORT

Mr. Ejechi, Ken is the managing director of the Sigma video library, after a brief interview with him these are what he said :

There's a number of problems. There is need to tighten up the accounting system. There are bits of paper floating about all over the place, and we never have accurate figures of what we have got at any moment. We also need more information , both for the manager. In future I would like to look in to the possibility of hiring video recorder's. It would be nice if the system you write could expand to include this without too much fuss.

Mrs. Nike Adeniji is the manager of the Sigma video library in Surulere Lagos.

When a new member joins, the fill in a membership form so that I can get all the details and I make out a copy of this and send it to accounts office. This shows his/her name, address. We also need a deposit of two hundred Naira (N200.00) for one year, one hundred and twenty naira (N120.00) for six months of membership which can be renewed at the expired time. Each member can borrow the maximum of four (4) films for a year membership deposit or a maximum of two (2) films for six months membership deposit. The borrow a tape for a day, a weekend, or for a week. Tapes have different rates : if they are new, then they are more expensive than the old ones. The rates are shown on the tape record card. When some one wants to borrow a tape, they tell us the title, then I go in the back and get the tape. They are held in order of title although they are sometimes put back in the wrong place! I get out the tape record card out and write the title, today's date the hire period and the charge on the card. Yes, it does take time. On a busy Saturday afternoon we can have quite a queue waiting while we try to find the tape record card and the member's record card. I should not say it, but sometimes the staff do forget to write things on the cards.

When a tape is returned we look at the member's card to see when the tape was due back. If it is late, then we charge the over due days at the daily rate. Even if it is, say ten (10) days late, we charge ten times the daily rate. Then I write this surcharge on the tape record card to

show that the tape is back in stock. I pay all the cash in to the bank and then send the bank slip to the accountant. We need to know what tapes we have in stock at any moment. Sometimes, we spent ages looking for a tape in back when it is actually out on loan and somebody has forgotten to write it on the card. I think there should be some system of keeping an eye on the tapes. When there are being used for more than hundred (100) times, they get a bit doggy. When a tape drops to bits we send it the accountant with a note explaining.

Mr. Hassan Idowa is the company's accountant and he say's:

When a new member joins us, he/she pays a deposit which could be two hundred naira for a year deposit , one hundred and twenty Naira for half a year deposit. This payment could be done in cash or in or in cheque. The member fills out a membership form and the shop sends a copy together with the cheque or cash deposit to me. I keep the cheque or cash here before taking it to the bank. I always fill there is loop hole there especially with the cheque. What if the cheque bounce and the customer runs off with some tapes? We can't cash the cheque. I do not know if your system can do anything about that. The money which the shops collect is paid into the Bank and I get a copy of the deposit slip sent in. There is no detail break down of what the money represents; now I am not saying that any of our staff would be dishonest, but I did like to know the earnings from each tape, what are the best-selling categories: horror, spies, thrillers, comedy or what? I order the new tapes from a

wholesaler and they are delivered straight to the shop. In the future, I would like to put this ordering and delivering on the computer, but not just yet. I am also suppose to produce a catalogue and send this to the members. This shows the titles available at the shop, but quite honestly, I am a bit pushed in doing this.

Documents collected during the investigation stage are :

Video Library System Membership Card

Name

Address

Telephone

Date joined

Deposit Paid Period of Date

Video Library System Video Library Catalogue

Category	Title
----------	-------

Adventure :

Children :

Classics :

Comedy :

Documentary :

Mystery :

Thriller :

Fig 1.2 a sketch of Sigma video library catalogue.

Video Library System
Video Library record card

Title :

Date obtained :

VHS/BETAMAS :

Date	Daily	Weekend	Weekly

Date	Borrower	Returned

Fig. 1.3 a sketch of Sigma Video library record card.

CHAPTER TWO

SYSTEM ANALYSIS

2.1 Document Flow Matrix

First consider the external entities, the functional areas, the documents and the physical resources involved in the current system. The functional areas with the Sigma video library which or provide information are:

- . Accounts Department
- . Cashier at the shop
- . New member's registration
- . Tape ordering
- . Tape borrowing
- . Tape returning

The external entities which receives information from, or provide information to, the organization are :

- . Member
- . Wholesale video tape supplier

The documents which flow into, out of, and within the organization are :

- . Membership card
- . Membership card-copy
- . Tape catalogue
- . Bank deposit slip

The physical resources and materials which flow, out of and within the organization are :

- . Deposit cheque/cash
- . Money-fees and fines
- . Tapes

During interview, notes were taken of synonyms that where the same information or piece of data is known by different names.

1. The terms membership form, members card, member's record card and membership card are used to indicate the same documents.
2. The terms surcharge used in Mrs. Adeniji's interview is the same as the fine shown on the tape record card.
3. The terms deposit slip and bank slip are both used to indicate the same document. Also note was taken of a homonym, that is where different information or pieces of data are called by the same name. The word charge is used by Mrs. Adeniji to mean the normal rental fee and Mr. Ejechi to mean the membership deposit.

See Figure 2.0 for the Document Flow Matrix.

VIDEO LIBRARY SYSTEM
DOCUMENT FLOW MATRIX

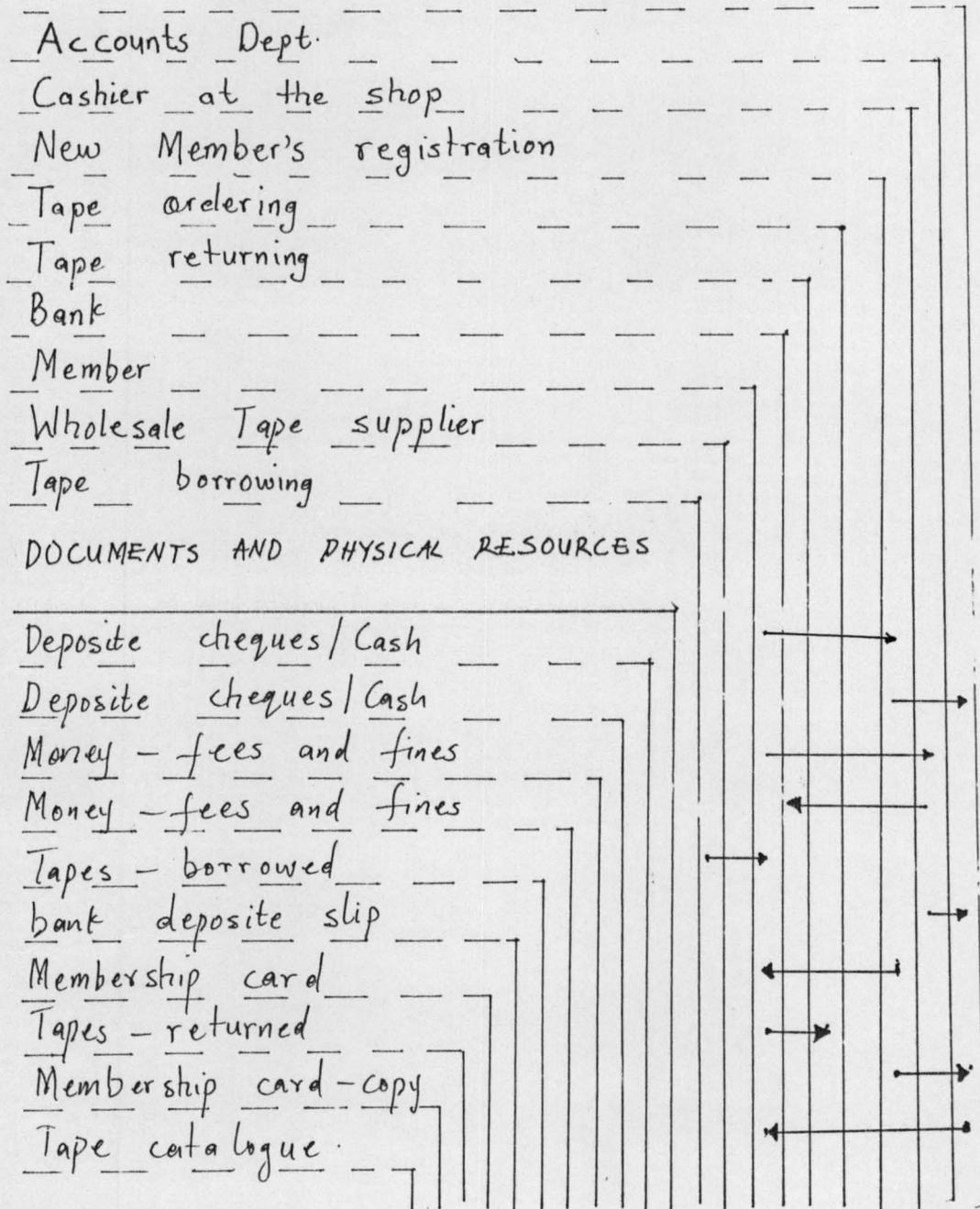


Fig. 2.0 Document Flow Matrix

Using the document flow matrix produced earlier a data flow diagram was produced. See figure 2.1

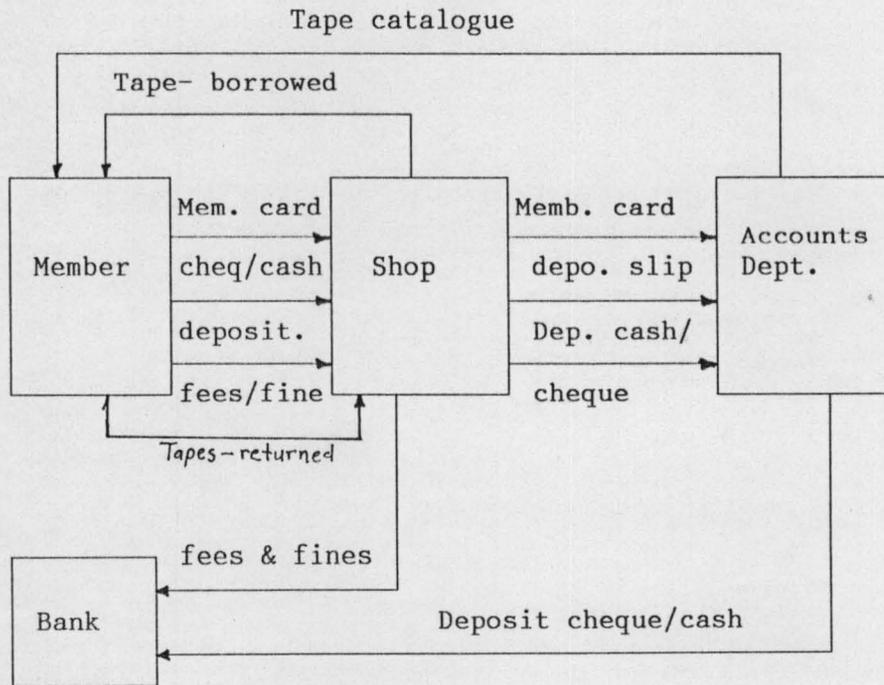


Figure 2.1 Data Flow diagram.

2.2 Document Flow Diagram

Consequently using the document flow matrix and the data flow diagram a document flow diagram was produced. See figure 2.2

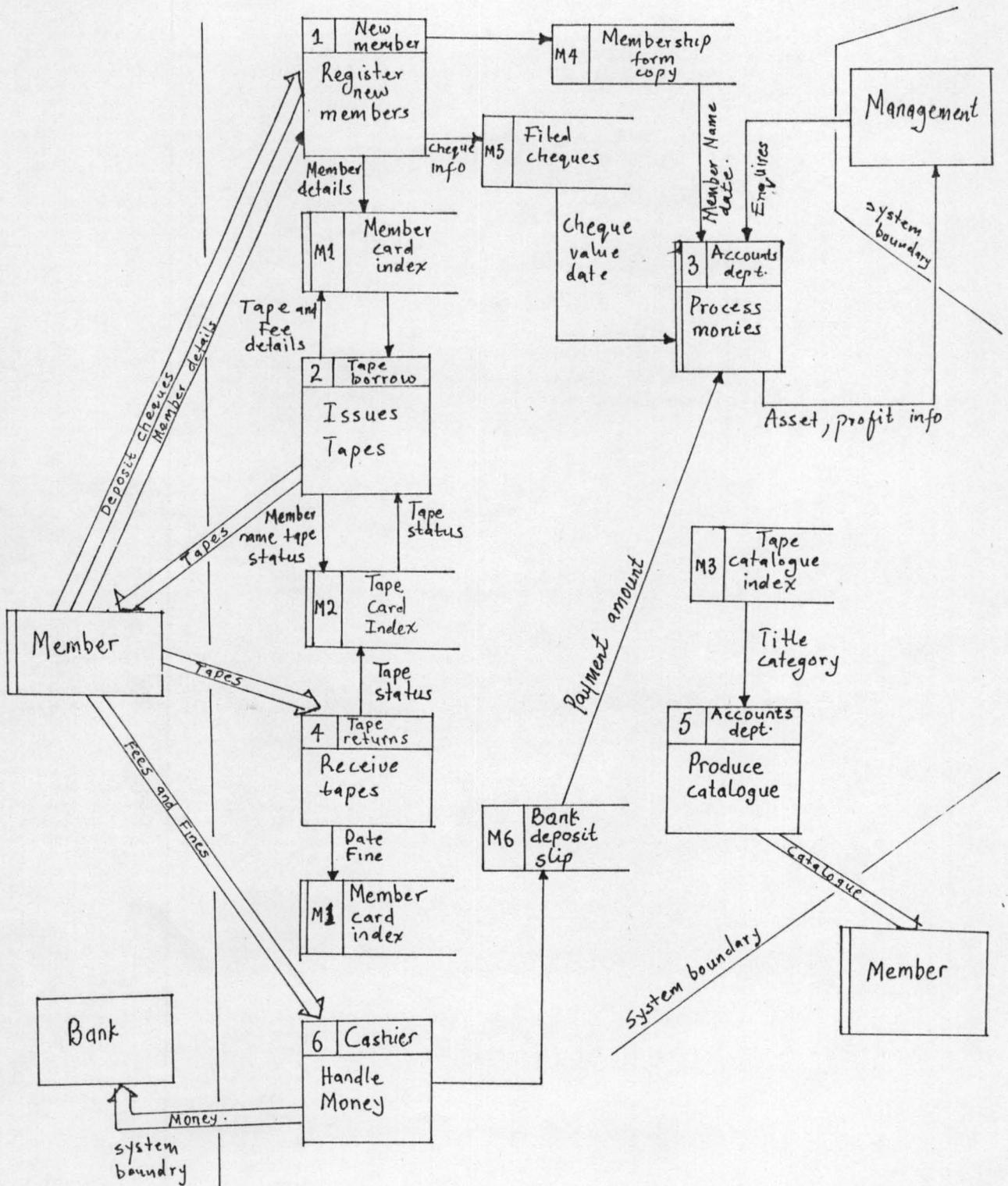


Fig 2.2 Document flow diagram.

2.3 Data Structure Diagram

By considering the entities the data structure diagram was produced.

The concepts about which the company holds data are :

1. Members : the member entity on data structure diagram.
2. Copy membership details - the copy-member entity
3. Tapes - the tape entity.
4. Payments - the payment entity
5. Bank deposit slips - the bank-deposit entity

See figure 2.4 on Data Structure Diagram.

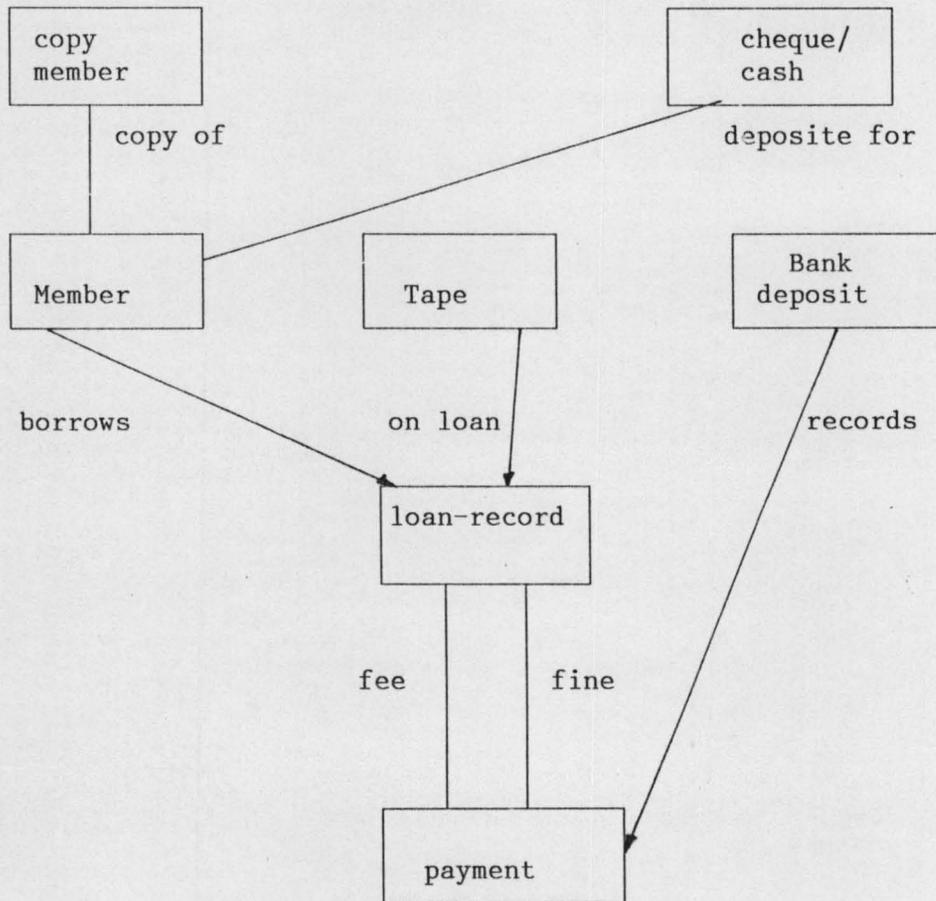


Fig 2.4 Data Structure Diagram.

From the data structure diagram the following relationship are visible.

1. There is one-to-one relationship called copy of between copy-member and member, that is, copy of : Copy-member 1: 1 Member.
2. Deposit for : Cash/Cheque 1: 1 Member.
3. Borrows : Member 1: Many loan-record.
4. On loan : Tape 1: Many loan-record.
5. Records : Bank-deposit 1: Many payment.
6. Records : Bank-deposit 1: Many payment.

On comparison between data structure diagram with the data stores on the data flow diagram the following deductions were made.

M1: Member Card Index

Represent information which is contained in the Member and loan-record entities.

M2: Tape card index

Represents information which is contained in the tape and loan-record entities.

M3: Tape Catalogue

The same as tape entity.

M4: Membership form-copy

Is equivalent to the copy-member entity

M5: Field Cash/cheques

Is equivalent to the cheque entity.

M6: Bank deposit slips

Is equivalent to the Bank-deposit entity.

2.4 PROBLEM AND REQUIREMENT LIST

The interview gave enough information to produce a problems and requirement list for the project. In this section analysis were made of these part of the transcripts which suggest that there are faults in the present system, or where a requirement has been indicated. Also considerations were taken on the impact of these problems on the company.

Finally, indication were made on action that the proposed system might take in order to overcome the problem or to meet the requirement. During Mr. Ejechi Ken's interview the following problems where identified and solutions given :

1. 'We need to tighten up our accounting system. There is bits of paper floating about all over the place ...'

Possible impact: Wasted resources chasing the paper work, and loss of management information.

Action : The computer system will remove the need for paper work.

2. ' ... and we never have accurate figures of how much we have got at any moment.

Possible impact: Loss of management information.

Action : Produce a new report showing the cash currently held at the shop.

3. 'We also need more information both for the manager.'

Possible impact : Loss of management information.

Action : as for (2) above.

4. 'In future , I would like to look into the possibility of hiring video recorders. It would be nice if the system you write could include this without too much fuss.'

This is less important than some the others.

Action : No action at present.

During an interview with Mrs. Adeniji:

5. '[The tapes are] held in order of title ... although they are sometimes put back in the wrong place:'

Possible impact : Wasted time and resources.

Action : The computer system can not do nothing about this. No action.

6. 'Too much clerical effort when issuing a tape: I got out the tape record and write the date and the borrower's name on it.'

Possible impact : Wasted time and resources.

Action : The computer system will update the member and the tape records when tapes are borrowed.

7. 'Then I get the member's record card out and write the title, today's date, the hire period and the amount paid on the card.'

Possible impact : Wasted time and resources.

Action : As for (6)

8. 'Yes , it does take time. On a busy Saturday afternoon we can have quite a queue waiting while we try to find the tape record and the member's record card !'

Possible impact: loss of customer good will.

Action : Have an enquire facility to locate member's records by member's number and locate tape by tape code.

9. ' I should not say it, but sometimes the staff do forget to write things on the cards.'

Possible impact: Loss of information.

Action : The computer system will eliminate the use of manual card and will constantly update its card.

10. 'More clerical effort when the tape is returned : ... we look at member's card to see when the tape was due back.'

Possible impact : Wasted time and resources.

Action : When a tape is returned, the computer system will display the loan details together with the fine, if any.

11. 'We need to know what tapes we have in stock at any one moment. Sometimes, we spend ages looking for tape in the back when it is actually out on loan and somebody has forgotten to write it on the card.'

Possible impact : Wasted time and human resources.

Action : A tape availability enquiry facility could be provided.

12. 'I think there should be some system of keeping an eye on the tapes. When they have been used for more than 100 times, they get a bit doggy.'

Possible impact: Loss of customer goodwill if the tapes are damaged.

Action: The computer system could retain a count of the number of times a tape has been borrowed and show this on enquire.

During an interview with Mr. Ejechi Ken:

13. 'I always feel there is a loop hole there what if the cheque bounce and the customer runs off with the tape(s)? We can not cash the cheque I do not know if your system can do anything about that.'

Possible impact : Possible loss of tapes and money.

Action : Suggestion is made to the management to accept only cash deposit until the cheque system in Nigeria is improved.

14. 'There is no detail break down of what the money represents ... now I am not saying, that any of my staff would be dishonest, ...'

Possible impact : Loss of money.

Action Produce and maintain a cash ledger for the shop. This could be used to prepare the bank cash deposit slip and as a covering letter when the bank deposit slip is sent to the account office.

There could also be inquire facility to display the cash in hand at the shop at any moment.

15. '... but did like to know the earnings from each tape ..

Possible impact : Lack of management information

Action : The record for each tape could retain a total of the income for that tape.

16. '... what are the best-selling categories?'

Possible impact: Lack of management information and consequent loss of customer goodwill if popular tapes are not provided.

Action : A report could be produced showing the number of times which each tape has been borrowed and the category into which they fall.

17. 'In the future , I would like to put this [tape] ordering on the computer, but not yet ?'

Action : As with point (4)

18. 'I am also supposed to produce a catalogue and send this to the members. This shows the titles available at the shop, but quit honestly, I am a bit pushed in doing this.'

Possible impact : Loss of customer goodwill, also of business if tapes are available but members do not know about them.

Action : A tape catalogue could be produced on demand.

CHAPTER THREE

PROPOSED SYSTEM

3.1 NEW SYSTEM REQUIREMENT

The new system is intended to improve the service and performance of the Sigma video library shop, and will utilize the computer system which provide an on-line data processing service at the shop and the accounts office.

1. There will be two Visual display unit (VDU), keyboard terminals in the shop one in accounts office and the other in the main library.
2. It will be possible to update the computer system if it is subsequently decided to input data at the shop via bar-code readers.
3. There will be at least one line printer in the accountant office. It was originally suggested that there would be a printer in the main library this would produced a cash deposit slip to accompany the company's cashier at the bank.

However, because of the problem of maintaining and servicing these machines, it was decided to have line-printer facilities only in the accountant office. The main library will have a simple display facility to allow them to check the cash that has paid in each day.

4. The accountant may log into the main library accounts.
5. There will be facilities for the shop to print the video catalogue by the shop assistant on request.
6. When borrowing a tape, the member will use the video catalogue to select the tape number, and will also present his or her membership

- card. After checking that the tape is available, the computer system will ask about the required loan period. It will then calculate and display the date when tape is due back and after all tapes are entered the system will calculate and display the fee which is due.
7. When a tape is returned, the system will calculate any fine that is due. There will be an extensive range of management report facility including the capacity to :
 8. Produce a report of the cash held at shop and clear this down when the cash deposit slip has been submitted.
 9. Add and change tape details.
 10. Cancel and reinstate membership.
 11. Produce a report of the income from tapes this will be able to show the relative popularity of the various categories.

3.2 DATA NORMALIZATION

Using the document gathered during investigation stage data normalization was performed, and the following result obtain.

Video Library System Membership Card- data Normalization stage

- a) Member-1 (Membership-number, Name, Address, Telephone, Date-joined, (Tape-number, Title, Date-borrowed, Amount-paid, Date-returned, Fine-paid)
- b) Member-2 (Membership-number, Name, Address, Telephone, Date-joined, Loan-1 (Membership-number, Tape-number, Date-borrowed, Amount-paid, Date-returned, Fine-paid).

- c) Loan-2 (Membership-number, Tape-number, Date-borrowed, Date-returned, Fine-paid. Tape-1 (Tape-number, Title, Amount-paid)

Video Library System
Video Tape Record card-data Normalization stage

- a) Tape-2 (Tape-number, Title, Date-obtain, Tape-format, (Daily-rate, Weekend-rate) (Date-borrowed, Membership-number, Name, Date-returned).
- b) Tape-3 (Tape-number, Title, Date-obtained, tape-format) Price-change-1 (Tape-number, Sequence-number, Daily-rate, weekly-rate)

Video Library System
Video Tape Catalogue-data Normalization stage

- a) Catalogue-1 (Date-produced, (Category, Tape-number)
- b) Catalogue-2 (Date-produced)
- c) Catalogue- Entity-1 (Date-produced, Sequence Number, Category, Tape-number, Title)
- d) Catalogue - Entry-2 (Date-produced, Sequence-Number, Tape number) Title-1 (Tape-number, Title, category, Payment-1 (Payment-sequence-number, date-paid, Member-name, Detail, Amount)

Since Member is organized by Member-number there is no need for operational entity. OP-NAME-1 (Name, Sequence-number, Membership-number)

Tape-5 (Tape-number, Tape title, Income-to-date)

Tape-6 (Tape-number, category, Tape-title, Number-of-times-borrowed).

Tape entity is organized by Tape-number, thus a need for an operational entity like this OP-TITLE-1 (Title , Sequence-number, Tape-number)

3.3 REPORT FORMAT

Video Library System
Cash held at ship report draft format

Date	Member's number	Detail	Amount
01-01-91	1004	Hire fee	2.50
01-01-91	1021	Hire fee	2.50
01-01-91	1003	Late fine	3.00
Total			#8.00

Video Library System
Tape Popularity Report - Draft format

Tape number	Category	Title	Borrowed
1001	Mystery	Problem of a funeral	nnn
1005	Action	Raw deal	nnn
1024	Thriller	Zombie fresh eater	nnn

Video Library System
Tape income report - draft format

Tape number	Title	Income-to-date
1009	Tell it to the birds	nnn.nn
1025	Moon lighting	nnn.nn
1027	Angels Town	nnn.nn
		nnn.nn

3.4 DATA CONSOLIDATION

Consolidating the various entity structures, combined with those entities which have identical keys the consolidated entity structures was produced.

Video Library System Consolidated Entity structures
--

Loan	(Membership-number, Name, Address, Telephone, Date Borrowed, date-due-back)
Category	(Category-code, Category) Charge-rate (Charge-code, Daily-rate, Weekend-rate, Weekly-rate)
Member	(Membership-number, Name, Address, Telephone, Date-joined, Date-renewed)
OP-NAME	(Name, Sequence-number, Membership number)
OP-TITLE	(Title, Sequence-number, Tape-number)
Payment	(Payment-sequence-number, Date-paid, Membership-number, Detail, Amount)
Tape	(Tape-number, Income-to-date, Number-of-times-borrowed, Membership-number, status)

With the Tape and Loan entities, it is possible to find which member has borrowed any particular tape and which tape are on loan to any particular member.

CHAPTER FOUR

DEVELOPMENT OF SIGMA VIDEO LIBRARY SYSTEM PROGRAM

4.1 WHY DBASE III PLUS

The question may arise why use database management program commands? This is due to the nature of the database to be maintained (see appendix A) that decision was made to use dbase III PLUS programming tools. A database, is a collection of programs that gives the user access to collection of information stored as data this collection or pool, of information is called the database. What DBASE III PLUS is can be determined by discussing what a data base program is and what it can do. Although much will not be said about it because it is beyond the scope of this project, however, it is possible to boil it down to the two basic functions provided by any data base program. They are:

- 1: SEQUENCING
- 2: SELECTION

Sequencing refers to any action that alters the other in which information is stored or presented. When a list of names is placed in alphabetical order, sequencing is taking place. Although most people perform sequencing as part of their daily routine, sequencing remains a difficult and demanding task. Dbase III PLUS can perform complex sequencing task with great power and accuracy.

The other major function of a data base is selection. Selection refers to the process by which certain items are selected from a large group. For example, suppose there are a list of recent college graduates. There may arise a need to select those with only six credits. Selection can be done in a number of ways for a wide variety of reasons. However, the process always consists of testing the elements of the collection to select a subgroup, or some combination of the two actions, you are performing a data base management task which DBASE III PLUS can use its powerful and accurate functions to perform. It has to be noted that not every program that sequences or selects is a data base management program. For example, lotus 1-2-3 is primarily a program that crates mathematical models. However, it is advertised as a spreadsheet, as well as a data base manager and a graphics program. While it is true that 1-2-3 can perform sequencing and selection functions, only a small part of the program's power is used to implement these functions. Sequencing is one of the most difficult task for a computer to deal with. Therefore it is not enough to ask "Can a program sequence ?" You must look deeper and ask how the sequencing is accomplished. The data management programs offer very powerful sequencing and selection commands and functions which DBASE III PLUS offer.

Though DBASE III PLUS is often referred to as a relation database management system, it is lacking many features of a true relational system. Rather, Dbase III PLUS can be viewed more as a file management system with a relational features added. Dbase III PLUS contains its own programming language, permitting a user with very little experience in

programming to develop extremely powerful and complex programs for demanding applications.

Other features of DBASE III PLUS include :

1. Programs and data are largely independent of each other.
The user can change the structure of the database without making many program changes.
2. The user can easily add, edit, sort, index or report data using a minimum of programming.
3. The user can quickly create many reports from the data, using as necessary, mathematical operations such as multiplication and division averages, totals, subtotals, and subtotals can be generated easily.
4. Customer screen formats can be created for data entry. The user can design the entire screen so that the data entry operator only has to fill in blanks.
5. The internal language of dbase III plus is very powerful, with single commands for indexing, and reporting, Many programs can be developed five or ten times faster than developing equivalent BASIC programs.
6. The DBASE III PLUS internal language is a structured language. DBASE III PLUS programs are far easier to write than are unstructured programs (such as with BASIC), and easier to update.

4.2 HISTORY OF DBASE III PLUS

The first dBASE product DBASE II, was written by Wayne Ratliff and marketed by Ashton-Tate in the early 1980's for the eight-bit CP/M machine and Apple II. Although DBASE II was powerful and offered many advantages for custom programs, it did have some serious limitations.

In the summer of 1984 a new version of DBASE III was released that took advantage of the extensive memory of the IBM PC. New commands were added, the specification extended, and the reliability of the product improved. Dbase III PLUS, with additional commands and menu features, was released in early 1986.

4.3 STEPS TO PROGRAMMING

In designing the video library program using DBASE III PLUS programming tools certain steps were taken viz:

1. Menus

Menus have clear heading that explain precisely what the menu purpose is. Menus are consistent throughout the program like options that require to press enter key in one menu will also require to press enter key in another menu. The system is designed to be menu driven that is a tree-structured menus, where one choice leads to another menu with more choices see appendix B . Efforts were made so that descriptions of options were concise to avoid visual confusion. However, at any point in the system there is always a way to quit to previous menu.

2. Editing and Deleting Records

The program for editing and deleting records is quite similar to the program used for adding data, with one significant difference. In place of an append blank to add a new record, a search routine was used to find the desired record to edit or delete. However, the user is prompted to enter the tape or member number to edit. A search was made using seek command so that the search will be fast in case a large database is maintained then the fields to display are stored in variables and displayed for confirmation. Then there is a request to edit or delete. If it is delete the program deletes the record and pack databases if necessary. However, there are some conditions which do not allow user to delete member's record they are when a member has tape/tapes he has to return or he is owing some amount. Also, for tape file if tape is out it can not be deleted. For editing, after all editing the edited data is transferred to the database file.

3. REPORTS

Most of reports that were required was designed using the report generator which is best in this case. However, there are times which only visual display is necessary in such case steps taken are initialize some variables store record number to a variable and using the do while loop the necessary fields are display on the screen.

CHAPTER FIVE

CONCLUSION

Throughout history, people have assigned labels to describe the major advances or characteristics of a given period of time the Iron age the Renaissance, the age of enlightenment, and the industrial revolution just a few labels. In today's rapidly changing world a phrase has appeared recently to describe advances made in the areas of communications and computer technologies ; the information age.

Computers a fact of life whatever you do wherever you go you will encounter a computer or computer delivered services every day. Computers have become common place - virtually unnoticed by many people. But computers are there, you can literally bank on them.

However, as computer system come to be increasingly rely upon, the have acquired apparent immutable power. Administration system in particular have become so complex that no on programmer understands or can reconstruct the logic behind them. Interacting with the system, it is easy to suffer from the delusion that the computer is generating decisions when in fact these follow the action of the successions of analysts and programmer(s) who have design and maintain the system and the user who have specified the requirements.

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APPENDIX A

Computerized video library

Structure of data base : Avtape.dbf

Field	Field Name	Type	Width	Dec
1	Tapenumb	Numeric	4	
2	Caregory	Character	3	
3	Chcode	Character	1	
4	Costprice	Numeric	7	2
5	Date_borrow	Date	8	
6	Date_due	Date	8	
7	Dateobt	Date	8	
8	In_to_date	Numeric	9	2
10	Mem_la_bor	Numeric	4	
11	Num_of_tbr	Numeric	4	
12	Oldbal	Numeric	9	2
13	Pre_bor_nu	Numeric	4	
14	Status	Character	1	
**** Total ****			101	

Computerized video library

Structure of data base : Avmemb.dbf

Field	Field Name	Type	Width	Dec
1	Address_1	Character	20	
2	Address_2	Character	20	
3	Amountowe	Numeric	6	
4	Amt_depost	Numeric	6	2
5	Baln	Numeric	5	2
6	Cr_limit	Numeric	6	2
7	Custno	Numeric	4	
8	Date_last	Date	8	
9	Date_renew	Date	8	
10	Date_join	Date	8	
11	First_name	Character	15	
12	Last_name	Character	15	
13	Maxt	Numeric	2	
14	Occupa	Character	20	
15	Period	Numeric	2	
16	Phone	Character	10	
17	Tape_pos	Numeric	1	
			157	

**** Total ****

Computerized video library
Structure of data base : Avcharge.dbf

Field	Field Name	Type	Width	Dec
1	Code	Character	1	
2	Daily	Numeric	5	2
3	Week	Numeric	5	2
4	Weekend	Numeric	5	2
**** Total ****			17	

Structure of data base : Avpay.dbf

Field	Field Name	Type	Width	Dec
1	Detail	Character	50	
2	Membno	Numeric	4	
3	Pddate	Date	8	
4	Ret	Numeric	5	2
**** Total ****			73	

Structure of data base : Avpaywk.dbf

Field	Field Name	Type	Width	Dec
1	Mdate	Date	8	
2	Mname	Character	15	
3	Tamt	Numeric	10	2
4	Tbaln	Numeric	10	2
5	Towe	Numeric	10	2
**** Total ****			54	

Computerized video library

Structure of data base : Avpaymt.dbf

Field	Field Name	Type	Width	Dec
1	Mdate	Date	8	
2	Mname	Character	15	
3	Tamt	Numeric	10	2
4	Tbaln	Numeric	10	2
5	Towe	Numeric	10	2
**** Total ****			54	

Structure of data base : Avctrf.dbf

Field	Field Name	Type	Width	Dec
1	Pass	Character	10	
2	User	Character	10	
**** Total ****			21	

Computerized video library

APPENDIX B

- ISSUE TAPE
- RECIEVE TAPES
- FILE MAINTENANCE
- UTILITY
- REPORT
- QUIT

REPORT

UTILITY

FILE MAINTENANCE

- REPORTS ON MEMBERS
- REPORTS ON TAPES
- CASH REPORT
- QUIT

- INDEX RECORD
- ADD PASSWORD
- CLOSE ACCOUNTS
- OTHERS
- QUIT

- Add Tapes
- ADD MEMBERS
- DEL/MOD TAPE
- DEL/MOD MEMBER
- QUIT

REPORT

- DAILY REPORT
- WEEKLY REPORT
- MONTHLY REPORT
- QUIT

- PRODUCE CATALOGUE
- POPULARITY REPORT
- INCOME/AGE REPORT
- TAPE IN/OUT REPORT
- QUIT

- INFO ON MEMBERS
- EXPIRED MEMBERS
- REPORT ON DEBTORS
- QUIT

CLOSE ACCOUNTS

- CLOSE DAILY ACC.
- CLOSE WEEKLY ACC.
- QUIT

OTHERS

- RUN WORD PERF.
- RUN LOTUS 123
- BACKUP FILES
- QUIT