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INSTITUTE FOR SCIENTIFIC AND TECHNOLOGICAL INFORMATION (INSTI)/CSIR

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UNIDO/INSTI National Seminar on Advanced Technology for
Globalizing Industrial Information.

Accra, Ghana, 25th - 29th January 1999.

REPORT*

CONTENTS

1. Recommendations

The participants at the Seminar organized from 25th to 29th January 1999 by UNIDO and the CSIR, having discussed the various topics under the general theme "Advanced Technology for Globalizing Industrial Information" do hereby make the following recommendations:

1.   The responsibility of making this system work should not rest only on the National Focal Point (NFP) but also on the participating institutions. This requires that the operating framework should be clearly spelt out to ensure that the goals of the network are achieved. These goals should include outreach programmes, quality control, packaging and commercialisation.

2.   The NFP should take the necessary steps to formalize its relationship with the identified nodes by organizing follow-up meetings to determine the actual structure of the network.

3.   Follow-up training should be organized by the NFP after identifying the training needs of participating institutions.

4.   The participating nodes should be provided with some resources like computers to enable them to be linked up by electronic mail to the NFP. This will facilitate the management of INTIB activities in the country.

5.   The NFP should identify datasets available through questionnaires in the nodes constituting the network, which will provide the basis for formulating a policy document to guide the network.

6.   There is the need for the NFP assisted by the various nodes to organize seminars to sensitize or create awareness among the end-users ie. SME's about the availability of industrial and technological information at the INTIB National Focal Points.

7.   The UNIDO initiative should be consistent with the World Bank and other Donors initiatives.

facilitate the formation of Ghana's Industrial and Technological Information Network.

4. Organization

The Seminar was jointly organized by UNIDO and INSTI of the CSIR. The Seminar programme included paper presentations, hands-on and discussions. It was attended by twenty participants drawn from both the government and private sector in Ghana. Annex 1 contains the papers presented at the seminar. Annex 2 contains the programme of the seminar. Annex 3 contains the list of participants and resource persons. Annex 4 contains the seminar evaluation form.

5. Opening Session

The opening session was held at the INSTI Conference Room. It was attended by about thirty (30) officials from government and private sector organisations in Ghana. Mr. Clement Entsua-Mensah, Director of INSTI welcomed the participants and guests. In his welcoming address, he informed the gathering that the seminar is the result of years of cooperation between UNIDO and INSTI. Participants were informed that the seminar is aimed at creating the necessary awareness of the existence of an INTIB focal point in Ghana and to solicit their cooperation with the focal point to make it more functional for the benefit of the country's SMEs. He highlighted the importance of the internet which has revolutionized the flow of information in industry, technology and investment market opportunities. He stressed the importance of information in today's competitive world.

The keynote address for the opening ceremony was delivered by Prof. W. S. Alhassan, Director General of the CSIR. In his speech, he said that the seminar is a very important one considering the present focus of the Government of Ghana and the CSIR programme of commercialisation. He observed that in today's highly competitive world, the ability to adopt new technologies seem to be one of the pervasive characteristics that differentiate between successful and unsuccessful industries. He reiterated that to address these issues adequately, there is the need for support and assistance to establish a fully integrated database with access to overseas databases specializing in technology, product and market and industry performance. He therefore commended UNIDO for its decision

to make Ghana one of the sites in Africa to provide trade and investment information to strengthen the capabilities of SMEs. He urged the participating institutions to cooperate with INSTI to ensure that the project succeeds in Ghana. He was of the view that by the end of the seminar the various structures would have been put in place and the necessary commitment made by the participating organisations.

In his address, Mr. Massimo Garzelli, UNIDO Representative in Ghana indicated that UNIDO is to hold discussions with the Ministry of Environment Science and Technology (MEST) and the Environmental Protection Agency (EPA) with the view to establishing a national industrial cleaner production centre in Ghana. The centre, when established, would assist in the adoption of appropriate technology to help minimize the negative impact of industrial activities on the environment.

Prof. A. Ayensu, Deputy Director General, Industry, Natural and Social Sciences (INSS) of the CSIR chaired the opening ceremony.

6. Working Session

The working sessions and the discussions that followed are summarized below:

6.1   Introduction to Computers

This was the first session of the seminar and was facilitated by Mr. Anim Dankwa of INSTI. The objective of the session was to introduce participants to the use of computers and also to let them know the essential parts of computers. Starting with the historical development of computers, Mr. Dankwa went on to describe in detail the four stages of computer evolution usage, the component parts of computers and their usage. He also explained the difference between a hardware and a software and what they are used for. There was a brief discussion on programming languages and the different types of computers and how they evolved.

6.2 Communication Technologies

The second presentation of the first day was on Communication Technology. This was presented by Mr. William Tevie, Deputy Director of Network Computer Systems Limited. The presentation dwelt on the different media types and the different connection types. Some of the media types discussed included: leased circuits, relay

frame, ATM, wireless radio, VSATS, satellite earth stations. The different connection types discussed in detail are: point to point media, broadcast media, wireless media and non broadcast media.

6.3 Introduction to the Internet

An overview of the internet was presented by Mr. Tevie, followed by the structure of the internet. This was followed by how the internet works. There were discussions on intranet and extranet. The services available on the internet and its capabilities were also discussed. Participants were taken through typical internet services like electronic mail, world wide web, file transfer protocol and news groups. This was later followed by a practical session.

6.4 Overview of Internet Applications

The last presentation for the first day was delivered by Mr. Anim Dankwa who gave an overview of basic internet applications. The importance of the internet as a communication tool which has turned the world into a global village was stressed. Some basic services employed on the internet were discussed in detail. These included telnet, file transfer protocol, electronic mail, archie, world wide web and gopher. The presentation was done along side practical sessions where the participants had hands-on experience. Participants were also taken through the various e-mail programmes such as UNIX mails and On-line e-mail hosts as well as the basic features of e-mail programmes. The terminologies associated with the world wide web were also discussed.

6.5 Searching for Information on the Internet: Search Engines

The first paper on the second day of the seminar was delivered by Mr. Anim Dankwa. This was a very interactive presentation. The objective of the session was to enable participants use a variety of searching services on the world wide web and to compare the various searching services. There was a discussion on the difference between a search engine and an inventory. There were hands-on exercises using AltaVista, Yahoo and the BUBL index.

6.6 Searching for Information on the Internet: Search Techniques

This session was facilitated by Mr. Anim Dankwa. The objective of this session was to devise a search strategy and plan a search in advance. Participants were taken through a series of logical steps in devising a search strategy. They were also given certain tasks to perform. These tasks were: how to develop a search strategy, the steps to follow in performing a search, searching for phrases, searching for plurals, searching in fields, methods of refining a search, structuring long and complex searches. This session was more practical oriented.

6.7 Introduction to Web site Development

The last session for the second day of the seminar was on web site development. The session was led by Mr. William Tevie. The objective of this session was to explore the tools and techniques involved in authoring web pages and to give an awareness of standards and validation. An overview of web site development was presented, followed by web site development terminologies and principles. This was followed by practical sessions where participants created their own web pages. Participants were then taken through authoring tools and the problems of authoring tools.

6.8 Overview of Marketing

Mr. J. A. Villars, Chief Consultant, LINFOTEC Systems and Services was the facilitator for the session on overview of marketing. The session was very interactive. There was discussion on the concept of marketing, the objectives of marketing and the functions of marketing. Mr. Villars treated in detail the factors affecting marketing and information marketing strategies. The session ended with a discussion on the role of the information provider in marketing information.

6.9 Planning for Information Marketing

Prof. A. A. Alemna. Professor of Library Studies at the University of Ghana, led the discussion on planning for information marketing. Prof. Alemna indicated that information marketing has become popular in recent years because of reduced funding for library services world-wide. There is therefore the need for libraries and information

centres to review their traditional activities in order to generate needed revenue. There is the need to undertake research as a first step before undertaking information marketing. He then listed a series of questions that the research should aim at finding answers for. Planning and public relations activities must also be carried out by the information centre before a decision is taken to market information. Prof. Alemna dwelt briefly on the library's public and techniques to use in marketing information in the library.

6.10 Nature of Industrial and Technological Information

Mr. Villars facilitated this session. In his presentation, he highlighted on the following: the meaning, the key ingredients, features, peculiarities, and types of industrial and technological information. There was also a discussion on the national infrastructure to support industrial and technological information in Ghana. The role of both governmental and non-governmental organisations in promoting industrial and technological information was stressed.

6.11 Sources of Industrial and Technological Information

In his presentation on sources of industrial and technological information, Prof. Alemna highlighted on the general sources, specific sources, and types of sources. These sources were then dwelt with in detail. He grouped the types of sources into fifteen broad groups and discussed them. Participants made very useful contributions during the discussion period. It was stressed that patents are a very important type of industrial and technological information.

6.12 Industrial and Technological Information Services and Products

This was the last presentation for the third day and was led by Mr. Villars. He categorized industrial and technological information systems into conventional and non-conventional information systems. He stressed that both the conventional and non-conventional systems engage in some or all the information service activities and operation like the generation, identification, collection, processing, storage, re-packaging, and dissemination in some form or the other. Mr. Villars highlighted on the formal conventional type of information services and explained them in detail. He however

indicated no single library in Ghana provides all the services discussed. Mr. Villars then discussed industrial and technological information products and beneficiaries and users. Determining information needs of users and methodology for user study was briefly discussed.

6.13 Techniques of Information Marketing

The presentation on techniques of information marketing was the first for the fourth day and was facilitated by Prof. Alemna. A general overview of marketing was given, information marketing objectives, kinds of information markets, marketing management philosophy, and information marketing techniques. It was emphasised that the marketing and promotion of information products particularly in Africa face greater problems resulting from the increasing austerity in spending.

6.14 Re-packaging Industrial and Technological Information

Mr. Villars in his presentation defined information re-packaging as the process of rendering any piece of information more pertinent or relevant to the precise or specific requirement of the user. The various forms of re-packaged information was dealt with in detail. There was a discussion on the agencies involved in information re-packaging. Participants were then shown samples of re-packaged products.

6.15 User Needs Analysis

This presentation which was given by Prof. Alemna, focused on user surveys and user feedback. The guidelines for user survey and the methods of obtaining user satisfaction was discussed in detail. Participants were made to understand that these surveys will only provide favourable results if users are adequately educated on library use. He stressed the need for user feedback to be obtained in introducing any new service. It was that interviews are more reliable than questionnaires in undertaking user feedback.

6.16 Guidelines for Pricing Information Services

This presentation by Mr. Villars focused on pricing, elements of pricing, issues in pricing information services and products. Pricing is a critical aspect of the process of buying and selling in marketing and the aim is at satisfying both the seller and the buyer. A distinction was made between pricing and cost. Direct cost and indirect cost in pricing was discussed. Issues that arise in pricing information services and products were discussed in detail. It was stressed that no matter how rational the pricing of an information service or product is, the bottom line rests on the ability of the buyer to pay.

6.17 INTIB-Africa Programme and IRMS^{Plus} Package

The last day of the seminar was devoted to a discussion on the INTIB-Africa Programme and the IRMS^{Plus} package. This session was facilitated by Ms. Shadia Y. Bakhait of UNIDO. The discussion on the INTIB-Africa programme stressed on how UNIDO is helping African countries to use the internet to facilitate their process on technology transfer, investment and business opportunities. The immediate and development objectives of the new programme launched by UNIDO to support INTIB activities in Africa was discussed. The types of INTIB National Focal Points was discussed.

The was a demonstration of the IRMS^{Plus} package. The activities related to the package was discussed in detail.

7   Evaluation of the Seminar

At the end of each session, participants were required to evaluate the session in terms of : level of difficulty in understanding the presentation, the relevance or importance of the presentation to the objectives of the seminar and the style of presentation by the resource person. Thirteen (13) out of the twenty (20) participants answered the questionnaire. The results of the evaluation are:

Level of difficulty: Most of the participants rated this aspect of the evaluation as easy. A few of them however indicated that the topics were fairly difficult to understand

especially in the area of information technology. Of particular mention was communication technologies.

Relevance/Importance: On the relevance/importance of the topics to the seminar, majority of the participants assessed the topics as very relevant. There was one participant who did not find searching the internet: search engines relevant.

Style of Presentation: Participants were required to evaluate the style of presentation of resource persons. This aspect was also rated highly in that most of them indicated that the sessions were very well presented. In a few cases however some participants were of the view that the presentation was average.

General Comments: The following are some of the general comments which were put forward by the participants:

i.   the seminar should have been residential and the time allotted to some of the presentations reduced. The tight time table did not allow for more interaction among participants;

ii.   there should have been more hands-on exercises on searching the internet and web site development;

iii.   handouts should have been given before the presentations;

iv.   the responsibility of carrying out the project should not rest with the focal point alone but all the nodes;

v.   further training is required on the IRMS plus package;

vi.   the seminar was generally well organized;

vii.   future seminars should be for two weeks instead of one week;

viii.   the course was very educative, beneficial and enhanced the knowledge and skill of participants;

ix.   the resource persons exhibited a very high level of professionalism in their field;

x.   there should be frequent interaction between the focal point and the nodes to evolve a common strategy in carrying out the task ahead;

xi.   UNIDO should assist with capacity building and equipment;

xii.   the number of computers must be increased in future courses to enable each
        participant have access to one computer;

xiii.   more time should have been allotted to the presentation on internet and website
        development.

8   Closing Session

The Director of INSTI, Mr. Clement Entsua-Mensah performed the closing
ceremony. He thanked the resource persons and participants for making the seminar
a success. He expressed his gratitude to UNIDO for sponsoring the seminar and
pledge the commitment of the national focal point to the network. The NFP will put
the nodes together and do whatever is expected to do. It will also keep in touch with
UNIDO on developments in the network. He urged the nodes to be identified to be
committed to let the network succeed. With this, he declared the INTIB network for
Ghana duly in place.

List of Participants and Resource Persons

Participants

1. Addo Francis
2. Adjei Ebenezer K.
3. Adumuah Nii Noi D.
4. Agyemang Moses
5. Agyemang Sereboo Michael
6. Aidoo B. Jacob
7. Amoah Kay
8. Damptey Patience T. M.
9. Dandzo T. E. K.
10. Dotse S. K.
11. Entsua-Mensah Clement
12. Fokuo Donyina
13. Lincoln-Codjoe Monika
14. Mahamadu A. Mahamuda
15. Osei Simon K.
16. Osei-Boateng Michael
17. Quaye Joehida
18. Sam Joel
19. Tetteh E. K.
20. Twum Martin

Resource Persons

1. Alemna A. A. (Prof.)
2. Anim Dankwa William
3. Bakhait Shadia Y. (Ms)
4. Tevie William
5. Villars John A.

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FINANCIAL REPORT
NATIONAL SEMINAR ON ADVANCED TECHNOLOGY FOR
GLOBALISING INDUSTRIAL INFORMATION,7 - 12 DECEMBER, 1998.

INCOME

Funds from UNIDO

	04/12/98	9,271,680.00	
	01/02/98	9,709,636.00	
Total Income			**18,981,316.00**

EXPENDITURE

Resource Persons Fees	6,785,000.00	
Participants Allowance	3,243,000.00	
Training materials	2,836,916.00	
Co-ordination	3,846,400.00	
Participants Transport Allowance	2,270,000.00	18,981,316.00
OTHER EXPENSES :		
Hard Disk	840,000.00	
Telephone	350,000.00	
Internet Access	1,248,000.00	
Transport Expenses	200,000.00	2,638,000.00
Total Expenditure		**21,619,316.00**
Excess of Expenditure over Income		**2,638,000.00**

NATIONAL SEMINAR ON ADVANCED TECHNOLOGY FOR
GLOBALISING INDUSTRIAL INFORMATION,7 - 12 DECEMBER, 1998.

RESOURCE PERSON	MODULE DEVELOPMENT	DELIVERY	TOTAL FEE	SIGNATURE
Mr. Anim Dankwa	920,000.00	1,035,000.00	1,955,000.00	
Mr. Tevi	920,000.00	690,000.00	1,610,000.00	
Mr. J. A. Villars	920,000.00	690,000.00	1,610,000.00	
Prof. Alemna	920,000.00	690,000.00	1,610,000.00	
	3,680,000.00	2,415,000.00	6,785,000.00	

WORKSHOP EVALUATION FORM

WORKSHOP TITLE.. Advan. Te.. Glob. Ind. Inf... WORKSHOP DATE.... 25/1/99 - 2/1/99

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1	Introduction to Computers	Anini Dankwa	8	4	4	3
2	Communications Technology	Mr. W. Tevie	1	4	3	3
3	Introduction to the Internet	W. Tevie		4	3	2
4	Overview of internet applications					
5	Searching for Info. on the Internet. Search engine	Anim Dankwa		3	3	3
6	Search Techniques			3	3	3
7	Introduction to website Development.			3	3	3
	Information marketing package etc	Alemu/Villars		4	4	4
				4	4	4
	IRSM Re-glese	UNIDO Consult.		4	3	3

Notes: (a) Level of Difficulty   (b) Relevant/Importance   (c) Style of Presentation

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered. _Website Developments._

2. Indicate the topics you think should have been left out.

3. Do you think there was opportunity during the course to share experiences with other participants?

   Yes [✓]   No [ ]

4. Do you think the course will improve your prospects for promotion in your organisation?

   Yes [✓]   No [ ]

5. Would you have an opportunity to practice what you have learnt?

   Yes [✓]   No [ ]

6. Other Comments:

   The course was too loaded. There was not enough time for practice. The course should therefore have been residential. Better still the course should have been of 2 weeks ① It would have been good if the handouts were given before the lecture especially the slides. One could have made notes on them. Some of them were quite technical.

WORKSHOP EVALUATION FORM

WORKSHOP TITLE.. WORKSHOP DATE...25/1/99

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1.	Introduction to Computers	Mr. Anim Dankwa & mr TEVI	2	4	3	3
2.	Communication Technologies	✓ ✓	2	3	3	3
3.	Introduction to the Internet	✓ ✓	2	4	4	4
4.	Overview of Internet applications	✓ ✓	2	4	3	4
5.	Searching for info on the Internet	mR. Anim Dankwa	2	4	4	4
6.	website development	Mr. Tevi & Anim Dankwa	2	3	4	3
7.	Overview of Marketing	Prof Afemna	2	4	4	4
8.	Nature of Industrial information	Mr. Villars	2	4	3	3
9.	Sources of Industrial Information	Prof Afemna	2	3	3	3
10	Packaging of Ind info	Mr. Villars	2	4	4	4

Notes: (a) Level of Difficulty   (b) Relevant/Importance   (c) Style of Presentation

	Score		Score		Score
Easy	4✓	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3✓	Good Presentation	3✓
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

| 11. | User needs Analysis | Prof Afemna | 2 | 4 | 4 | 4 |
| 12 | Pricing Information Services | Mr. Villars | 2 | 4 | 4 | 4 |

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.   N/A

2. Indicate the topics you think should have been left out.   N/A

3. Do you think there was opportunity during the course to share experiences with other participants?

   Yes [✓]   No [ ]

4. Do you think the course will improve your prospects for promotion in your organisation?

   Yes [✓]   No [ ]

5. Would you have an opportunity to practice what you have learnt?

   Yes [✓]   No [ ]

6. Other Comments:

The project would be very useful to us in Ghana. ~~It should not~~ The responsibility of carrying it out should rest on not only the focal point but on all the nodal points. Further training should be organised on how to enter data into the ~~Arcus~~ Plus ~~package~~ programme by the focal point for its ~~most~~ nodes so that there would be uniformity in data entry activities. The course in general was well organised.

WORKSHOP EVALUATION FORM

WORKSHOP TITLE....New Tech for globalizing and info.... WORKSHOP DATE ...25th - 29th Jan 1979

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1.	Introd to computers	W. Arim Dankwa	1½	3	4	3
2	Comm. technologies	W. Tevie	1½	2	2	2
3	Introd to the Internet	W. Arim Dankwa	2	3	4	3
4	Overview of Internet applications	W. Arim Dankwa	1 hr	3	4	3
5	~~Search techniques~~	✓ ✓				
5	Introd. to website dev.	✓ ✓	2	3	4	3
6	Overview of marketing	Prof Atanna	1½	4	4	3
7	✓ ✓ info	3·A· Villars	1 hr	4	4	3
8	Nature of web info	✓	1 hr	4	4	3
9	Inf. Services Prof Alemver		1 hr	4	4	3
10	IRMS Pus package	UNIDO Consultant	2	4	4	3

Notes: (a) <u>Level of Difficulty</u>   (b) <u>Relevant/Importance</u>   (c) <u>Style of Presentation</u>

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.

2. Indicate the topics you think should have been left out.

3. Do you think there was opportunity during the course to share experiences with other participants?

   Yes [✓]   No [ ]

4. Do you think the course will improve your prospects for promotion in your organisation?

   Yes [ ]   No [✓]

5. Would you have an opportunity to practice what you have learnt?

   Yes [✓]   No [ ]

6. Other Comments:

   Generally beneficial and tailored to suit Ghana informational needs in her industrial development programme

WORKSHOP EVALUATION FORM

WORKSHOP TITLE..... I M T I B .... WORKSHOP DATE Jan. 25-29, 1999

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1.	Intro to Computers					
2.	Comm. Technologies					
3.	Intro to the Internet					
4.	Overview of Internet Applications					
5.	Search Engines					
6.	Search Techniques					
7.	Intro to Website					
8.	Website Development					
9.	Overview & Planning of Marketing					
10.	Nature of Ind & Tech Info					

Notes: (a) Level of Difficulty   (b) Relevant/Importance   (c) Style of Presentation

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

Had some difficulty in the technical
IT language, otherwise the topics were
relevant and presentation was good
in all cases!
UNIDO Consultant was not as fluent as
I would have wished.
It was unfortunate that the server
broke down and therefore hands-on was
not very adequately treated.

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.

2. Indicate the topics you think should have been left out.

3. Do you think there was opportunity during the course to share experiences with other participants?

   Yes   [✓]   No   [   ]

4. Do you think the course will improve your prospects for promotion in your organisation?

   Yes   [✓]   No   [   ]

5. Would you have an opportunity to practice what you have learnt?

   Yes   [✓]   No   [   ]

6. Other Comments:

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WORKSHOP EVALUATION FORM

WORKSHOP TITLE *National Seminar on* ..... WORKSHOP DATE *25ᵀᴴ - 25ᵀᴴ Jan. 1999*

Advanced Technology for
Globalizing Industrial Info.

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1	Ittr. Introduction to Computers	Mr. Anim Dankwa	1½	4	4	3
2	Communication Tec.	Dr. Quaynor	1	3	4	4
3	Introduction to the Internet	Dr. Quaynor / Mr. Anim D	1½	4	4	4
4	Searching for information					
5	on the internet ✓	✓	1½	3	3	4
6	✓	✓	1	4	3	4
7		✓	2	3	4	4
8	Introduction to Website	✓	1			
10	Website Development ✓	Mr. Anim Dankwa	1½	4	4	3
11	Overview of Marketing			3	3	3
12	Planning of Info. Marketing	Prof. Alemna / Mr Villars	1½	3	4	2
13	Nature of Ind. Tech. Info	✓	1	4	4	4
14	Sources of Ind. Tech. Info.	✓	1	4	3	2
15	Info Service and Product.	✓	1	3/3	4/3	4/4

Notes: (a) <u>Level of Difficulty</u>   (b) <u>Relevant/Importance</u>   (c) <u>Style of Presentation</u>

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
16	Techniques of Info. Market	Mr. Villars / Prof. Alemna	1½	4	3	4
17	Information Repackaging	✓	1½	3	4	4
18	User Needs Analysis	✓	1	4	3	3
19	Guidelines for Pricing Info. Services	Mr. Villars / Prof Alemna	1½	3	4	4
20	INTIB - AFRICA Prog.	Unido Consultant	2	4	3	3
21	IRMS plus Package	✓	1½	3	3	4
22	IRMS ✓	✓	1½	3	4	4
23	Develop. of Unido/Clinghouse	✓	2	3	3	4

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.

2. Indicate the topics you think should have been left out.

3. Do you think there was opportunity during the course to share experiences with other participants?

    Yes [✓]   No [ ]

4. Do you think the course will improve your prospects for promotion in your organisation?

    Yes [✓]   No [ ]

5. Would you have an opportunity to practice what you have learnt?

    Yes [✓]   No [ ]

6. Other Comments:

The course was very educative and have enhanced my skills on the use of the internet. It have also brodened my knowledge on the commercialisation of technological information. All the lecturers exhibited a very high level of professionalism in their field and must be given a tap on the shoulders.

WORKSHOP EVALUATION FORM

WORKSHOP TITLE... *National Seminar on* WORKSHOP DATE *25th-29th Jan. 1999*
Advanced Technology for Globalizing Industrial Information

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1.	Intib-Africa Programme	UNIDO Consultant		4	4	4
2	Intib - Focal Pts	''		4	4	4
3	IRMS Plus Package	''		4	4	4
4	Intro to Computers	Anim-Dankwa		4	4	4
5	Communication Tech.	Tevie		4	4	4
6	Intro to the Internet			4	4	4
7	Oview of Internet App.			4	4	4
8	Searching for Info on the Internet! Search Engines			4	4	4
9.	Search Technique			4	4	4
10	Intro to Website Dev.			4	4	4
11	Development of UNIDO/ Ghana Website			4	4	4
12	Overview of I.M.			4	4	4
13.	For the Rest			4	4	4

Notes: (a) <u>Level of Difficulty</u>   (b) <u>Relevant/Importance</u>   (c) <u>Style of Presentation</u>

	<u>Score</u>		<u>Score</u>		<u>Score</u>
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.   NIL

2. Indicate the topics you think should have been left out.   NIL

3. Do you think there was opportunity during the course to share experiences with other participants?

    Yes   [✓]   No   [ ]

4. Do you think the course will improve your prospects for promotion in your organisation?

    Yes   [ ]   No   [X]

5. Would you have an opportunity to practice what you have learnt?

    Yes   [✓]   No   [ ]

6. Other Comments:

    NIL

WORKSHOP EVALUATION FORM

WORKSHOP TITLE..For..G·L·O·B·A·L·I·Z·I·N·G...... WORKSHOP DATE.25th – 29th Jun, 1999.

ADVANCED TECHNOLOGIES INDUSTRIAL INFORMATION.

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1	Introduction To Computer	Mr Dankwa		4	4	3
2	Introduction to the Internet	Mr Mr Tenge		4	3	2
3	Website Develop	Mr Dankwa		4	4	4
4	Overview of Info Marketing					
5						

Notes: (a) <u>Level of Difficulty</u>   (b) <u>Relevant/Importance</u>   (c) <u>Style of Presentation</u>

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

Generally from the seminar is easy to follow with relevant topics treated. The modes of presentation were generally Good.

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered. _Pricing of information services_

2. Indicate the topics you think should have been left out. — _In the case of IRMS, demonstration packa could have given a better_

3. Do you think there was opportunity during the course to share experiences with other participants?

        Yes   [✓]   No   [   ]

4. Do you think the course will improve your prospects for promotion in your organisation?

        Yes   [   ]   No   [✓]

5. Would you have an opportunity to practice what you have learnt?

        Yes   [X]   No   [   ]   _if only the AFP facilities can used_

6. Other Comments:

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WORKSHOP EVALUATION FORM

WORKSHOP TITLE *GLOBALIZATION OF INDUSTRIAL* WORKSHOP DATE *25-29 January 1999*
& TECHNOLOGICAL INFORMATION

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
	Search Engines Search Techniques	Anim Darlewa/Tavie		4	4	4
	Web Site Development	Anim Darlewa/Tavie		3	4	3
	Market Overview/Planning Information Marketing	Prof. Akinaa/Villors		4	4	4
	Nature/Sources of Industrial & Technological Information; U Sur/Needs Analysis; Packaging and Pricing	—do—		4	4	4
	IRMS Plus Package	UNIDO CONSULTANT		4	4	4
	UNIDO/GHANA WEBSITE	Anim Darlewa/UNIDO CONSULT		3	4	3

Notes: (a) <u>Level of Difficulty</u> (b) <u>Relevant/Importance</u> (c) <u>Style of Presentation</u>

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.   WEBSITE DEVELOPMENT

2. Indicate the topics you think should have been left out.   NIL

3. Do you think there was opportunity during the course to share experiences with other participants?

   Yes [✓]   No [ ]

4. Do you think the course will improve your prospects for promotion in your organisation?   DON'T KNOW

   Yes ~~[ ]~~   No ~~[ ]~~

5. Would you have an opportunity to practice what you have learnt?

   Yes [✓] .   No [ ]

6. Other Comments:

   I think that CSIR/UNIDO should monitor the utilization of the knowledge acquired in this course and suggest remedial measures. There should be the need of participants to liase with each other and share experiences together. All suggested nodes and the national focal point should meet regularly to evolve a common approach to tackling this project and to sharing the benefits together.

   UNIDO should assist the nodes with capacity building and equipment facilities

WORKSHOP EVALUATION FORM

WORKSHOP TITLE. ~~Intro~~ ADVANCED TECHNOLOGIES FOR THE GLOBALIZATION OF INDUSTRIAL INFORMATION .... WORKSHOP DATE. 25-29 Jan 9?

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1.	Intro to Computers	Anim - Dankwah	2	4	4	4
2.	Communicatio Technolgies	Tevie	2	~~3~~ 2	4	4
3.	Intro to Internet	Tevie	2	4	4	3
4.	Overview of internet Applications	Anim - Dankwah	2	4	4	4
5.	Search Engine	~~Anim Dankwah~~ Tevie	2	4	4	3
6.	Search Technique	Anim - Dankwa	2	4	4	3
7.	Introducti to website Development	Tevie	2	4	4	3
8.	website Hands-on	Anim Dankwa	2	4	4	~~?~~ 4
9.	Overview of marketing	Villars	2	4	4	4
10.	Planning of info Mkt	Alemna	2	4	4	3

Notes: (a) <u>Level of Difficulty</u>   (b) <u>Relevant/Importance</u>   (c) <u>Style of Presentation</u>

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

11.	Nature of IxT info	Villars	2	4	3	3
12.	Sources of IxT info	Alemna	2	4	3	2
13.	Info Service and Product	Villars ~~Alemna~~	2	3	4	3
14.	Techniques to Info Mkt	Alemna	1½	4	4	2
15.	Info Repackaging	Villars	1½	4	4	2
16.	User needs	Alemna	1½	4	4	4
17.	Pricing of Info Service.	Villars	1½	4	4	2
18.	INTIO - Africa Program		1½	4	4	3
19.	IRMS Plus Package.		1½	4	4	3

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered. _Techniques of Info Marketing Pricing of Info Services_

2. Indicate the topics you think should have been left out.

3. Do you think there was opportunity during the course to share experiences with other participants?

    Yes [✓]   No [ ]

4. Do you think the course will improve your prospects for promotion in your organisation?

    Yes [ ]   No [✓]

5. Would you have an opportunity to practice what you have learnt?

    Yes [✓]   No [ ]

6. Other Comments:

    Generally a good programme. There is the need for detailed Discussions between focal point and institutions to be selected as nodes to provide a framework for the network to succed.

WORKSHOP EVALUATION FORM

WORKSHOP TITLE *Nat. Sem. on Adv. Tech. for* WORKSHOP DATE 25th - 29th Jan '99
Globalizing.

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1	INTB	Mr. Amin Donkwah	2½	3	4	4
2.	Intro to Internet Appl.	Amin Donkwah	2 hr	2	2	2
3	Searching for Inf.	Amin Donkwah	2½ h	3	1	2
4	Website Dev.	Amin Donkwah	2½	2	3	2
5	Overview of Marketg	Prof Alemna	2½	4	4	4
6.	Matg Ind & Tech. Inf.	John Villars	2½	4	4	4
7.	Tech for Inf. Marketg	Prof Alemna/Villars	2½	4	4	4
8.	IRMS	UNIDO Consultant	2½	4	2	3
9	INTIB	Ms. Baikath L	2½	4	4	4

Notes: (a) <u>Level of Difficulty</u>   (b) <u>Relevant/Importance</u>   (c) <u>Style of Presentation</u>

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.

2. Indicate the topics you think should have been left out. *None*

3. Do you think there was opportunity during the course to share experiences with other participants?

    Yes [ ]   No [X]

4. Do you think the course will improve your prospects for promotion in your organisation?

    Yes [X]   No [ ]

5. Would you have an opportunity to practice what you have learnt?

    Yes [X]   No [ ]

6. Other Comments:

The Seminar should be residential, and the number of hours could be reduced. Participants can get to know themselves better if they would be grouped to discuss morning lectures. By this wa proper foundation would be laid for an effective network to be established. The number of computers must be increased to enable each participant to access to one.

WORKSHOP EVALUATION FORM

WORKSHOP TITLE..*Advanced Technology for Globalising Ind Inf*.... WORKSHOP DATE..*25-29th Jan 99*.

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1.	Intro to Computers					
2.	Comm Technologies	— William Tevie	1	3	4	2
3	Intro to Internet					
	All other topics			3	4	4

Notes: (a) Level of Difficulty   (b) Relevant/Importance   (c) Style of Presentation

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.

2. Indicate the topics you think should have been left out.

3. Do you think there was opportunity during the course to share experiences with other participants?

   Yes [✓]   No [ ]

4. Do you think the course will improve your prospects for promotion in your organisation?

   Yes [ ]   No [✓]

5. Would you have an opportunity to practice what you have learnt?

   Yes [✓]   No [ ]

6. Other Comments:

   • Lectures on the Internet and Website Development could have been allotted more time for the hands-on experience.

   • Lecturer on Communication Technologies could have spoken a little louder. Too soft spoken

WORKSHOP EVALUATION FORM

WORKSHOP TITLE... WORKSHOP DATE............

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
	Introduction to Computers Anim-Dankwa					
1.	Introduction to Computers	Anim - Dankwa		4	3	3
2.	Practical Session	Andm - Dankwa		5	3	3
3	Communication Technologies	William Teavie		4	3	3
4	Introduction to Internet	Amin - Dankwa		5	3	3
5.	Overview of Internet Application	Anim - Dankwa		5	3	3
6	Searching for Information on the internet	Anim - Dankwa		5	5	5
7	Introduction to the Website	Anim - Dankwa		5	4	3
8.						

Notes: (a) Level of Difficulty   (b) Relevant/Importance   (c) Style of Presentation

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

9. Overview of Marketing

10. Overview of Information Mkting | 4 | 4 | 4 |

11. Nature of Industrial and Technological Information | 4 | 4 | 4 |

12. Sources of Industrial and Technological Information | 4 | 4 | 4 |

13. Information Re packaging | 4 | 4 | 4 |

  | 4 | 4 | 4 |

14. User Needs Analysis | 4 | 4 | 4 |

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.

2. Indicate the topics you think should have been left out.

3. Do you think there was opportunity during the course to share experiences with other participants?

    Yes [ ]   No [✓]

4. Do you think the course will improve your prospects for promotion in your organisation?

    Yes [✓]   No [ ]

5. Would you have an opportunity to practice what you have learnt?

    Yes [✓]   No [ ]

6. Other Comments: Would have liked to have more practical work

WORKSHOP EVALUATION FORM

WORKSHOP TITLE. *National Advanced Tech for Globalization* WORKSHOP DATE. 25-1-99

NO	TOPIC	NAME OF LECTURER	NO OF HOURS	(a)	(b)	(c)
1	Overview of Internet appli.	Mr Domkwa	1		4	
2	Searching for Info on ntet: Search techniques	Mr Domkwa	1		4	
3	Introduction to web dev.	Mr Domkwa	1		4	
4	Website Dev. Hands on	✓	1		4	
5.	Overview of Mkt	Mr. Villows	30 min		·	4
6.	Planning of Info mkt	Alemna/Villows	1			4
7.	Tech of Info mkt	Alemna/Villows	1.30			4
8	Info repackaging	✓ ✓	1.30			4
9	User needs analysis	✓ ✓	1.30			4

Notes: (a) Level of Difficulty   (b) Relevant/Importance   (c) Style of Presentation

	Score		Score		Score
Easy	4	Very Relevant	4	Very well Presented	4
Fairly Difficult	3	Relevant	3	Good Presentation	3
Difficult	2	Fairly	2	Average	2
Too Difficult	1	Not relevant	1	Below Average	1

10. Guidelines for pricing Inform ✓✓ 1.30   4

11. INTIB-Africa Programme (UNIDO) 1.30   4

GENERAL COMMENTS

1. Indicate the topics of the course which you consider as inadequately covered.

2. Indicate the topics you think should have been left out.

3. Do you think there was opportunity during the course to share experiences with other participants?

   Yes [✓]   No [ ]

4. Do you think the course will improve your prospects for promotion in your organisation?

   Yes [✓]   No [ ]

5. Would you have an opportunity to practice what you have learnt?

   Yes [✓]   No [ ]

6. Other Comments:

The UNIDO Initiative in relation to Industrial Information System network must be consistent with the World bank EIS initiative in Ghana. This would facilitate data integration and harmon
The above contention presupposes the following:
(a) a policy document defining the scale of data collection and generation of various stakeholders
(b) Consultation of EPA representation at the seminar so that the UNIDO Initiative could benefit from World Bank Initiative (Ghana information System).

NATIONAL SEMINAR ON ADVANCED TECHNOLOGY FOR GLOBALIZING INDUSTRIAL INFORMATION 25TH – 29TH JANUARY, 1999

VENUE: INSTI CONFERENCE ROOM

MONDAY 25TH JANUARY

8:30 – 9:00	REGISTRATION	RESOURCE PERSONS
9:00 – 10:00	Opening Ceremony	
	Introduction of Chairman	
	Introduction of Resource Persons	
	Introduction of Participants	
	Briefing on Course Objectives	
	Group Photograph	
10:30 – 12:00	Introduction to Computers	Mr. Anim Dankwa/Dr. Quaynor
12:00 – 13:00	Communication Technologies	Dr. Quaynor/Mr. Anim Dankwa
13:00 – 14:00	L U N C H	
14:00 - 16:00	Introduction to the Internet	Dr. Quaynor/Mr. Anim Dankwa
16:00 – 16:30	Tea/Coffee Break	
16:30 - 17:30	Overview of Internet Applications	Mr. Anim Dankwa/Dr. Quaynor

TUESDAY 26TH JANUARY

Time	Topic	Presenter
8:30 – 10:00	Searching for Information on the Internet: Search Engines	Mr. Anim-Dankwa/Dr. Quaynor
10:00 – 10:30	Tea/Coffee Break	
10:30 – 12:00	Searching for Information on the Internet: Search Techniques	Dr. Quaynor/Anim-Dankwa
12:00 – 13:00	Search Techniques (Continued)	Mr. Anim-Dankwa/Dr. Quaynor
13:00 – 14:00	LUNCH	
14:00 – 16:00	Introduction to Website Development	Dr. Quaynor/Anim-Dankwa
16:00 – 16:30	Tea/Coffee Break	
16:30 – 17:30	Website Development (Continued)	Dr. Quaynor/Mr. Anim Dankwa

WEDNESDAY 27TH JANUARY

Time	Topic	Presenter
8:30 – 10:00	Website Development Hands-on	Mr. Anim Dankwa
10:00 – 10:30	Tea/Coffee Break	
10:30 – 12:00	Overview of Marketing	Prof. Alemna/Mr. Villars
12:00 – 13:00	Overview of Information Marketing	Prof. Alemna/Mr. Villars
13:00 – 14:00	LUNCH	
14:00 – 15:00	Nature of Industrial and Technological Information	Mr. Villars/Prof.Alemna
15:00 – 16:00	Sources of Industrial and Technological Information	Mr. Villars/Pro.Alemna
16:00 – 16:30	Tea/Coffee Break	
16:30 – 17:30	Information Services and Products	Prof. Alemna/Mr. Villars

find them on the Hard Disk, the only option left is to try and find a Floppy Disk with the files on it, so you can put them back onto your Hard Disk. In most cases, unless something seriously went wrong, your Hard Disk will always have the system files on it. Once the Computer has found these files, it will load the Operating System. Most people will use the Microsoft Windows 3.1 or 95 Operating System.

Like anybody waking up, your computer is hungry. But the computer hungers for more information. It checks to see if a bootable disk is in drive A:. If not, it looks to see if the hard disk is bootable.

A bootable disk is one that contains "system files." The basic three are MSDOS.SYS, IO.SYS and COMMAND.COM. You might have seen COMMAND.COM in the root directory of your hard disk or on an old floppy disk. The others are sometimes hidden from view. They are there, but you don't see them when you type "dir."

The computer then reads these system files. They tell it all about becoming a real computer. Once it reads these files, it knows how to run programs. Just like when you read a book, the computer puts this information in short-term memory. On a computer, this is the RAM. These are several IC chips that can hold hundreds of thousands or millions of individual bytes.

Next, the computer will look for files called AUTOEXEC.BAT and CONFIG.SYS on the bootable disk. These are special files in which the user can write instructions to tell the computer to automatically load chosen programs.

The computer has a timing crystal, which keep its thinking organized. Another timing crystal keeps track of the time and date. Most computers also have a small rechargeable battery and an IC chip that keeps track of the time even when the main power switch is turned off. This small part of the computer is always awake. This part of the BIOS system is called the CMOS, and can also contain some hardware configuration information, such as what type of hard disk you have, and whether you want the system to check to see if A: is bootable, or try the hard disk first. You can modify CMOS settings by pressing a key combination (often [DEL] or [Ctrl] + [Alt] + [S] or [F4]) when the computer first starts. Changing CMOS settings is not a good experiment unless you are really familiar with what they do. It is very possible to lose track of the settings necessary to operate the hard disk or the video system!

The timing crystal emits an electronic tick, tick, tick at a high rate of speed. The timing chip adds these ticks to the time and date. The battery keeps this going. Whenever the computer is turned on, the battery is recharged

TERMINOLOGIES

DOS

This is the DISK OPERATING SYSTEM. E.g. MS-DOS, Windows 3.1, 3.11, Windows 95, Windows NT, Windows 98, UNIX etc.

Software
A software is all or part of the programs, procedures, rules and associated documentation of a data processing system. It is an intellectual creation that is independent of the medium on which it is recorded.

Program
A sequence of instructions suitable for a computer. Usually files ending with .exe

THE INTERNET

Companies discover they can easily communicate with other companies the first time.

- Improved customer communications

- Electronic collaboration development

- Customer Support

- New Means of marketing products and services

- Online research and development

Internet Growth Dwarfs Other Models

Moore's Law ➤   (PC performance growth)

2 X every 18 months

Internet Law ➤   (Bandwidth Demand growth)

2 X every 3 – 4 Months

THE INTRANET

Large companies use Internet technology to create their own private network.

- Secure and searchable databases
- Document sharing and collaboration
- Project management coordination
- Company benefit package
- Human resource data, client profile, etc.

The Intranet

Existing Network

PC-n

PC-2

PC-1

Internet or Private
Web Server

Desktop

The
Intranet

Browser

Firewall

The
Internet

Internet Public
Web Server
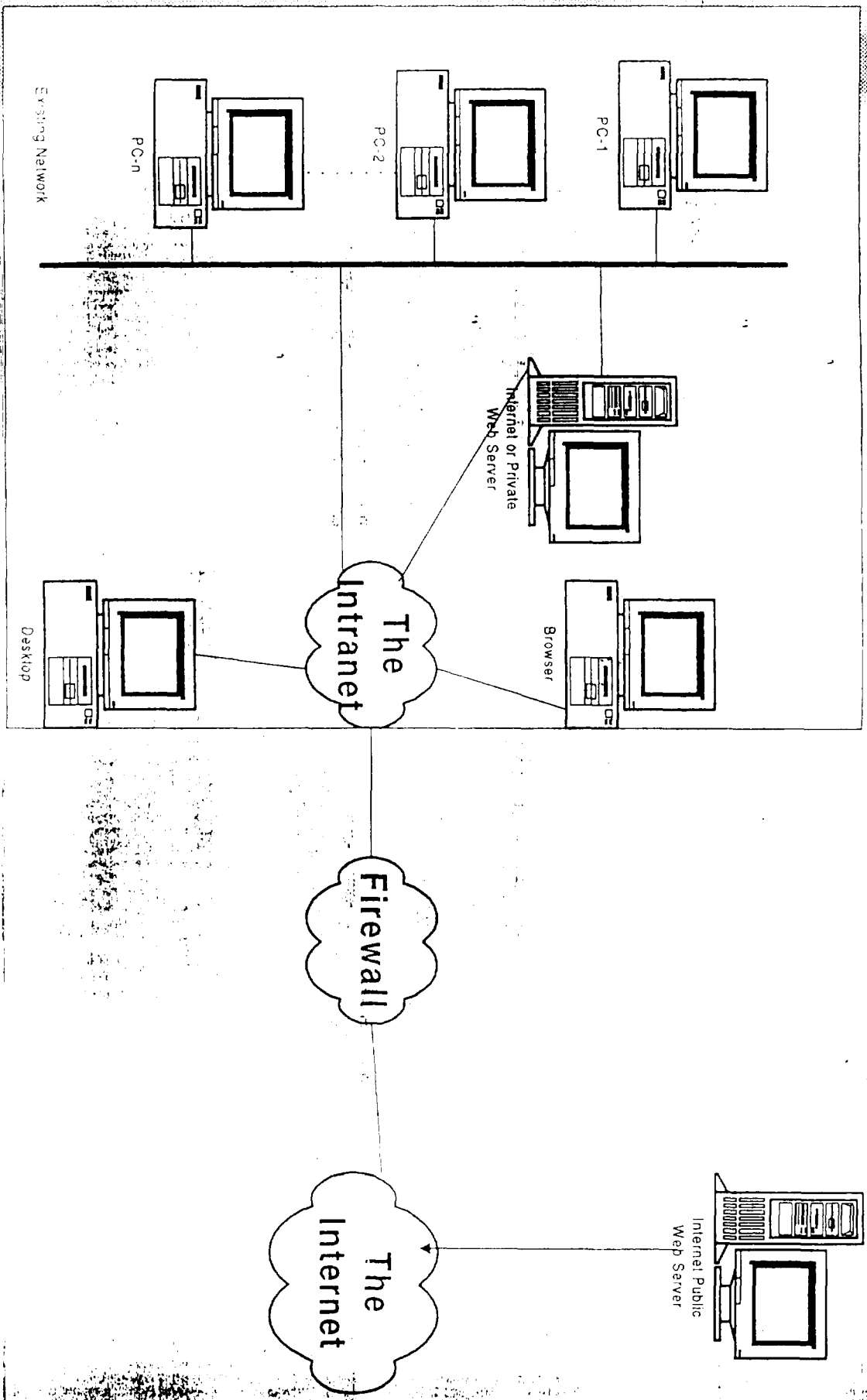
THE EXTRANET
(Extended Intranet)

Companies then created Extranets to connect remote employees, customers and business partners to the company's Intranet.

STRUCTURE OF THE INTERNET

BACKBONE

| | S | SERVER | | I | Internet Service Providers | | N | Network Access Point | | e | End User |
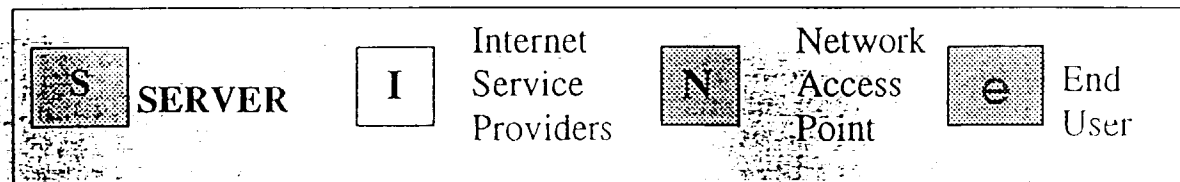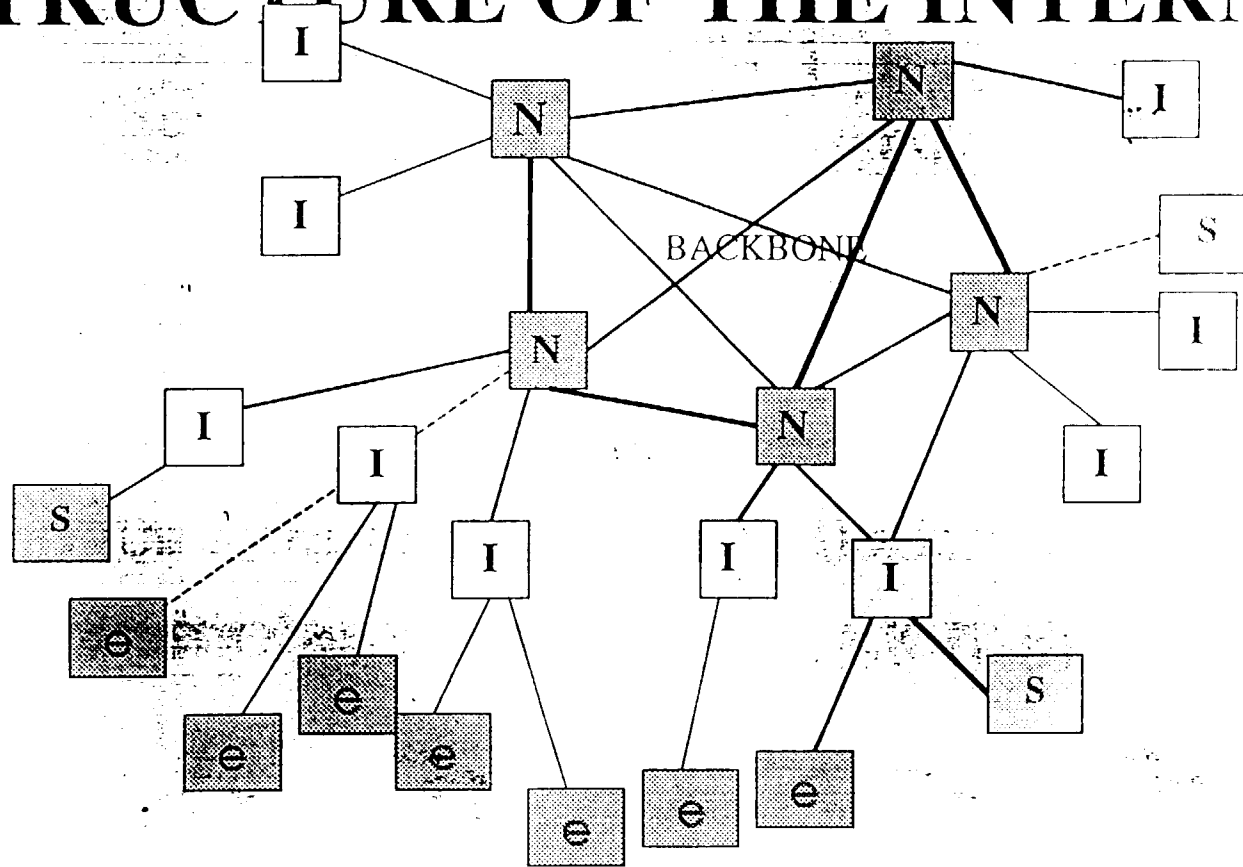
HOW THE INTERNET WORKS

- The Internet is packet switched - Model is the "Post Service" - No dedicate piece of the network - what we send is is mixed others in a pipe.

- Different pieces of Internet are connected by sets of computers called routers.

THE INTERNET

Corporate Network

Router

Telephone
lines

Regional and
National Providers

Router

Router

Router

Ethernet

Router
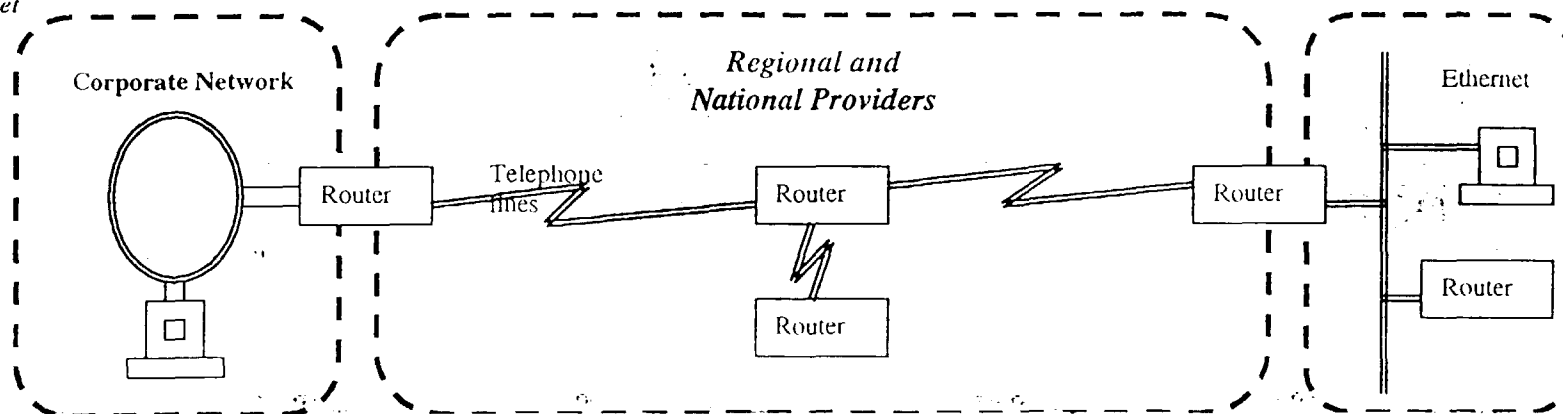
HOW THE INTERNET WORKS

- Every computer has a unique address; four numbers made up of multiple parts - the network you are a part of, and the machine.

- Ex: 192.112.36.5

- Information sent across IP network is broken in to packets usually between 1 - 1500 bytes long

HOW THE INTERNET WORKS

- The telephone lines, ethernets etc are the equivalent of planes, trucks in the postal system

- The routers are like the postal stations that make decisions about how to route packets.

- Internet Protocol (IP) takes care of addressing and making sure router know what to do with packets when they arrive.

HOW THE INTERNET WORKS

- All Networks, using the IP Protocol that cooperates to form seamless network for collective users.
- Internet is governed by a council - there is no president, chief operating officer etc., - ultimate authority rest with Internet Society

HOW THE INTERNET WORKS

- (ISOC) - a voluntary membership organization that appoints council of elders called Internet Architecture Board (IAB) - standards oriented .
- Users express view through meeting of the Internet Engineering Task Force which forms working group for operation issues.

HOW THE INTERNET WORKS
Problems with IP
Only

- Information to be transferred is usually larger than 1500 bytes

- Things go wrong - loss of packets get damage in transit

- Packets may arrive out of sequence

- Transmission Control Protocol (TCP) solves these problems

THE TRANSMISSION CONTROL PROTOCOL

- Protocol used to get around Multi -packet Data, Error Handing and sequencing.

- TCP takes information to be transmitted , breaks them into pieces, number each peace and sends

- To pass the sequence number TCP has an envelope and information written on it. This is placed in an IP envelope.

TCP PACKET ENCAPSULATION

•On receiving side TCP collects the envelopes extracts the data and puts it in proper order. If some is missing it asks the sender to retransmit.

•Glitches on telephone lines damage data in transit.

•Checksum are used to handle problem

TCP PACKET ENCAPSULATION

•As data is put in envelop, checksum is calculated and transmitted. Receive TCP calculates what checksum should be and compare what sent by transmitter.

What is the Internet?

- It is IT, It's **Client/Server** Implementation

- Internetworking of Networks --TCP/IP.

- Union of:**Telecommunications,** TV/Media, Computing, and Applications

- **New** Applications Everyday

Overview

ATTRIBUTES	TELECOM	INTERNET
Dominant Function	Voice	Multimedia
Provisioning/Setup	Circuit/Switching	Packet Switching
Terminal Equipment	PABX, Phone Sets	Computers, Networks
System Equipment	Cross Bar Switches	Router
Circuits	Physical	Virtual
Traffic	Short Duration & Symmetric	Long Duration & Asymmetric

Introduction to the Internet
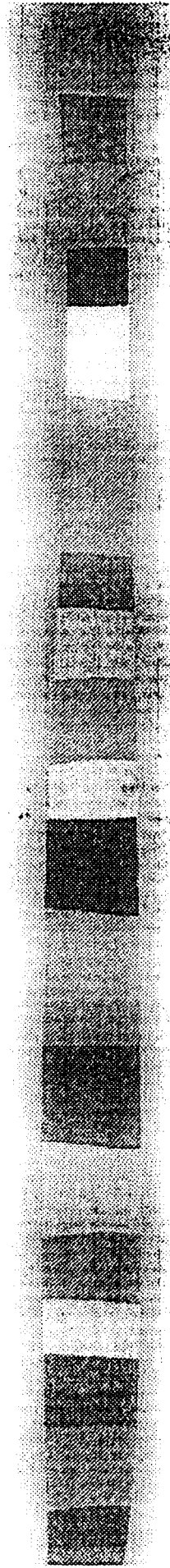
by
William Tevie

tevie@ghana.com

Agenda

- Overview

- What is the Internet, Intranet, Extranet?

- How Does the Internet Work?

- Naming System on the Internet

Satellite Earth Stations

- Point To Point
- High Band width
- Runs most protocols
- Used in areas with no land lines
- High latency ~600ms
- e.g. Ghana, Uganda Togo, Costa Rica
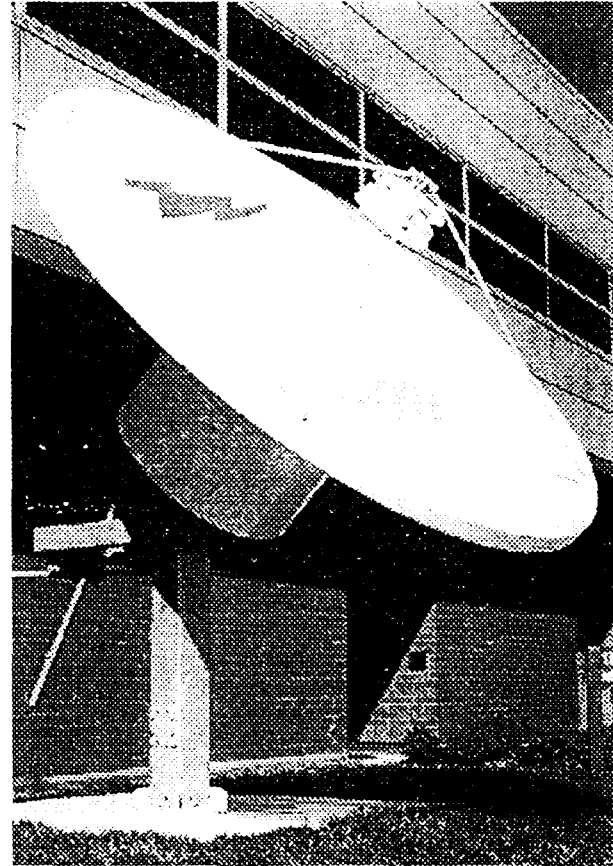
Packet Radio

- Uses radio to achieve connectivity in remote areas.
- Uses VHf UHF
- Speeds quite Slow 2400 - 9600
- Can send email and fax
- distance of over 500 km
- Codan, Paktel
- www.codan.com.au

Enhanced
TDMA

Hub Station

TDM

TCP/IP

Router

PC

RFT

(Baseband)

Modulators   Receivers

HSP

Host

CPU Cage

Tx-ODU   LNB

Host   FEP

SDLC

HPP   HVP

TV

PC

SNA/TR

SSA

PC

NMS

Token-Ring

PC

Host

PSTN

Host
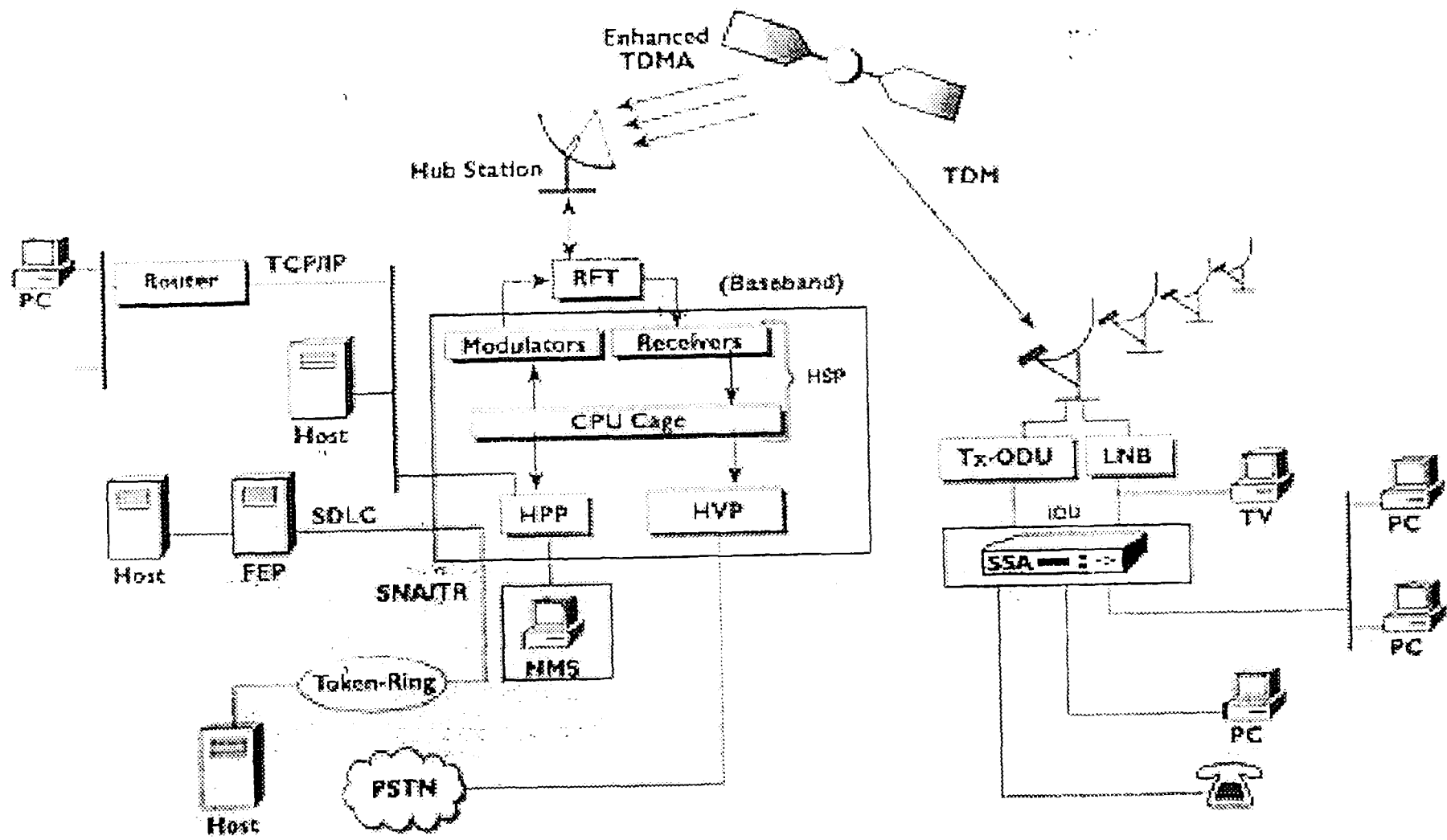
ISDN

- **Integrated Services Digital Network**

  - Consists of Three channels

  - 16kb/s signalling Channel D channel Delta Channel

  - 2 64kb/s data channels B channel Bearer Channel

  - You Can combine 2 B channels to provide 128 kb/s connection

Basic Rate Access (BRI)

- 2B + D

- S0 interface
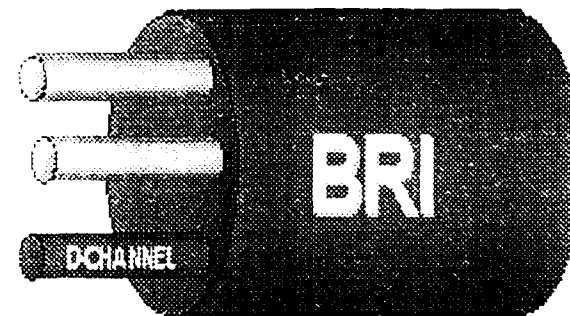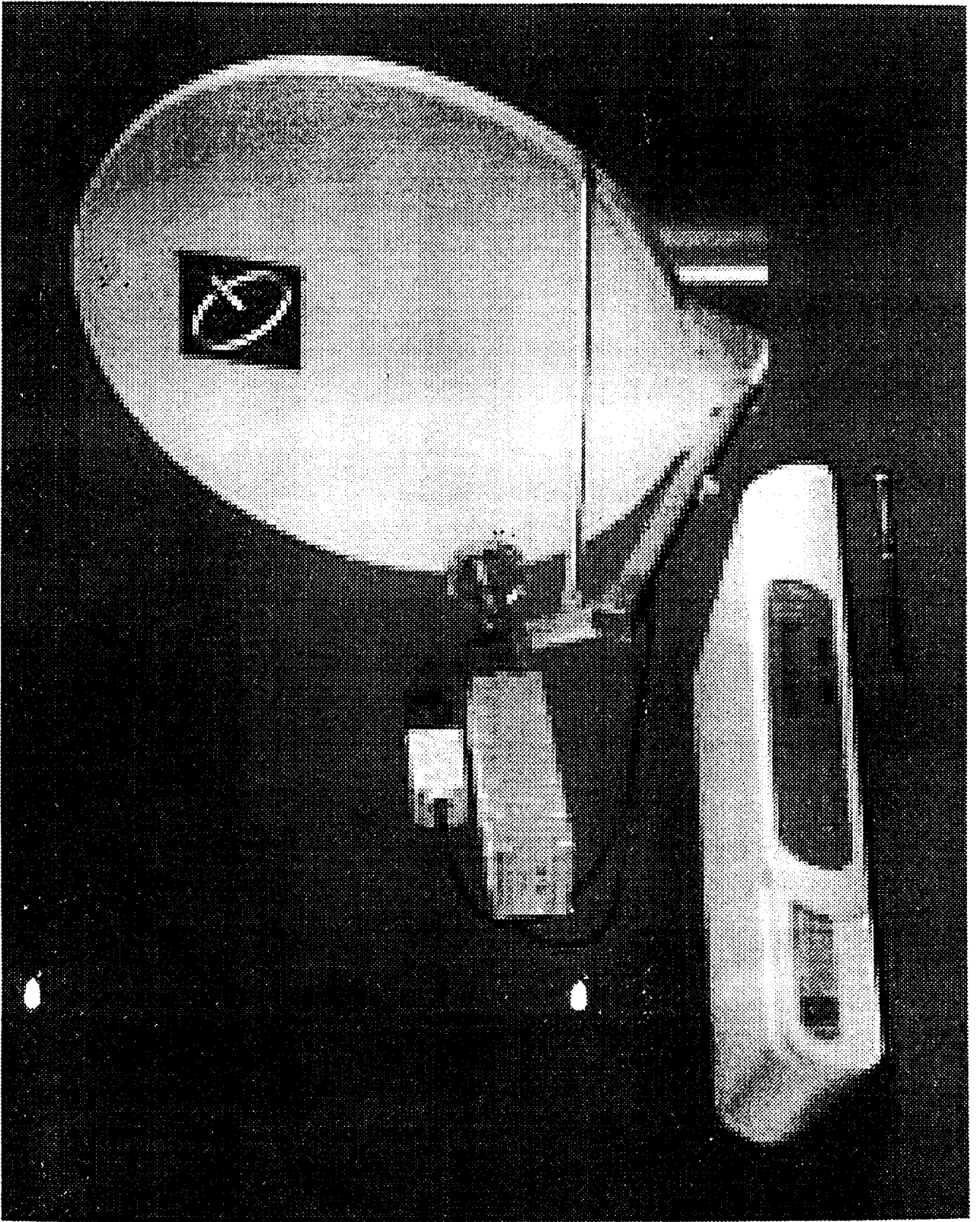
VSAT

- Very SmallAperture Terminal.
- For Connecting very remote locations.
- Connects to a central Hub.
- Achieves High speeds
- High Latency 500ms - 1000 ms
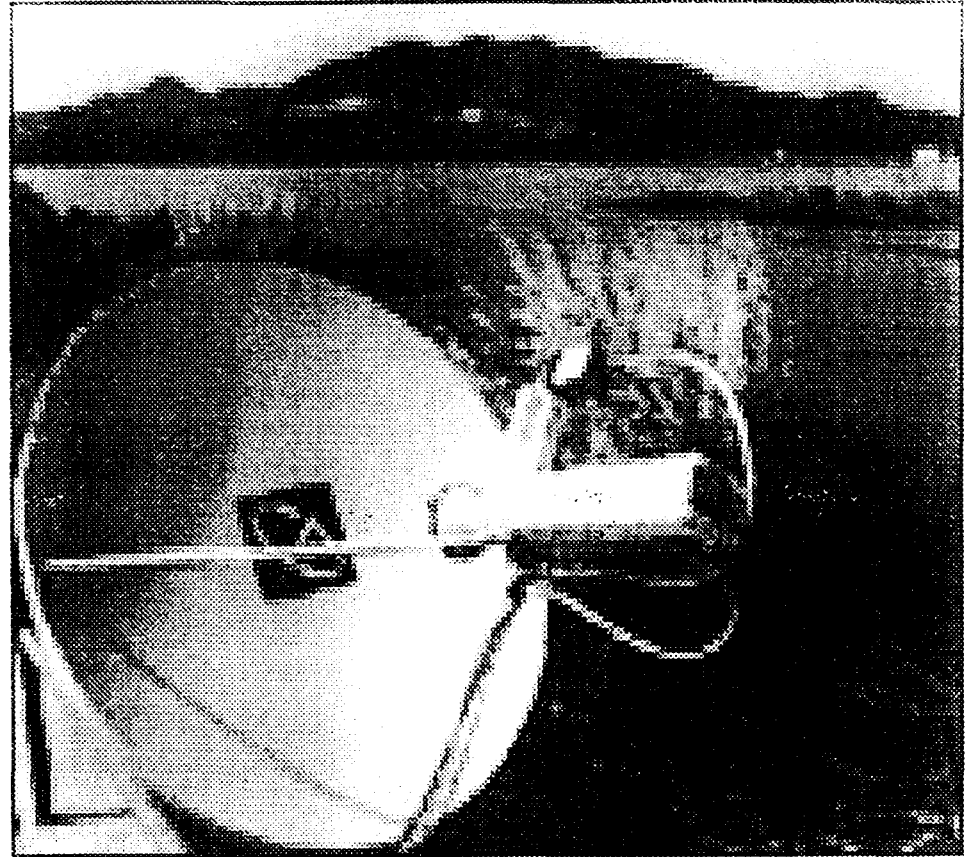
xDSL

- DSL Digital Subscriber line, The miracle of modern electronics that allows high speed data rates over unconditioned copper telephone lines

- xDSL Global reference to different types of DSL

What Is xDSL?

POTS | ADSL

0 Hz   4400 Hz   1 MHz
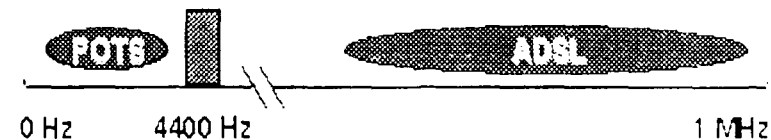
New transmission techniques that drive high data rates over a telephone line's higher frequencies, often without disrupting POTS
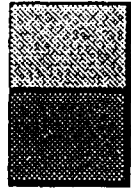
Generic xDSL Implementation

Central Office

Telephone Switch

Remote Location

POTS

xDSL Modem

xDSL Modem

Corporation or ISP

Data Network

Splitter

Single Pair Telephone Line
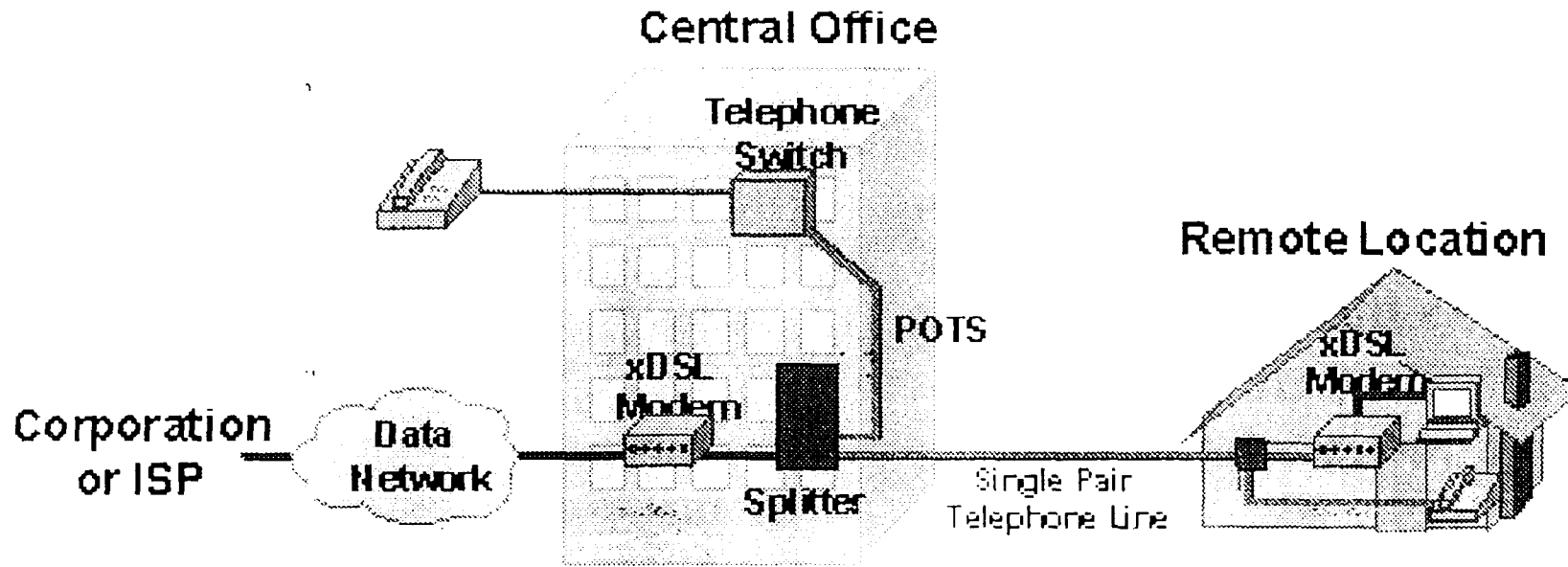
An access solution: connects remote user to central office as a dedicated circuit

ATM

- Each Cell is 53 bytes long - 48 bytes of data plus 5-byte header

- Used in Large Distributed networks speeds up to 622 MB

- Uses Virtual Circuits

Creating Cells from Packets

Packet	Dest. Address	Source Address	Data	Frame Check

Cells: Header | Payload

Header | Payload

Header | Payload

Header | Payload

53 Bytes

5 Byte Header

48 Byte Payload

ATM Cell

Cisco Systems

Cisco Systems Confidential
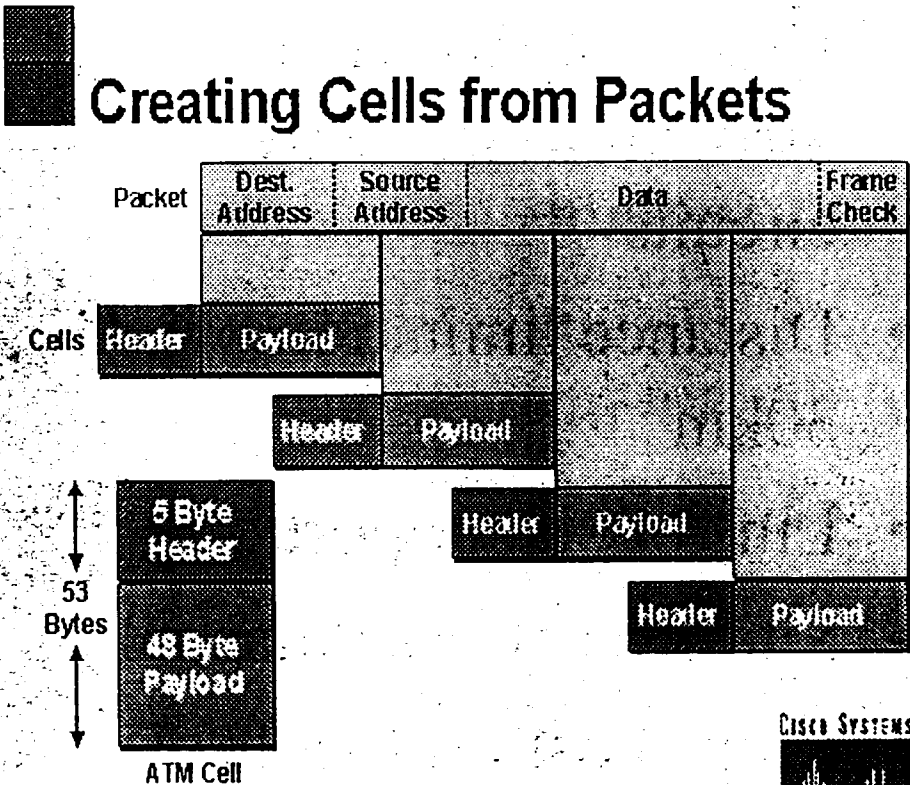
Wireless Radio

- Used in areas where difficult to get leased circuits
- Distance limitation of 30km
- Line of site important
- Site Survey essential
- Runs most Protocols
- Breezecom, Cylink

DLCI 22

DLCI 21

DLCI 12

DLCI 11

DLCI 10

DLCI 20
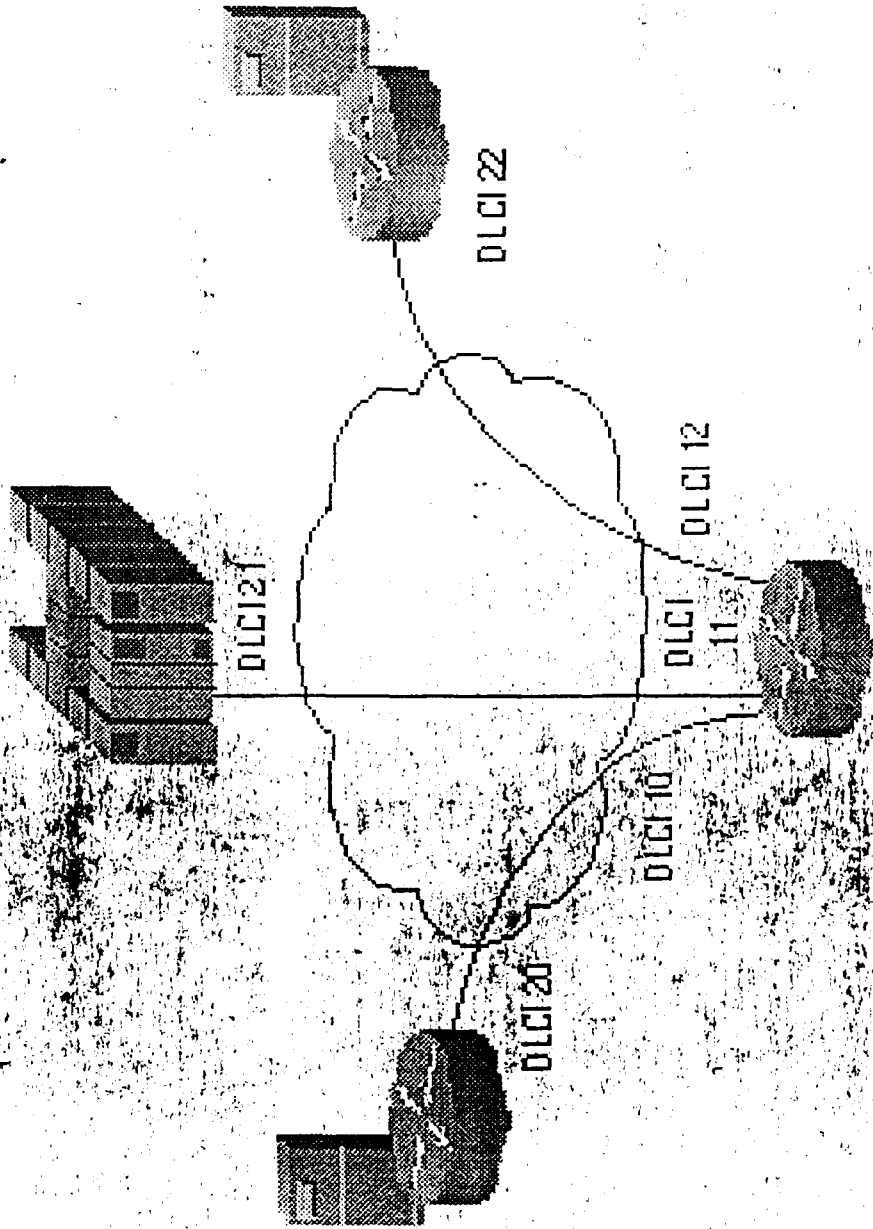
ATM

- **Asynchronous Transfer Mode**

- uses small fixed size cells

- connection-oriented

- supports multiple service types

- Applicable to LAN and WAN

Characteristics of ATM

Voice

Data

Video
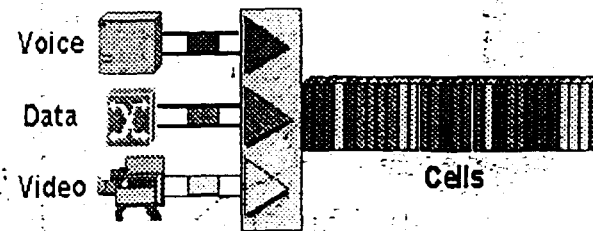
Cells

- Uses small, fixed-sized cells
- Connection-oriented
- Supports multiple service types
- Applicable to LAN and WAN

Cisco Systems

Cisco Systems Confidential

Frame Relay

- Frame Relay is a packet switched link layer wide area networking protocol
- End Points are virtual
- Each frame relay link organised as a permanent virtual circuits
- Speeds up to 2mb/s
- DS3 speeds coming up.

Application		Application
Presentation		Presentation
Session		Session
Transport		Transport
Network		Network
Data Link		Data Link
Physical		Physical

End User   Frame Relay Access Equipment   Frame Relay Switch   Frame Relay Network   Frame Relay Switch   Frame Relay Access Equipment   Host
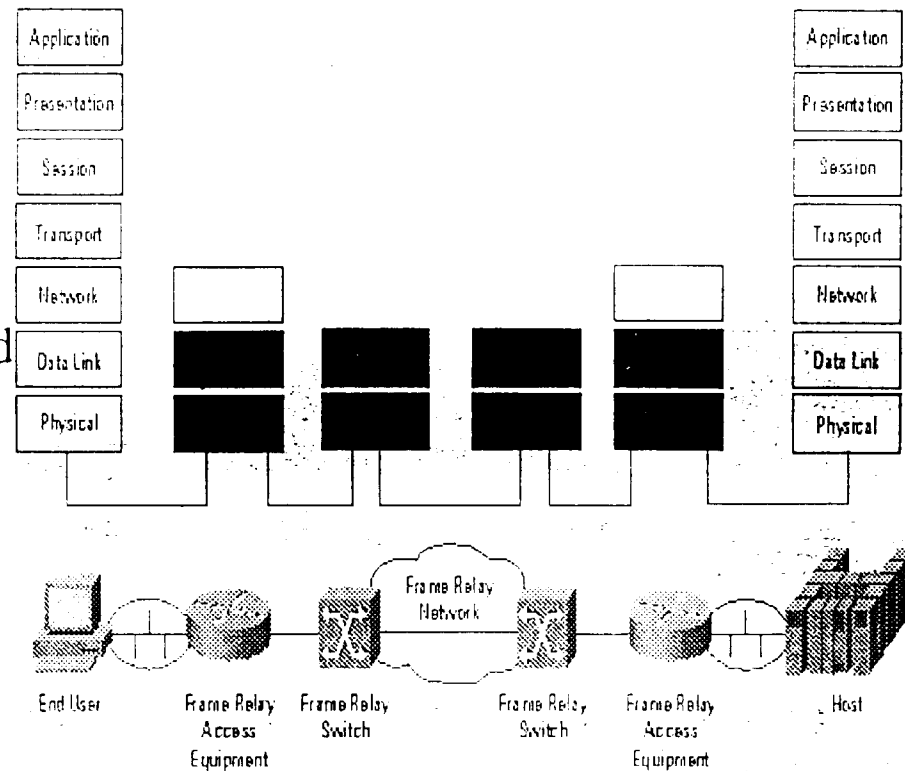
PERMANENT VIRTUAL CIRCUIT PVC

DLCI
#2
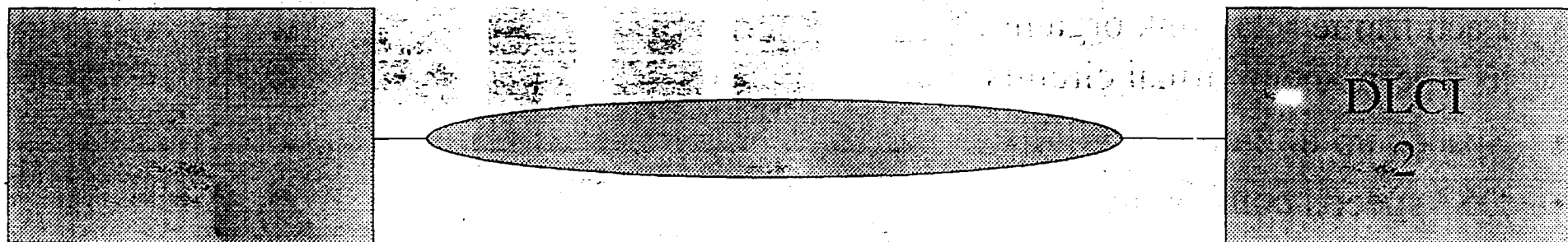
THE PAIR DCLI#1 AND DCLI#2, DESCRIBE A PVC, DCLI VALUES
CAN RANGE FROM 16 TO 991

T3

- T3 link also carries TDM data
- 672 64 kb/s channels
- Bandwidth of 43.008 mbit
- Need an multiplexor for moving data across link
- Connection across link is a variety of technologies
- Fiber optics
- Microwave or Coax
- cost is normally 4to 6 times cost of a T! circuit for 30 times raw performance

- Aggregation of Channels
- 670 DS0 channels
- 28 DS1 Channels
- 7 DS2 Channels
- 1 DS3 Channels

T1 Lines

- **Handful of DS0 64kb/s circuits**

- **24 TDM 64Kb/s channels over a 4 wire copper circuit- 1.536Mb/s**

- **E1 32 64kb/s channels totalling 2.048Mb/s**

- **connects through a CSU/DSU**

- T1 circuit

Rj-48   V.35

Demarc   Csu/dsu   router

LAN
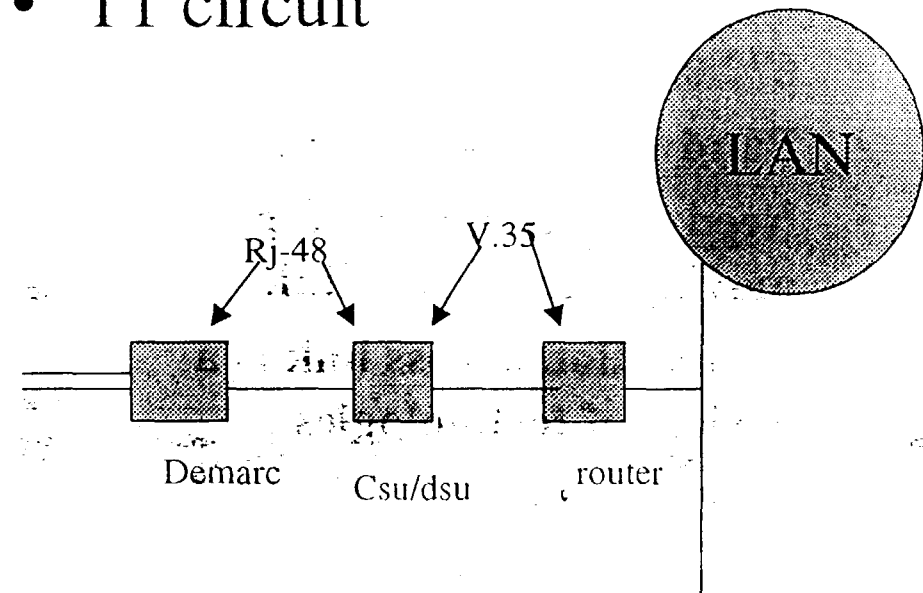
Different Connection Types

- Point to Point media

- Broadcast media

- Wireless media

- Non Broadcast media

Leased Lines

- **Dedicated Point to Point**

- **9.6 to 2mb**

- **Normaly provided by the Telco**

- **Need to have CSU/DSU interfacing to router**

- **For low speed connections you need a 4 wire leased line modem**
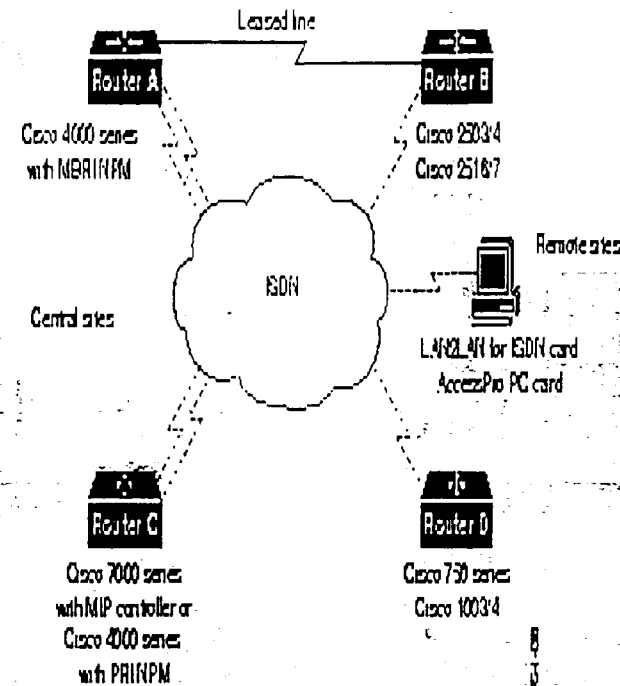
MEDIA TYPES

WILLIAM TEVIE

TEVIE@GHANA.COM

Different Media Types

- LEASED CIRCUITS
- FRAME RELAY
- ATM
- WIRELESS RADIO
- VSATS
- SATELITE EARTH STATIONS
- xDSL

BASIC INTERNET APPLICATIONS

By

William Anim Dankwa

Presented at the

National Seminar On Advanced Technology for Globalizing Industrial Information, INSTI

25TH-30TH January 1999

THURSDAY 28TH JANUARY

8:30 - 10:00	Techniques of Information Maketing	Mr. Villars/Prof. Alemna
10:00 - 10:30	Tea/Coffee Break	
10:30 - 12:00	Information Repackaing	Mr. Villars/Prof. Alemna
12:00 - 13:00	L U N C H	
13:00 - 14:30	User Needs Analysis	Prof. Alemna/Mr. Villars
14:30 - 16:00	Guidelines for Pricing Information Services	Mr. Villars/Prof Alemna
16:00 - 16:30	Tea/Coffee Break	
16:30 - 18:00	INTIB-AFRICA Programme	UNIDO CONSULTANT

FRIDAY 29TH JANUARY

8:30 - 10:00	IRMS Plus Package	UNIDO CONSULTANT
10:00 - 10:30	Tea/Coffee Break	
10:30 - 12:00	IRMS Plus Package	UNIDO CONSULTANT
12:00 - 13:00	L U N C H	
13:00 - 15:00	Development of UNIDO/Ghana Website	UNIDO CONSULTANT/ Mr. Anim Dankwa
15:00 - 15:30	Tea/Coffee Break	
15:30 - 16:30	Questions, Discussions and Evaluation	All Resource Persons
16:30 - 17:00	Closing Ceremony	
17:00 - 17:30	Cocktail	

INTRODUCTION TO COMPUTERS

By William Anim Dankwa

Presented at the

National Seminar on Advanced Technology for Globalization Industrial
Information, INSTI, CSIR
25-30 January 1999

Computer Evolution Characteristics

User Interface (UI)
- how we interact with a computer
- UI has improved in each stage
- examples from each stage still exist

1st Stage - Batch Processing

- developed in early 60's
- **User Interface** - punched cards
- jobs were run sequentially (batched)
- computers were large, expensive, not very powerful
- paychecks and bills still generated by this process

2nd Stage - Time Sharing

- established in 70's
- **User Interface** - command line
- terminals connected to central computer
- several users work simultaneously
- airlines and insurance companies still use time sharing

Introduction to Computers

History & Overview

- computer usage evolution
- computer essentials
- hardware components
- software components
- types of computers

4 Stages of Computer Usage

- Stage 1 - batch processing
- Stage 2 - time sharing
- Stage 3 - personal computing
- Stage 4 - networked and mobile computing

Computer Essentials Analogy

- underlying processes of cooking
  - groceries gathered by cook
  - food is processed (chopped, sliced, cooked, frozen)
  - meal is result

Hardware Components

- 4 different types of hardware
  - input devices
  - central processing unit (CPU)
  - storage devices
  - output devices

Input Devices

- convert data into electrical impulses
- keyboard
- mouse
- camera, pen, voice

3rd Stage - Personal Computing

- evolved in 80's
- **User Interface** - GUI (graphical user interface)
- computers are smaller, cheaper, and more powerful
- spread to schools and home

4th Stage - Networked & Mobile Computing

- developed in 90's
- **User Interface** - GUI and voice activated
- several computers linked to share resources
- or, portable computers that link remotely
- Information on demand regardless of time or place

Computer Essentials

- underlying processes of computing
  - raw data input to computer
  - data is processed
  - information is result

Software Components

- Instructions used by computer
- application software
  - word processing
  - spreadsheet
  - graphics
- system software

Applications Software

- programs that perform practical tasks
- word processing
- spreadsheets
- data management
- graphics
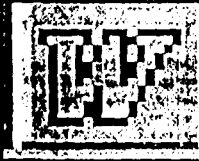
Word Processing

- turns computer into a powerful typewriter
- spell and grammar check
- create professional looking documents

Central Processing Unit

- brains of the computer
- microprocessor chip
- speed and power determined by the chip

Storage Devices
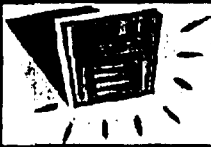
- hard drive
- floppy disks
- where data is stored

Output Devices

- where results are displayed in understandable form
- monitors
- printers

System Software

- operating system
  - programs that run the computer itself
- programming languages
  - create specialized applications

Operating System Software

- controls all devices attached to computer
- manages files and programs
- "air traffic controller" of the computer
- User Interface determines how easy it is to use

Operating System Software

- DOS (Disk Operating System)
  - commands typed into computer
- Windows or Mac
  - Graphical User Interface (GUI)
  - point and click to give commands

Spreadsheets

- turns computer into powerful adding machine
- formulas analyze budgets
- create charts and graphs

Data Management

- turns computer into powerful filing cabinet
- data can be sorted for best purpose
- create useful lists
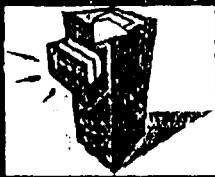
Graphics

- turns computer into powerful drawing machine
- images can be digitized
- create attractive publications

Programming Languages

- BASIC
- COBOL
- C++
- create specialized applications

Types of Computers

- microcomputers
- minicomputers
- mainframe computers
- supercomputers

Microcomputers

- built around single microprocessor chip
- least expensive and most prolific
- chip can be embedded in devices
  - one specific use only
  - for example, microwaves, calculators, toys, etc.

Programming Languages

- BASIC
- COBOL
- C++
- create specialized applications

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  - for example, microwaves, calculators, toys, etc.

Supercomputers

- very expensive and powerful
- used when extensive analysis and calculations required
- found in large research universities, space program, etc.

On to Input and Output...

Topic : INTRODUCTION TO COMPUTERS

Objective : This module introduces participants to the use of computers. It is expected that
At the end of the lecture, participants should be able to appreciate the use of
Computers and to identify essential parts

Duration : 1hr 30 mins

Instructor : William Anim Dankwa

What is a Computer?

A Computer is a tool that people use to achieve a goal, just like any other tool that we use for example
a hammer to knock in nails. A Computer in its simplest form is a box full of switches. These switches
can have two possible states, On or Off. That is why a Computer is known as a 'Two State Electronic
Device'. Most people assume that Computers are intelligent, but this is not true. Computers are really
thick, they can't do anything without being told to do so, and when a Computer does something wrong,
it is not usually the Computer that is wrong but either the person using the Computer or the person who
programmed the software.

Types of Computers

There are two basic categories of computers, special-purpose and general purpose. Special-purpose
computers are preprogrammed to perform a specific task, such as injecting fuel in an automobile engine,
keeping time in a digital watch, or programming a videocassette recorder. General-purpose computers can
be adapted to perform any number of functions. Most computers you have read about are general-purpose
computers.

Computers come in four main sizes:

1. Supercomputers
2. Mainframes
3. Minicomputers
4. Microcomputers

Supercomputers are the largest and fastest. They are used for large projects such as national or global
weather forecasting, satellite tracking etc.

Mainframe computers are very powerful and can be as large as an entire room. They are used, for example, by banks to keep track of millions of checks and deposits, by airlines to schedule thousands of flights and make seat reservations, and by governments to keep track of their citizens.

Mainframes usually have terminals connected to them. A terminal consists of a monitor and keyboard that allow a person to enter information and retrieve it from the computer. Minicomputers are smaller and sometimes used in medium-size companies to run their manufacturing plants or keep track of inventories. They also have terminals attached to them. Microcomputers or personal computers are the smallest computers, designed to be used by individuals for writing, illustrating, budgeting, playing games, and communicating with other computers.

Parts of a Computer?

A Computer has three main parts:

The Input devices
Usually a keyboard, a mouse, scanners, Barcode Readers, Digital Cameras.

Output devices
Usually a Monitor (sometimes known as a VDU, Visual Display Unit), a Printer, video and Speakers.

Processing unit.
The Processing Unit contains other devices that make the Computer work. There are three main parts of the Processing Unit these are.

Central Processing Unit

The CPU is the brain of the Computer. There are various types of CPU, the most common one people will know is the Intel Pentium Processor. The speed of a CPU is measured in Megahertz or MHz for short. The faster the MHz the faster you can run things on your Computer.

Memory

The Memory inside a Computer is what the CPU uses as a work area. The more memory the Computer has, the more it can do in a shorter time. When the Computer uses up all its memory, sometimes it can not do the task asked of it. In other cases if it runs out of memory, it will start to use the space on the Hard Disk. This area on the Hard Disk is called a 'swapfile', the Computer copies data onto the disk that it is not using at that time. This makes room for more data that it requires, then it copies it to and from the Computer memory and the disk drive, and this has the effect of virtually giving the Computer more memory that it really has. This is why it gets the name 'swapfile' Unfortunately if the Computer uses the swapfile a lot, it can severely reduce the speed in which the task could be achieved, because real memory is much faster than using the swapfile. You may notice while you are using your Computer, that the disk drive suddenly starts to come on and off, what is happening is the Computer is either writing data to the swapfile, or it is cleaning up data from the swapfile it no longer needs.

Disk Drives

The computer loads a program from a disk into the RAM. Hard disks usually spin at 3600 or more revolutions per minute and floppies run at 300 RPM. The hard disk can hold more information than a floppy, and give it to you much faster, but their principal of operation is the same.

The surfaces of a disk are coated or plated with a magnetic metal. A small recording head is placed very near each surface. The head can be moved in and out along the radius of the disk, so that it can read or write along any of many tracks, called cylinders.

Tape Cartridge

This also appears in some computers. It involves the use of magnetic tapes for the storage of Data.

System Software:

This applies to software that is application independent. E.g. operating systems.

Application software
This is work specific software used on computers. They are normally based on occupations. E.g. Spreadsheet, word processing (Word Perfect, Word, Coral Draw)

Use of computers

Sometimes computers are used as stand-alone or Network. Network computers involve Client and Server relationships, which helps in the sharing of information and speeds up printing and retrieval at all terminals.

What does my Computer do when I switch it on?

When you switch your Computer on, the Computer does a check of all the components that are connected to it, to see if they are all working correctly. As we said before, Computers are thick, and don't do anything until they are told to. So how does the Computer know when to check itself? Well the Computer has a microchip that lives inside the Computer that tells it how to talk to the devices connected to it, this microchip also tells the Computer to check all the devices when it is first started up. This microchip is called the BIOS. BIOS stands for Basic Input Output System.

The BIOS checks the following components when it is first started up:

Memory

The BIOS checks to see if all the memory in the Computer is working correctly. On some systems you can visually see this on the monitor. It looks like the Computer is counting, and that is exactly what it is doing, it is counting the number of bytes (the smallest measurable part of a Computers memory) to see if it all adds up correctly.

Keyboard

The BIOS then checks to see if you have a keyboard connected and working. On some systems you may see the 'NUM Lock' light come one.

Disk Drives

The BIOS then checks to see if you have a Floppy and a Hard Disk drive connected.

If they are working it then checks the Floppy Disk to see if there is a disk inserted in it. If there is then in some systems the Computer then tries to 'Boot' from your floppy disk drive. If the Computer does try to boot from the Floppy Disk, it expects to find a disk that has system files on it (files that tell the Computer how to load the operating system). If it does not find these files on the disk, it will give an error message like 'Non System Disk Inserted, Replace and Strike a Key'. What this tells you to do is to either replace the disk with a disk that has the system files on it or just remove the disk and press a key. If you remove the disk and press a key, the Computer then checks your Hard Disk for the system files. If it can not

If you move a magnet past a wire, an electric current is generated. This is also how disks work. Spots on the disks are magnetized, representing bits of bytes. As the disk spins by a small coil in the head, as the spots pass, spikes of electricity are produced. These spikes are translated into bytes and passed to the CPU and the RAM.

If you run a current through a wire near a ferrous metal, the metal will become magnetized. This is how writing to a disk is done. As the disk turns past the coil in the head, the coil is energized every time an "on" bit is to be written to the disk, resulting in a magnetized spot. The switching on and off of the electricity flowing through the head is very fast.

These are both called "floppies" although the one on the right is rock hard. The reason is that the one on the right has a floppy disk inside the case.

There are three main types of disk drives on most modern Computers.
They are as follows:

Floppy Disks

There are two main types. These are 3.5 in. $(3\frac{1}{2})$ and $5\frac{1}{4}$. Floppy Disks are known as 'removable media'. This is because the disk can be removed easily, and transported to another Computer, the downside to a Floppy Disk is that the storage space is quite limited, usually 1.44 or 1.1 megabytes.

The Hard Disk

The Hard Disk is known as 'permanent media'. The Hard Drive lives inside your Computer and you are not meant to remove it and place it in another Computer. The Hard Drive has many advantages over its Floppy counterpart, these are in the speed it can save and read data, and on the size of storage space, the average Hard Disk today is around 1.2 Gigabytes, almost 1000 times greater than a Floppy.

CD-ROM

CD-ROMs are a little bit different than floppy and hard disks. Instead of electromagnetism, they use a laser to reflect light off microscopic pits embedded in the disks. When a pit swings by, the light is reflected to an electric eye. Where there is no pit, the light is not reflected. DVD-ROMs store more data. They can do it by having smaller pits, using two levels of pits, one under a translucent surface containing the other layer, and in some cases, by storing data on both sides of the disk.

A CD-ROM is known as 'removable media' just like the Floppy Disk. However, the CD-ROM Disc can store up to 650 megabytes on one CD as opposed to 1.44 on a single Floppy Disk. The CD-ROM is much faster to use than a Floppy Disk, and it has many more uses. Today you can get whole encyclopaedias, interactive games and videos on CD-ROM. The only downside to a CD-ROM is that on standard Computer systems, the CD-ROM is known as 'read only'. This means that you can not store files on the CD-ROM, but you can use the files on it, or copy the files to another type of media such as your Hard Disk. However it is now possible to purchase as an extra, a CD-ROM Drive that can write to the disc, these are known as 'CD-ROM Writers'. Depending on the type of drive you buy, you may only write to the CD-ROM once, or if you were to buy the newer 'CD-ROM Re-Writer' you could write to it in excess of 1000 times.

Introduction

The internet has become a very important communication tool. It has actually made the world a global village. It has removed many frontiers in the movement of data, materials and softwares and it is making learning, teaching, business and commerce very exciting and challenging. The internet stores a vast array of information covering a wide range of subjects and interests.

The internet employs some basic services and these are discussed below.

TELNET

Telnet is an Internet application used for logging into other computers on the Internet. It is used to access lots of public services including library card catalogs and other kinds of Databases. Simply, it enables you sit at a keyboard connected to one computer and log on to a remote computer across the network. Once connected it takes you to a computer as if you are siting in front of that remote computer. The simplest way to telnet is to type.

telnet remote computer- name

at the command prompt.

Telnet performs the following for you when you type the command:

- Create a TCP network connection with a server
- Accept input from you in a convenient manner
- Reformat the input to a standard format and send it to a server
- Accept output from the server in a standard format
- Reformat that output for display to you

Telnet commands can be accessed by typing "?"

They include.   Close
                 Display
                 Mode
                 Open
                 Quit
                 Send
                 Set
                 Status
                 Toggle
                 Z

Example of some telnet sites: **sonne.uiuc.edu, madlab.sprl.umich.edu 3000**
Vmd.cso.uiuc.edu

Files Transfer Protocol (FTP)

FTP is a protocol that facilitates files transfer. Its job is to move files from one computer into another. The distant between the two computers does not matter. In the same way, how they are connected or the software they use are or irrelevant provided they can talk or have access to the internet.

FTP helps you to move software, databases, and archives. There are two ways of doing an FTP. It can be done on remote hosts on which there are password or accounts as well as anonymous sites. In simple terms there are those computers on which you need passwords and those, which you need no password to access.

The basic command is **ftp remote-machine-name.**

The common problems with FTP include;
Mistakes in the typing of passwords
Lack of precise information on directories of files needed

The FTP commands are just like the Telnet commands
ls
dir
get
close   to quit from one machine and to get to the command prompt

Commands are mostly UNIX based. Sometimes you can use commands to pick multiple files. These include; **mput, mget** in a syntax ftp> mput list of files
                                             Mget list of files

Anonymous FTP helps you to bypass the problem of passwords. It normally uses the login anonymous with your e-mail address as your password.

ELECTRONIC MAIL

Electronic mail goes by its name. It is faster and a cheaper medium for sending and receiving memos, information and importantly feedback. Email can best be judged by, its speed, informality, accountability, and conferencing

Electronic mail can both be direct and also store and forward. The direct e-mail is terminal to terminal whilst the store and forward is usually to a post office in one computer. You need to call into it before you can read your mail

E-mail is address dependent just like an ordinary snail mail (Postal System). It is addressed to a person not to the machine. The addressing and final delivery is done by the last machine on the line and this is normally the account holder or in today's parlance the Internet Service Provider

The addresses for email depend on the program being used and the network it belongs. The address syntax is normally;

Name or alias @ (organization) (ISP) Region and or country
e.g. jsmith@uiuc.edu
        james@tanus.co.au
        quarcooa@news.com.au
        jsky@nyu.edu

In the United States suffixes of e-mail addresses are mainly
.edu
.com
.mil
.org

Outside the US most addresses end with the country codes for eg.

gh for Ghana
za for South Africa
.au for Australia
.uk for United Kingdom
.pe for peru and
ca for Canada

Some networks have different ways of assigning addresses. Let us look at a few examples:

Compuserve   -   76543.123@compuserve.com
Amercan Online   -   mkd@aol.com
Bitnet   -   *krol@uiucvmd.bitnet
Fidonet   -   wmatin@p3.f2.n5.z1.fidonet.org

Electronic mail addresses are not just chosen. The prefix ie before the @ sign is the only one that can be chosen by the user. The service provider assigns the other part. This is because the address should tally with the machine number being used. In most cases a password is required to pick up mails and to prevent mails from going astray. Unix systems are password specific.

In choosing the e-mail program the decision should be with ease of accessing as well as compatibility with the service provider

E-mail Programs

There is now a store of e-mail programs to choose from:
UNIX mail.
Pine
Elm
Pegasus mail
Eudora
Microsoft Messaging
Browser Mails

Online E-mail hosts
Hotmail
Eudoramail
Yahoo
CNN
CNNSI
Ghanamail

Basic Features

Almost all e-mail programs have some basic features. These include:

TO.
(FROM)
CC.
BCC:
(FCC):
SUBJECT:

The menus are word processing based except that some of the programs are text based and therefore do not have fonts, underline, bold etc. The following are similar in all of them;
Compose
Folders
Inbox
Addresses

Help
Quit

Returned Mails
Mails are likely to be returned if the addresses are not properly done. Normally the mails come with the message "Host Unknown". The addresses are almost mechanical and therefore a little error renders it "not known" This happens when the service providers section of the address is not properly done. In certain cases it "User unknown" when the users alias or name is not correctly spelt. For example when John is spelt John

USENET NEWS

Usenet news lets you read and post messages to that have been sent to public Newsgroups or bulletin Boards or discussion groups. Usenet is the world largest bulletin board service.

Various discussion groups are on the internet classified under the following:

*	comp	-	computers
*	news	-	news network/news software
*	rec	-	hobbies recreationals and the arts
*	sci	-	scientific research
*	soc	-	social issues
*	talk	-	debates
*	misc	-	other issues

These kinds of information are on various servers with further breakdowns of the groups discussed above. The important servers run programs called **majordomo**

Various programs are used on the net There are newsreader programs in Unix and on any modern browser

To become a member one will have to subscribe to the group. The subscriptions in most cases are free and involve sending an e-mail with

Subscribe *name of group   your name*

And in the event of leaving type

Unsubscribe *your name*

Mailing Lists

This is a list of recipients of particular types of mails or discussion groups. The rational is that the same mail is sent to **xyz.** Any change made for one person affects all. This is done through a mail reflector. A member of the list subscribes to it and opts out when he wishes. For this reason there is the need ffor an administrator who will set effective parameters for the administration of the server/machine.

Mailing lists are very useful for many reasons. They engender:
 Discussions
Disseminating of information
Surveys and questionnaire administration
Electronic meetings and
Locating colleagues

Task 1 Developing a Search Strategy

Objectives   To devise a search strategy and plan a search in advance

Method   You will follow a series of logical steps in devising your search strategy

Comments   You will need to refer to Appendix 1 and Appendix 2 of this document in order to
                complete this task

Activity 1.1   In this task you are going to develop a search strategy on a sample topic area.

Planning a search strategy before you actually start to search on the web can be a good
idea as it helps you to focus more precisely on your topic and your information needs.
You can then apply this approach to a topic of your own choice.

The sample topic you are going to develop a search strategy for is as follows:

vegetarian recipes for special occasions

First of all, use the space below to make a list of as many words as you can think of which
might be associated with this topic. You might want to think about things like plural and
singular versions of words, similar concepts, narrower and broader terms, and synonyms.

....
....
....
....
....
....
....
....

Activity 1.2   Take a look at Appendix 1 of this document for a list of possible words and topics which
                might be relevant to the above subject.

You will notice that this list of words has been grouped into concepts. Using the space
below, group your own list of words into concept areas, as has been done in Appendix 1.

....
....
....
....
....
....
....
....

Activity 1.3   You are now going to structure your search terms using AND, OR, NOT (boolean
                operators), phrases and truncation.

You can use some or all of your words from the list you have generated.

Using the space below, structure your search using some or all of the key words you have
chosen.

....
....
....

Activity 1.4   Take a look at Appendix 2 of this document for examples of how you can structure your search

Notice the use of parentheses to group together similar words and concepts. Notice also the use of AND and OR, and the use of a truncation character to cover both singular and plural instances of words

Note: you might not want to include all of your words from your list in your search.

You may decide to run a number of different searches using different variations of words, or to keep some words in reserve in case your first choice of keywords doesn't produce any useful results.

Activity 1.5   At this point you should also think about any other factors that you might want to consider in your search.

For example, do you want to limit the search to documents from the English language? Do you want to limit your search to documents over a particular date span?

Make a note in the space provided below of any other factors you might want to take into consideration when searching for information on this topic.

....
....
....

Task 2   Performing Your Search

Objectives   To use the Alta Vista search engine to perform a search

Method   You will access Alta Vista at the URL `http://www.altavista.digital.com`

Comments   Alta Vista allows different levels of searching, is very versatile and has risen rapidly to being one of the best known search engines available.

Activity 2.1   In your WWW browser enter the URL:

`http://www.altavista.digital.com`
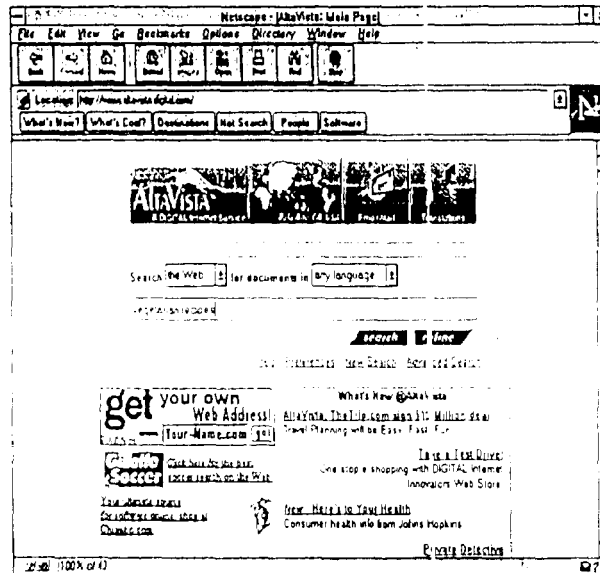
Figure 1 Alta Vista home page

Activity 2.2   Type the words **vegetarian recipes** into the text entry box and click on the Search button to perform your search. Alta Vista will perform your search and display the results on screen.

Make a note of how many results you retrieve from the search in the space provided below:

....

Activity 2.3   Now perform the search again. This time type **+vegetarian +recipes** in the text entry box (ie: place a plus sign in front of each of your terms).
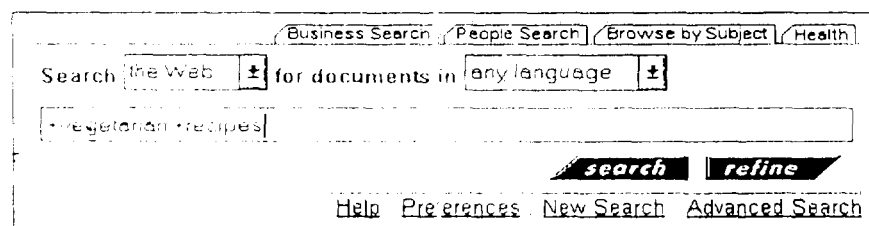
Figure 2 Alta Vista Search Form

Click on the Search button to start your search

Make a note of how many results you retrieve from the search in the space provided below:

....

Take a look at your search results. You should notice a difference in both the number and content of documents you retrieve from this second search. You should have found fewer

documents than in the previous search, and overall, more of these documents should be relevant to your query.

This is because the query **vegetarian recipes** will find pages where either word is present, not necessarily both of them. This is the equivalent of using Boolean OR in a search.

The search on **+vegetarian +recipes** will find pages where both words are present.

This is the equivalent of using Boolean AND in a search to link terms together.

Activity 2.4   Try some more searches on Alta Vista using the plus sign. Try some of the combinations of words which you listed in Task 1. You can also try your own topic areas of interest if you prefer.

Task 3   Searching for Phrases

Objectives	To explore searching for phrases on Alta Vista
Method	You will follow instructions for phrase searching
Comments	Phrase searching can be used to obtain effective results when searching for phrases or groups of words which should be exactly adjacent to each other.

Activity 3.1   Perform a search on Alta Vista for the following topic

`+meat free +cookery`

Click on the Search button to perform your search. and take a look at your results

Make a note in the space provided below of how many results you retrieve

....

Activity 3.2   Now perform this search again This time. type the following:

`+"meat free" +cookery`

Note the quotation marks around the phrase "meat free".
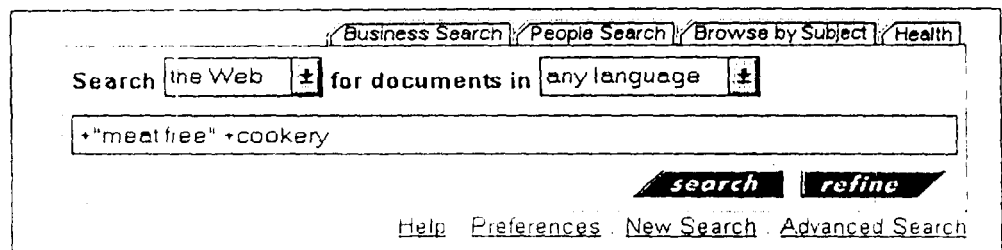
Figure 3 Searching for Phrases

Take a look at your results and make a note of how many results you have retrieved.
Compare this with the number of results from your first search above.

....

You should find that your results from the second search are more likely to be relevant to
the topic than those from the first search You should also find that you have retrieved
fewer results from the second search.

The quotation marks enable you to search for a particular phrase; that is, where two or
more words appear *exactly adjacent* to each other in the text of a document

Activity 3.3   Try some more searches on Alta Vista using phrase searching features. Try some more
combinations of words and phrases from the list of terms which you drew up in Task 1.
You can also try your own topic areas of interest if you prefer.

Writing HTML in a Text Editor

Advantages

- Cheap
- Flexible
- Wide range of possible features
- Good way of learning HTML

Disadvantages

- Easy to make mistakes
- Need to understand syntax of HTML
- Difficult to remember all the tags

Authoring Tools

➡ Easy-to-use interface - menus, buttons

➡ Can hide complexities of HTML e.g. tables

➡ Self contained or embedded in word processors or browsers

➡ WYSIWYG page editors
- e.g. Netscape

➡ Conversion tools
- e.g. Internet Assistant for Microsoft Word

➡ HTML aids
- e.g. HTML Assistant
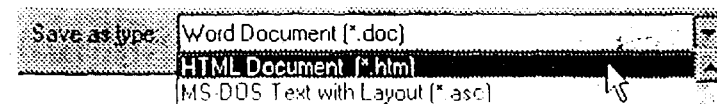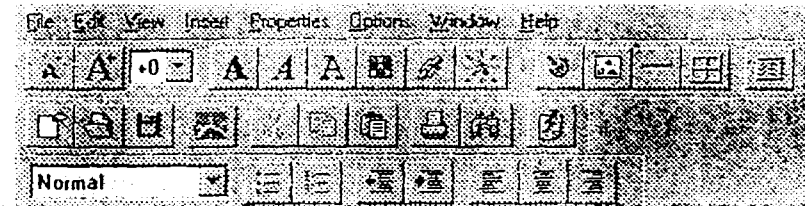
Simple HTML Elements

HTML documents are comprised entirely of text and will typically contain the following elements:

- HTML Structure
  - `<HTML></HTML>` start and end of HTML file
  - `<HEAD></HEAD>` information *about* the file
  - `<BODY></BODY>` the main page *contents*
- Style tags (`<H1>`, `<UL>`, `<P>`)
- Inline images (`<IMG SRC=" ">`)
- Hypertext links (`<A HREF=" ">`)

A Simple HTML Document

HTML documents can be created using a simple editor
(e.g. Notepad, vi, emacs)

test.html

```
<HTML>
<HEAD>
<TITLE>A Simple Document</TITLE>
</HEAD>
<BODY>
<P>Information about the <EM>World Wide
Web</EM> is available at
<A HREF="http://www.w3.org/">W3C</A></P>
</BODY>
</HTML>
```

Tip   Notice that the CONTENT metatag is used by some search services in its search results page (and not the DESCRIPTION metatag, used for indexing purposes only). Generally, the most important metatags for search services are the DESCRIPTION and the KEYWORDS tags. Also note that the word Web is for many search services a STOP word - it won't be indexed at all unless it's searched for within quotes. Note, too, that if the first few hundred lines of your document contain JavaScript code you should make a special point of using metatags.

Activity 1.4   For a good Metadata article in *PC Week Online* enter the URL:

        `http://www8.zdnet.com/pcweek/ir/0113/13jia.html`

Activity 1.5   To see Metadata in action, search through one site's metadata, at the URL:

        `http://www.icbl.qub.ac.uk/`

        (click the search icon).

Activity 1.6   If you are interested in having your own search engine to index your site's pages, enter the URL

        `http://www.searchenginewatch.com/software.htm`

Activity 1.7   Not all <META> tags are to do with indexing functions: some are used to change the page without the user having to do it ("client pull", or "server push"). See the Meta- Meta page at:

        `http://WWW.WDVL.com/Location/Meta/`

netskills Using Metadata

This module consists of a set of exercises that explore the use of Metadata in World Wide Web pages.

Author	Netskills
	University of Newcastle
Date	Nov 1997
Document	META 1
Description	This module consists of a set of exercises which explore the use of Metadata in World Wide Web pages.
Edition	1 0
Copyright	This document is Copyright 1997, Netskills, University of Newcastle. All rights reserved

META 1

Contents

Objectives

This module consists of a set of exercises which explore the use of Metadata in World Wide Web pages. When you have completed these exercises you should be able to:

- Understand the concepts of Metadata
- Be able to incorporate Metadata in Web pages

Pre-requisites

This document is based on the assumption that you are familiar with the use of Microsoft Windows (or the Apple Macintosh). It assumes a certain basic level of competence in using Netscape.

Format Conventions

The following format conventions are used in this document.

Computer input that you type is shown in a **bold Courier font**	`http://www.netskills.ac.uk/`
Computer output, menu names and options, buttons, and URLs are shown in a `Courier font`	`Save, Go to, Refresh`
Text that you must replace is shown in *italics*	Enter your *username*
Computer keys that you must press are in a **bold Courier font** and enclosed in angle brackets	`<Enter>, <n>, <N>, </>`

Site-Specific Features in this Document

This document is based on the assumption that Netscape is available on the MS Windows desktop, and that the Netscape home page has been set to `http://www.netskills.ac.uk/`

Feedback

If you notice any mistakes in this document, or if you have any suggestions on how the document could be improved, contact the Netskills team (contact information below).

Copyright

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Task 1   Metadata - Using it

Objectives   To understand what Metadata is, what it's used for, and how to use it.

Method   You will look at a tutorial and compare how Metadata is used in several services, and gain familiarity with some metatags.

Comments   Metadata is gradually gaining more currency with Web authors as its advantages are being better understood and efforts are being made to standardise its usage. This task introduces Metadata in general terms whilst the following Tasks look at its use by specific agents.

Activity 1.1   Metadata is used primarily to index a page by the use of keywords enclosed in a variety of metatags. Currently, only a few search services ("search engines) use Metadata when indexing a Web page: Yahoo!, HotBot, InfoSeek, WebCrawler and AltaVista index metatags, and Lycos does so partially. The weight given to metatag words does vary: for example Lycos analyses the text of Metadata but doesn't attach any particular meaning to it - the metatags are not used to control the description of that particular Web page. Enter the following URL:

> **http://www.searchenginewatch.com/meta.htm**

This is a dense high-content page which is worth reading; alternatively, skip the main text for now and scroll directly to the links towards the bottom of the page, as shown at Figure 1-1, and under the section Dr Clue's HTML Guide - Meta Tags select the link http://users.abac.com/cgi-bin/drclue/F1.cgi/HTML/META/META.html

Note   This site has a useful link called "Search Engines Features" which gives a useful lists of the features of all the main search engines including their use of Metadata.
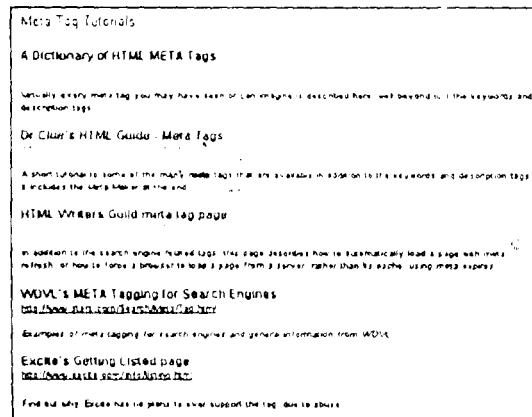
Read Dr Clue's
Introduction
and, if you wish, use
the buttons
[BACK] [PREV] [NEXT] [JUMP]
to navigate other
pages.

Figure 1-1 Some Searchenginewatch Meta Links

Activity 1.2   Return to Dr Clue's URL shown in Activity 1.1 and this time, at the bottom of the page, select pull-down menu item number 7 METAMAKER and use it to obtain the HTML for some metatags to insert into your file active.htm

Activity 1.3   Return to the links at the bottom of the Searchenginewatch page, and this time, under the section WDVL's META Tagging for Search Engines select the link:

> **http://www.stars.com/Search/Meta/Tag.html**

Read through the first two paragraphs carefully, but don't follow any links until you come to the link META near the start of the third paragraph. Click this link. Read the ensuing page carefully, noting that Metadata is particularly important for pages with a lot of graphics or using Frames heavily (especially without a <NO FRAMES> alternative).

Appendix 2

Examples of structured searches using Boolean logic, parentheses and truncation.

```
(vegetarian or veggie or vegan) and (recipe* or cook* or
food) and ("special occasion*" or celebration*)


("meat free" or "meat reducing") and (meal* or food) and
(party or parties)


"Vegetarian Society" and (pudding* or dessert*)
```

Appendix 1

Example list of topics (organised by concept)

Vegetarian

Veggie

Meat-free

Meat-reducing

Vegan

Vegetarian Society

Healthy

Recipe(s)

Cooking

Cookery

Cookery Book

Cookbook

Food

Pudding(s)

Dessert(s)

Starter(s)

Main course(s)

Menu

Meal(s)

Special occasion(s)

Feast

Celebration(s)

Party

Parties

ARCHIE

Archie is a system. which allows you to search indexes to locate files that are available on public servers. It is a good starting point for searching for data, programs and textiles and then you can use FTP to move the files. The xarchie program has been applauded as the best Archie.

Archie scans all the directories on the Internet to find a string of files that match your search. However the Archie search is best done on an Archie server. You can type Archie in any web browser to give you a list of Archie servers. Archie can also be used by e-mail.

WHOIS

This is an answer to the normal white pages in the telephone directory on the internet. This basically help you to find someone on the internet. The **whois** command is used to access the directory of people on the Internet. It is restricted to some people in authority on the Internet. The command is usually;

Whois name eg. Whois krol

On specific systems the command **Finger** can be used but this is tied to UNIX systems. For example ;

Finger tevie@mantse.gh.com
Another useful program is command is **Netfind**

GOPHER

Gopher is simply a lookup tool that lets you prowl through the Internet by selecting resources from Menus. The big advantage of the gopher is that you don't have to look at the address of the resource but you just look at the Gopher menu and select it just like using catalog cards

In using Gopher there is the need for a program installed on your computer. UNIX comes with gopher. Once the program is obtained you can gopher to any public access sites for example gopher.msu.edu **with the login** *gopher*

In the manner of Archie **Veronica** assists Gopher users to acquire their data.

Wide Area Information Service (WAIS)

WAIS is another Internet service used to search through indexed materials in archives. WAIS allows the user find articles based on what they contain. WAIS is distributed text-searching system. It is based on a standard that describes a way for a computer to ask another to do searches for it. This is used extensively in the search engines today on the Internet. Example www.search.com

World Wide Web (WWW)

The world wide web was developed at CERN, the European Particle Physics Laboratory for the purpose of comparing and sharing information on their research but it has developed to change the Internet in many ways.
The World Wide Web is based on the hypertext technology and remains one of the most flexible tools on the Internet. Hypertext is a method of presenting information where selected text/words in the document can be expanded to provide other information linked to it. One word is linked to another in a splendid

chain. By this system of linkages all the information on the net are organized in a way that you can move from one document to another via links. You can also move from one server to another without moving from your keyboard.

This is done through the WWW browser. a tool that helps you to read the information irrespective of the system it is running. There are various browsers. Some of them include;

        Netscape

        Mosaic

        Internet Explorer

Some of the browsers are text based. These are mostly those that operate in UNIX environments. The browser is based on a client server architecture. WWW is fully multimedia and allows both sound graphics and video.

The w3 provides access to Internet resources including Gopher, Usenet and FTP.

Locating Internet Resources using www
In locating Internet resources the browsers use the Uniform Resource Locator (URL). This is the standard address format for the Internet

The URL indicates
        Means of Access
        Location of resource

For example. http://www.ghana.com

Terminologies associated with the World Wide Web.

WWW -   World Wide Web

HTML -   HyperText Markup Language

HTTP -   HyperText Transfer Protocol

URL   -   Uniform Resource Locator

TECHNIQUES OF INFORMATION MARKETING

Introduction

1. Society produces and uses information and also seeks and disseminates information. Human kind is the major source of information that is produced or generated for use. It is essential for a country not only to generate information that is required to help solve some of the problems that hinder the socio-economic development process but also to seek information available elsewhere in the world. This fact deserves real attention of all developing countries.

2. Information and knowledge required for development and produced by the developing countries is by far less than what is produced by the developed countries. The situation is aggravated if we know that those who seek information are very few to those who really need it. Moreover, if we know that a country possesses information but nobody uses it because nobody knows that it does exist or somebody knows that it exists but doesn't know where to get it from and how much it costs, then it becomes necessary to undertake marketing.

3. In Africa today, one may ask several questions regarding marketing of information. Is it because decision makers have to be educated about the importance of information? Is it because they also do not realize that scientific approach to decision making stipulates the use of data and information? Is it because they need to know that information is worth paying? Is it because we are working more on the supply rather than on the demand for information? The answer to all of the questions and any other that goes along the same lines is "all of the above".

Marketing Concepts

Marketing

5. Is the analysis, planning, implementation and control of programs designed to create, build and maintain eventually beneficial exchanges and relationships with target markets for the purpose of achieving organizational objectives. It relies on a disciplined analysis of the needs, events, perceptions, and preferences of target and intermediary markets as the basis for effective product design, pricing, communication and distribution.

Marketing Strategy

6. Is a set of objectives, policies, and rules that guides overtime the firm's marketing efforts, the level, mix and allocation, partly independently and partly in response to changing environmental and competitive conditions.

Promotion

7. Is the set of activities that aims to inform the potential users of a product and convince them that a particular products and its price are the right things for them.

Information Marketing objectives

8.   Normally, the objective of marketing may be any of the following:

a.   To maximize sales. This means that the only concern of the firm is to sell regardless of the cost and profit. This objective can be used for market penetration of a new product.

b.   To maximize profit which entails the maximization on sales but the minimization of cost. Such an objective can be used after the market penetration of the product.

c.   To maximize return on investment (ROI).

Information marketing, a new approach to development

9.   The term information marketing is new to many of Africa's decision makers and also information professionals. This is because the term "marketing" is considered a new term itself. This is one of the reasons that makes the marketing function not fully developed in most of the information related organizations in Africa. There are other reasons such as hostility towards marketing as a result of short-sighted perception of its role "Law" of fast forgetting is another reason because marketing principles tend to be forgotten with success and top management should always be reminded of these principles every now and them. The lack of finished saleable information products add to the above mentioned reasons. In African countries, seldom do we find an information product which is ready to be promoted and sold. While information industry is flourishing in industrialized countries (more that 3500 databases available commercially). we can hardly find similar situation in developing countries including African countries.

Information Market

10.   The concept of exchanging information or exchanging information in return of any payment or reward leads naturally into the concept of a market. It is the duty of marketing personnel to raise the demand to information vis-a-vis the supply of it. The size of information market depends upon the number of persons (organizations) who have:

a.   Interest in information
b.   The necessary resources to pay for information
c.   The willingness to spend some of the available resources to acquire information.

These three factors make up the level of demand.

Kinds of information markets

11. The following may be classified as kinds of information market.

   a. Need market, where one satisfies need.
   b. Product market, where one can buy or sell a database or a book.
   c. A demographic market, where the market is segmented on demographic basis.
   d. A geographic market, where segmentation is based on geographic basis. All the four or any constitute an information market.

Marketing management philosophy

12. There are different concepts under which organizations conduct their marketing activities.

   a. Production concept - this is where information centers have to make product decisions, i.e. what product they have to produce, which should be 'tangible, physical products or services like books, CD-Roms, Microfiche etc. The information center has to decide on core-products which normally are sought by the users of information depending on the benefits of such information.

   b. Selling concept. This is where the pricing of information products depends on:

      i. direct monetary costs.
      ii. indirect monetary costs.
      iii. non-monetary costs.
      iv. value/price ratio must be favorable for effective marketing of information products and services.

      In order to increase demand for information products and services one should be able to lower costs or raise perceived level of value.

   c. Marketing concept. This is where the promotion of information products and services helps to communicate with target users. Promotion avoids miscommunication and selective perception. Advertising information products and services requires the identification of target consumers, and identifying target effects which arouse awareness, interest, and cause of action.

Information marketing techniques

13. Marketing of information and documentation products and services is constrained by the Macro-economic environment, particularly in Africa. Services in Africa should be facilitated by the provision of high quality information. For institutions dealing with the marketing of information and documentation products and services, the following initiative can be undertaken.

a. Develop marketing tools which should include the annual marketing plan, market analysis and market research, short by-lined articles, press releases, leaflets, advertisements, direct mailing, and end pages.

b. Special initiative of conferences/seminars and training courses, and the rationale behind them.

Marketing tools

14. Various information marketing tools exist, among them being:

a. Annual Marketing Plan: This is the most crucial of all the tools for marketing and promotion. Such plans determine the marketing activities for the forthcoming year and give a detailed breakdown of how the marketing budget is to be spent. The plan also incorporates realistic sales targets for the year in question as a reflection of the importance of evaluating the overall result.

The Marketing strategy: This has four main components, namely:

a. Analysis - which is the step which sets marketing apart from public relations.

b. Planning - this involves the setting of challenging but attainable objectives for the marketing effort.

c. Implementation - during this component, some adjustments are required.

d. Evaluation - this is the "final and usually the most important part of the marketing plan but is vital to future marketing efforts" (Griffith, 1992). By evaluating the plan, the most effective activities can be determined and the reasons for failure pinpointed without this step, mistakes could be repeated in future marketing efforts and more productive activities could be forgotten. Evaluation should occur throughout the length of the plan as well as the end (Griffith, 1992).

Market analysis and market research

15. Market research is crucial because it helps the organization to better serve users needs and to predict possible future new products. As Arnold argues, "The key to effective marketing tactics is to understand the product/service one wants to sell" (1990). This means not only having substantial knowledge of where your products fit into the market but also trying to understand the strengths and weaknesses of products produced by other organizations.

Short Articles

16.   Objective of such articles is to inform readers about a certain aspect of services and or/products. It is an effective way of promoting information products because it does not take any of the marketing budget, although it may be expensive interms of staff time. Such articles may allow one to reach his/her audience without evoking skepticism and resistance which most people feel when faced with an advertisement. It is, however, important to choose the media with care and try to suit your potential article to the probable audience.

Press Releases

17.   "The press release is one of the most effective marketing tools, and one of the easiest to produce. Unlike advertisements, it costs very little and you don't have to tear your hair out trying to undo your competitors with witty one-liners" (Duncan, 1993). Press releases , like short articles, can be a cost effective method of marketing information products. Some of the items to be included in a press release include the launching of new products or initiatives, the appointment of new personnel, and possible re-organizations.

Leaflets

18.   Leaflets highlight further areas of expertise within an organization including information management and promotion of certain products.

Advertisements

19.   Advertisements can be placed for example in journals, newspapers, magazines etc.

Conferences

20.   Conferences are obviously a good opportunity for marketing information products. One has to make an overview of all the conferences and seminars at the beginning of the year, which could be of interest to the activities of his/her organization during the forthcoming year. Such an overview is made by scanning "events" pages in journals; and by undertaking a literature search or on-line databases which list conference s and seminars.

21.   When a potentially interesting conference has been identified, it is necessary to decide which conference should have personal representation and a stand; those conference which require the mailing of a standard leaflet; and those which require the production of a special information sheet.

Conclusion

22.   The marketing and promotion of information products particularly in Africa face greater problems resulting from the increasing austerity in spending. The marketing and

promotion strategies of the information, library and documentation centers in Africa should make practical efforts to face up to these challenges. An increasing emphasis on evaluation should make it possible to further refine and adapt marketing initiatives in response to what the information world and the macro-economic environment have in store (Cummings - 1994).

NATIONAL SEMINAR ON ADVANCED TECHNOLOGY FOR
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Industrial and Technological Information Services and Products
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A. Industrial and Technological Information Systems

Like other types of information systems, industrial and technological
information systems may be categorized into those that are set up along
conventional and non-conventional lines.

    i.)   Conventional Information Systems

These include libraries, information and documentation centres of research,
educational, technological or industrial institutions and organizations. They
may be further divided into the multi-disciplinary and single or special
discipline types.

Examples include the University Libraries for the multi, and special libraries
like the Energy Information Centre of the Environment Protection Agency,
as well as those of institutes like the Building, Industrial, Food, Forest and
other research institutes. Other special libraries are those of the Ghana
Export Promotion Centre, the Ghana Investment Promotion Centre, the
Ministry of Trade, etc.

    ii.)   Non-conventional Information Systems

They include Patent Offices, Standards Organizations and Statistical and
Numerical Data Bureaux like the Registrar-General's Department, the
Ghana Standards Board and the Statistical Service of Ghana. Also included
in this group are organizations that provide liaison, facilitating and advisory
information services.

Examples of liaison and advisory information systems and consultancy
services are usually the non-governmental organizations like the West
African Enterprises Network, Centre for the Development of People, Ghana
Association of Women Entrepreneurs, (GAWE), Friedrich Nauman
Foundation, World Vision International, (WVI), National Council on
Women and Development, (NCWD), etc.

Examples of facilitating or enabling organizations include the Private Enterprise Foundation, Association of Ghana Industries, Ghana Chamber of Commerce, the Ministry of Trade and Industries, the National Board for Small-scale Industries with their Business Advisory Centres, EMPRETEC, with their consultancy and extension services, GRATIS and DAPIT among others.

- NOTE: Both conventional and non-conventional industrial and technological information systems engage in some or all the information service activities and operations. These include the generation, identification, collection, processing, storage, re-packaging and dissemination in some form or the other.

B. Industrial and Technological Information Services

Services provided by all information systems vary. Whilst some provide what may be termed as the formal conventional type of services, others provide informal type of services.

i.) Formal conventional type of information services are usually provided by libraries and documentation centres. Such services include Advisory and Consultancy, Information Re-packaging, Classification and Cataloguing, Abstracting and Indexing, Compilation of Bibliographies, Creation of Computerized Databases, Computer-based Literature Searches (CD-ROM), Desktop Publishing, Electronic Mail, Computer Software and other Training, Microfilming, Photocopying, Reading Facilities, Reference and Enquiry or Question and Answer Services, Referral Services, Audio-visual Services, Evaluation Surveys and User-Studies.

NOTE: Which libraries of participants provide any of these services?
NOTE: No single library in Ghana provides all the above services. However, a few provide an appreciable number of the services.

a.) Statistical and Numerical data services are provided essentially by the Statistical Service of Ghana which is the central body of government specifically assigned the responsibility of coordinating statistical data collection, storage and dissemination. Other government and non-government agencies also collect and provide statistical and numerical data on their activities. [Examples of Statistical and Numerical Data]

b.) Liaison, extension, advisory and consultancy services are provided by the various agencies already listed above. The agencies that provide such services are the Non-governmental organizations and others like NBSSI, GRATIS and DAPIT. Actual extension type services which constitute a form of re-packaging and dissemination. Extension type services include Fairs, Exhibitions, Open Days, One-on-One Demonstrations and Shows. Other extension services are provided by specialized organizations like the radio and broadcasting agencies of which in recent times there is a considerable increase in their numbers. Others in this area are the advertising and public relations agencies which also abound.

c.) Facilitating and enabling services include arranging meetings and discussions like seminars, workshops, conferences, Press briefings, etc. The various government ministries, as well as agencies like GEPC, GIPC, AGI and PEF among others provide advisory and consultancy services in addition to acting as facilitators.

d.) Online information services are beginning to gain prominence in Ghana. Already, a number of organizations are providing such services either online or offline. Thanks to the infrastructural facilities provided by the two (three) service providers in the country, Network Computer Systems (NCS) and Africa Online.

C. **Industrial and Technological Information Products**

Industrial and technological information products are aspects of the services provided and are usually in the form of documents or publications of various kinds They may be in either paper or electronic media and they appear in the form of books, journals, pamphlets, memoranda, tapes, discs.

i.) Documentary type of products include: [Participants to provide specific examples]

Computer Printouts,

Patents, Standards and Specifications, Statistical Data, Tables, Legislation, Almanacs, Dictionaries, Directories, Encyclopaedias, Handbooks, Yearbooks, Maps, Guides, Digests, Abstract and Index Bulletins, Catalogues and Bibliographies, Union Lists, Accessions Lists, Photocopies, SDI Reports, Survey Reports,

Newsletters, Brochures, Leaflets.

ii.) Non-documentary type of information products include: [Examples by Participants]

Databases, Compact Discs,

Microfilms and (Camera-Ready Manuscripts on diskettes).

Extension Material like Audio and Video Tapes, Slides.

Extension products and the re-packaging of information requires the prior need to know not only the type of user for whose benefit the extension product is being prepared, but also the peculiar and specific information needs of the beneficiaries, in order to tailor the information to their precise requirements. There is therefore the need to identify the users of such information, their distribution and the sectors in which they operate, their numbers and other characteristiçs, and to determine their specific information needs by means of specially designed studies and surveys.

D. **Beneficiaries and Users of Industrial and Technological Information**

Users of industrial and technological information who are the ultimate beneficiaries of any information service may be grouped into four categories. It is to be noted that users play a dual role and may sometimes become providers of information. The four broad groups are:

i.) Research Scientists, Academics and Students

They are concentrated in the universities and research institutions, as well as in other tertiary institutions, technical and vocational institutes and polytechnics.

ii.) Policy Makers and Planners

These are mainly in the Civil Service, Government Departments and in other Public Institutions and Corporations, including, Financial, Insurance and Banking Institutions. Many state-owned enterprises are being divested. It will be interesting to find out the types of industrial and technological information the many new investors (estimated currently at over 450) would require.

iii.) <u>Large-scale Entrepreneurs and Industrialists</u>

The large-scale enterprises include the large multi-nationals and a relatively few Ghanaian-owned ones. A good example is the Unilever Group of Companies, Nestle and Valco. Ghanaian ones include Darko Farms.

iv.) <u>Medium and Small-scale Enterprises, and Rural and Cottage Industries.</u>

There is a large number of industries that are medium scale but the group with the largest number is the Small-scale group.

E. **Determining Information Needs of Users**

Although there is a growing awareness of user needs for industrial information systems, more attention has been given to the <u>supply</u> of services and too little on mobilizing <u>demand</u>. An often-cited criticism of most information systems and services is that they are not sufficiently patronized for a host of reasons. This results in the phenomenon of Information Overload and Information Under-use (IOIU). Reasons often cited are that the systems are not geared to the needs of the beneficiaries for whom the services are intended and that they are not proactive. Determining information needs of users is a complex process which ought to be undertaken by specialists. Problems that arise in determining user needs centre on:

i.) <u>identifying</u> the various <u>categories</u> of users, <u>how well the user perceives information</u>, the user's <u>functions</u>, activities and day to day operations, his level of <u>specialization</u> in a particular field, or his general <u>education</u> or <u>literacy level</u>. Added to these are the user's peculiar <u>idiosyncracies</u> and <u>information seeking behaviour</u>. In any user needs study, it is also necessary to ascertain any deficiencies or weaknesses in the existing information system or service, including that of not being proactive.

ii.) Users may not even know that that they need information at all, or that they need a particular type of information. They may not know that what they need already exists.

iii.) Sometimes, if they do know that the information exists, they may know <u>where</u> it is located or <u>how</u> to obtain it.

iv.)   The information may not be easily accessible simply because of the constraint of <u>distance</u>.

v.)   Inaccessibility may be due to the problem of <u>cost</u> or the long or tedious process of obtaining the information.

F. <u>Methodology for User Study</u>

The very process of undertaking the study or survey is also fraught with problems of approach and methodology which are varied and diverse. Essential elements to be taken into account in conducting such studies however include:

i.)   Defining the user population,

ii.)   Defining the objectives of the study,

iii.)   Determining the data collection techniques

iv.)   Designing the interview or questionnaire

v.)   Actual data collection, Analysis and Report of Findings

Re-packaging Industrial and Technological Information
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A. What is Information Re-packaging?

Information re-packaging may be defined as the process of rendering any piece of information more pertinent or relevant to the precise or specific requirement of the user. In simple terms, it is the translation or interpretation of raw data into useful information in a language that the industrialist or entrepreneur can understand and make use of to solve some particular problem or satisfy a particular need of his.

The most important requirement is that the re-packaged information should be tailor-made and presented in a form that can be understood and is ready for use. This is a well-known marketing strategy.

It may be provided either in response to demand or may be provided in anticipation of demand. The latter option presupposes that a prior study of user information needs would have been undertaken.

B. Forms of Presentation

Re-packaged information, like other information types can be presented in a variety of physical forms, namely, either in book form (on paper medium), or in a non-book form like microform or electronic media. It may be a computer printout of data or some other information downloaded from a search on either CDROM or from some database on the Internet.

Apart from the physical format, it may also be presented in the form of say
- a report on macro economic trends,
- as a fiscal policy document or environmental issues or legislative instruments, or as

- an annotated list of items, persons, institutions with addresses,
- or of technology options, (How-to-do-it brochures, drawings, plans, designs etc),
- or as sources of raw materials or market outlets.

Examples of Specific Re-packaging Activities
      i.)   Data Analysis
      ii.)   Translations
      iii.) Survey and Research
      iv.) Abstracting and Indexing
      v.)   Annotated Bibliographies
      vi.) Computerized Databases
      vii.) Value-added Literature Searches using Desktop Publishing.

C. Agencies Involved in Information Re-packaging

The typical organizations that carry out information repackaging are often referred to as Information and Data Analysis Centres. A typical example is the Chemical Abstracts company.

Whilst there is no such centre so designated in Ghana, there are institutions and agencies that undertake data analysis. Typical among these are the Statistical Service of Ghana and the Institute for Statistical, Social and Economic Research (ISSER) at Legon.

Other agencies which engage in information repackaging include the National Board for Small-Scale Industries, (NBSSI), Development and Application of Intermediate Technologies, (DAPIT), Ghana Regional Appropriate Technology Industrial Service, (GRATIS) and Technology Consultancy Centre, Non-Formal Education Division of the Ministry of Education, (NFED), Non-Governmental Organizations, (NGOs) and private consultancy organizations.

Information repackaging sometimes requires the application of technologies like audio-visuals (sound recordings, filmstrips, and video recordings) among others. Institutions that provide such services include agencies like Radio and Television Stations, the School of Communication Studies, Ghana Institute of Journalism,

D. Samples of Re-packaged Products

USER NEEDS ANALYSIS

1) Who is the user?
    a) One-time user
    b) Casual user
    c) Frequent user

2) Background of user?
    a) Age differentiation
    b) Intellectual background
    c) Business/financial background

3) Type of Needs.
    a) For immediate usage
    b) For later usage
    c) For long-term usage

4) Purpose of Usage
    a) Personal info/education
    b) Academic/Research
    c) Production/Industrial

Need Availability
    a) Immediately available
    b) May be available later
    c) Not available

6) Need Assessment
    a) Satisfied
    b) To be satisfied
    c) Not satisfied

USER SURVEYS

Methods of obtaining information on user satisfaction include the following:

1. Indirect unsystematic methods -
      random casual observation
      obtaining views of library staff.

2. Indirect, systematic methods -
      measuring level of repeat use
      analysing acknowledgements in theses etc.
      obtrusive testing
      observation

3. Direct, unsystematic methods -
      suggestions box
      complaints analysis
      unsolicited feedback

4. Direct, systematic methods -
      questionnaires
      interviews etc.

It must be pointed out that must of these surveys are likely to produce favourable results if users are adequately educated on library use. It is often assumed that user education is not needed in Special Libraries. But this is not correct. User education programmes are equally important in special libraries and information centres.

Special librarians can teach their users how to use abstracts and indexes and computer databases. Set simple exercises that will get users to use information sources. People need to know how to use libraries and also what information sources and services are available to them.

Users should be trained to be:

1. aware of what the information service can do;
2. to identify their information problems;
3. to communicate these problems and to discuss them with information staff;
4. to give feedback to the service;
5. to keep information staff aware of their changing subject interests; and
6. to involve the information service in projects which have information implications.

USER FEEDBACK

In the Library situation, feedback on the introduction of a new idea can be obtained mainly by interviews and questionnaire. Both of them adopt the same techniques but interviews are more reliable than questionnaires.

When using interviews or questionnaires, the following general principles must be observed:

1. Do not ask vague questions or you will get vague answers in return.

2. The questions should be simple and self-explanatory.

3. Avoid professional jargons e.g. Online Public Access Catalogue (OPAC).

4. Let your questions be brief, but not at the expense of clarity.

5. Avoid leading questions

6. Avoid questions which may mean different things to different people.

7. Ask questions which demand factual answers and not opinions.

8. If you suspect that a question may yield an inconclusive answer, ask a supplementary question.

9. It is important to pre-test your questions before the actual process begins.

For questionnaires:

1. Let your questionnaire be as short as possible or very few respondents will bother to answer them.

2. Combine Yes and No answers with enough space for respondents' views.

3. Break up the whole scheme into subject headings arranged in topical sequence.

4. Distribute the questionnaire as widely as possible.

5. Remember to include your name and address on the form.

6. At the end of every questionnaire, thank your respondents for taking time to complete it.

The INTERNET is the world's largest computer network.

It is the international information superhighway.

It is a network of computer networks that talk to each other using Transition Control Protocol/Internet Protccol (TCP/IP).

Nobody owns the INTERNET.

UNDIO is helping the African countries to use INTERNET to facilitate their process on technology transfer, investment and business opportunities.
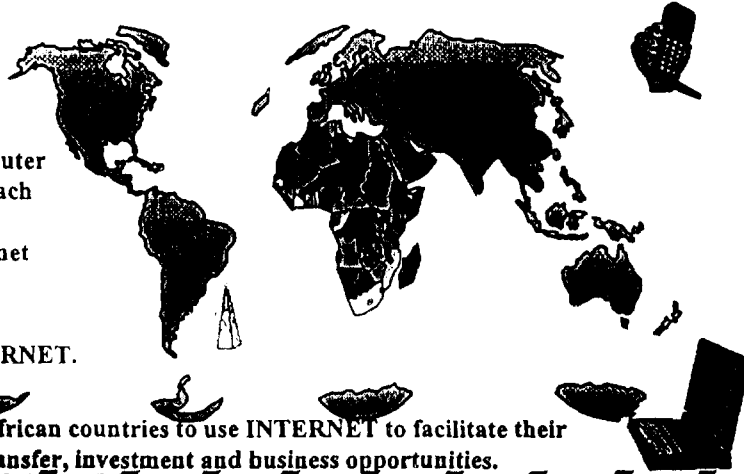
◆ **How can UNIDO help African countries make better use of the INTERNET ?**

- through INTIB, which is a mechanism aimed at facilitating information networking in developing countries

  ❖ Assessment activities

  ❖ Production of Information tools for data collection & dissemination

  ❖ Capacity building

  ❖ Sensitization and awareness

■ **UNIDO has just launched a new programme to support INTIB activities in Africa:**
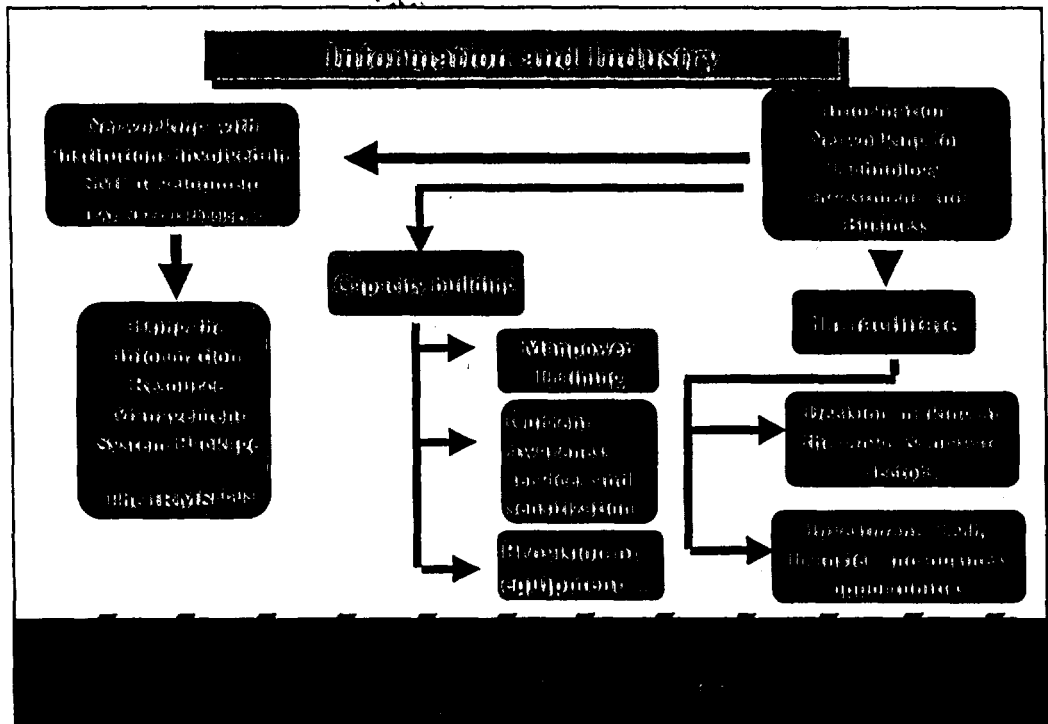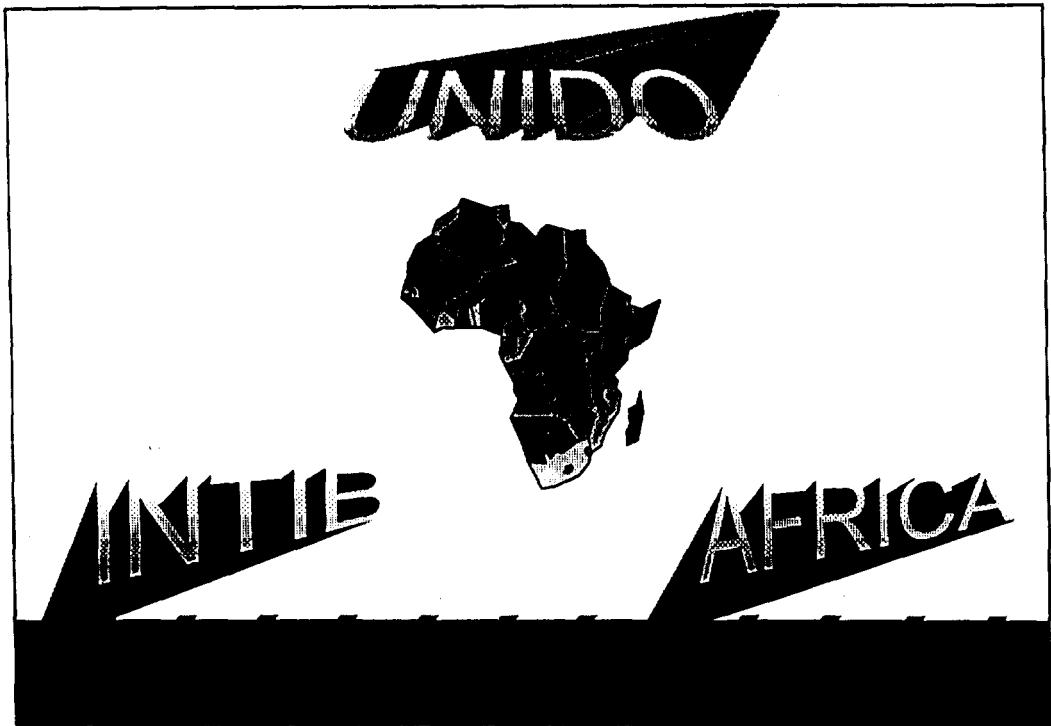
Immediate Objective

◆ To strengthen the national capacities and capabilities of the Focal Points in acquiring, processing and delivering useful industrial, investment and technological information using IRMS and Internet.

Development Objective

◆ To enable African countries to meet their information requirements on technologies, processes, investment and business opportunities, thereby facilitating the development of the industrial sector.

UNIDO

IRMS Plus

◣ The IRMS^PLUS package is the UNIDO tool for the creation of national and regional networks through which linkages will be created to the international networks.

25 January, 1999   1

UNIDO

IRMS Plus

national network (using ^PLUS IRMS as a tool)
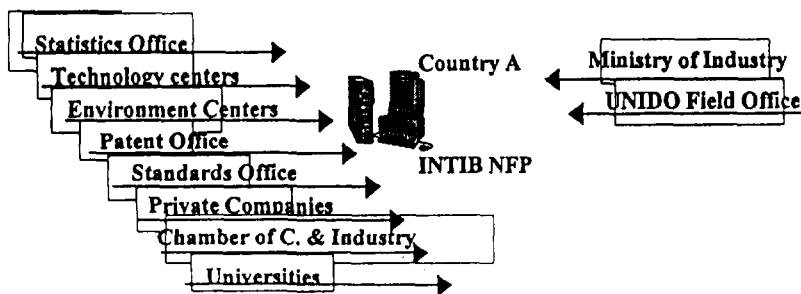
Statistics Office
Technology centers
Environment Centers
Patent Office
Standards Office
Private Companies
Chamber of C. & Industry
Universities

Country A

INTIB NFP

Ministry of Industry
UNIDO Field Office

25 January, 1999   2

1

Activities Related to the IRMS^plus Package

$\diagdown$ Assessment

$\diagdown$ Networking

$\diagdown$ Capacity Building

    $\diagdown$ Manpower training

    $\diagdown$ Sensitization and Awareness

    $\diagdown$ Supply of Equipment

Types of INTIB National Focal Points

  ❧ Single Private Office

  ❧ Parastatal

  ❧ Association of Private groups

25 January, 1999

4

SEARCHING FOR INFORMATION ON THE INTERNET- SEARCH ENGINES

PRESENTED BY
WILLIAM ANIM DANKWA

AT THE UNIDO/CSIR SEMINAR ON GLOBALIZING INFORMATION

DATE

Contents

Objectives

This document provides a series of exercises in searching the World Wide Web. When you have completed these exercises you should be able to:

- Use a variety of searching services on the World Wide Web

- Compare the various searching services

Pre-requisites

This document is based on the assumption that you are familiar with the use of Microsoft Windows (or the Apple Macintosh). It assumes a certain basic level of competence in using Netscape.

Format Conventions

The following format conventions are used in this document.

Computer input that you type is shown in a **bold Courier font**	`http://www.netskills.ac.uk/`
Computer output, menu names and options, buttons, URLs are shown in a `Courier font`	`Save, Go to, Refresh`
Text that you must replace is shown in *italics*	Enter your *username*
Computer keys that you must press are in a **bold Courier font** and enclosed in angle brackets	`<Enter>, <n>, <N>, </>`

Feedback

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Copyright

Contact Information

Print Record This document was printed on 15-Jul-98

Task 1   Using a Search Engine

Activity 1.1   In your WWW browser enter the URL:

                http://www.altavista.digital.com/

Figure 1 The AltaVista Page

Activity 1.2   Search for **degree course publicity** by typing the words into the text entry box and
                clicking the Search button. When finished with the first page of search results, scroll towards
                the bottom of the page to look for more pages of results. Click on one of the numbered links to
                view other pages or "screenfuls" of results, as shown at Figure 2:
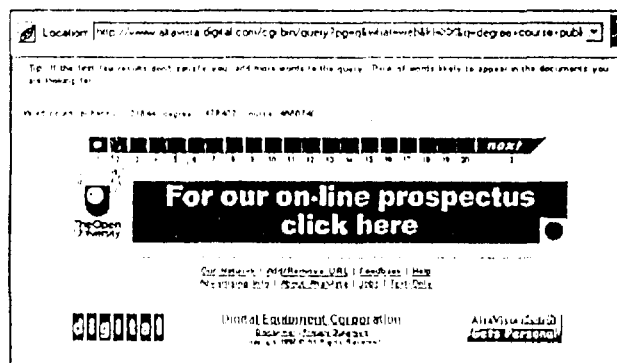
Figure 2 Selecting Another Page of Search Results

Task 2　Searching a Subject Index

Objectives	To browse the BUBL index.
Method	You will access BUBL at the URL
	http://bubl.ac.uk/
Comments	BUBL is a searchable index of classified Internet resources. The name BUBL originated as the shortened form of the BUlletin Board for Libraries but now it's known simply as the BUBL Information Service; it contains links to described resources relevant to the UK HE community. Note that the bulk of information resources in many classified indexes such as BUBL are often catalogued manually by information professionals rather than automatically.

Activity 2.1	In your WWW browser enter the URL:
	http://www.bubl.ac.uk/
Note	URLs are generally case sensitive - type this URL exactly as shown.
	The following screen will be displayed.
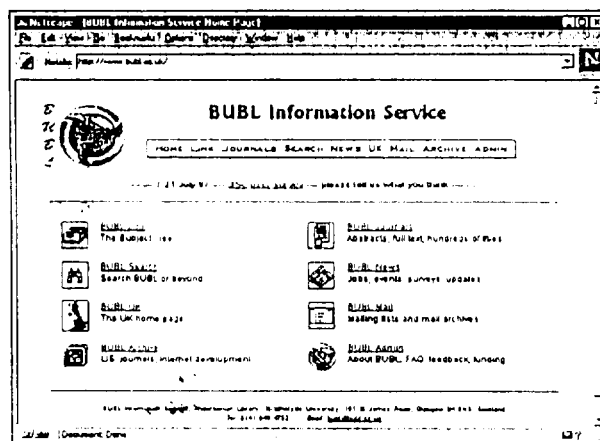
Figure 3 The BUBL Index

Activity 2.2	Select the link <u>BUBL Search</u> and then select the link <u>Search BUBL LINK</u>. From the Item Name pull-down menu select Subjects and then, in the search box, enter the word **copyright** and click on the Search button; you will then be returned a list of resources about copyright. Notice that if you select one of the links (or scroll down the page) you can find a short description of the resource from where you can go straight to the resource. Explore some of the resources that are of interest to you.

Task 3   The SOSIG Information Gateway

Objectives   To explore a UK-based Information Gateway as an alternative means of finding classified and ordered material on the World Wide Web.

Method   You will access SOSIG (Social Science Information Gateway) at the URL http://www.sosig.ac.uk/

Comments   Information Gateways are search tools constructed by subject specialists. They are an attempt to organise and categorise information, and in particular to incorporate the principles of review, editorial consistency, and quality. SOSIG enables you to find quality information about social sciences.

Activity 3.1   In your WWW browser enter the URL:

http://www.sosig.ac.uk/

Note   The SOSIG information gateway is interesting for several reasons.

- It offers the option of choosing to search either UK or overseas resources. Any site accessed from SOSIG pages is likely to be up to date and to provide "quality" information.

- As well as browsing, this type of gateway generally offers you the chance to search by entering a search term in a box. In SOSIG, resources have been catalogued using the Universal Decimal Classification (UDC), and you can also browse these alphabetically.
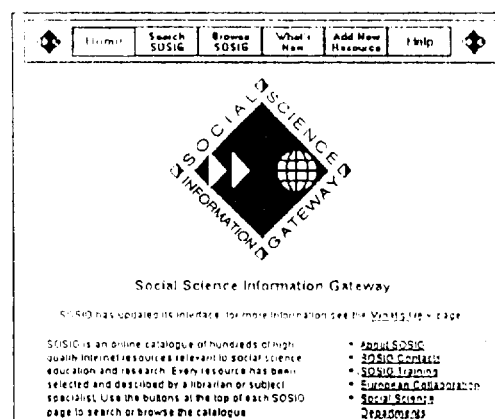
Figure 4 The SOSIG Home Page

Activity 3.2   Click on the button Search SOSIG shown at Figure 4. Then enter the search term language teaching (Figure 5)

Notice the descriptive abstract and keywords that are returned with each search result; this is designed to help you make a decision before going to the source site.

Figure 5 The SOSIG Search Page

From the results page you can select any link under the heading Available from and this should take you to the page that is described. Take some time now to explore any links that sound of interest to you.

Contents

Objectives

This document provides a series of exercises in searching the Web. When you have completed these exercises you should be able to

- Devise a strategy for web searching and follow a procedure for planning a search.
- Make effective use of web search engine features and functions

Pre-requisites

This document assumes that you are familiar with the use of a computer keyboard and Microsoft Windows-based programs, etc.

Format Conventions

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STRATEGIES FOR SEARCHING THE WEB

PRESENTED BY

WILLIAM ANIM DANKWA

AT THE

UNIDO/CSIR NATIONAL SEMINAR ON GLOBALIZING INFORMATION, INSTI CSIR, ACCRA

Task 9   Restricting Your Search By Date

Objectives	To restrict a search to a particular date period
Method	You will use the Advanced Search option to restrict a search by date.
Comments	Restricting a search by date can be useful when you want to restrict a search to just the most up to date information.

Activity 9.1   Use the Advanced Search option to perform a search on Alta Vista for the following topic:

(vegetarian or veggie or "meat free") and (recipe* or cook* or food)

In the date field (shown below) you should type the following:

From: 1/Jan/98

To: 1/Mar/98
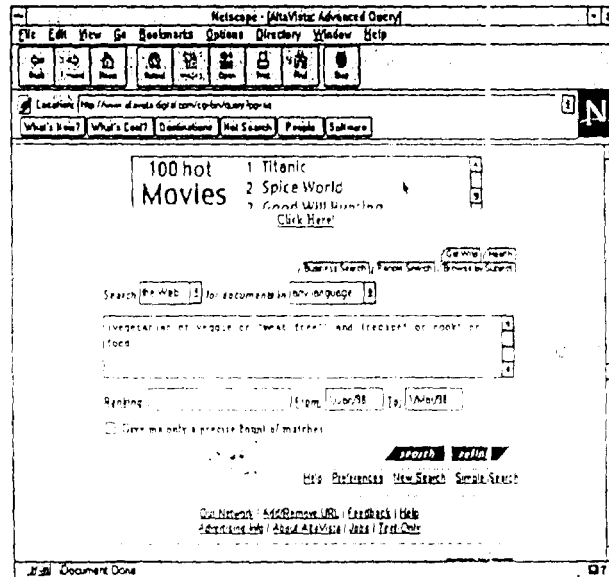
Figure 9 Restricting A Search By Date

This will restrict your search to documents which were made available on the web between that date period (or have been updated in that period). This can be useful for finding very up to date documents, or in order to screen out older material.

Task 8   Structuring Long Or Complex Searches

Objectives   To structure a long, complex search using the Advanced Search option.

Method   You will follow the instructions below, which will show you how to use the Advanced Search option to structure a complex search.

Comments   You may want to perform a more complex search if you have lots of keywords which are important to your topic.

Activity 8.1   Click on the Advanced Search option on the Alta Vista home page. You can use the Advanced Search option to structure longer queries more effectively.

Perform a search on the following topic:

```
(vegetarian or veggie or vegan) and (recipe* or cook*) and
("special occasion*" or celebration*)
```
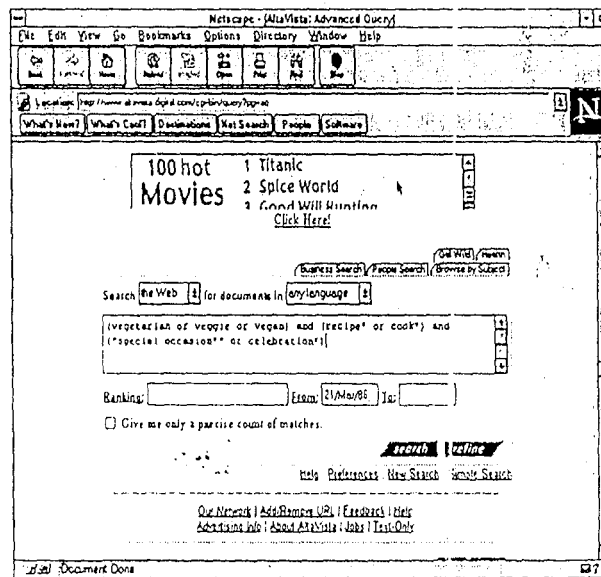

Figure 8 Using The Advanced Search Option

Type the search exactly as shown above.

Notice the use of parentheses:

```
(recipe* or cook*)
```

to group together certain catergories of words, the use of truncation:

```
recipe*
```

and the use of boolean AND and OR:

```
vegetarian or veggie or vegan
```

instead of the plus sign.

The advanced search option is the best place to perform a search on much longer queries, like the one shown above, where you want to include lots of different terms.

Activity 8.2   Try performing another search on Alta Vista using the Advanced Search option. You can choose a search from the list of words and search strategies you drew up in Task 1, or choose a topic of your own if you prefer.

Task 7 Restricting your Search by Language

Objectives   To explore methods of restricting a search by language.

Method   You will follow the instructions given below for searching by language

---

Activity 7.1   Perform a search on Alta Vista for the following topic:

```
+vegan  +gourmet  +cookery
```

Click on the pull down menu item shown below, and choose English from the list of languages available for searching
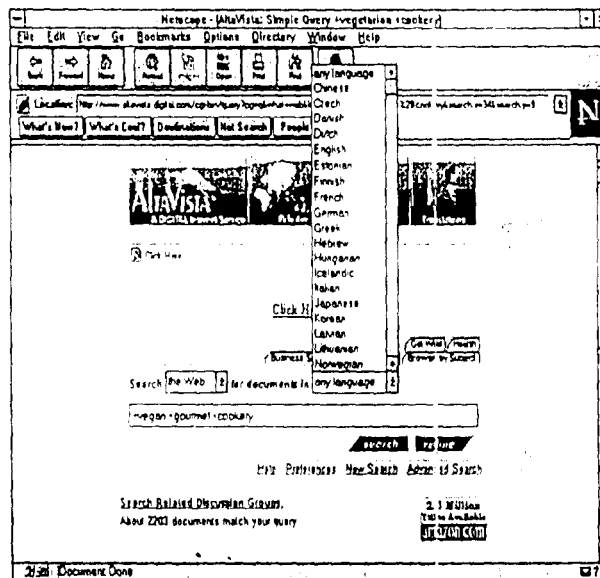
Figure 7 Searching By Language

Your search will now be restricted to documents which are in the english language.

Task 6 Refining Your Search

|	
Objectives	To explore methods of refining a search on Alta Vista
Method	You will follow instructions below for refining a search
Comments	You may want to refine a search if you retrieve too much information from an initial search. Refining will help you to focus in on a particular aspect of a topic.

Activity 6.1 Perform a search on Alta Vista for the following topic:

+vegetarian +cookery

Click on the Search button to perform your search, and take a look at your results.

Make a note in the space provided below of how many results you retrieve.

....

Activity 6.2 Click on the Refine button. This will enable you to refine your search down to particular areas of vegetarian cookery. Alta Vista will look at all the documents it found for your first search, and sort them into different categories according to the different sorts of topics which they cover.

refine

For example, your search may have found documents on a range of different topics such as the following ones

    healthy cooking

    Cooking with Tofu

    Salads

    Sweet recipes

    Gourmet recipes

If any of these topic areas are of specific interest to you, you can then refine your search in order to look at those documents in particular.
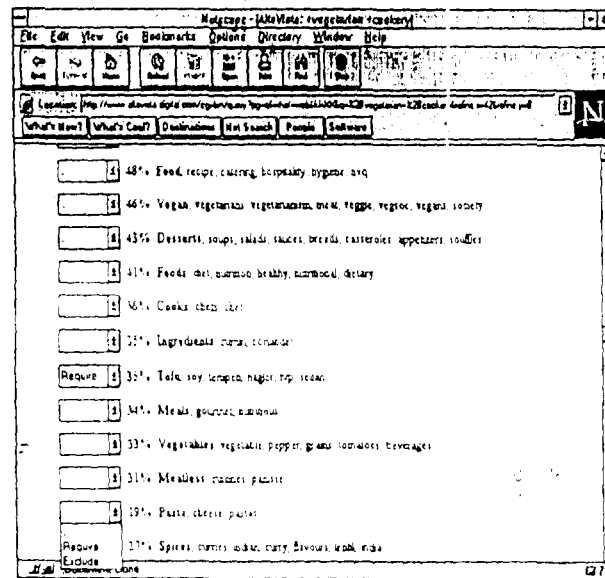
Figure 6 Refining a Search

You can now see at a glance the sorts of topics that the documents retrieved are covering. If any of these topics are of particular interest to you, you can now choose the Require option to prioritise them in your search (shown above). Select the Require ooption from the pull-down menus next to each category. Click on the Search button to run your search again with the refinement options selected.

Note: it is generally best to choose one category at a time, and then run the search again. Review your results before refining the search again.

domain: searches on the domain name (country code such as *UK* or other
               domains such as *edu, ac, com* etc. Useful for restricting your search to
        particular types of documents - eg: government web sites, UK only web
        sites etc.)

image: searches on images on web pages (actually using the filename of the
               image, or the alternative text which some web authors provide.

applet: searches for applets, which are small programs embedded into web
               documents.

Try some more searches using some of the different fields shown above. Try these on the
list of words you drew up in Task 1, or on your own subject area of interest. For
example, you could search for pictures from recipe books by typing:

image:recipes

or

+image:recipes +vegetarian

Task 5 Searching in Fields

Objectives	To explore methods of searching in different fields of documents.
Method	You will follow instructions for field searching
Comments	Field searching can be useful in searching the web as it enables you to narrow a search down to specific parts of a web document, such as the title.

Activity 5.1   Perform a search on Alta Vista for the following topic:

"The Vegetarian Society"

Click on the Search button to perform your search, and take a look at your results.

Make a note in the space provided below of how many results you retrieve.

....

Activity 5.2   Now perform this search again. This time, type the following:

title:"The Vegetarian Society"
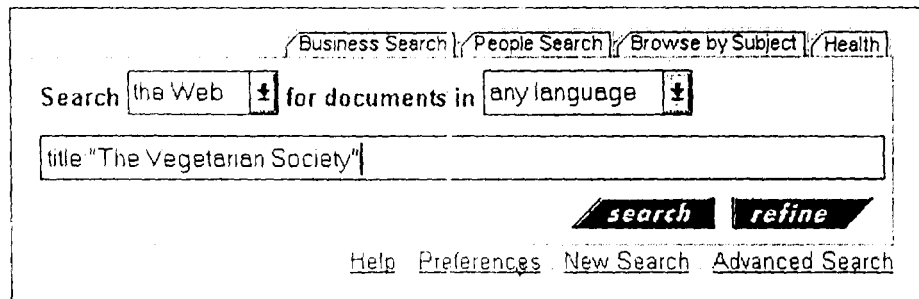
Figure 5 Searching In The Title Field

Take a look at your results and make a note of how many results you have retrieved. Compare this with the number of results from your first search above.

....

You should find that you retrieve fewer results from the second search than you do from the first search. The documents you retrieve should also be generally more relevant.

In the second search, Alta Vista is searching only the *titles* of documents for your keywords.

It is likely that a document which contains the words "The Vegetarian Society" in its title is more likely to be relevant to your needs than one which just briefly mentions these words somewhere in the main body of the document.

You also stand a better chance of finding the home page for the Vegetarian Society by searching titles; otherwise you might simply find documents which mentioned the Vegetarian Society.

Activity 5.3   There are other fields which you can also search in Alta Vista to improve your search results. A list of these is given below:

text:	enables you to restrict a search just to the main body of a document.
link:	restricts the search to hypertext links in documents. Useful if you want to find out how many sites link to a particular web page
anchor:	searches for the visible part of a hypertext link (ie: the actual words you click on rather than the underlying URL)
url:	searches for a particular URL (or part of a URL) on a web page, whether as a hypertext link or not
host:	searches on the host name -ie: host:netskills. Useful if you can't remember the full URL of a web page

Task 4　　Searching for Plurals

Objectives　　To explore methods of searching for plural instances of words and phrases on Alta Vista

Method　　You will follow instructions for searching on plurals

---

Activity 4.1　　Perform a search on Alta Vista for the following topic:

+vegetarian +meals

Click on the Search button to perform your search, and take a look at your results.

Make a note in the space provided below of how many results you retrieve.

....

Activity 4.2　　Now perform this search again. This time, type the following:

+vegetarian +meal*

```
┌──────────────────────────────────────────────────────────────────────┐
│              ( Business Search ) ( People Search ) ( Browse by Subject ) ( Health ) │
│   Search │the Web │ ± │ for documents in │any language │ ± │           │
│   ┌──────────────────────────────────────────────────────────────┐    │
│   │ +vegetarian +meal*                                           │    │
│   └──────────────────────────────────────────────────────────────┘    │
│                                          ▟ search ▜  ▟ refine ▜        │
│   ─────────────────────────────────────────────────────────────────   │
│                         Help   Preferences   New Search   Advanced Search │
└──────────────────────────────────────────────────────────────────────┘
```
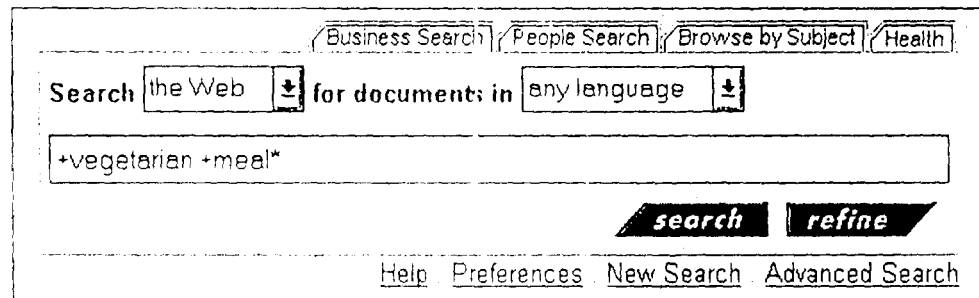
Figure 4 Searching for Plurals

Note the asterisk at the end of the word meal .

Take a look at your results and make a note of how many results you have retrieved. Compare this with the number of results from your first search above.

....

You should find that you retrieve more results from the second search than you did from the first search. The asterisk acts as a *truncation character*; finding all the words which have meal as their main stem. This means that it will find documents containing the words meal and meals.

Activity 4.3　　You can also use truncation to find other variations of words. For example: try a search on cook*

This should find documents containing the following words: cook, cooking, cookery, cookbook, cooks etc.

Searching for information.
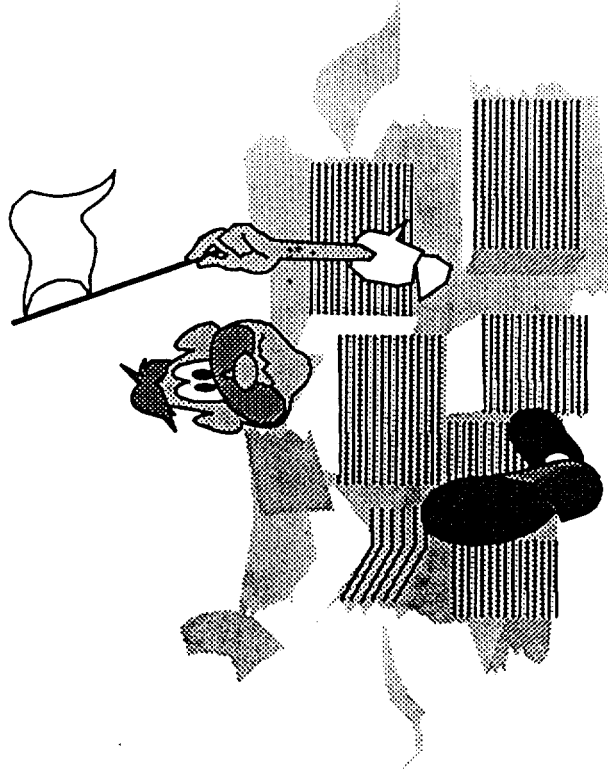
Tools For Information Seeking On The Web

⇨ Search Engines

⇨ Information Gateways

⇨ Subject Indexes

⇨ Frequently Asked Questions (FAQ's)

Search Engines

⇨ Finding lots of information

- *a search on Alta Vista for information about Bill Clinton may result in over 100,000 results!*

⇨ Addressing a fairly specific information need

- *e.g.: for information about cheese manufacture in the Switzerland*

⇨ Searching for organizations, people, images

⇨ Example www.altavista.digital.com

Search Engines

⇨ Keyword searching tools

⇨ Most have huge databases of web resources

⇨ Examples include: Alta Vista, Lycos InfoSeek etc.

Information Gateways

⇨ Subject related, reviewed resources

⇨ Access to quality information

    – *e.g.: The Official Guide to Geneva, as opposed to The Student's Geneva Web Page.*

⇨ Addressing more general information needs

    – *obtaining a general overview of what's available for a particular subject area*

⇨ Organizing information more effectively

    – *information sources are categorized according to their content*

    – Example SOSIG - www.sosig.ac.uk

Subject Indexes Are Good For...

⇨ Addressing general information needs

- *obtaining a general overview of what's available for a particular subject area*

⇨ Organizing information more effectively

- *information sources are categorized according to their content*
- **Example: Yahoo** www.yahoo.com/

Frequently Asked Questions (FAQ's)

⇨ FAQ's are literally lists of "Frequently Asked Questions."

⇨ FAQ's usually take the form of fact sheets made up of compiled questions a web site administrator has been asked and has answered many times.

⇨ These are put together on many subjects and if any are listed at a site you visit,they're worth a look.

Overcoming Information Overload

Devise a search strategy before you begin

Use advanced features of search engines
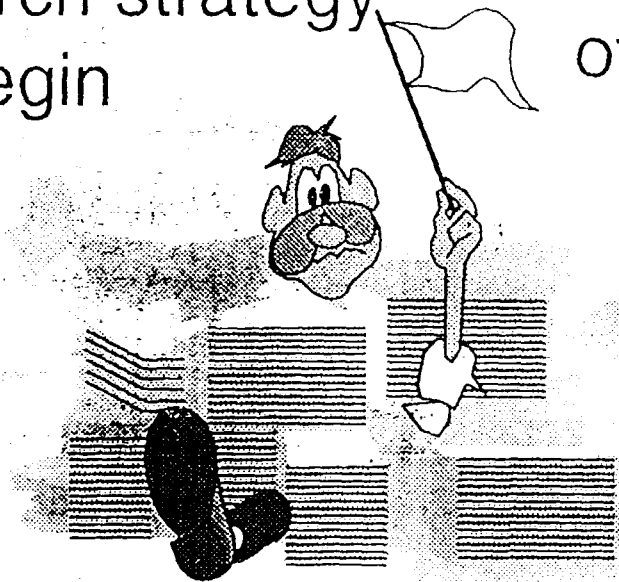
Focus your topic clearly

Make use of relevancy ranking features

Defining Your Topic, Scope And Keywords

⇨ Think about words which describe your topic effectively. Be aware of..
- Alternative spellings
- Use of synonyms
- Use of plurals
- Broader or narrower terms
- Capitalization

⇨ What sorts of information do you need?
- Web or usenet?
- Very recent material?
- English language?
- National or International?

Structuring Your Search

⇨ Use of *Boolean Operators* - AND, OR, NOT

- ISOC AND Geneva
- ISOC OR Geneva

⇨ Use of field and phrase searching

- "The Internet Society"
- title:"The Internet Society"
- domain: ch

⇨ Use of truncation

- comput*

Choosing A Search Engine

⇨ Factors to consider include:

- speed
- scope, size and coverage
- accessibility
- functionality

Quality Considerations

⇨ Content:

- who is the intended audience?

- how reliable is the information?

- how comprehensive is the information?

- are there links to other quality documents?

- are there many 'dead' links?

- how up to date is the information?

Quality Considerations

> Source and Ownership:

- who is the author or owner of the information?
- what is their designation or authority?
- is contact information available?
- is there evidence of sponsorship on the web site?
- is any bias evident?
- is there a copyright statement or a disclaimer?

Quality Considerations

⇨ Structure and Layout:

- are graphics sensibly used?

- is it easy to navigate around the site?

- does the text follow basic rules of grammar, spelling etc.?

Summary

⇨ Plan your search before you start

⇨ Make use of search query languages

⇨ Be prepared to go back and refine your search if you don't find what you need at first

⇨ Developing a good search strategy will save you time and frustration in the long run

Using The World Wide Web Effectively
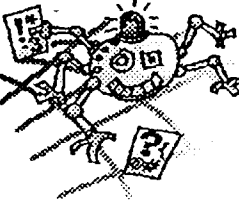
Ayitey Bulley
bulley@ghana.com

Introduction

Overview

⇨ The world wide web

⇨ Content creation

⇨ Searching for information.

World Wide Web
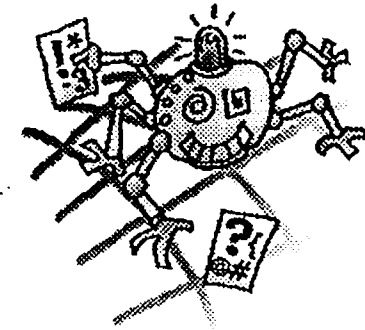
⇨ **World Wide Web (WWW or Web)**

- *Distributed multimedia hypertext* system
- Uses client/server architecture

  Clients known as *browsers* -
  Netscape, Mosaic, IE, Lynx

Client/Server Architecture
⇨ WWW is based on a client/server

Give me file x →

← Here it is

Desktop
Client

Remote
Server

Request made
using http

Your desktop
computer

A computer elsewhere
on the Internet holding
information
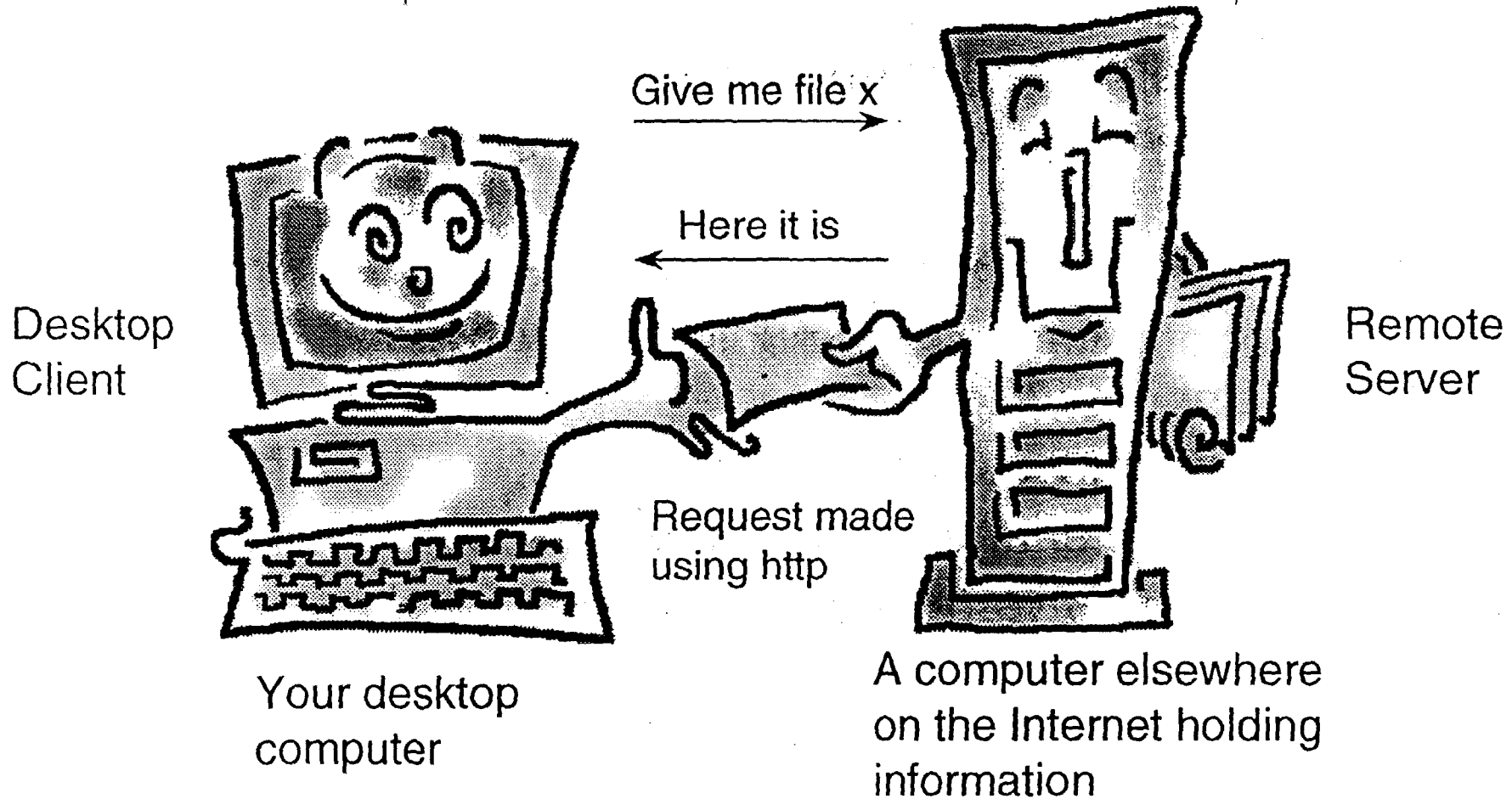
Terminology

⇨ **WWW - World Wide Web**

Distributed multimedia hypertext system

⇨ **HTML - HyperText Markup Language**

Native language for documents on the WWW

⇨ **HTTP - HyperText Transfer Protocol**

Set of rules for communication between client & server

⇨ **URL - Uniform Resource Locator**

Address of an object on the Internet

⇨ **CGI - Common Gateway Interface**

Defines how browser and server programs)known as CGI scripts) exchange data

A web of Web Servers

Server 1
(DEC)
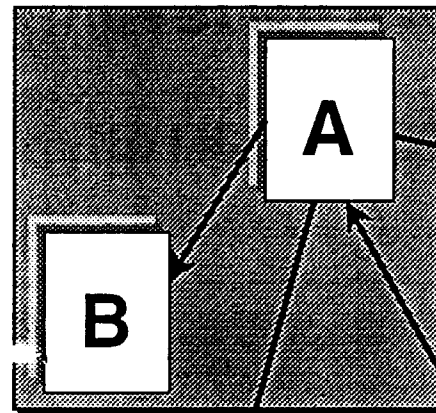
Server 2
(Microsoft)
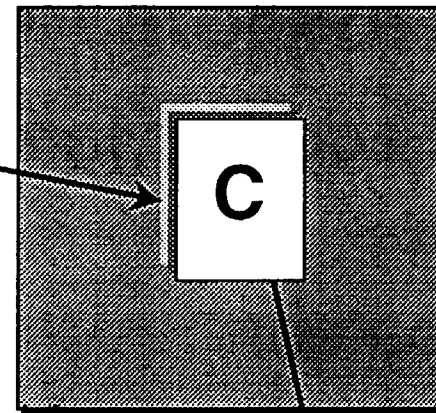
Server 4
(ISOC)
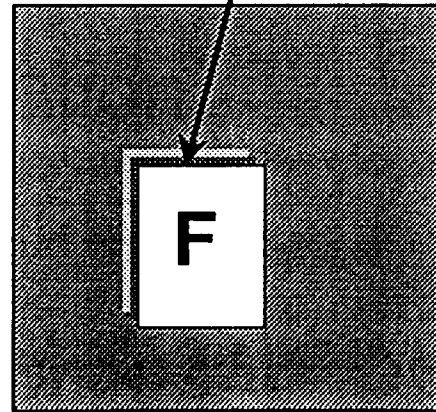
Server 3
(NCS)
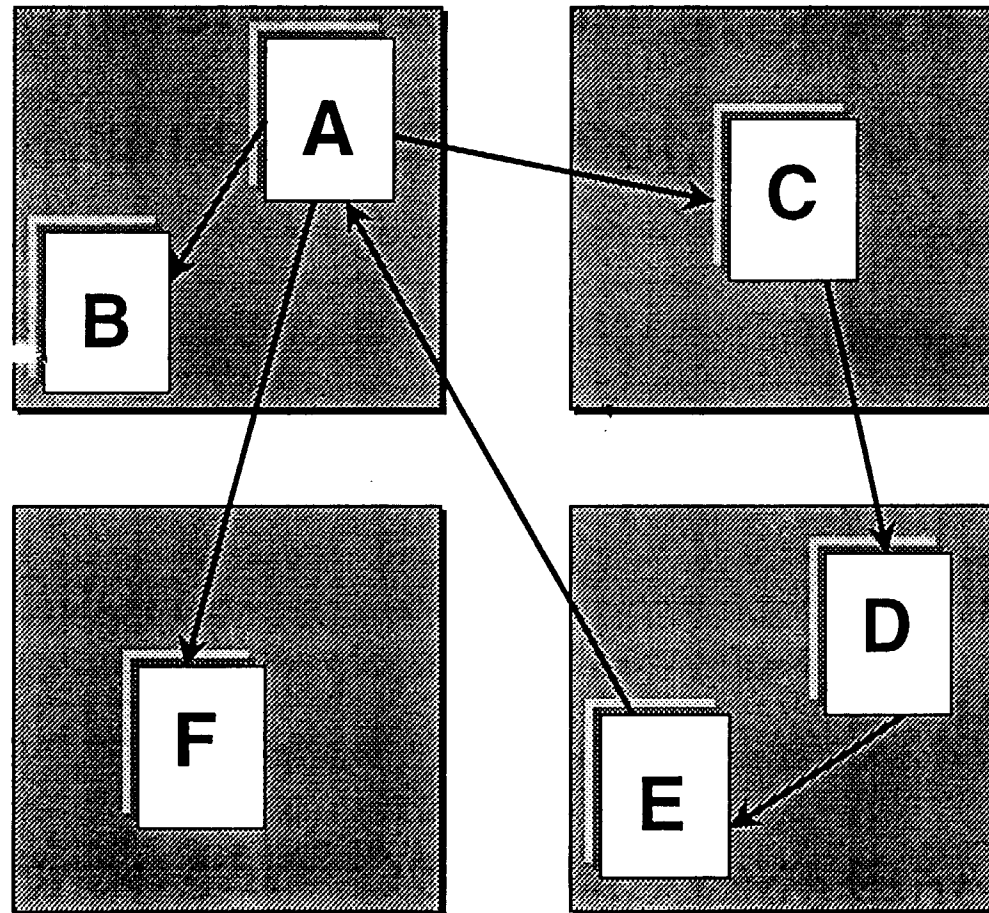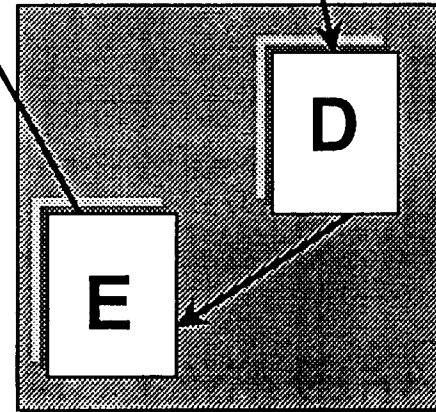
Locating Internet Resources

⇨ **Uniform Resource Locator (URL)**

Standard address format for Internet resources

URL indicates:

– Method of access

– Location

⇨ For example:

http://www.ghana.com.gh/index.html

http://www.ghanamail.com

HTTP Header

Server

Simple Request
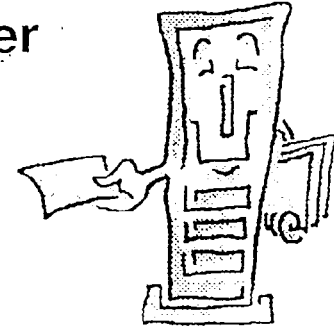
```
Get /index.html HTTP/1.0
Connection: Keep-Alive
User-Agent: Mozilla/3.4Gold (WinNT; I)
Host: www.ora.com
Accept: image/gif, image/x-xbitmap, image/jpeg, */*
```
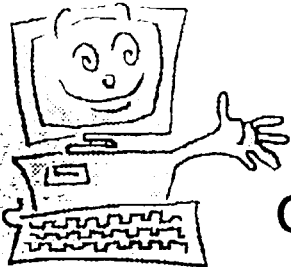
Client

HTTP Header

Server
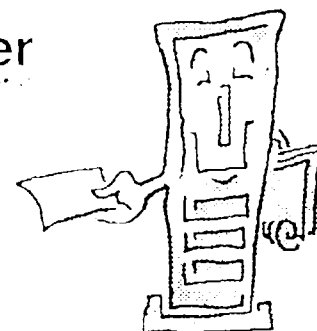
Server Reply

```
HTTP/1.0 200 Ok
Date: Tue, 17 Jun 1997 01:01:51 GMT
Server: Apache/1.2b10
Content-Length: 1613
Content-Type: text/html
[blank line]
[Content]
```
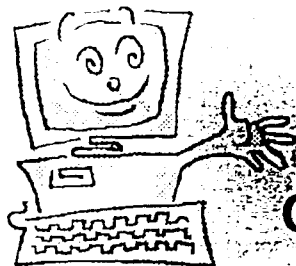
Client

HTTP Header

Posting form data

Server
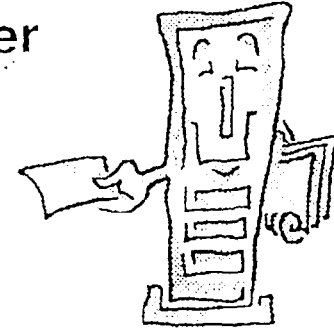
```
POST/cgi-bin/birthday.pl HTTP/1.0
User-Agent: Mozilla/3.4Gold (WinNt; I)
Host: www.ora.com
Accept: image/gif, image/x-xbitmap, image/jpeg, */*
Content-Type: application/x-www-form-urlencoded
Content-Length: 20


month=august&date=24
```
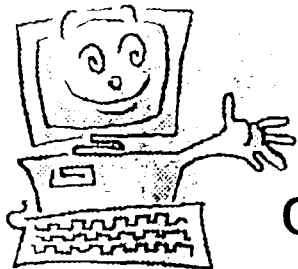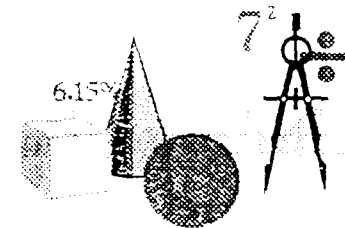
Client

Aesthetics - Images

- Decoration or information?
- Use sparingly
- Reduce loading delays:
  - use thumbnails where practical
    sunsite.unc.edu/wm/paint/auth/
  - keep images as small as possible - HEIGHT and WIDTH attributes don't help

Why Author on the Web?

⇨ Global audience

⇨ Attractive multimedia delivery

⇨ Increasing use in teaching, research, business and commerce

⇨ Widely accessible, platform independent

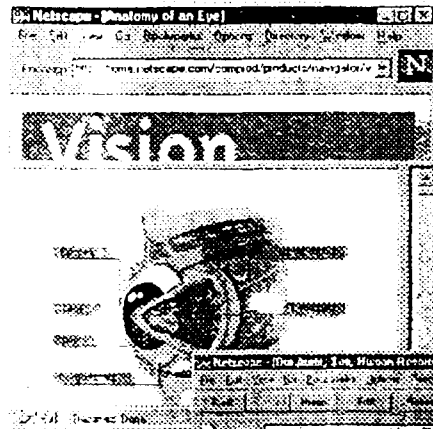⇨ No paper, no distribution, immediate updates

⇨ It's easy!

Web Page Uses

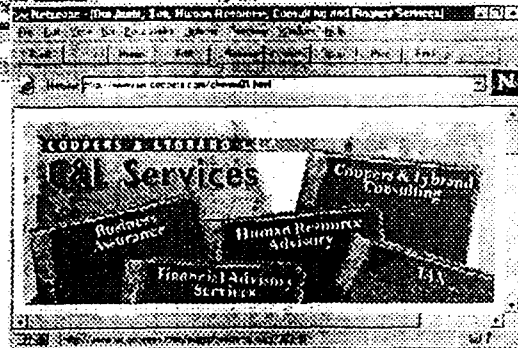## Web is used for many purposes - what's yours?

www.netscape.com/comprod/products/
navigator/version_2.0/frames/eye/

www.broonale.co.uk/uk/

Marketing

Teaching

Sales

Services

www.us.coopers.com
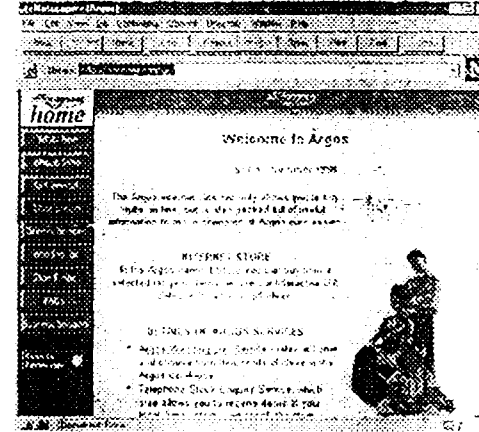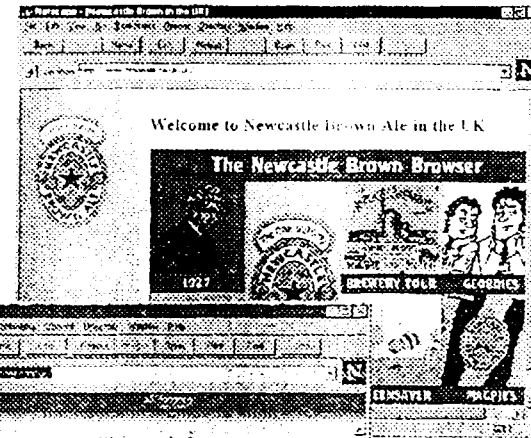
www.argos.co.uk

What is HTML?

HyperText Markup Language: the 'native language' of the Web

- HTML documents use markup tags:

  ```
  <H1>Introduction</H1>
  ```

- Markup tags are case insensitive `<H1>` or `<h1>`
- Attribute values may be case sensitive
  (e.g. filenames)

  ```
  <IMG SRC="logo.gif">
  ```

- Markup tags are usually paired to denote the start and end of an element (`<H1>` and `</H1>`)
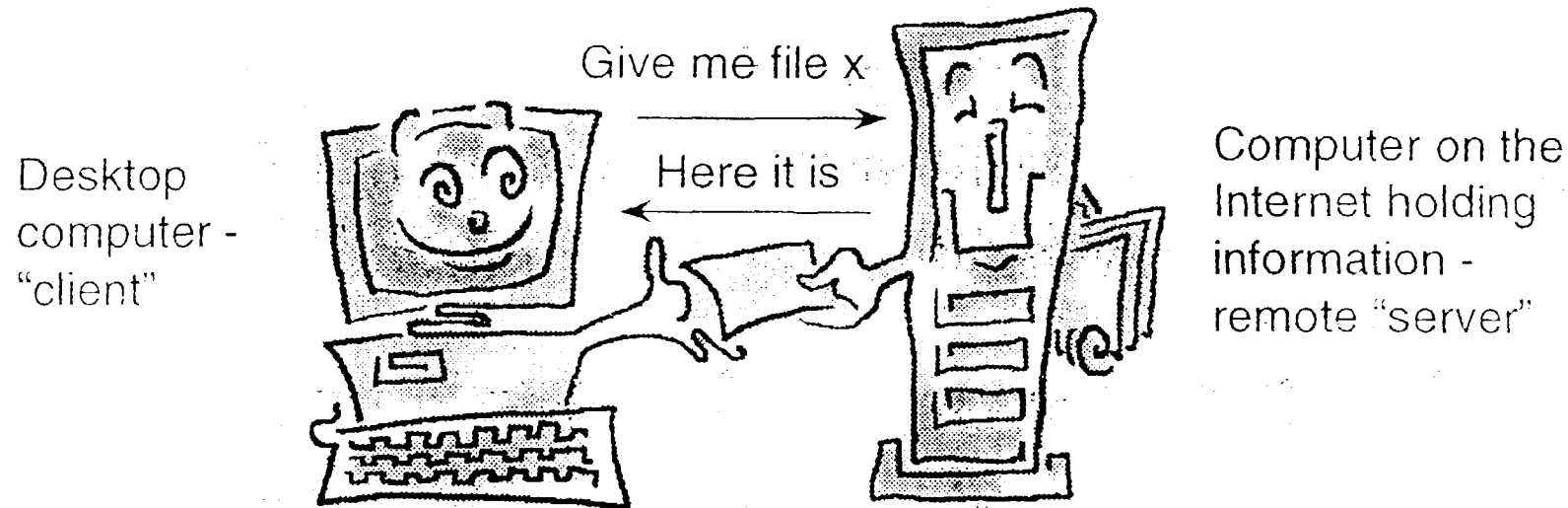
Web Architecture

Web is based on a client/server architecture using

HTTP: *Hypertext Transfer Protocol*

Set of rules for communication between Web clients and servers

Give me file x

Here it is

Desktop computer - "client"

Computer on the Internet holding information - remote "server"

Unix, Macintosh, PC ...

e.g. http://www.ghana.com.gh/index.html
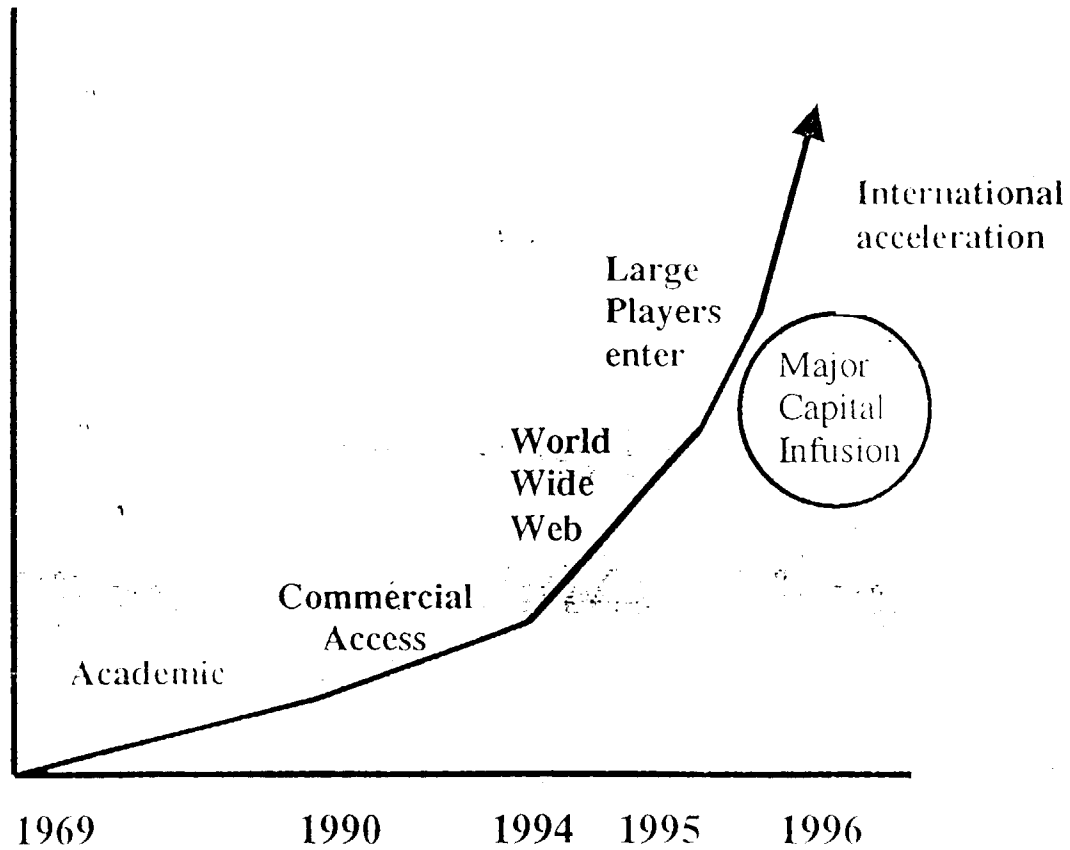
TYPICAL INTERNET SERVICES

- •Electronic Mail(e-mail) [smtp]

- •World Wide Web(WWW)[http] ~ pull

- •File Transfer Protocol [ftp]

- •News Groups [nntp]

- •Internet Relay Chat (chat)[IRC]

HOW DID IT ALL BEGIN?

- In 1973, ARPA began an "Internetworking Project" to link computer networks .

- By 1974, Robert Kahn and Vinton Cerf developed the Transmission Control Protocol/Internet Protocol (TCP/IP) to handle data transfer between different types of Networks over phone lines. The Internet was born.

The Internet: Evolution of a Growth Industry

International acceleration

Large Players enter

Major Capital Infusion

World Wide Web

Commercial Access

Academic

1969   1990   1994   1995   1996

NEWER SERVICES

- Fax2fax

- Phone2phone

- CU See Me (Video conferencing)

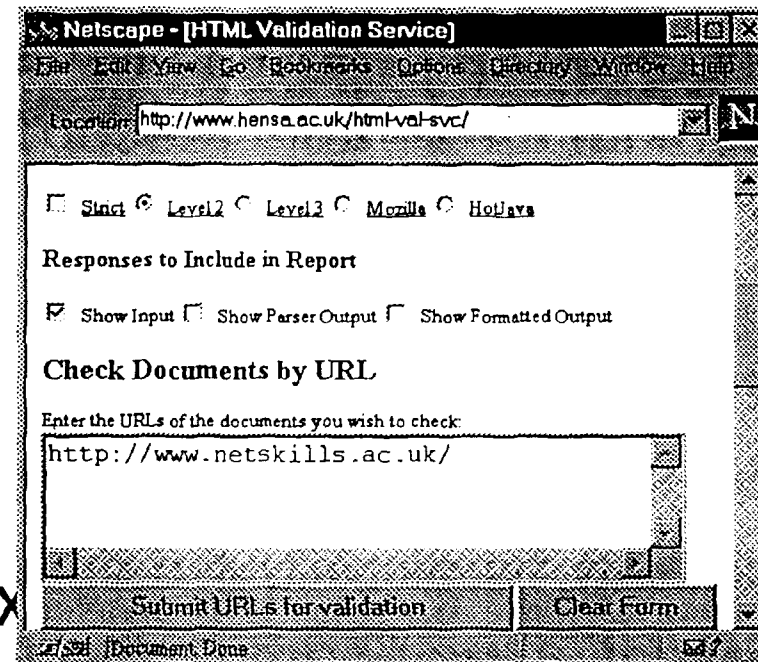- Streaming Video (Multicast - Push)

Web Page Validation

⇨Validation Services can check your HTML for:

- Typing mistakes: `<\H1>`
- Syntax errors:

  `<B>Bold<I>Italic`

  `</B>text</I>`

- Conformance to a standard

⇨Simple checks or complex analysis

www.hensa.ac.uk/html-val-svc/

Dr HTML: www2.imagiware.com/RxHTML/
Weblint: www.unipress.com/cgi-bin/WWWeblint

Summary

⇨ The Web can be used as an effective medium for a variety of purposes

⇨ HTML is the language behind Web pages

⇨ Authoring tools hide the complexities of HTML

⇨ Creating HTML by hand can offer greater:
  flexibility, functionality and standard HTML

⇨ Validation and standards are very important for consistency and accessibility
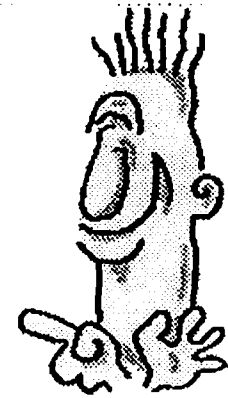
Creating Web Pages

Aim: to explore the tools and techniques
involved in authoring Web pages and to give an
awareness of standards and validation

Summary

⇨ First impressions influence the user

⇨ Navigation can help find information

– but no substitute for well organized information

⇨ Consider information content carefully

– language, style, accessibility

⇨ Appearance is secondary to content

⇨ The intended audience is paramount
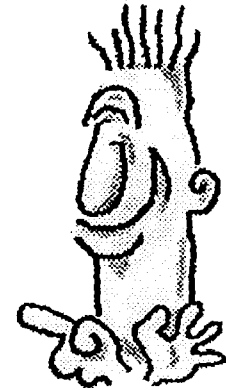
HTML Standards

- ⇨ Maintain consistency and wide accessibility
- ⇨ Coordinated by the WWW Consortium (W3C)
- ⇨ Cooperation of major Web browser developers - Netscape, Microsoft
- ⇨ HTML 3.2 - Current standard - covers most commonly used elements
- ⇨ HTML 4.0 - Recommended Standard with new features

  www.w3.org/pub/WWW/MarkUp/

Authoring Tools - Problems

> Loss of control over page creation
  - automatic insertion of commercial information

> Non standard HTML

> Limited Web page features
  - tables, forms?

> Best guess conversion
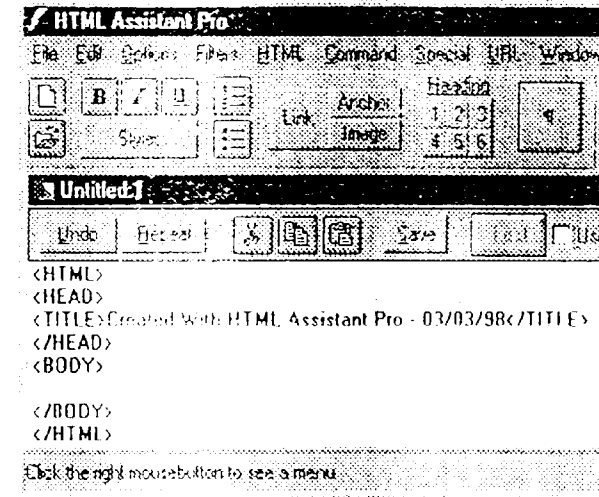
```
<HTML>
<HEAD>
<TITLE>Created With HTML Assistant Pro - 03/03/98</TITLE>
</HEAD>
<BODY>

</BODY>
</HTML>
```

Click the right mouse button to see a menu.

An Overview of Marketing
By
J. A. VILLARS
Chief Consultant, LINFOTEC Systems and Service
P. O. Box M.191, Accra. Ghana

A. **Marketing**

Marketing is defined by the American Marketing Association as:
'the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organizational objectives'.

Marketing consists essentially of three elements, namely, the provider, the commodity and the buyer. When applied to information, it consists of the information provider, the information and the information user.

Marketing also involves a number of functions that are usually performed by many people including manufacturers, wholesalers, retailers, marketing specialists and consumers. The functions are:

    i.)   Marketing Research

    ii.)   Consumer Analysis

    iii.)   Pricing

    iv.)   Promotion and Advertising

    v.)   Buying

    vi.)   Selling

    vii.) Distribution

    viii.) Management

    ix.)   Social Responsibility

B. **Objective of Marketing**

The main aim of Marketing s customer satisfaction even though the provider or seller also requires satisfaction either in terms of profit or the satisfaction of having done a good job or even of having provided customer satisfaction. It is a two-way process. However factors that help satisfy the customer include the following:

i.) Product Quality and/or (quantity, volume, weight, size, etc)

ii.) Service Performance/Employee Performance

iii.) Image of Company/Firm (Armani, Dolcis, Christian Dior, etc)

iv.) Competition

v.) Price-Value Relationship

vi.) The Delivery System

C. **Factors Affecting Marketing**

Marketing is always influenced by a host of uncontrollable (usually unpredictable) factors. They are;.

i.) Customers

ii.) Competition

iii.) Government

iv.) Economy

v.) Technology

vi.) Media

D. **Information Marketing Strategies**

As already indicated above the three most critical elements of marketing are the Provider, the Information and the User. To plan an effective strategy for information therefore, it is necessary to examine the characteristics of the three elements.

i.) The Information Provider – Characteristics
- Qualification and Knowledge of Subject
- Skills in Housekeeping, Retrieval, Repackaging, Marketing
- Attitude

ii.) The Product Information – Characteristics
- Features and Peculiarities
- Types (See Papers on "The Nature of Industrial Information" and "Information Systems and Services, Information Products")
- Quality (Appropriatness, Accessibility, Timeliness)

iii.) The User – Characteristics
- Needs and Wants
- Sophistication
- Behaviour and Idiosyncrasy

E. **Role of the Information Provider in Marketing Information**

Although it is the Librarian or Information Officer who has direct responsibility for marketing industrial and technological information, this function may sometimes be confused with the marketing of the parent organization itself. In the case of the latter the parent organization also has a part to play in the overall marketing process although this role is more specifically assigned to the department of Public Relations or Public Affairs, or to the Marketing Department. The main distinction lies in the product that is being marketed, i.e., information or another product. Difficulties may arise however when the product is a service, especially in the form of advice or extension.

In research institutions like the CSIR, especially in the light of recent developments regarding commercialization of research findings, responsibility for marketing information becomes blurred. Is it the sole

function of say the Institute for Scientific and Technological Information (INSTI) or whether the responsibility should be shared with the Commercial Manager, or sometimes with the PRO? There is a tendency to duplicate effort among the various players.

There is the need for clear definition of roles and functions and there is also the need for proper coordination of the variety of marketing activities to be undertaken. There is also the need to stress the complimentary nature of their roles. Depending on the organizational setup, the function of overall coordination could be assigned to INSTI, with emphasis on the need to collaborate with the Commercial, Marketing and Public Relations departments.

NATIONAL SEMINAR ON ADVANCED TECHNOLOGY FOR GLOBALIZING INDUSTRIAL INFORMATION
ACCRA, GHANA, 7TH – 12TH DECEMBER, 1998

The Nature of Industrial and Technological Information
By
J. A. VILLARS
Chief Consultant, LINFOTEC Systems and Services
P. O. Box M.191, Accra. Ghana

A. What is Meant By Industrial and Technological Information

The term 'Industrial Information', according to an old UNIDO document, refers to

- "specific items of scientific, technical and economic knowledge that can be communicated and applied in order to facilitate and accelerate the process of economic growth."(UNIDO, 1969).

This is a rather broad definition since virtually all other types of information also eventually facilitate and accelerate the process of economic development.

Also, the definition does not take account of that type of knowledge or information which may not be regarded as 'scientific' knowledge. Here, one is referring to traditional knowledge or know-how, which is usually based on empirical knowledge from practical experience. (Cf. How our local fishermen are sometimes able to forecast the weather, or even anticipate and predict a good catch by merely looking into the skies.)

A second attempt at a definition is as follows:

- Industrial Information is information that helps industry to function well in achieving its goals and objectives.

B. Key Ingredients of Industrial and Technological Information
(At all the various levels e.g. the individual Organization Level, the Sectoral or National Level, or at the Global Level, the key ingredients of industrial and technological information are:

i.) The information must be Scientific (or based on empirical study)

ii.) It must be Technical (or Technological)

iii.) It must have Economic benefit.

At the national and global levels, these elements are integral to national or global development plans and processes. The elements are dependent on the science and technology infrastructures that governments put in place, and on the national social and economic policies. At the individual organization level also, the elements are equally applicable. Every organization requires information that is based on sound study or research or even on tested traditional knowledge; it requires information that is based on know-how and which can be converted into a product or service; and it requires information which would result in economic gain.

At the individual organizational level also, the organization constitutes the direct beneficiary of the infrastructures and policies provided at the national level, and if the organization performs well, there is a resultant salutary effect on the national economy in return. One is dependent on the other for their mutual benefit, that is, the organization or industry as a whole and the nation.

C. **Features of Industrial and Technological Information**

i.) Like other information types, industrial and technological information is also subject to the global phenomena of "information explosion", and of "information over-load and information under-use".

ii.) Also, like all other information types, industrial and technology information therefore has to be Managed (generated, identified, collected, processed, stored, retrieved, re-packaged -where necessary-, disseminated and used).

iii.) Other pertinent issues that arise in the management and use of industrial and technological information, again like other information types, include the need to provide the right information to the user at the right time, in the right form and at the right price.

iv.) The call for <u>information re-packaging</u> comes into sharp focus at this stage.

v.) Issues of <u>information marketing</u> also arise at this stage, and so do issues of determining specific needs of the <u>information user</u> and the role of the <u>information provider</u>.

vi.) Particularly with the marketing of information, the <u>supply</u> side continues to <u>outweigh</u> by far, the <u>demand</u> side. (Examples from participants' experience).

D. **Peculiarities of Industrial and Technological Information**

Industrial information peculiarities are determined by the size, (large, medium, small), and category or group under which the industry is classified and the users. The concept of "Industry" is often interpreted in a restrictive sense to cover only <u>Manufacturing</u>. Other industries can be categorized as <u>Service</u> industries. All industries, whether manufacturing or service, large, medium or small, require and use industrial and technological information in one way or the other depending on the industry type or group.

i.) In the Manufacturing group there are sub-sectors like <u>Agro-based</u> industries, the <u>Food and Beverages</u>, <u>Wood</u>, <u>Textile</u>, <u>Leather</u>, <u>Rubber and Plastics</u> ,<u>Chemical</u> and <u>Metal</u> industries.

ii.) Under the Service Industry category are <u>Agriculture and Fishing</u>, <u>Advertising</u>, <u>Catering</u>, <u>Consultancy</u> services, <u>Construction</u>, <u>Extractive Industries</u> (Mining, Timber and Logging), <u>Finance</u> (Banking and Insurance), <u>Informatics</u> and <u>Information Technology</u> (including Information Brokerage), Telecommunications, <u>Tourism</u> and Transport (road, rail, air, water).

iii.) Another criterion for the classification of industries is the size; such as <u>Large</u>, <u>Medium</u> and <u>Small-Scale</u> industries.

iv.) For all the various sub-sectors listed above, the typical industrial information users can also be grouped into <u>Research Scientists, Academics and Students, Policy-makers and Planners, Large entrepreneurs and industrialists, and Medium and Small-scale, and Rural /Cottage industries.</u>

v.) Different categories of users also determine the types of industrial and technological information and the special peculiarities required by each user category.

For example, whilst the research scientist would be typically interested in innovations in processes and products, the academic and student may be interested in socio-economic issues. Policy-makers would be concerned with matters of policy such as and regulations and legislation. The large-scale industrialist would be interested in patent information and standards, the stock market and investments The typical small-scale entrepreneur would like to have information on sources of raw material, credit, more efficient technologies and equipment, and markets for his products.

[**NOTE**: These are only some typical examples because all user categories may require several or all information types, depending on what they are engaged in at a particular time].

E. **Types of Industrial and Technological Information**

1. Information on raw materials such as the type, quality, quantity and reliability of supply, the source and the price, etc.

2. Information on the processing methods, procedures and techniques so as to reduce costs, increase speed or volume, to improve quality or to meet laid down standards and specifications.

3. Technical information to learn about developments in the technology, and for innovations or adaptations of already available technologies.

4. Management information using statistical data and profiles for projecting national, regional or international trends at the macro level, and a micro level to ascertain trends in production targets based on internal or external data, for forecasting market trends and pricing.

5. Marketing information on new markets, user satisfaction, pricing and on new competitors and technologies.

6. Research and Development information to generate new techniques, ideas, processes and standards.

7. Appropriate technology information to ensure that the most appropriate technologies in terms of skilled manpower, raw material resources and infrastructural facilities, and environmental issues, are applied.

8. Information on machinery and equipment on the various makes, spares, maintenance, costs, and changes or improvements to avoid obsolescence and down time.

9. Tools and implements information to keep up to date with new types and designs to improve efficiency.

10. Funding and investment sources of information to obtain and determine investment opportunities, the best terms of credit, licensing or sub-contracting and technology transfer.

F. **National Infrastucture to Support Industrial and Technological Information-Ghana**

i.) Economic Planning and Policy-making
Clear and progressive national economic policies and plans that promote entrepreneurship and industrial growth and development. (Cf. Import Substitution, Economic Recovery Programme, Structural Adjustment Programmes, Trade Liberalization and Selective Protectionism, and Divestiture of state-owned enterprises.

ii.) Government Institutional Machinery
The creation and strengthening by government of support institutions like the Ministry of Trade and Industries, (MoTI), Ghana Investment Promotion Council, (GIPC), Ghana Export Promotion Council, (GEPC), Environmental Promotion Agency, (EPA), Ministry of Mines and Energy, (MoME), the Statistical Service of Ghana (SSG), among others.

iii.) Development of Facilitating Institutions
The creation and strengthening by government of facilitating institutions like National Board for Small-scale Industries, (NBSSI), Ghana Regional Appropriate Technology Industrial System, (GRATIS), Development and Application of Intermediate Technology, (DAPIT), Intermediate Technology Transfer Units, (ITTUs), Management Development and Productivity Institute, (MDPI), EMPRETEC Ghana Foundation (GEF), Private Enterprise Foundation (PEF), etc.

iv.)   Private Industrial and Manufacturing Associations
These include agencies like the Association of Ghana Industries, (AGI),
Ghana National Chamber of Commerce, (GNCC), Ghana Chamber Mines,
(GCM), Federation of Associations of Ghanaian Exporters, (FAGE), Ghana
Association of Women Entrepreneurs, (GAWE) etc.

v.)   Scientific Research Institutions and Institutions of Higher
       Learning
These include institutions under the CSIR, such as the Science and
Technology Policy Research Institute, (STEPRI), Institute for Industrial
Research, (IIR), Building and Road Research Institute, (BRRI), Food
Research Institute, (FRI), Forestry Research Institute of Ghana, (FORIG)
and other non-CSIR ones like the Ghana Standards Board, (GSB), Centre for
Scientific Research into Plant Medicine, (CSRPM), Technology
Consultancy Centre, (TCC) the Bureau of Integrated Rural Development,
(BIRD) and the Universities and Polytechnics.

vi.)   Scientific and Technology Information Systems and Services
These include the Institute for Scientific and Technological Information,
(INSTI), Ghana Agricultural Information System, (GAINS), the Energy
Information Centre, (EIC), as well as the documentation and special
information systems in the various organizations and research institutions
mentioned above.

vii.)   Non-Governmental Institutions (NGOs)
Some NGOs which are engaged in activities related to industrial and
technological information include the West African Enterprises Network,
(WEN), Centre for the Development of People, Ghana Association of
Women Entrepreneurs, (GAWE), Friedrich Nauman Foundation, World
Vision International, (WVI), National Council on Women and Development,
(NCWD), etc.

I.   PLANNING FOR INFORMATION MARKETING

Information marketing has become popular in recent years because of the reduced

funding for library services world-wide. The competition for limited funding means that

libraries must review their information providing activities in order to look for areas of "selling"

its products and services to generate revenue.

There is always the feeling that library-related information should not be marketed

because the library is a social agency established to serve the educational and information needs

of society. But the current push towards developing self-sustaining information dissemination

operations is changing this idea.

Research is often the first step taken in information marketing. Such research aim to

find answers to questions such as:

1.   Who are the potential users of the information?

2.   What type of information are they interested in?

3.   In what forms and through what channels do users want to receive the service?

4.   How will users make use of the service?

5.   What is the full range of the service?

6.   Could you consider charging for the service?

7.   Will it produce enough income?

8.   How much are users willing to pay?

9.   What is the most effective way of informing users?

10.   When is the most appropriate period to start?

After these questions have been considered:

1. A sample of users is determined

2. Questionnaire is designed

3. Interviews are set up

4. Fieldwork is carried out

5. Results are analysed

6. The report is written

7. The final decision is implemented and the appropriate services and products are publicised.

Before a decision is taken to market information some amount of research, planning and public relations must be carried out by the library.

Public relations is defined as a deliberate, planned and sustained effort to establish and maintain mutual understanding between an organisation and the public.

The Library's Public include the following:

1. Employees

    The Administration
    Clerical Staff
    Professional Staff
    Retired Employees
    Employee Families

2. Funders

    Institution/Organisation
    Government
    User group/Individuals
    Foundations/Agencies

3. The Media

    Radio
    T.V.
    Newspapers
    In-House publications
    Newsletters

4. Library Customers

    Old Users
    New Users
    Potential Users

These groups must be sensitised in advance with the necessary feedback obtained before information marketing begins.

Techniques to market information in the library include the following:

1. Personal contacts and Discussions
2. Library Guides
3. Newsletters
4. Staff Manual

5.   Annual Reports
6.   Library Weeks
7.   Library Display   -   a)   Exhibitions
                                   b)   New Books
                                   c)   Subjects
                                   d)   Authors
                                   e)   Anniversaries
8.   Talks and Seminars
9.   Library Committees
10. Posters and Signs
11. Feature Articles/Press Release
12. Radio/T.V. Interviews
13. Library Staff   -   a) Training   b) Performance
                              c) Attitudes   d) Appearance
14. User Education/Orientation

TELEVISION

Strengths	Limitations
1. Reaches a larger educated audience	1. Too expensive
2. Utilises sight, sound, motion	2. Need more repetition
3. Audience selectivity possible	

RADIO

1.	Cheaper to use	1.	Lacks visual image
2.	Reaches more homes generally	2.	Easier to forget message
3.	Good for special events		

II.   Attitudes to Marketing

Dr. Blaise Cronin wrote, "The key feature of the marketing model is its emphasis on satisfying, first and foremost, the needs of the client."[*]

Cronin is a librarian, and he is saying to his colleagues that they must be flexible, dynamic, and responsive to their users' needs. This opens the question of attitudes. Everyone working in the information area knows colleagues who are responsive to all users and all their needs, even when not having the pertinent resources. Others are responsive to some users, and yet others are simply not responsive.

Where do we as information professionals stand concerning the orientation of our institution and our products?

a.   *Are we production-oriented?*

In this category are those who continually straighten the book shelves, but pay no attention to whether or not the books are in order. Here the smooth performance of the routine tasks of the organization is an end in itself, outweighing any idea of benefits to the human user.

b.   *Are we product-oriented?*

Are we more concerned about our product than our customers? Cataloguers who are not interested in the users, but insist on making the catalogue "perfect"; circulation librarians who recall books so that they can be all on the shelf safe from users; these and others make up the product-oriented group.

c.   *Are we sales-oriented?*

To sales oriented professionals, the main task is seen as interesting people and selling the product that they now have, without concern for what the users may actually want.

d.   *Are we customer-oriented?*

To the customer-oriented information manager, the customer and the customer's needs are paramount. The most important tasks are identifying potential customers, determining their needs, and provide them.

$ Blaise Cronin, *The Marketing of Library and Information Services* (London: Aslib, 1981), p. 6.

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Sources of Industrial and Technological Information
By

A. A. ALEMNA

A. General Sources

- Individuals (Experts in the field)
- Organizations (Commercial/Industrial Organizations, Professional Associations, Government institutions and organizations, etc)
- Industrial/Technological Literature (Books, Reports, Standards, Conference/Seminar Papers)*
- Information Services (Information Brokers, Information Bureaux, etc.)
- Libraries (All types but particularly Special Libraries)
- Invisible College Network (Informal groups of people working in a related subject field and sharing ideas)

B. Specific Sources

Information	Source
Properties of Materials and Numerical Data	Professional and Research Guide Books, Journal Articles, Organizations
Product and Service Data	Commercial Organizations, Guide Books, Patents, Reference Sources, Standards, Trade Literature
Brief Introduction to a Subject	Abstracts and Indexing Journals, Books and Comprehensive Literature Guides, Journal Articles, Reference Materials

Surveys and Reviews	Abstracting and Indexing Journals, Bibliographies, Books, Literature Guides, Journal Articles, Reference Materials
Details of Current Research	Commercial and Professional Organizations, Educational Institutions, People, Reports and Guides
Latest Information on Subject	Abstracting and Indexing Journals, Educational Institutions, Journal Articles, Newspapers, People, Periodical Articles, Theses and Dissertations
Detailed and Advanced Information On a Subject	Abstracting and Indexing Journals, Bibliographies, Books, Conference Proceedings, Government Publications, Journal Articles, Professional and Research Organizations, Reviews, Theses and Dissertations

*[See Also topic on: Nature of Industrial and Technological Information above]

The type of literature in industrial and technological libraries is quite complex. Just as the information in such libraries differ from those found in other types of libraries, it is also clear that even among the industrial and technological libraries, information differs from one type to another.

C. Types of Industrial and Technological Information Sources

Generally, however, industrial and technological information may be broadly grouped according to the following types:

    i.)   Conference Literature

Conferences are very important in the communication of industrial and technological information. Attendance at conferences is important because it offers opportunities for conversation about new research or development. As it is not all conference papers that are published, it is very easy to lose this very important type of information.

ii.) Dissertations and Theses

These record original research and contain state-of-the-art reviews of literature. They are excellent sources of industrial and technological information.

iii.) Government Documents

In most countries, the government is the largest publisher. These documents come in the form of monographs, pamphlets etc. Unfortunately, a number of industrial and technological information from government sources are often classified as sensitive or confidential information.

iv.) Laboratory Notebooks

These are often in-house information relating industrial and technological reports from the organization.

v.) Journals

Journals are most important form of industrial and technological information. They provide current information in the related subject area.

vi.) Maps

A map is a compact representation of a remarkable amount of data. It can thus provide essential industrial and technological information especially in disciplines such as solar energy, earth sciences and environmental sttudies.

vii.) Microforms

These contain images of textual documents or graphics reduced to the point where they are too small to be read with the unaided eye. They may be in various formats such as microfiche or microfilm. They may be used for technical reports, journal backfiles, or special collections. They serve to cut down space and preserve materials.

viii.) Numeric Data

Scientific and technological information may also be in the form of numeric data. These include fundamental constants, properties of chemicals, physiological data etc. They are mostly found in handbooks and tables.

ix.) Patents

Patents are a very important type of industrial and technological information. They are a specialized kind of literature as they sometimes come in obscure languages and terminologies which may not be understood by the non-professional in the subject area.

x.) Standards and Specifications

These describe the features of something desired by a purchaser. They cover
products, materials, processes or services. When a specification is accepted
by recognized authority, it becomes a standard. Standards and specifications
can be formulated by companies, trade associations, professional societies,
government agencies, national and international standardizing agencies.

xi.) Technical Reports

Technical reports are produced for a sponsoring agency and they allow
prompt dissemination of research results. They are a very common but
essenial form of industrail and technological information.

xii.) Translations

Some industrial and technological information come in different languages.
Unfortunately, the number of industrailists and technologista who are able to
deal with foreign languages is limited. A number of requests are therefore
made for translations from languages other than English.

xiii.) Databases

Industrial and technological information may also be in the form of a variety
of databases. These may be either bibliographic, referral, numeric or full
text. Specific examples are SCISEARCH and NTIS which are based in the
USA.

xiv.) Software

Some recent industrial and technological information now come with their
own software, e.g. Energy Software. Increasingly, industrialists and
technologists are getting interested in what softwares are available in their
subject areas.

xv.) CD-ROM

Related to Software (10) above is the CD-ROM which has also become an
innovation in the industrial and technological information provision.

Guidelines for Pricing Information Services
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A. **What is Pricing**?

Pricing is a critical aspect of the process of buying and selling in Marketing and it is aimed at satisfying both the seller and the buyer.

Pricing embraces direct and indirect costs, as well as any other value-added costs in terms of margins or profits in any profit-making venture.

Sometimes, pricing does not seek to make profit but is only aimed at sustaining the enterprise, in other words, at least, to just break even and not incur losses.

Price is not the same as cost. The price (usually the selling or market price) is the cost of production of an item, plus a fair portion of other costs incurred by the enterprise which cannot be attributed any particular item or product.

B. **Elements in Pricing**

As noted above, two main factors are those involved in direct and indirect costs.

    i.)   Direct costs cover costs of all items that are procured and used directly (the inputs) in the manufacture or processing of a product. For example, raw materials, machinery and equipment, consumable items, staff salaries of production personnel, etc.

ii.)   Indirect costs cover items of expenditure that are not directly involved in the production of the finished goods but which facilitate or help to provide the appropriate environment for the production of the said goods. For example, land and buildings, electricity, water, transportation and other utilities, salaries of other personnel not directly involved in the production and other general overhead expenses, including set-up costs, taxes, general promotion and advertising.

C. Issues in Pricing Information Services and Products

Issues that arise in the pricing of information services and products include:
- Whether they can be sold (or whether they will be bought)
- The price at which they can be sold
- Aspects or items of the service that can be costed (Direct and Indirect Costs)
- Costing Intellectual Effort or How other 'value' or intangible items can be costed

i.)   Information Services – are they Saleable?

In the context of developing countries like Ghana, are information services, especially the intangible services, saleable, to warrant the pricing of such services in the first place?

[Discuss this in the light of the free library services and the tradition to which the public has been so used, vis a vis the type of services that libraries provide
- Would the average industrialist or entrepreneur be willing to pay for such intangible services?
- What measures can the information provider take to make the information service worth paying for?
- How can he sensitize the industrialist? (An aspect of marketing and awareness creation – promotion, advertising and user education)
- How can he add value to the service he provides? (Issues of **Relevance** and Appropriateness, Specificity, Usability, Timeliness, Ease of Access, Speed of Delivery, Cost Effectiveness].

ii.)   For how much should services sold?

Determining the price of information services, especially the intangible services, is not an easy task. The difficulty arises partly because of difficulty of determining the

- <u>value</u> of the service to the 'buyer', and the buyer's perception of that value, which is determined by the
- <u>need of the buyer for the service.</u> (this may require the prior need for the service provider to prepare a product or service in anticipation of need, and presenting it to the buyer up front; the need would have been pre-determined by the information provider. Creating a demand, and also partly because of the difficulty of placing a price tag on an <u>intangible</u> 'thing'.

iii.) <u>Which items or aspects of the service (can or should) be costed?</u>

a.) <u>Direct costs of an information service include</u>
- items, products or services procured from other sources which are not free of charge or which entail some expense in their procurement. Examples include:
  - costs of on-line searches on commercial databases,
  - costs of telecommunication charges for online searches, even on free databases,
  - costs of sub-contracting tasks to other agencies; or costs of using the research or business facilities of other organizations.

These are the services paid for from information vendors or information brokerage and consultancy companies or firms. Such services include hiring of equipment for a particular project, repackaged products like films, sound tapes and video recordings, designs and technical drawings, slides and transparencies, printed matter and other extension material. It is also advisable to include here, a small percentage for unforeseen expenses like price fluctuations, or fluctuations in the exchange rate.

- items, products or services produced in-house but for which some inputs were purchased from outside,

Examples include:
  - Photocopies, (cost of toner and paper),
  - Searches downloaded on electronic or A/V media (cost of diskettes, microfilms),
  - Telephone, Fax and E-mail facilities

b.)   Indirect costs of information services, (i.e. the general overheads already stated).

For example,

- land and buildings, electricity, water transportation and other utilities, salaries of other personnel not directly involved in the production and other general overhead expenses, including set-up costs, taxes, general promotion and advertising.

c.)   Intangible services, of which the product is mainly then result of intellectual effort.

Examples include:

- Compilation of Bibliographies,
- Development of Databases,
- Literature Searches (Manual and Computerized CDROM Searches and searches on the Internet),
- Data Collection and Research,
- Selective Dissemination of Information (SDI) Services,
- Cataloguing and Classification,
- Abstracting and Indexing,
- Advisory and Consultancy Services,
- User Education and Training in the Use of Resources,
- Question and Answer Services,
- Report Writing.

d.)   Actual Pricing of Information Products and Services

As already noted above, the pricing of both the direct and indirect expenditure is not so much of a problem as the pricing of the 'intangible' items, or the intellectual effort. The two main factors to be taken into account in pricing the professional or intellectual input of an information service provider are:

i.)   intellectual or professional input itself, and the

ii.)   length of time or duration (Usually determined in the number of hours, days or man-months) spent by the professional on the assignment or task.

e.) Useful Guides in Pricing

- It ought to be noted however that professional or consultancy fees are very often rather arbitrary and may vary widely among information service providers. They therefore tend to be relative and also tend to be based on some comparison, either with rates charged by competitors or by other professional colleagues, or based on the level of sophistication of the information seeker as perceived by the provider.
- In order to avoid arbitrariness in determining rates and fees for professional work, it is highly recommended that the library or information centre providing information service, should join professional associations as a corporate entity, or that its professional staff should be encouraged to join professional associations in their individual capacity. This would provide some degree of rationalization (and legal) backing.
- A useful guide provided by the UK Institute of Physics, recommends for its members when they offer consultancy services, to peg the fees of a professional physicist at a daily rate of $1/60^{th}$ of the professional's annual salary. For the hourly rate, the institute recommends the use of $1/7^{th}$ of the daily rate.
- The Consultants Association of Ghana also recommends certain rates for its members. Relative rates are recommended for Chief, Senior and Junior consultants.
- Similar guidelines are provided by international organizations like the United Nations agencies and the World Bank. These agencies usually indicate the qualifications and experience for which the rates are applicable.

v.) Ability of Buyer to Pay

No matter how rational the pricing of an information service or product is, the bottom line rests on the ability of the buyer to pay. This is also a factor of the need of the buyer for the service or product.

[Stress the need for developing the service or product before offering it for sale and also stress the importance of user education, even in the user knowing that he does need information for his enterprise to prosper or make more profit].

However, it is prudent for the information service provider not to price himself out, whilst on the other hand he does not quote too low else the buyer might have the wrong perception that the quality of work is low.

iv.) The information may not be easily accessible simply because of
the constraint of <u>distance</u>.

v.) Inaccessibility may be due to the problem of <u>cost</u> or the long or
tedious process of obtaining the information.

F. <u>Methodology for User Study</u>

The very process of undertaking the study or survey is also fraught with
problems of approach and methodology which are varied and diverse.
Essential elements to be taken into account in conducting such studies
however include:

i.) Defining the user population,

ii.) Defining the objectives of the study,

iii.) Determining the data collection techniques

iv.) Designing the interview or questionnaire

v.) Actual data collection, Analysis and Report of Findings