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INTER-CONTACT
– AN INFORMATION CENTRE AND A TECHNIQUE

**Description of a planned computer-based information centre
on international and national organizations and related entities
to be established by the Union of International Associations**

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INTRODUCTION

Each year carefully collected data is available on the estimated population of each town and country, and for the world as a whole. This extends to the number cars, radios, newspapers, cinemas etc per 100 inhabitants, and to detailed information on the income, and in some cases the credit rating, of each person

No such systematic information is available on the number, nature and contact addresses of the organizations to which individuals and other bodies belong in order to represent, safeguard and develop their interests. This is true despite the fact that local and national organizations are the major means of canalizing and stimulating individual activity in connection with international programmes.

The lack of information disguises the importance of the organizational network as a resource for the attack on world problems. Because of this lack, existing organizations and their publications are under-used, there is an accelerating tendency to duplication of effort and proliferation of organizations and programmes. This results in duplication of research and publications, compounding the existing documentation problem, because it is exceedingly difficult to determine who is responsible for what. The current fragmentation and dispersal of effort led, for example to a "wastage" of \$1000 million in development aid in 1968 due to 'lack of coordination', according to a spokesman of the Organization for Economic Co-operation and Development.

The need for a general data "base as an aid to the study of organizations within the world system has reached a stage at which the available comprehensive and specialized directories and single purpose surveys no longer meet the requirements of users. The equipment and techniques currently available, the promised technological developments, and the cost of using the equipment favour the immediate use of an integrated approach to the organization and use of information on the world system.

This note describes the reasons for the establishment of an integrated, computer-based information system by the Union of International Associations (UAI). Provisionally named Inter-Contact, the information centre will focus on all types of bodies whose activities significantly affect the world system ~ whether they be international, national or local. Major emphasis will be given to international and multidisciplinary bodies

The main use of Inter Contact will be to facilitate the production and updating of UAI reference books, such as the Yearbook of international Organizations (now in its 12th edition). At the same time. Inter-Contact will be used for preparing address lists. for research. ncl for limited administrative work. Use of the Inter-Contact system will not be restricted to the UAI. Every effort will "be made to ensure that Intergovernmental and other non-governmental bodies make effective use of the addresses on file to contact organization which may wish to collaborate with their programmes or receive their publications. The Inter-Contact technique may be used, by other organizations, and it is hoped that general development of this technique will benefit all users and ensure that organizations are well-informed about each other's activities.

The unique advantages of the Inter- Contact system are its relative simplicity, low initial and operating costs, and flexibility of development. The priorities for its development, which stress international and multidisciplinary bodies and programmes, ensure that it gives an optimum overall view of the world system at any one time

The amount of information collected and stored may be very closely controlled in terms of the resources available: The use of the system may therefore be easily restricted to self--financing programmes if sufficient funds are not available at any time to develop its more ambitious possibilities.

The initial stress on international and multidisciplinary bodies ensures a wide variety of outside users of the information system which, by their use of it, contribute directly to its development and financial independence.

SIGNIFICANCE OF THE ORGANIZATIONAL NETWORK: AN UNEXPLORED RESOURCE

1. Much effort is devoted to the collection of detailed information on population and related statistics in every country (e.g. newspapers_f, radios, cinemas, books, libraries per 100 people, age and income ranges, etc_c). No systematic effort is devoted to the collection of information on organizations to which individuals and their representatives belong* It is not known, for example, how many local or national organizations exist, even in the majority of the developed countries. It is however through these organizations that individuals participate in society and support international programmes. It is by such bodies that individuals are influenced and it is via them that individuals can be supplied with information, encouraged to support international programmes, or involved in particular projects for peace, development, etc. The link between these organizations and international programmes is therefore particularly important. The organizational network is thus an important unexplored resource for the attack on world problems and the promotion of peace.

2. Systematic analysis of the organizational network facilitates the location of the most competent coordinating organizations in any field at the international, national or local level. This is essential to the design of international programmes which must (a) use limited resources to the best effect (b) take account of weaknesses and strengths in the organizational network in particular areas, (c) avoid aggravating programme duplication and wastage of effort.

3. Little can be done directly to foster peaceful and cooperative links between two bodies_v, for this depends on their individual wishes to develop their field of activity and their judgment on how it should be developed* Peace and international cooperation are therefore difficult to promote, What can be done, however, is to remove or reduce the current barriers to communication across:
 - geographical boundaries (e.g. between regional or national organizations)
 - subject area boundaries (e.g. between organizations with related fields of interest)
 - jurisdictional boundaries (e.g. between organizations of different types)Such barriers oppose and discourage the initiation, development, coordination and maintenance of inter-organization contacts which are essential to world peace and development.

4. An adequate structured collection of information on the organizational network is a basic requirement for any overall clear perspective on problem areas to facilitate allocation of funds for peace and development projects.⁵ Due to the volume of information involved, the systematic analysis of the organizational network and the reduction of barriers to communication can only be achieved with modern electronic data processing techniques and compatible statistical methods.

SUMMARY DESCRIPTION: COMPUTER- BASED INFORMATION CENTRE ON NATIONAL AND INTERNATIONAL ORGANIZATIONS AND RELATED ENTITIES

The Union of International Associations plans to establish an information centre in the period 1969-1970. Initially data currently on file or published in the Yearbook of International Organizations will be coded and stored via a service-bureau computer. Queries received concerning organizations or subject areas will be processed by the computer and the printed information will be returned to the questioner as mailing lists or analytical results.

ions to be coded.

In the early stages emphasis will be placed on international organisations (4000), their meetings (3000 - 4000 per year), and their national collective members (30,000). Related organizational structures, such as sub-commissions, treaties, programmes, publication series, libraries, etc. will then be added. As funds become available increasing numbers of national bodies in specialized fields will be included.

An eventual total of 100,000-500,000) organizations would provide an extremely useful aid to the development process and yet be modest, in technical terms, in comparison with equivalent files in commercial enterprises, which may include over 14 million addresses.

Type of details to be coded on each organization.

In the early stages emphasis will be placed on the name(s), address(es), fields of interest and a minimum indication of the type of organization. The system is however specifically designed in such a way as to permit the addition of a variety of details on an organization at later stages, either as users request new categories of information or as funds are made available by bodies interested in ensuring the availability of information on a particular type of organization.

Possible additional details could includes membership by country, type of activity by country, bodies to which recommendations are sent or from which they are received, bodies to which information is sent, etc.

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- a) Flexible mailing list for questionnaires, meeting invitations, programme information, periodical mailing lists, circulation of reports, etc.
 - b) Specialized directory production by organizations interested in information on a particular category of organizations (by country, subject or other criteria).

- c) Fund allocation and location. Location of bodies through which programmes can be effectively initiated and the corresponding problem of locating bodies which might be interested in allocating funds to a particular project.
- d) Programme implementation facilitation due to the immediate availability of mailing lists of organizations concerned with all fields.
- e) Problem evaluations identification of bodies competent to report on new problem areas or in a position to provide a pool of experts.
- f) Research: information flow analysis (location of communication and coordination gaps, unnecessary duplication, overlap and wasted effort), education and communication research, simulation, peace research, etc.
- g) Individual queries location of organization contacts in other countries, regions or subject areas*

-
- h) International and national associations to increase their effectiveness, particular by building up their membership and the circulation of their publications as well as to locate programmes with which they can coordinate their efforts or from which they can obtain assistance.
 - i) International and national governmental agencies to facilitate their contacts with bodies at the local level.
 - j) University research groups working on international relations, social science models, peace, etc.
- d) Foundations and fund-allocating bodies.**
- e) Individuals**

Source of finance

- a) Use of the computer service will be charged at the cost per query,
- b) Grants for the development of the file in an area of particular interest, for example, organizations interested in programmes for human rights, development, health, etc
- c) Research grants to incorporate increased details on particular organizations to facilitate more detailed study of the international system and techniques for promoting peace.
- d) Grants to finance the preparation of new computer programmes to increase the uses to which the data can be put and the sophistication with which it can be processed.

- e) Grants to permit low-cost use of the service by particular types of organizations; e.g. international or national associations or individuals wishing to initiate projects, including peace projects, in cooperation with bodies in other countries.
- f) Grants to permit organizations, indicated by the computer as not being in contact (although with related programmes), to be informed of each others existence

Significance

The reduction of barriers to communication implicit in the proposed centre will stimulate;

- a) creation of organisations, build up of membership, participation in organized activity and programmes;
- b) contacts between organizations with related fields of activity (and thus permit them to avoid necessary duplication, wasted effort, and competition for financial resources and support);
- c) organizations in such a way as to permit them to respond more rapidly to new problem areas;

whether at the local national or international level. This will ensure a natural increase in the momentum towards collaboration at the international level and facilitate the implementation of international and national programmes at the local level.

REASONS FOR ESTABLISHING THE INTER-CONTACT SYSTEM

UAI Purpose and Objectives

The UAI exists in order to convey, as a whole, a comprehensive, detailed, future-oriented picture of world society as a dynamic network of information processing entities. The information needed to accomplish this is stored and used in such a way as to facilitate any action which helps to clarify the nature of the world system for any individual or group, or which helps to guarantee balance and harmony within it at every level.

The purpose which the UAI has set itself can "be conveniently subdivided and refined as seven main objectives:

Types, of organizations interrelate and portray all types of organizations as forming a single set of interdependent networks having different functions;

Levels of Organization: interrelate and portray all levels of organization as forming a single cascade of interdependent networks linking the areas of coordination to the areas of activity and innovation}

Control of changes interrelate as a single process the functions of research and innovation to the consequences or requirements for the management of change;

Integration of the individual: facilitate the progressive integration of the human being as the key to his fulfillment in society and the stability of world society;

Comprehensibility of complexity; interrelate the different aspects of world society with any appropriate techniques, so that the whole may be made understandable and relevant to the needs and interests of an individual or group with a particular bias;

Disciplines and concepts interrelate as a single set of interdependent entities the concepts arising from each discipline as a key to the stability of world society and the integration of the individual;

_____ interrelate as a single set the problem areas which society has selected or with which it has been forced to deal.

Each of the above areas_f as well as their interrelationship, poses its own problem of a "vue d'ensemble". The unique function of the UAI is that it is focused on a "vue d'ensemble" through all areas, and it is by this criterion that the data handling problem can be limited.

B Important environmental trends and problems

The following trends in society strongly influence decisions on UAI. strategy for the futures

- increase in the degree of specialization, accompanied by a lack of techniques for gaining an overall view of the increasing complexity of society;
- increase in the amount of information, the speed at which it must be processed, and the need for new means of assisting individuals to absorb information significant to the development of their fields;
- increasing interrelation between every area of life in society, associated with an erosion in the value of traditional categories and a recognition of the interaction of organization programmes;
- increase and importance of computers data networks and new means of relating man to sophisticated machines to provide him with a highly developed power to process information;
- increasing problems of coordination and duplication of organizations and programmes, associated with a reduction in their speed of response and an increase in their fragmentation into specialized bodies with communication problems;
- decrease in concern for the individual as a human being as opposed to a source of activity whose consequences need to be harmonized and rationalized, associated with an invasion of individual privacy and a progressive isolation of the individual from his social environment.

C Need for a computer based system

The UAI has been involved in detailed documentary work continuously for the past 20 years. This period has seen the improvement in techniques for handling information, storing it and making it available in new forms for the benefit of a wider variety of users. During this period the UAI has continued to perform its documentation work in the traditional manual fashion, as accepted in libraries for the past 50 years. This approach has led to increasing difficulties

- the volume of information which the UAI should be handling has increased;
- the requirements or needs of users have become more precise and increasingly go beyond the feasibility of answering questions under the present system of manual retrieval of information;
- storage of information in static reference works is increasingly unsuited to the complex search and mailing operations required by a very wide variety of users;
- use of a single set of categories to order information is increasingly unacceptable at a time when interaction across category boundaries is increasing.

In effect this means that the UAI, in common with many information centres, is becoming less competent to meet the demands placed upon it by those requiring information on the international system. The information is in many cases on file, but it requires too much time and effort to reprocess it to fit the requirements of each user* Even in those cases where an inquirer is willing to finance an extensive manual survey, the allocation of a member of staff to such a task for a lengthy period is detrimental to other UAI activities. This inadequacy means that the UAI must search for new means to fulfill its objectives.

A computer based system:

- holds the information in a more highly organized form, permitting it to be rapidly sorted into a new state of order to conform to the requirements of a variety of users and uses;
- can be used to interrelate organizations, programmes, problems and concepts in a much more sophisticated manner with many practical implications;
- can be used to relate research results and techniques to administrative needs and problems, making the first more realistic and the latter more sophisticated;
- can be used to structure information to highlight significant trends and details for users with different educational backgrounds.

Such a system is of particular importance to the UAI because it can be used to detect those organizations on file to which the UAI's own mailings can be most effectively made. This ensures that the maximum number of critical organizations can be included regularly on the U.A.I, mailing list. This means that (a) the maximum number of organizations which are most likely to be oriented towards international programmes can be contacted and influenced by a more overall perspective to make further contacts, and (b) such contacts may be facilitated by use of U.A.I, publications or the Inter-Contact system, thus guaranteeing the financial independence of the information system and the further development of the information available on the network of organizations.

The UAI is not in a position to ignore these advantages and must make every effort to make use of computer systems to ensure its future development and the effective accomplishment of its objectives over the next 10-20 years.

NEED FOR AN INTEGRATED INFORMATION SYSTEM

Current status of the programme of the Union of International Associations to establish the Inter-Contact integrated information system on international and national organizations.

During 1969 the UAI published the following reference books:

Yearbook of International Organisations (1968-1969), 12th edition,
1200 pages;

Yearbook of International Congress Proceedings (1960-1967), 1st edition,
640 pages;

Directory of Periodicals Published by International Organizations,
3rd edition, 240 pages.

During the same period a series of studies was undertaken to determine the best method of storing, searching, publishing and distributing information on international organizations and their members. As a result of these studies, three programmes have been outlined:

1. Production of the Yearbook of International Organizations (1970-1971), 13th edition, using computer typesetting methods.
This technique involves transfer data held in print metal form to magnetic tape. On the basis of this tape, future editions of the Yearbook can be updated. The indexing possibilities are increased with a reduction of cost. Specialized directories can be produced at low cost. The form in which the information is held means that it can be manipulated for a variety of purposes at low cost.
Schedule for the production of the 13th edition requires completion by July 1970. Computer programming and data transfer must be commenced in December 1970.
Funds required for this project are 3,000,000 Belgian Francs (\$ 60,000). These funds are in the process of being negotiated as a bank loan with past performance of this publication as guarantee.
2. Establishment of a computer-based information system on organizations. This is to be based on the international organizations listed in the Yearbook. The core of the information would be the titles (several languages), addresses and a limited number of columns of descriptive coding. In this form the system can be used very flexibly for mailing purposes, e.g. questionnaires to the organizations requesting further information, sales programme to ensure distribution of the publications, rental of mailing lists to other bodies which need to contact the international organizations (report distribution, meeting invitation sale of services, etc.).

For technical reasons it is more economical in the short-term to manipulate the information in a separate system even though at this stage all the information would be duplicated in that used for computer typesetting purposes. This stage is however planned as the first of a series which would extend the information included beyond that held for computer typesetting purposes. The number of organizations included would be expanded with the members of international organizations, their commissions, their programmes, national organizations of significance to international activity, etc. This can be done very flexibly as funds are made available.

The amount of information on each body included will also be increased. Characteristics of interest to research on the international system will be included. These will also serve to make selection of mailing lists more flexible. It is planned to extend this research information in such a way that the relationship between the entities coded can also be analyzed by the computer. For the first time, information on organizations within the world system will be processable as a network. This is of considerable research significance and has many important practical applications. The first stage is urgently required to replace a temporary and unsatisfactory mailing system which is preventing the effective development of the sales of the publications from which the UAI is almost completely financed. Completion is desirable early in 1970. Succeeding stages can be treated as modules to be attached to the first as and when funds become available. The only restriction on this is that the general direction of the development of the system must be planned to ensure compatibility. A preliminary study of this has already been completed. Funds required for the first stages 300,000 Belgian Francs (\$6,000), if the compatibility requirement is ignored.

Funds required for an integrated mailing/research programme (including the first stage): 600,000 Belgian Francs (\$2,000), with provision, but without transfer of data for research and extensive mailing.

Operational costs would be met out of the UAI ordinary budget. Set up costs have not yet been obtained. In view of the urgency of the first stage, it may be necessary to commence the first stage without making any provision for later development. If this is done much of the future value of the system will be lost.

Establishment of a simple invoicing and accounting system on computer to increase the effectiveness of the marketing of the publications produced and the recovery of funds which are so vital to the survival of the UAI. Due to the number of publications sold (over 50), manual accounting systems are not satisfactory for the adequate management of UAI resources. The list of clients/subscribers included in the file for this system would almost completely overlap the addresses included in the mailing/research system (2) above. Potential clients and publications could be matched more effectively to improve sales. The variety and dispersion of potential clients, and the difference between the types of publication which interests them, currently makes this task most difficult.

Completion of this system is not a matter of urgency except in so far as it would help to increase the UAI financial flexibility, It would be desirable to complete it during the course of 1970 and to ensure that it is compatible with the mailing/research system from which all the client/subscriber addresses must be obtained. Funds required for this project are 250,000 Belgian Francs (\$5,000).

In the short term, the UAI could undertake each of the above projects separately. For technical reasons it would even be an advantage to carry out each with a different computer service bureau.

In the long run, namely over the next five years, such a decision would, however, tend to cripple the system as a whole. In the first place, the core information on the names and addresses of international organizations and their members are common to the three systems. If an integrated system is not envisaged, input of data to each of the three systems (eg changes of address) will have to be made separately in three; different forms.

To ensure the full development of the directory production possibilities of the first system (1) transfer of data from and to the mailing/research system (2) must be envisaged. This does not need to be implemented at this stage but must influence the computer programme design of both (1) and (2). The need for more detailed information on organizations in the international field can only be met by the UAI by allowing for this sort of interaction.

Such interaction would for example reduce the costs of producing the following reference works based on the data stored for computer typesetting and mailing/research: French edition of the Yearbook of International Organizations, directory (or Who's Who) of officers of international organizations, directory of national organizations associated with international bodies, directory of international programmes. The ability to produce such publications would increase the utility and financial independence of the information system. To ensure the full development of the mailing/research system, and its many possibilities for ensuring greater coordination of international activity and an understanding of the world system, interaction with (1) is essential. Again this need only be provided for, but need not be implemented at this stage. This is extremely important for the development of the distribution of UAI publications which can be considered as (a) increasing understanding of the international system and facilitating communication, and (b) ensuring the economic independence of the information system as a whole.

Clearly the integration of the invoicing/administrative system (3) with the other two is a measure which will reduce costs and increase the administrative efficiency of the UAI

If the three systems are to be planned together a decision must be taken before the end of 1969.

The extra funds required to ensure the compatibility of the three systems are 300,000 Belgian Francs (\$ 6,000)#

The table below indicates the minimum and optimum development costs for the establishment of Inter-Contact_f for each of the different operations.

1 (see p* 21) 1 Development		1970		1971		
direction	Stage	Optimum	Minimum	1 Stage	Optimum	Minimum I
1 [(number of addresses)	1a	\$ 3680	\$ 3680	1.8	\$12000	
	1*2	240 920		1.9	2400	
	1.3	1440		iao	1600	
	1.4	1200		1.11	1600	
	1,5	1600		1.12	2400	
					6000	
			I9S8	3680	JL	26000
2 (information per address)	2a	2500	1500	i 2.5	3000	i
	2.2	4000		1 . * r . «	500	i
	r	6500	1500	...	3500	
3 (Links between organisations)	en ns)			see 2.1, 2,	5, 2,6	!
4 (indexing methods)	4.1	see 5*1		i		• -1
(Program sophistication)	5a ion)5.3	6400	6400 J			
		5000	5000			
		4000			--	
		5000			--	
		20400	11400			
6 (Output simplification)	ion)			6a	3000	
				6.2 6,3*	4000	
					7000	
(Application	B)			i 1		
8** (Control)						
j Carried over j			I 16580 !		\$ 36500	

	1970		1971	
	Optimum	Minimum	Optimum	Minimum
	\$ 35980	\$ 16580	\$ 36500	-
each (edition)	800	11000 800	-	-
	25000	25000****	-	-
	36800	36800	-	-
	6000	3680***	-	-
	8000	2000	-	-
	15000	4000	25000	4000
Personnel	25000	14000	30000	17000
administrative overheads	25000	15000	18000	4000
TOTALS	\$ 151,780	\$ 92,060		

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Notes:

Would be undertaken independently by university groups, or e . ' e
under contract

Involves only administrative charges for external relations and
Scales

If the option of not integrating is chosen, there is a supplement-
ary charge of \$ 3680 for the conversion to tape of data (namely, a
recodification of Stage 1,1)

Production of the Yearbook of International Organisations (13th
edition) using a computer typesetting process is already
possible due to a special bank loan \$f I 50,000 from a Belgian
bank

REASONS FOR UNDERTAKING THE INTER-CONTACT PROGRAMME THROUGH THE UNION OF INTERNATIONAL ASSOCIATIONS

1. Development of current activities. The UAI has since 1910 been concerned with collecting material on international organizations and their activities. This information is published in the form of reference books such as the

Yearbook of International Organization (1968-1969)
1200 pages, 12th edition;

Yearbook of International Congress Proceedings (1960-1967),
640 pages, 1st edition;

Directory of Periodicals Published by International Organizations,
240 pages, 3rd edition.

Establishment of the computer-based centre is therefore merely an extension of its past activities.

2. Financial independence. The sale of publications guarantees the financial independence of the UAI. The fact that immediate uses exist for the system in order to produce such publications means that they will provide an important source of income to cover the operating costs. Subsidies should only be required for the further development of the system or to increase the rate of development.

3. Contacts with sources of information. A tradition of contact with the necessary sources of information already exists to ensure a continual flow of new information.

4. Contacts with users

Contacts with users of tradition of contact with many of the potential users of the information system already exists.

Research and applications. The UAI has always been concerned both with the research use of the data collected and the actual use of this data by the organizations themselves to improve contact between organizations. This ensures, particularly in a computer environment, that research surveys and models quickly have an impact on the use of the system for management and administrative purposes. It also ensures that the direction of research is influenced by the problems brought out by a comprehensive data base rather than one built up on the basis of pre-determined categories.

Non-commercial basis. Much of the information which would be obtained would not be readily available to an organization operating for profit. In addition, placing such an information system on a commercial basis would necessarily force the exclusion of non-economic categories of addresses thus distorting the objective of providing a comprehensive source of information on the world system.

7. Non-specialist basis. The UAI has always collected information on organizations in every field (science, religion, law, economics, sport, education., health, etc.;. This universal coverage is increasingly important as organizations in each field are forced to interact with those in others (eg social consequences of science or development). Specialized systems cannot cope adequately with the information requirements of overlapping problem areas.
8. Non-political basis. The UAI has always collected information from sources countries with all political tendencies. This traditional stance means that data collection is not unnecessarily difficult in some countries and an a-political presentation of data can be provided.
9. Non-governmental basis. The UAI has always collected data from both governmental and non-governmental sources. This avoids the data collection problem of governmental information systems which is closely tied to short-term programmes, political questions and the governmental sphere of interest. Governmental systems cannot effectively cope adequately with information on the interaction between governmental and nongovernmental spheres.
10. International focus. The UAI is primarily interested in the international system. The data collection is therefore not biased to favour a particular country's needs. The system does however include much information on the national level where the organisations concerned are of importance to the international system equilibrium and development.

REASONS FOR PRACTICALITY

1. Low volume of information. A very important distinction is made between information producers, information channels and storage points, and the information produced. Compare these figures:

	number	estimated increase
a) international organizations (1968-1969)	4,500-3,000	200-300
international and national bodies	500,000-1,000,000	5,000-10,000
b) volumes of scientific/technical literature	40,000,000	200,000
volumes in Yale University Library (2040)	200,000,000	12,000,000

The reduction in the volume and the concentration on current and planned activity means that the starting costs are low and the updating costs are low* Inter-Contact is not a document retrieval system, although it can assist in the retrieval of documents*

The reason for the high cost estimates of * information¹ systems in general is that the d[^]uj[^]ntatJLo[^] of keeping track of a mass of detailed factual information is confused with the management an[^]fommu.nicatiQn problem of keeping track, of information on bodies controlling, evaluating, formulating and implementing programmes, or coordinating membership activity and information networks with regard to a particular problem area* The volume of data in the second case is very much lower and is not increasing at the same rate. This is the principal reason for the practicality of the Inter-Contact system*

Optimum utility. Emphasis is placed on maintaining an overall view by concentrating first on international and multidisciplinary bodies, then national and specialized[^] etc. In this way the best collection of information is maintained for the resources available* The focus on an overall view is the key to "the problem of data volume limitation"

3. Availability of data_c T. Availability[^] of data_c The initial data is already on file in typewritten form or in U₀A.I. publications.

Immediate use* Several important uses for the information already exist which themselves justify the investment in the information system* These applications will provide a proven source of income to cover the operating costs,, Subsidies should only be required to assist in the establishment of the centre, for its further development, or to increase the rate of its development.

- 5* QPOS&FS3 , }il^l\ -PP-WPPr, -JgJL Affi", R["ft"fe°B° -^ ■tradition of contact with the necessary sources of information already exists to ensure that the information is updated*,

6. p fS Ji^f. ^JfA-lfe^^^L^1, . 9K, Al\$&fB3\$3-2fi* ^ tradition of contacts with potential users of the information system ahead^r exists.

- 7* Low ncapital irinyestmentc The information system is designed to be inexpensive to operatec The necessary computer time can be hired -- a computer does not have to be purchased*

- 8* Low o per at Ing, op sts > The information system could be updated on one hour of computer time per month (\$100) through a computer service "bureau* The computer can be used to reduce many of the administrative costs associated with operating and developing the system.

- 9* 3E-g^^.n,A^Z^4°RR^e^* Development of the many aspects of the system (volume,detail?r@grammes, applicationsv etc) can be undertaken gradually as the funds become vailafcle. Development priorities are very flexible* Development or use of the file and programmes can be done in association with, other "bodies, such as university research groups. Copies of the file may be used by such bodies. Work ha,s already been commended in this way on the use of visual display computer terminals to manipulate organizational networkso

- 10* Financ^ n^ development, The development of the file lends itself to funding "by organizations interested only in very narrowly defined specialist areas which facilitates allocation of funds from special government or foundation programmesc

,9.^, A^^6.-!-0all?^,, ^ r^ie f ii-^ is designed in such a way as to permit later development in ways which cannot be predefined.

- 12* .Use of^ ^G, ^:QqfCfLm9^J1&c r^ie fil^ ^s designed to accept research data on organizations produced according to different coding schedules,, This ensures that research data is not lost or treated as a one-off project and helps to ensure interaction between research projects on different aspects of the world system.

Number or volume of addresses. The system can "foe developed by adding to the number of addresses. Priority will be given to addresses of direct relevance to international programmes or to coordination of programmes at the national level

of information per address. The system can be developed by increasing the amount of detailed information which is coded, to describe each organization in the system. Such details might include: number of members, types of members, types of activities, budget, countries of activity, etc. Priority will be given to providing codes which will increase the sophistication with which lists are established for mailing purposes to avoid organizations receiving a flood of unnecessary information. The intention is to build up the number of codes describing the interaction between organizations, so that the bodies which could usefully make contact can be highlighted.

Links and relationships between organizations. The nature of the descriptive codes associated with each address can be extended to indicate the relationship between the organization concerned and the particular bodies with which it is in contact. This is a form of cross-referencing between organizations within a network and might be applied to membership, information distribution, funds flow, recommendations flow, etc. By building up this form of coding a multidimensional network is constituted which gives a progressively more realistic picture of world society as well as increasing the number of uses of of the system. the system.

4. Indexing methods. The system is designed to permit many different types of indexing and indexing experiments. These may be introduced gradually and partially as they become justified. Particular emphasis will be placed on developing more sophisticated methods of interrelating the entities indexed*
5. Computer programme sophistication. Once the basic programmes have been prepared, new sections may be added to them to increase the sophistication of research, indexing or list selection. Parallel to this, new programmes may be developed to manipulate the data in new ways. The intention is to encourage the development of computer programmes to analyze the data stored, to aid in the development of useful decision-making models.
6. Computer output simplification. It is not sufficient to have a large amount of information which can be analyzed. The results of such analyses must be structured in such a way as to highlight the significant trends and details and make them comprehensible to the uninitiated, A special series of programmes can be developed to do this.

Inter-Contact may be developed in eight different directions, as indicated in an earlier section. The stages of development in each direction are outlined below. The rates of development in each direction do not have to be synchronized. This guarantees a great deal of flexibility and rapid response to new demands or "fillt mT of"; the stages are therefore "My an indication of priorities for the UAI. These priorities could be changed with the aid of grants or on the basis of a contract

addresses

(

5if2E^ _____ addresses

Stage 1.1 (1970) 200 intergovernmental organizations
4000 international non-governmental organizations
3000 libraries 2000 other bodies

Stage 1.2 (1970) 600 international meeting centres Stage
Ic3 (1970) 2000 embassies and government delegations
300 government departments on international organization

Soage 1.4 (1970) 3000 unconfirmed international bodies
600 centres and professors of international relations

dtagc 1,5 (1970) 3000 multinational business enterprises Stage 1,6
(1970) 500 international periodicals
1000 information centres 2000
international meeting series
500 bibliographical services Stage 1.7 (1971) 30000
national member bodies of international non-governmental
organizations Stage 1,8 (1971) 1000 foundations
and national bodies with international
activities
5000 governmental departments and institutes

Stage 1.9 (1971) 2000 commissions set up by intergovernmental organizations
2000 commissions set up by international non-governmental
organizations Stage 1,10 (1971) 2000
intergovernmental organization programmes
Q* n TI /-.rvriN ?ooo international non-governmental organization programmes

Stage 1.11 1971) 6000 officers of international organizations
Stage 1.12 (1971) 1500 bilateral international organizations
Stage 1.13
national and local bodies
treaties
directories of organization addresses
periodicals, experts, etc.

Illf2ffi2^^ _____ addresses

Stage 2.1 (1970) titles, addresses, abbreviations, major keywords, countries
of members, officers, descriptive coding for international
organizations Stage 2.2 (1970) titles, addresses, major
key words, descriptive coding for
non-international bodies Stage 2.3 (1970) extended

descriptive coding for international organizations
(based on material already available)

- Stage 2^4 (1970) data on past meetings of international organizations
- Stage 2.5 (1971) reference numbers of members of international organizations
- Stage 2.6 (1971) reference numbers of international organizations of which an international organization is member
- Stage 2.7 extension of the supplementary coding to national and local bodies that are directly linked to international or multi-disciplinary programmes
-
- Stage 3d (1971) reference numbers: of officers (Stage 2_01); members (Stage 2_5) of international organizations; organizations of which the organization is member (Stage 2_6) will be included for 1971
- Stage 3 2 (1972) extension of link coding to cover contacts? information, funds; recommendations or decisions about future programmes
- Stage 3-3 more detailed coding on important links
- Direction 4i^_ifid_rijig mejfchods
- Stage 4«1 (1970) a simplified indexing system will "be used in the initial stages in connection with the preparation of the Yearbook of International Organisations (13th edition)
- Stage 4^2 investigation and development of other indexing methods s. particularly those which can be used to handle multidisciplinary subject areas
- study of "problems" in order to classify them hierarchically, so as to be able to link the classification of "problems" with the classification of organizations and the classification of concepts (with the help of general systems research)
-
- Stage 5*1 (1970) computer typesetting and generation of indexes, combined with applications of "listing" and the possibility of providing answers to simple questions on all organizations that have been registered
- Stage 5-2 (1970) accounting operations of international non-governmental organizations^ sufficiently simplified to be applicable to the problems of a multiplicity of organizations
- Stage 5-3 (1970) addition of modules to facilitate processing of hierarchies of organs within a complex organization^ such as the United Nations
- Stage 5«4 analysis of organization networks? lack of co-ordination/duplication^, isolation of sources of information, other structural weaknesses
-
- Stage 6c1 (1971) clustering of organisations on a 2-co-ordinate system^ as supplementary indexing

- Stage 6.2 (1971) juxtaposition of different organizations working in the same programme areas, in order to facilitate comparison and co-ordination
- Stage 6.3 (1971) experimental manipulation of data on visual display units for educational purposes and for **decision-making** as regards the allocation of resources
- Stage 6.4 data manipulation between forms of expression, index flow-chart, and network
- Stage 6.5 projection of organizational networks on visual display devices in terms of users' reference points

Stage 7a (1970) production of the Yearbook of International Organizations (13th edition) for the UAI

Stage 7.2 (1970) production of mailing lists for the UAI -stage 7.3 (1970) production of mailing lists for other bodies on a contract

Stage 7.4 (1971) production of specialized directories., or editions of the Yearbook in languages other than English, for the UAI

Stage 7.5 production of specialized directories for other

oasis

- Stage 7.6 (1971) uses for sequential analysis by other bodies or with the loan of tape copies Stage 7.7 (1971) trial analyses of organizational networks, starting with the organs of the major institutions
- Stage 7.0 (1971) use of tape copies with visual display units linked to a computer putting groups with related interests into contact, on the basis of a contract exchange of information between different types of institution grouping organizations with similar problems in order to enable them to make use of tapes of programmes

Direction B.j. control

- Stage 8.1 (1970) implementation of Inter-Contact system by UAI stage 8.2 (1970) making contact with international organizations that might be interested in joining in the control of the system stage 8.3 (1971) investigation of methods of pooling data processing, protecting confidential information and possible joint control of data, utilization
- Stage 8.4 implementation of an evolving system of control according to needs, with safeguards for the use of data in collaboration with other international bodies.

Facilitating communication exposes organizations operating in the same programme area to one another. This forces them to take cognisance of each other's activities and maximises the possibility that they will collaborate^ liaise^ exchange information and avoid the consequences of duplication of effort and lack of co-ordination. The formation of working links exerts a stabilizing and controlling influence on change in the area, with which the organizations are concerned,

3lfSSSEfffsE^ o? ^k^ world §J^t§K

Portrayal of the intricacies of the organizational relationships within the world system makes its structure "transparent" to many more people and groups. This corrects the trend which increasingly permits only the most well-placed powerful groups with large resources to experience the system as transparent< This trend obscures the need for appropriate control mechanism to avoid abuse*

_____ L^ pmphasis on^f omal_recognitjLon

A comprehensive information system permits organizations, individuals and departments to be informed of *one* another's activities indirectly without the need to be in contact or to recognize each other's existence. This avoids many of the problems which hinder> delay or render contact between bodies impossible, It guarantees partial co-ordination prior to contact (if the latter is even necessary)* This decreases the divisive emphasis on political or .administrative recognition or non-recognition,

4-

The multitude of detailed relationships between entities may be held and re-ordered with great precision within a computer. Projection of parts of this organized complexity may be displayed to facilitate conceptualization* This should lead to greater general understanding of the world system> which would have important socio-economic implications*

5 <- C^jj^roj.jl.fid, jchange

Systematic storage of data on organizations constituting the structure of society s; ould facilitate the development of techniques of structural analysis. This should prove a valuable aid to the adaptation of organizations to an ever more rapidly changing environment .

6,

By making information on who is doing what easy to obtain, the participation of local bodies in national activity and of national bodies in international activity is significantly stimulated* This increases the number of vertical links between organisations at different levels, thus contributing to the stabilization of society and the co-ordination of activity at each level. In those areas where no body is active, the demonstrated lack is a stimulus to activity, thus making available resources which would otherwise not be released.

FOR THE UAI

L Production of g k g

The system will be used for producing:

The Yearbook of International Organizations (English edition)
The computer will prepare the subject, abbreviations, keyword officers indexes as well as geographical indexes

- L'Annuaire des Organisations Internationales (French edition)
- Who's Who in International Organizations
- ~ ~ Directories of international organisations (for example: Directory of International Organizations established in Belgium, in Europe, *in the USA)
- Other publications that could be prepared on the basis of the stored data, (for example? directory of agricultural organizations, directory of scientific organizations)

2, Mailings

The system will be used for the following kind of mailings;

- Questionnaires for obtaining new information to keep the system up-to-date (particularly for the production of new yearbooks) and for special surveys
- ~ Distribution of the monthly magazine "International Associations"⁷
- Distribution of circulars > lists for the sale of publications, etc
- Preparation of mailing lists undt;r contract

3* Research

The system will be used for;

- Answering requests for information concerning organizations (for examples list of organizations having headquarters or members in Italy, list of organizations interested in a given subject, list of organizations which have not held meetings in Belgium)
- Facilitate more complex studies by university research groups

4 Contacts

The system will be used for;

- Obtaining information from organizations on their contacts, so that they can be included in the development of an overall view of the world system
- Putting into touch with one another organisations working in allied fields which do not yet seem to have been in contact

The system will likewise be used for sales accounts purposes

APPLICATION: GENERAL SUMMARY

The following list is an indication of the areas, or organizations, for which the Inter-Contact system should be of values

ORGANIZATIONS

Use by

particular types of organization

1. United Nations and Specialized Agencies
- 2* Intergovernmental organizations
- 3* International nongovernmental associations
- 4« National governmental and nongovernmental bodies
- 5« Commercial enterprises
- 6« University based research groups
- 7* Local groups and individuals
8. Foundations and fund-allocating bodies

-
1. United Nations Agencies and Intergovernmental Organizations
 2. Intergovernmental and Nongovernmental Organizations
 - 3* National and international organizations
 - 4* Local and national organizations
 - 5« Inter-departmental interaction

II .CONTROL OF CHANGE

Research

1. International relations, political science and peace research 2*
Social science
3. Policy-making, planning^ research priorities and forecasting
- 4* Information research

Management

- 1* Provision of a clear and comprehensive picture
- 2_f Allocation of resources and planning

of pro^gra

- 1# Identification of needs and appraisal of requests
- 2_c Fund allocation
- 3* Planning and initiation
- 4* Implementation
- 5* Field level inter-programme coordination
- 6# Distribution of results of programmes and meetings
- 7* Public information and information distribution

III ^DIVIDUAL DEVELOPMENT

IV

- 1# Participation and youth
- 2# Education
3. Decision-making
- 4* Democratic protest, privacy, the need for secrecy, and human rights

V GENERALSYSTEMS ANALYSIS

VI PROBUM_AgEAS

1. Development
- 2# Environment
- 3* Crisis relief
- 4» Discrimination
- 5« Urban planning
- 6o Information explosion

It is difficult to provide a systematic summary of the value of the Inter-Contact system to each of the many areas in which it can be used. This will be attempted elsewhere. Moreover, since the Inter-Contact system is a developing system - designed for change -- specific applications may come to be of greater or lesser significance as it is developed.

The following list must therefore only be considered as an outline of the areas in which the system (or the technique) would be of value.

(a) Use

- United Nations and Specialised Agencies
 - public information mailings and programmes; special mailings (initiation of programmes, surveys, distribution of reports); compilation of specialized directories; location of competent specialized bodies; management overview of relationship between governmental and non governmental programmes
- 2. Intergovernmental organizations
 - as for United Nations
- 3a International non--governmental associations
 - as for United Nations; extension of mailing lists; contact lists for new programmes? meeting invitations; report or periodical distribution; crisis responses surveys
- 4. National governmental and non-governmental bodies
 - as for international
- 5. Commercial enterprises
 - professional services advertising (meeting organisers, conference interpretation, translation, audio-visual equipment); journal sales campaigns; book distribution
- 6. University-based research groups
 - new field of research on methods of increasing the effectiveness and integration of the world system in response to problem areas; determination of the optimum degree of integration and co-ordination of different sections of the organizational network; location of network weaknesses critical to the functioning of the overall system; location of key points which should be linked in the network; location of areas where meetings or periodicals should be encouraged
 - the inter-Contact system would constitute an extremely important source of data for testing theories of international relations.
- 7. Local groups and individuals
 - queries on organizations active in a particular area prior to initiating new programmes, meetings, organizations or periodicals
- 8. Foundations and fund-allocating bodies
 - location of competent bodies in particular problem areas to which funds can usefully be channelled.

(b)

L UN Specialized Agencies and Intergovernmental Organizations

- convenient neutral information source on the programmes of all inter-governmental bodies. Programme information can be filed in the Inter-Contact system by IGOs. The whole file can then be scanned by subject area, thus giving the programmes of other agencies without the need for complicated official channels of liaison between agencies, but nevertheless facilitating contact over specific technical questions.
- 2. Intergovernmental and Non-Governmental Organizations
 - as above, both INGOs and IGOs can file. or have filed, information on their current and planned programmes. They can then have the file scanned for their particular area of interest to detect what other organizations are doing, without the need for direct official contact between the organizations concerned.
- 3. National and International Organizations
 - location by international bodies of potential members (or subscribers); location by national bodies of organizations in which they should be active or where they should ensure that their interests are represented.
- 4. Local and National Organisations
 - as for national and international
- 5. Inter-departmental Interaction
 - inter-departmental communication may often be practically impossible on account of complex organisational channels and jurisdictional boundaries. -The Inter-Contact technique may be used for circulating information across jurisdictional boundaries without any need. for contact between departments at different levels or positions within an organizational hierarchy Each department is sent via the computer any information relevant to its own activities filed by a department in another part of the organization.

The control of change in the broadest sense covers the development of new analytical techniques, their validation, their use as a guide to the allocation of resources, together with all the problems normally associated with programme management and administration.

(a) Research

1. International relations, political science and peace research
 - Inter-Contact provides an ideal data base from which to commence analysis of a particular aspect of the world system. It can also be used for sending out questionnaires to organizations on which more information is required. Data secured from such organization surveys can be filed back into the system to facilitate later research, aid validation as a guide to resource allocation, as well as increase the sophistication of later listing and mailing operations.
 - The Inter-Contact system also forces students to exclude explicitly, rather than implicitly, categories of organizations they do not wish to consider. This helps to interrelate indirectly the different models developed.

2. Social science

- An important field of development in the social sciences is represented by the increasing use of mathematical models in conjunction with computer data processing. The planned organization of the file lends itself very strongly to research on social systems models and to social systems analysis,

3. Policy planning, research priorities and forecasting

- Basic to an understanding and improvement of policy formulation and implementation is a comprehensive view of the interrelationship between all the bodies in the fields concerned. From this perspective policies can be formulated with a greater degree of clarity and precision. The planned investigation of visual display computer terminals offers the possibility of significant breakthroughs in this area*
- Policy-making is linked to the question of establishing research priorities.* Development of new indexing methods could permit research areas to be ordered, in relation to problems, to highlight critical areas,
- The network of interrelationships between the organizations is closely related to the cross-section through a critical path planning network used in scheduling individual projects. Investigation of this relationship may offer new approaches to forecasting and futures research,

4. Information research

- In order to achieve any breakthroughs in communication and the improvement of the flow of significant information, it is of fundamental importance to have an adequate picture of the pattern of flows between producer and user. The system will facilitate the production of detailed flow charts, with associated computer analysis, to pinpoint weaknesses in the information channel design. This will prove a very useful basis for recommendations concerning areas in which new information systems (libraries, periodicals etc) should be created. The system not only facilitates the research but also, thanks to its mailing function^ it can speed up contact with the bodies to be served by any proposed new system. It would, for example, be of great assistance in the design of the World Scientific Information System (ICSU-UNESCO).

management

Provision of a clear and comprehensive picture

- At a time when "... it has become more and more difficult for any individual, whether in government service or in an international secretariat, to be aware of the totality of the United Nations family programme- and activities... the lack of an adequate and carefully organized system of presentation of a myriad of relevant data and determinants renders highly problematical, if not impossible, the establishment of overall programme priorities..." (E/AC!51/GR/Lu9;7/10/1968)< The situation is even more complex when all organization programmes are considered. The Inter-Contact system can go some way towards resolving this difficulty by developing methods for portraying a clear and comprehensive view of the interrelationship between organizations in the same or related programme areas,.

This will assist the preparation of specific recommendations to reduce lack of co-ordination, overlap, duplication, and lack of communication. It will also help to prevent the waste of resources in areas where such conditions exist. A clear picture of this type, especially if shown through a computer visual display device, could prove to be the most significant aspect of the Inter-Contact system, particularly as the mailing function enables immediate action to be taken to establish contacts detected on the screen.

2. Allocation of resources and planning

- Investigations will be made as to the best way of portraying the interaction between problem areas, where research has shown this to exist, in order that specialized programmes should also reflect it and not nullify each other's results. This should also assist in the selection and design of programmes to which resources must be allocated.
- The juxtaposition of many different types of organizations within the Inter-Contact system permits the complete sequence of governmental and non-governmental organization action to be planned and contacts encouraged-, facilitated or recommended as different bodies assume responsibility for particular aspects of the solution during the formulation of the necessary programmes; detection of problem, formation of action group, location of funds to permit investigation, notification of research groups, contact with information centres, exchange of results, mobilization of public opinion and pressure groups, programme implementation.

(c)

programmes

Admin
istration
of
programmes

1. Identification of needs and appraisal of requests

- facilitates the task of identification of key organizations which are likely to be in a position to supply expert opinions on particular new problem areas.
- mailing of survey questionnaires to new categories of organization, The number of details coded on each body means that mailings can be designed by the user since, contrary to normal practice, grouping of addresses into a limited number of rigid categories is avoided.

2. Fund allocation

- facilitates location of bodies to which funds can be usefully channelled for particular purposes.
- permits bodies seeking funds for a programme to locate the fund-allocating bodies with similar interests. Because all the organizations are juxtaposed within a network, this should make it easier for fund-allocating bodies to break with traditional patterns and allocate funds to areas where they are required, but for which no precedent exists.

3. Planning and initiation

- reduces the time required to bring together key organizations and specialists in a particular problem area at meetings to plan and gain support for a programme, prior to implementing it, possibly through their members or contacts.

4. Implementation

- facilitates the task of informing and sending documentation to all the organizations which should be involved in a particular programme. This helps to avoid the delays, inefficiency and communication gaps in programme implementation. The system can be improved to the point of ensuring that relevant material is sent to all interested bodies and no others, thus reducing distribution costs.

5. Field level inter-programme co-ordination

- it is not only essential to maximise inter-programme co-ordination at the policy level; contacts at the field level during implementation must also be guaranteed. The existence of the network would enable field workers from many different types of organization to be notified automatically of programmes in their area with which they can integrate their activities, or of which they need to observe the consequences.

Distribution of results of programmes and meetings

- facilitates the distribution of reports (or publications lists) to all bodies likely to be interested. The system may be improved to make use of an. 'interest profile' defined by the bodies in the system. This would make lists much more selective and flexible, thus reducing costs and increasing effectiveness of distribution of information. This may be used as a technique to encourage co-ordination between related programmes of organizations which do not interact at the policy level.

Public information distribution

- facilitates effective dissemination of information down to the local level* This helps to avoid wastage of time and funds in assembling new lists of addresses for each new specialized programme, which normally cuts into the resources available for organizing the campaign or programme.

The technique of relating organizations in networks can equally well be applied to concepts. Development of this technique within the Inter-Contact system may assist the individual to arrive at a maturer, more integrated or comprehensive approach to the categories which he uses. This has implications for the psychological development of the individual and the education of generalists.

- facilitates interaction between the categories used by an individual in structuring the aspects of the world system as he grasps them, and the model of the actual relationships between organizations and programmes derived from the Inter-Contact data base. This leads the individual to increase inter-category interaction in his thinking by pointing out to him the sort of links of which he is not aware. It could also stimulate him to activity in some area if he has a profound belief in the need for interaction between some categories which is not reflected in the link pattern of existing organizations or programmes*
- development of techniques for portraying the world system, as a single interrelated whole, should lead to a succession of tangible, detailed, dynamic models of what has hitherto been an abstract concept, namely "world society", The existence of such realistic,wholistic models could have many important psychological and sociological consequences.

IV Comprehensibility of Complexity

The world system is very complex. This complexity can be handled by computers for analytical and data retrieval purposes, but this in no way implies a solution to the problem of making this complexity comprehensible to individuals with different functions and educational backgrounds. Special computer programmes will be developed to structure the complexity in order to highlight significant features, thus facilitating communication between man and the computer 1.

Participation and youth

- the major problem in persuading people to participate in social activity is to show them how their individual actions can contribute significantly in the face of a maze of impersonal complex organisational and administrative activity. The system will develop techniques to structure this complexity so that the respective contributions of organizations concerned with a particular problem area can be clearly understood.

This will enable individuals and groups to pick out those areas or organizations where a valid contribution can be made* It is of vital importance that the enthusiasm, idealism and energy of young people is not lost because individuals are unable to see and judge for themselves how best to contribute and where their contribution is most wanted (whatever their interest)< This has many implications for vocational guidance towards careers in international bodies, developing areas or challenging critical subject areas,

2. Education

- a major problem in education for international understanding is to structure and simplify the maze of activity relevant to international organizations and programmes, making it real, meaningful and relevant to individuals in their local or special interest context. Techniques could be developed to display the world system network on a screen as seen from an origin chosen anywhere within the network. Thus an organizations known and familiar to a particular user, may be used as visual origin and all other bodies displayed in terms of their relationship to it. The network can then be 'explored' by the individual and manipulated in terms of his own preconceived ideas. This would be a great help in systems education. Such displays can also be filmed for low cost circulation.
- the technique is not only applicable to education concerning the generalization 'local to international' but also concerning the generalization 'specialization to generalization' since concepts may be treated in the same way as indicated above,

3. Decision-making

- permits structuration of organized complexity so that the channels through which resources and information flow can be clearly seen and related to problem areas, so that the maximum use may be made of existing organizational resources and duplication avoided.
- permits structuration of organized complexity so that interacting problem areas do not result in decisions to produce separate and unco-ordinated programmes in each area,
- facilitates production of models as an aid to decision-making. The computer visual display terminal has much to contribute to increase the sophistication of useable models of social systems. As an example, consider the comments of an electronics expert with regard to his own mental models of electronics circuits? "Unfortunately, my abstract model tends to fade out when I get a., circuit that is a little bit too complex. I can't remember what is happening in one place long enough to see what is going to happen somewhere else.. [This happens to policy makers in large organizations]. My model evaporates. If I could somehow represent that abstract model in the computer to see a circuit in animation, my abstraction wouldn't evaporate. I could take the vague notion that 'fades out at the edges' and solidify it. I could analyze bigger circuits. In all fields there are such abstractions. We haven't made any use of the computer's capability to 'firm up'⁹ these abstractions. The scientist [and the policy maker] of today is limited by his pencil and paper and mind. He can draw abstractions [for example, organization charts], or he can think about them [for example, interacting problem areas]. If he draws them, they will be static, and if he just visualizes them, they won't have very good mathematical properties and will fade out. With a computer we could give him a great deal more. We could give him drawings that move, drawings in three or four dimensions

which he can rotate... We could let him represent all kinds of very complex and very abstract notions, and we could let him work with them in a way that he has never been able to do before. I think that really big gains in the substantive scientific [and policy making?] areas are going to come when somebody invents new abstractions which can only be represented in computer graphical form".

It is this sort of facility which the political, social, information and management scientists and educationists require in their studies of the world system and its sub-systems. It is through them that policy making techniques can be improved. The Inter-Contact system is designed to facilitate such research. 4. Democratic protest, privacy, the need for secrecy, human rights

The proliferation and interconnection of complex national and international information systems and their sociological implications necessitates the investigation of new means of relating the individual or organization and the controllers of the information systems within which he or it is registered.

- investigation of means of using an information system like Inter-Contact to act as a channel for democratic protest against abuses or omissions -- particularly abuses which can only be detected with sophisticated analyses of the cross-linking or absence of cross-linking between organisations. It is only by developing such techniques that the problems of individual privacy and optimum official secrecy can be resolved. The democratic protest mechanism (abuse detection, formation of action groups, communication with influence groups, etc) and human rights can only be adequately safeguarded by developing the procedures for this sort of participation by non-official groups through the computer. Failure to do so will aggravate the current wave of protest against computers as tools (despite their necessity for administration) instead of encouraging the use of the sophistication of computers to increase the effectiveness of democratic protest against their abuse. It is probably only within such a context that the detection of abuse would fully take into account all the factors involved.

Systems

The complexity of the problems which society is now forced to face, and their subtle interaction, necessitates the development of new ways of thinking about them and determining the multidisciplinary programmes needed for their solution, - the Inter-Contact system is designed to benefit from such investigations as are currently being made (within the general systems movement) to develop techniques to facilitate inter-disciplinary exchanges of ideas, which would also contribute towards the creation of a functional synthesis of knowledge. "This development is giving the specialist equipped with this language (along with supporting tools) mental wings to explore the whole universe of knowledge in search of particular lessons relevant to his own speciality". This clearly has implications for the manner in which programmes are designed and for the types of working contacts which organizations should establish.

- the Inter-Contact system could also be used for research to facilitate the type of systems analysis which leads to a more effective subdivision of tasks between different disciplines, thus maximizing the contribution of each

VI Problem Areas

Mention has been made in previous sections of the use of the Inter-Contact system in connection with a number of problems. In this section the system's value for the programmes in a selection of major problem areas is outlined.

1. Development problems are complex. Health, education, food, industrialization, etc, -- all involve interacting problems. The extent of this interaction must be made clear in some way to facilitate recommendations on programme co-ordination, in areas where the need is not obvious. The indexing systems developed will contribute to the solution of this difficulty.
2. Many organizations of different types (governmental, non-governmental and business) are involved in related development problems. The indexing system will permit an overview of this organized complexity and the extent of programme interaction, co-ordination and duplication.
3. A key factor in development programmes is public support. The system may be used for public information mailings to ensure grass roots involvement of national and local organizations, 4. The educational uses of the system will also assist individuals and organizations to determine where, why and now they should contribute to the development process. It could also help to highlight the critical areas in which they might act.
5. The funds available for development programmes must be conserved and used judiciously. The system is organized to assist the study of the flow of funds to organizations, problem areas or geographical areas. The system will be developed to permit computer analysis of these flows to indicate underfunded areas or areas to which the available funds could best be allocated.
6. Much development information is available, but the points at which it is stored and the channels through which it flows are not easy to locate for the uninitiated. The system will facilitate such studies by producing lists of sources and information flow charts or availability maps.
7. Many individuals and organizations are willing to work on or initiate development programmes, but cannot do so because they are unable to locate the particular type of programmes or bodies with which they would wish to work. This represents an untapped resource for development. The system would facilitate such contacts by answering queries, introducing organizations with similar programmes, and working toward a dynamic contact system.
8. The system could also be used as a means of ensuring field level contact between programmes of different types of organizations, especially where the results of either may nullify the activities of the other.

(b) Environment

1. Environmental, pollution and conservation problems are complex. Agricultural methods, industrial effluents, urban planning, etc. all interact. The extent of this interaction is difficult to portray to facilitate recommendations regarding the necessity for programme coordination* The indexing system which will be developed for Inter-Contact will be designed to facilitate this, firstly through the generation of contact lists, then through the production of network maps.
2. A key factor in responding to environmental problems is the unpredictability of the combination of disciplines, organizations and geographical areas which may be rapidly implicated. These have to be contacted

rapidly and maintained in contact as the response is developed. The system holds the maximum number of contact addresses for direct mailings to such bodies, or in order to provide each of them with a list of the others to encourage communication and exchange of information between them.

3. Many imminent crises are only detected by unimportant groups which must first mobilize public and specialist opinion before the appropriate combination of responsible bodies can be brought together or informed as a prelude to concerted action. The system provides a channel through which such groups can locate and mail to the appropriate bodies.
4. For each new environmental problem, it is to a new network of organizations that information must be sent to ensure the appropriate solution. The distribution pattern also changes from stage to stage, as different bodies assume responsibility for particular aspects of the solution during the formulation of the necessary programmes formation of action group, location of funds to permit investigation , notification of research groups, contact with information centres, exchange of results, mobilisation of public opinion, programme implementation, etc. The system can be used for each of these stages. It therefore cuts down the delays which normally arise as each new group realises that it must take over where the last left off.

(c)

1. The essence of a crisis is its unpredictability* It is not possible to determine what combination of problems or geographical areas will be concerned – nevertheless, rapid organized response is desired. Inter-Contact holds addresses of bodies in every subject area and geographical area to which a mailing can be immediately made with great flexibility.
2. Reaction to a crisis situation must be planned in order to make best use of the funds and organizational channels available. An overall view of these can be obtained using contact lists, response characteristics, computer analysis of the most appropriate channels, etc.
3. A crisis generally causes a response from governmental, nongovernmental and business organizations. Major difficulties are experienced in coordinating the activities of these different groups in a situation which crosses normal jurisdictional boundaries.
4. Additional funds and organizational support must be obtained from new sources in a time of crisis. The possibility of displaying and examining the organizational network on a TV screen is an ideal means of conveying greater understanding of the need for support and where it is most vital. It is also a useful means of showing the development of the organized response as a direct encouragement for new support. This offers a simple means of giving the public a comprehensive view of where funds are going and the effects they are having.

(d) Other Problems

The above remarks* with regard to the problems of development, environment and crisis relief can be extended to cover other problems such as discrimination urban planning, the information explosion, education for international understanding, etc.

CONCLUSIONS AND

The present note has tried to set out, in fair detail, a new conception of the UAI programmes based on the adoption of the new techniques which now seem to be indispensable on account of the dimensions and needs of world organization.

It means taking up an option with extensive implications for the future^ By adopting the proposed scheme, the UAI might well be able to render tangible service to international organizations in their entirety, as a function of the global character of the network they constitute and their potential, with the further possible utility to national governments, which are directly interested in, and in the last resort responsible for, the effectiveness of international institutions.

Production of the Yearbook of International Organizations (13th edition) has already been made possible, thanks to a special loan of FB 2,500,000 (\$ 50,000) by a Belgian bank. This loan will be paid back during 1970 and 1971 on the basis of sales forecasts.

The only additional aid which would be necessary at the beginning of the year (1970) is the sum of FB 550,000 (\$ 11,000) for the preparation of computer programmes to develop Inter-Contact into an integrated information system. This investment would not itself be directly productive of financial returns. It would however, enable data to be stored by computer (and thus exploited under contract) as supplementary funds become available).

The balance to be found if the whole programme is to be carried out amounts to about FB 5,000,000 (\$ 100,000), In view of the difficulty of estimating immediate profitability of all Inter-Contact uses it might be advisable for this to take the form of a grant in aid of development. Subsequent running expenses should be covered by current receipts.

The Inter-Contact system would permit the UAI to supply in a suitable manner the synthesis of international organization which is currently available, as well as ensuring effective operation as "switchboard" between the many elements of the international organization network - tasks envisaged by the UAI founders more than sixty years ago, and now seen to be more than ever essential.