

Reflections on Associative Constraints and Possibilities in an Information Society

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1. Introduction

The purpose of this report is to explore some ways of looking at the emerging information society which may help to clarify the future challenges and opportunities of international bodies. Much has already been said in the media about the "information society", to a large extent inspired by those attempting to sell their products and services, whether or not they are appropriate to the emerging needs of potential users. It is therefore useful to place such elements of the information society in a context which draws attention to the needs of international bodies concerned with issues such as development and the environment.

In the light of the theme of the debate, the focus is on the opportunities for the future. But in order to give substance to such an exercise, it is useful to clarify the existing forms of international organization action and the limitations which constrain their wider use. Only by recognizing the limitations of past forms of action is it possible to avoid the classical trap of seeking ways to implement such forms within future information systems, without examining the opportunities for alternative forms of action, whether as complements or substitute.

2. Forms of organized action

It is an unfortunate reality of the international system of organizations that no

satisfactory typology has emerged which recognizes the diversity of the existing forms of organization. That diversity is, however, to a large extent reflected in the various sections of the Yearbook of International Organizations and many contrasting types are distinguished in the commentary therein (1). Nevertheless the prevailing typology continues to focus on the uninteresting distinction between two categories, IGOs and (I)NGOs, largely because of its value for questionable administrative purposes within the intergovernmental system.

For the purpose of this report, the forms of organized action are presented in Table 1. This is in no way to be considered definitive. The allocation of bodies to parts of the table is merely to be considered indicative of a primary focus. Some bodies have concerns and modes of action which would require that they be positioned in several parts of the table. But the table does serve to make distinctions which permit a richer discussion than the simplistic IGO/NGO model.

2.1 Time-factor

By explicitly introducing the time-factor (short-term, medium-term, long-term), a place is given to the forms of organization which are most widely known, namely the short-term events (e.g. meetings, demonstrations, and media events such as Band Aid). In the long-term struggle to gain international legal recognition for NGOs (2), the "international outlaws",

there has been little attention given to the sociological or legal "existence" of such events, which tend to be considered as epiphenomena. The irony of the situation is that it is precisely such epiphenomena which attract the attention of the media and the imagination of the public, whereas the medium and long-term forms of action are largely unrecognized by the public, even though they may be responsible for the widely publicised short-term events. It is of course the short-term events which are already organized to exploit a number of the opportunities of the information society.

Introducing the longer term distinguishes certain modes of action from those of the medium-term, which are necessarily more sensitive to the political dimensions of such issues as development and environment, and less sensitive to the substantive dimensions implied by such issues. Most IGOs and NGOs function in terms of medium-term preoccupations, as defined by budgetary cycles and election periods (1 to 8 years). The political implications of longer-term environmental and developmental issues can safely be ignored in practice, especially under the pressures of current political crises. Few organizations, or governments, can afford the political luxury of investment in the long-term.

Attention is drawn in the table to the distinction between a global focus and a non-global focus, whether regional or local. Since the table is only intended as

indicative, the controversial question of the degree to which particular forms of action may be global or non-global has not been explored in the detail of the table.

2.2 Degree of participation

By explicitly introducing the degree of participation (elite, interest-group, mass), it is possible to distinguish those forms of action which are considered "serious" by various establishments from those which attempt to influence such forms, or must be taken into account as constraints. The elite form, most opposed to the participation of outsiders, is primarily characteristic of inter-governmental action, although it may also be seen in meetings of elites (e.g. Interaction Council, Bilderberg Meetings), the activities of certain NGOs (e.g. the Trilateral Commission, the Club of Rome), religious orders and secret societies (e.g. the Freemasons).

In complete contrast, are the forms of mass action which normally invite the participation of all, usually in an effort to influence the two other forms. The intermediary form of action is that which is mainly characteristic of nongovernmental modes of organization.

Attention is drawn in the table to the distinction between concerns which are universal in nature (e.g. environment, peace) and those which are of a more sectarian nature (e.g. those of particular economic or social sectors). Since the table is only intended as indicative, the controversial question of the degree to which particular forms of action may be universal or sectarian has not been explored in the detail of the table.

3. Variety of information policies

In order to clarify the actual discussion of the dimensions of the information society (in a subsequent section), it is appropriate to present the variety of information policies practised by the different forms of organization noted in Table 1. This may be done in a form such as Table 2, which, it should be stressed, is indicative rather than definitive.

3.1 Range of "users"

Three types of user have been distinguished, those within the organization (whether operational units or membership), those constituting the organization's context (whether peer groups, patrons, sponsors, fund sources or sympathizers), and any wider audience (whether a "target-group", the "uninformed", or a "market" for the organization's "products").

3.2 Purpose of information

Three purposes have been distinguished: informing (taken in its most disinterested and neutral sense), influencing (whether in direct support of the interests of the organization or to "destabilize" its opponents) and facilitating learning (to engender innovative initiatives, possibly quite independently of the interests of the facilitator).

Informing and influencing as purposes are primarily characteristic of what has been identified, in a Club of Rome report (3), as "maintenance learning". This is in contrast to "innovative learning" which is primarily characteristic of the third purpose of facilitating learning. Maintenance learning involves acquisition of information to ensure the continued functioning of the individual or the group. Thus learning to fulfil the criteria for a job or to fulfil the demands of a contract is a response to pre-defined expectations. Innovative learning involves the acquisition of the ability to respond appropriately in ways that cannot be predefined, especially in response to unforeseen situations characteristic of personal and societal crisis.

4. Dimensions of the information society

The concept of an "information society" can be approached in a number of ways. Unfortunately perhaps, it is the intense discussion of several aspects of the phenomenon which almost completely obscures other aspects of potentially greater significance, at least for international associations. Partly for this reason, it is not easy to separate the commonly discussed aspects from those which merit greater attention. In an effort to clarify this situation, the approach taken here has been to produce Table 3 in which "9 Debate Arenas" concerning the information society are distinguished and interrelated. As with the previous tables, Table 3 is intended to be indicative rather than definitive.

The table emerged from reflection on the merit of distinguishing:

- communication hardware from the modes of communication which it required or rendered possible;
- information programming from the social organization which it required or rendered possible;
- information content from the conceptual organization which it required or rendered possible.

The 9 Arenas result from the inter-action between the dimensions so distinguished. The arenas are discussed individually in Annex 1. The approach is applied to the information initiatives of the Union of International Associations, as a concrete example. The result is pre-

sented in Table 4, with details given in Annex 2.

4.1 Comment on dimensions

Some brief comment on the dimensions is called for:

- **Hardware:** includes both the equipment and the telecommunication networks by which it is linked.
- **Mode:** refers to the manner in which the information is organized in the communication process, especially in terms of the technical implications of exchanging the information in that form.
- **Software:** refers to the logical instructions for handling, interrelating and processing information, expressed in a form which can be used to operate a machine (e.g. computer programs), an organization (e.g. policies, plans, rules and procedures) or an intellectual discipline (e.g. a methodology and its associated procedures).
- **Groupware:** refers to the range of possible group and social structures, especially when conceived in terms of the kind of information exchanges they sustain or by which such structures are rendered viable (4).
- **Content:** refers to the hard data (e.g. facts) and soft data (e.g. opinions, values) actually exchanged in any communication process, irrespective of the mode used or the logical procedures rendering the exchange possible.
- **Conceptware:** refers to the conceptual tools, patterns of concepts, models or paradigms through which the information is ordered. It is to be distinguished from isolated concepts that may be communicated as content and from any methodology or software through which they may be given operational form.

In the following discussion of the 9 Arenas, it has been found useful to distinguish three levels of significance in relation to the theme of this paper.

4.2 Nine information society arenas

4.2.1 Adaptive Group (Arenas I to V)

These are the arenas in which most discussion concerning the information society occurs. They relate in most cases to the pre-conditions, practicalities and infrastructure without which the information society cannot emerge. For the purpose of this report, their significance is relatively low, because concentration by associations on these arenas will only result in patterns of action that reproduce, in the new context, those which have prevailed to date in the pre-information society era. To the extent that associations rate their performance to date as appropriate to

the challenge, or have no desire to envisage patterns other than those which have "stood the test of time", it is certainly on these arenas that their attention should be focused. There are indeed real practical problems which need to be confronted at this level in order to be able to function effectively in the information society.

4.2.2 Innovative Group (Arenas VI to VIII)

Whereas the above group of five arenas is concerned in different ways with the infrastructure of the information society and the various checks and balances appropriate to its continued viability, this second group may be considered as concerned with its development. The distinction should however be made between quantitative development, based on existing patterns, as characterized by the preceding group, and its qualitative development, which is the characteristic of this group. The preceding group is associated with the "adaptive" or "maintenance" learning of the Club of Rome report cited earlier (3), whereas this group is associated with innovative learning in response to new situations. The major danger in the previous group is of simply replicating existing patterns, with their many inherent defects, in a new environment reinforced by a new technology - and then claiming significant social transformation. Discussions in the arenas of this group therefore tend to be sensitive to uncomfortable issues which are fundamentally incompatible with those of the previous group, because they call their premises into question - a necessary basis for any significant innovation.

4.2.3 Transformative Group (Arena IX)

Whereas the previous group of arenas is characterized by discussions which are critical of the appropriateness of modes of organization inherited from the past as "tried and true", such discussions tend to reject any critical reflection on the innovations which they themselves favour as "positive". Such questioning tends to be perceived as counter-productive and "negative". By contrast discussions in this group introduce an essentially self-reflective and self-critical dimension.

5. Identification of transformative opportunities

It is possible to take the 9 Arenas of Table 3 and explore the implications of each of them for the nine forms of organization identified in Table 2. This would result in a report of 81 sections and is

therefore not appropriate in this context, however valuable it might be as a guiding framework for organizations wishing to explore their future opportunities and constraints in detail.

The purpose of this paper is to help to distinguish more clearly the nature of the opportunities for international associations which are characteristic of the three groups of arenas noted above.

It is very clear that there are significant opportunities for international association action in connection with all three groups. It is also clear that, as an artificial device, Table 3 does not truly convey the permeability of the boundaries between the arenas. Activity in any one arena can easily be entrained by activity in another arena. Nevertheless the objectives of activity in any one arena can easily ignore, deny or reject, the implications for activity in another arena.

5.1 Adaptive Group (Arenas I to V)

Despite the many startling differences characteristic of high technology informatics, innovation in this first group is primarily a question of adapting existing procedures to a new context. The procedures and structures are not significantly changed. It is, to a large extent, a question of "more of the same", although carried out with greater ease, efficiency and effectiveness. And this ease creates a new problem, namely the proliferation in the amount and variety of information in circulation. This is about to receive a further boost, due to the much discussed phenomenon of "desk top publishing", which will presumably add to the quantities of printed matter being distributed and exchanged by associations.

Innovations associated with the first group therefore contribute directly to the much discussed "information explosion", whose consequences are at present under review in a project of the United Nations University on "information overload and information underuse". In the adaptive spirit of this group of arenas, many further innovations are explored to counteract such overload. They tend to take the form of "selective dissemination of information" and specialization. But these together reinforce social fragmentation and the manipulative abuses which this makes possible. Within this group the challenge of generating and handling "quantity", tends to be "solved", but at the expense of "quality".

The operational challenges of the adaptive process associated with the first group pose real problems of mobilizing resources and developing skills. The necessity of responding to such challenges to ensure the viability of initiatives in the information society makes it appear a luxury to consider the less tangible initia-

tives associated with the second or third group.

5.2 Innovative Group (Arenas VI to VIII)

The second group of arenas focuses more directly on the appropriateness of such adaptive innovations, in an effort to engender structural innovations which transcend the problems associated with the first group. What, for example, is the "desk top reading" innovation which will enable recipients to cope intelligently with the exploding output of "desk top publishing" noted above? What are the "alternative" styles of organization which may prove more appropriate?

This does not necessarily imply that the innovations of the second group are "superior" to those of the first. Some of them (e.g. disinformation) seek to exploit the opportunities of the information society in a more subtle manner than that associated with the first group. Whereas the first group constitutes a "first order" response to those opportunities, the second group is effectively a "second order" response. It is the ability of international associations to develop such second order responses which will determine whether they will attain a new freedom to act within the information society, or whether they will find themselves constrained by other initiatives (possibly as a victim of new forms of exploitation).

For those associations concerned with development issues and societal problems, the adaptive innovations of the first group are far from offering a panacea for social ills. They are opening a "new frontier" in which such problems may well be redeployed in new configurations, without in any way being alleviated. Signs of this are to be seen in the emerging division between the "haves" and the "have nots", in terms of degree of participation in the information society.

The difficulty in shifting attention to the second group is that the economics of the information society are to a very large degree associated with the first group. Any initiative must be viable at the first order level before consideration can be effectively given to issues of the second order. In most cases (e.g. "innovative meetings") the pressures to ensure the viability of a project are such that no attention can effectively be given to second order innovation. And yet it is precisely at this level that the qualitative changes, if any, will emerge.

From the point of view of international associations, in the "pre-information" society a basic distinction is made between profit-making and non-profit-making bodies. And yet international associations need to balance their finances in order to survive, even though no "profit" is made. In the information society, many profit-making organizations are

actively developing opportunities in the first group of arenas - often performing information tasks for which international associations have been previously created. Whilst international associations need to continue to demonstrate their effectiveness in these arenas (and balance their finances on the basis of activities there), the "non-profit" function by which they are characterized can only effectively emerge through their development of activities in the second group of arenas which are of considerably less interest to profit-making bodies - because there is relatively little profit to be made therein. In the information society the distinction required between first order and second order initiatives can therefore usefully be considered as analogous to the distinction between profit-making and non-profit-making initiatives in the "pre-information" society. Both forms are required, but it is the second which ensures a continuing focus on qualitative change as opposed to purely quantitative development.

There is a real risk that, in their struggle to adapt to the information society, many international associations will find themselves trapped by the real challenges and opportunities of the first group of arenas. Many new "do-able" projects are becoming evident. These will obscure the importance of the transition to initiatives in the second group (which may well go unrecognized) that would empower associations to continue to fulfil their basic function in counter-balancing the non-qualitative initiatives of the first order.

5.3 Transformative Group (Arena IX)

Despite genuine engagement in structural innovation of a qualitative kind, a prime characteristic of initiatives of the second group is that they are not structured so as to recognize their own limitations - especially in the manner in which their seemingly positive achievements are themselves as much a part of the problematique as the problems which they address. Initiatives of the first group, but especially of the second, are often associated with an unquestioning belief in their inherent "rightness" as a contribution to the common good. Their advocates are profoundly amazed by the unenthusiastic, if not negative, reactions of those holding alternative views (e.g. American reactions to European perceptions of their proposals; Western reactions to Third World perceptions of their proposals).

Initiatives of the third group can usefully be perceived as sensitive to the counter-productive aspects of their own best efforts, especially as revealed in the light of alternative paradigms and cultures. Such third order initiatives must necessarily respond creatively (rather than reactively) to the reality of the co-

presence of international coalitions seemingly acting at cross-purposes. Here the challenge lies in using the opportunities of the information society to facilitate "trans-conceptual" learning processes which can transcend such differences without denying their function in any pattern of checks and balances. The application of metaphors to the problems of such development-oriented communication is one unexplored opportunity (5).

In a sense initiatives of the first and second groups may well create the impression of transcending differences - as in naive concepts of the "global village" or of "holistic paradigms" - whereas in reality this superficial impression conceals the necessity for such differences. Differences and disagreements have an important psycho-social function. Indeed, it might be said that significance only emerges through the confrontation of dissimilar phenomena. The organized fragmentation of the information society may however be used to reinforce and protect such differences - whether for or against the common good.

The third group is not inherently "superior" to the other two. As with the second, such initiatives may indeed be more profoundly exploitative. The ability to "divide and rule" is an inherently third order skill, which if possessed by those responsible for a second order initiative could be used to totally pervert the declared intentions of any project. International associations enthusiastically collaborating on such a project would clearly be totally vulnerable to such manipulation - unless they developed third order skills.

The inadequacy of the innovations of the second group results from the necessarily restricted nature of the domain in which they can be successfully implemented. Such structural innovations make no provision for internalizing the radical opposition of other competing alternatives, associated with other restricted domains. International associations normally handle this fundamental problem by avoiding anything more than token (first or second-order) contact with bodies holding radically opposed viewpoints. And yet, to the extent that there is some validity to such opposed viewpoints, appropriate global transformation can only emerge by interrelating such perspectives in new ways. The emerging information society provides a context for more innovative responses to this challenge - through initiatives characteristic of this third group.

6. Challenges faced by organizations

The previous sections have pointed to the challenges for an international association in organizing itself:

- to function in the information society (the "adaptive group" of arenas);
- to recognize its innovative contributions within that context (the "innovative group" of arenas);
- to respond effectively to its own limitations in relation to other bodies with alternative perspectives (the "transformative group of arenas).

Particular challenges which may be usefully highlighted at this point include:

- (a) the continuing problem of information overload and the total inadequacy of narrow specialization as a "solution" in a context of cross-sectoral issues;
- (b) the emergence of an even greater range of specialized interests to which commercial information providers will respond if associations fail to fulfil this traditional function of theirs;
- (c) increasing "competition" between associations and commercial bodies interested in providing the same services, thus depriving many associations of an important source of income;
- (d) increasing costs in conventional communications traditionally employed by associations (e.g. postage, telephone), coupled with economic restrictions on electronic exchange of information (possibly deliberately imposed to reduce association activity);
- (e) imposition of restrictive regulations to inhibit electronic exchanges of information and trans-border data flows (possibly for reasons of "national security");
- (f) proliferation of a wide range of "alternative" forms of electronic communication (e.g. videodisks, electronic mail and conferencing systems, laserscards, paperstrip), many requiring different, and often incompatible, equipment.
- (g) proliferation of computer crime and abuses designed to sabotage, exploit or manipulate information systems which it would otherwise be easy for associations to set up and share;
- (h) reinforcement of the prevailing pattern of inequality, discrimination and fragmentation as vested interests find ways to establish their position in the information society;
- (i) erosion of the significance of existing conceptual distinctions, whether established by scholars, legislation or administrators, whose maintenance has been justified by operational convenience in the pre-information society (e.g. such distinctions as profit / non-profit, governmental / non-governmental, temporary / permanent, formal / informal, national /

international, and possibly even legal / illegal)

- (j) extreme difficulty of ensuring that messages of requisite complexity (cf Ashby's Law) can be communicated successfully (via reductionist conceptual filters imposed by computerised thesauri) to a sufficiently wide audience;
- (k) difficulties of responding effectively to the opportunities (and financial drain) offered by a multiplicity of information exchange facilities, whether initiated by associations, by commercial bodies or by governmental bodies.

One interesting challenge for associations, whether national or international, will be that of responding to the changing significance of their relationship to intergovernmental institutions (e.g. UNESCO, ILO, WHO, ECOSOC), in the emerging environment the latter's privileged status will be brought into question, to the extent that it is non-functional within the communicating network of international bodies - leading perhaps to a role analogous to that of the aristocracy in European countries.

Perhaps the most profound challenge for international associations will be to discover ways to use the facilities of the information society to communicate, interrelate and defend the subtler insights and values for which they stand - in an information environment in which such insights must "compete" for attention (and therefore resources) with other less subtle, and seemingly more striking, items of information. This is the traditional challenge of international associations transferred to a context where the opportunities and obstacles are much greater than before.

7. Selected innovation possibilities

Here it seems appropriate to focus on 5 quite different possibilities for future innovation.

7.1 Global media events

The surprising success of media events such as Live Aid, Band Aid, Hands across America, etc. has led to active exploration of the possibility of future events of this nature. Media contacts have been developed; people and groups are developing the skills to bring about such events at reasonably short notice; formulas for funding such events are becoming clearer. Such events are naturally attractive to the media faced with the need to constantly discover new programme content for an ever-hungry audience.

International organizations, whether governmental or non-governmental, have been slow to respond to this opportunity.

They have only associated themselves with such events after the fact. The main initiatives have come from North American national coalitions, although even there the established bodies were not involved in launching such projects.

The opportunity and organization of such events engenders much grass roots enthusiasm as a means of focusing on real social problems or on values such as world peace. They become a highly visible celebration of togetherness (which seldom takes an attractive and communicable form in the normal activities of international bodies).

There is therefore clearly an opportunity for international associations, if they can overcome the awkward political and financial issues of negotiating with Western-dominated media. With the considerable development of global satellite links, there will be a great need, on the side of those responsible for them, to demonstrate that there is something of global interest that can be communicated (in addition to the Olympic Games, the World Cup, or the Eurovision song contest, at a regional level).

Such events do of course have quite distinct limitations, which may well discourage the involvement of international bodies. Their impact, in terms of their stated goals, has been questioned. And clearly the planning of such events lends itself to innovative forms of manipulation and exploitation. Nevertheless if international associations do not engage themselves on this front, others will.

7.2 Support negotiation system

The previous innovation focuses mainly on persuasion through the asymmetric communication of images to a largely passive audience over a short period, with little opportunity to build concretely on any pattern of communication or insight which emerges. Clearly there is a need to match such mega-events with a complementary system offering exchange of information between active participants, on a continuing basis, such that every possibility of engendering new initiatives between them is fostered and supported throughout the lifecycle of any resulting project.

Such a system is to be seen in embryonic form, especially in North America, in the emergence of many electronic mail and computer conferencing networks, themselves partially interlinked (to a limited degree). The most recently launched include PEACENET and ECUNET, with preoccupations implied by their names. They are open to international association participation, at non-commercial rates.

Since the viability of the technology has been demonstrated, it is worth envi-

saging what form such a system could take. The most practical guide to such reflection is the recent installation of a world-wide, computerised, share-trading network. This links stock exchanges, brokers, banks and institutional investors. It is composed of a number of complementary components, which can perhaps best be illustrated by Table 5. This is a diagram of the equipment on the office desk of a "fund manager" in a major financial institution at the present time.

In order to make any valid comparison with the evolution of the ways in which associations could interact through a comparable system, it is necessary to identify the functional similarities. Although associations do not have shareholders, they frequently have fee-paying members. Many also undertake campaigns and projects to which the public is invited to subscribe. Many also undertake specialized projects for which they seek funds from other bodies (especially foundations and major institutions). Many also seek, with such funding bodies, projects in which they could usefully collaborate to further their programme objectives. All these interactions currently take place using the postal, telephone, and telex systems, as well as the media. Such systems are in the process of being integrated, in a quite dramatic way, as communication options within the information society. There is no reason why associations should not also envisage shifting the "centre of gravity" of their operations into that context.

The key difference between share-trading and support-negotiation, is that in the former the focus is on value in monetary form, for its own sake, whereas in the latter the focus is on values, as expressed in the form of ideas, projects, information and cooperative arrangements. Just as it is claimed by financiers that they are essentially dealing in confidence (expressed in monetary form), so it could be claimed that associations are negotiating degrees of confidence in the interests that they are promoting.

Few would deny that the system whereby the international community negotiates support for a project amongst its constituent bodies is extremely clumsy - many projects take years to be "approved". This is to be contrasted with the speed of financial transactions in response to any political situation or opportunity. That support can be negotiated rapidly for non-financial projects is admirably illustrated by such events as Live Aid and Band Aid, in which millions of people were involved.

Such a support negotiation system would help bring the international community out of the bureaucratic dark ages in which token projects, approved in response to yesterday's problems, are vain-

ly applied (and acclaimed) as significant responses to today's problems and to those of the future. Such a system would constitute an appropriate context for emergency preparedness and for the look-out function repeatedly called for by policy makers. Of greatest significance, such a system would provide a visibly coherent means whereby individuals and groups could rapidly formulate collaborative projects and mobilize support for them - thus drawing on the vast reservoir of goodwill which is alienated by the non-participative initiatives characteristic of the present.

As noted above, the elements of such a system are already evident in operational form, however embryonic. It is more than likely that coalitions of national, governmental, commercial or association interests will make ambitious proposals along such lines in the coming years. The challenge will be to filter out or contain those with hidden agendas and "empire-building" intentions. Clearly there is little hope that the United Nations system will prove helpful in this connection, given its selective and highly politicized track record in dealing with nongovernmental initiatives and those responsible for them.

7.3 Transformative conferencing (6)

The clumsiness of the international community of organizations in formulating an initiative and negotiating support for it is reflected, to a large degree, in the procedural clumsiness of international meeting organization. It is fair to say that international meetings hinder, rather than facilitate, the emergence of new initiatives. In many ways they can be considered as laboratory models of the problems of the structural and procedural inadequacies of the international community.

The emerging information society is already affecting meeting organization in a number of ways: use of telex, reservation systems, media involvement, communications devices, messaging systems, satellite links (video-conferencing). These may be said to have contributed to the increase in the logistic efficiency of such events (Arenas I to V). They cannot be claimed to have increased the effectiveness with which ideas or positions, put forward by different participants, are interrelated in order to bring out the pattern of concepts which could constitute the foundation for a new initiative.

The previous innovation discussed depends on the participation of many bodies in a world-wide network. Whether or not this comes about in a useful form, associations should be able to explore uses of low-cost computer equipment and software as a means of providing "conceptual scaffolding" to facilitate the emergence and collective recognition of

patterns of significance in their own meetings - and the possible transformation into even more significant forms. All the elements are available. Some experiments have already been conducted along these lines (7). Further possibilities are now emerging with the availability of "do-it-yourself" artificial intelligence (shell) programs - Peter and Trudy Johnson-Lenz, developers of the EIES computer conferencing system, announced in December 1986 a new initiative: "awakening technology". This focusses on tools and technologies to help awaken individual and collective mind, emphasizing the use of personal computers and computer networks as electronic extensions of the mind.

7.4 Meta-stable coalitions

The viability of any form of organization is to a large extent dependent on its ability to maintain its coherence. This ability is directly related to the nature of the communication system. Any organization based on the slow exchange of letters by post needs to emphasize the rules for being "a member" and to make evident who is on the current membership "list". When participants in an electronic mail system interact, they effectively bring about the creation of one or more organizations - if the pattern of their interactions causes clusters of participants to emerge around particular fields of interest. Such clusters can be formalized if necessary - membership can then be restricted to participants on a "list", if desired. The point however is that the transition between the "non-existence" and "existence" of an organization, in such a context, can be both very subtle and highly formalized. The emergence and dissolution of such an organization can be very rapid, with little need to maintain the organization in existence once it is no longer needed - since the participants can reconfigure into that coalition at any time. The information system establishes a continuum out of which coalitions can rapidly emerge, in response to any issue, and into which they can dissolve when no longer immediately relevant (8).

The above process currently occurs in the many computer conferencing systems, usually based in North America. The process exhibits a fundamental weakness to the extent that it is merely a form of "super-telex" (characteristic of the adaptive group of arenas). In particular such systems have no special means for handling the kind of disagreements which are mediated within the framework of international associations having a politically and culturally diversified membership. In fact no use is made of computer processing power to facilitate (or even provoke) the emergence, maintenance and dissolution of coalitions in terms of the pattern of shared, opposing and complementary interests of partici-

pants. If such an innovation were to be made the emergence of a whole new range of meta-stable coalitions would be possible.

The difficulty in conventional organizations based on non-electronic communications lies in the necessarily simplistic nature of any rules which are agreed amongst the members as the basis for the organization they form. If they are too complex, in order to take into account a variety of exceptional cases, the organizational decision-making procedure is perceived as cumbersome or simply incomprehensible. As a result, if the organization cannot be made "hospitable", some potential members of an exceptional nature simply do not join. This reduces the potential effectiveness of any coalition.

More interesting however is the possibility of coalition formation on topics in which all potential members have reservations that cannot be reconciled in any simplistic set of rules. In such instances, the processing power of the computer can be used to devise sets of rules of a higher order of complexity (of Asby's Law) within which the different reservations of the potential members can be reconciled. In effect the "constitution" of the organization so formed is based on a dynamic set of rules embodied in a computer program, rather than in a static "legal" text as at present. Representing the organization structure might then be done using a dynamic and/or graphic model, rather than using organization "charts" as at present.

One merit of such an approach is that it can make use of both patterns of agreement and of disagreement - embodying discontinuity (9) - to ensure the stability of the structure, rather than relying solely on consensus as at present. The art of interweaving agreements with disagreements to bring about an entirely new form of organization is suggested by models of "lensegrity organization" (10).

A further development, enabling the emergence of even more subtle coalitions, could result from even more dynamic sets of rules to cover cases where the coalition can only effectively "exist" by alternating between several different (and essentially unstable) forms, each governed by a different set of rules (11). Such "variable geometry" is a well-developed characteristic of organic molecules basic to life - namely "resonance hybrids" (9). In a much simpler form it is evident in rules to maintain coherence through rotation of an association secretary or chairperson.

7.5 Metaphor design (5)

The fundamental challenge for international associations, as noted earlier, does not lie in either the adaptive or the

innovative group of arenas, but rather in the transformative group. Innovations in either of the first two groups will tend to be based on existing linear and static paradigms. They will tend to be locked into the prevailing Western paradigm. This has not produced ways of organizing which respond effectively to the complexity of the social system - that the international community is obliged to confront and to reflect through coalitions favouring opposing paradigms.

It is questionable therefore whether innovations like those described above would not simply be coopted to serve vested interests of a traditional kind. Even the possibility of moving beyond the linear, text-oriented information systems which are the core of the information society, using pattern-oriented software and hardware, is subject to such constraints. It is also clear that the information society will severely discriminate against the "information poor" - whether blatantly, or subtly through depriving them of adequate information of a transformative nature (the information equivalent of "avitaminosis"). It is also doubtful whether such changes will permeate sufficiently rapidly to assist any but the information elites.

In such a context, an alternative approach would seem to be well worth exploring, namely the design of metaphors offering people a way of re-conceptualizing their relationship to their social and natural environment. Metaphors offer the considerable advantage of requiring few resources for their dissemination. They can even be used to bypass the considerable lags in the education system. They have the special

merit of being natural to most cultures and languages - so that it may be more a question of enhancing peoples' own use of metaphors, rather than importing new metaphors for them.

Outside the literary world (with the possible exception of fundamental physics), it is only politicians who make deliberate use of metaphors to communicate. For metaphors are inherently communicable and travel well, in contrast to the sophisticated theories of academe. They have the considerable merit of transcending non-functional conceptual distinctions and remaining comprehensible to many, to whatever degree. And yet this resource has not been explored, at a time when most other communication techniques are recognized as suffering from severe limitations.

The key to collective navigation through complexity may well lie in new ways of using metaphors to clarify policy options, whether or not their use is facilitated by high technology information systems. It may be through the exploration of metaphors that the international community of organizations will finally discover a way to describe itself meaningfully - whether to itself or to those who currently question its credibility.

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ANNEX1

Arena I: Hardware / Mode

On the technical side this is the well-developed discussion in the tele-communication community, involving experts in computers, satellite communications and audio-visual equipment. It is above all the domain of the manufacturers of hardware and of the government ministries responsible for communications and broadcasting. From this arena emerges such innovations as facsimile, videodisks, videotext, cable TV, usually without any understanding whatsoever of the social or conceptual implications of such innovations.

The main issues raised by this arena which are of relevance to associations include:

- (a) the availability of such innovations (especially in developing countries), insofar as there is a very real risk of establishing a fundamental divide between those with access to such innovations and those forced to live as "information outlaws" outside the information society which the innovations make possible. Such innovations are already creating a class of individuals and groups which is below a new poverty line - that of the "information poor". Associations are especially exposed to this problem through the manner in which their operations are affected by rising costs of communication, of which the best example is cost of postage. Such increases, apparently innocent, can easily come to be used as a new form of repression,
- (b) the rate of technical innovation is such that there is a continuing problem of maintenance and of compatibility with other equipment (both of the same generation and of a new generation). This is especially severe in developing countries, where, in addition to the problem of acquiring spare parts, there is frequently a difficulty with surges and disruptions in the power supply (which can severely damage computer equipment).
- (c) such equipment creates new forms of dependency, making it difficult for organizations and individuals to function should such equipment breakdown. (The problem is analogous to that created by the breakdown of an automobile or of the public transport system, for whatever reason).
- (d) such equipment lends itself to new forms of abuse, some of which may be institutionalized. Already it is possible to detect the emergence of "information cartels" in embryonic form which could presumably come to parallel the situation prevailing in the petroleum industry or with respect to other commodities. At the national level this is

reflected in the tight government monopoly, maintained in many countries, on access to certain modes of communication.

(e) a particular source of possible abuse, which has received considerable attention, is that of "transborder data flows".

Arena II: Hardware / Software

From the technical point of view, this arena is concerned with such questions as:

- (a) whether specific forms of software and hardware are compatible. Hardware innovations of any significance necessitate new software to take advantage of those innovations, or at least to adapt existing software to the new equipment (to ensure continuity from the user's perspective);
- (b) development of more sophisticated software to handle new applications, or else to handle existing applications more efficiently;
- (c) ensuring that the man-machine interface is "user-friendly", namely the development of software which facilitates the access of the user to the machine (especially in the case of neophytes), rather than obliging the user to adjust to the particular idiosyncrasies of the equipment;
- (d) the elimination of "bugs" in equipment, software and systems, whether initially or when upgraded;
- (e) problems of upgrading applications from one generation of hardware/software to another with the minimum of disruption. This includes the problem of becoming "locked into" a particular hardware/software combination beyond which it becomes impossible to develop without a severe cost penalty;
- (f) the vulnerability of sophisticated hardware/software systems to sabotage and penetration by outsiders;
- (g) abuse of hardware/software systems, including "computer crime".

Arena III: Hardware / Content

In this arena issues such as the following are debated:

- (a) whether particular content can be adequately handled by particular hardware, and especially whether handling the content with that hardware does not involve adaptations which distort the content in an unacceptable manner;
- (b) whether dependence on particular hardware is compatible with particular cultures or sub-cultures, and whether the necessary adaptations result in an unacceptable form of "packaged" or homogenized culture;

(c) the "mind-numbing" effects of exposure to certain forms of hardware (e.g. TV addicts, computer junkies);

(d) the questions of media-induced violence, encouragement of permissiveness, and exposure to obscenity, as leading to the erosion of traditional values;

(e) increase in electronic surveillance and invasions of privacy;

(f) emergence of a "blip culture", as noted by Alvin Toffler: "Instead of receiving long, related 'strings' of ideas, are increasingly exposed to short, modular blips of information - ads, commands, theories shreds of news...that refuse to fit neatly into our pre-existing mental files." (12, p. 182)

Arena IV: Groupware / Mode

In this arena the focus of discussion covers issues such as the following:

- (a) adaptation of an organization, community or family structure to the challenges and opportunities of new media and new supplies of information. The focus in an organizations is often on the need for retraining older people and the special facility of younger people (in the case of computers), as well as on the ability of the body to adapt its procedures. In the case of the mass media, for example, the concern is with whether the body interacts appropriately with the media and how to project its "image" appropriately to a wider audience;
- (b) the cost of adapting as compared with the cost of not adapting (or not adapting at the same rate as associated bodies with which it normally works or competes for resources);
- (c) the appropriateness of some new modes in the light of the aims of the organization. For example, many "alternative" bodies have delayed making use of computers and data networks precisely because they were perceived as reinforcing the "high-tech" philosophy to which they were opposed;
- (d) erosion of traditional communities and family structures through orientation to electronic media, especially television;
- (e) increasing dependency of organizations, including government, on the media and the manner in which they are perceived through the media. Vulnerability of such bodies to the irresponsible quirks of the media and its amplification of fickle reactions in public opinion;
- (f) manipulation of media and data by groups in support of their special interests and to the detriment of their opponents (such as in the skilled use of rumour, scandal and "muck-raking").

Arena V: Mode / Conceptware

The discussion most characteristic of this arena is that in media-related contexts around the question of new "concepts" or new media "packages". It is on the marketing of such "concepts" that much attention is focussed by public relations and advertising agencies. Such concepts might be described as ways of interrelating available modes in order to achieve a significant new impact. Most campaigns and other media events originate from such concepts, by which the necessary investment is attracted, and which guide the planning through which they are implemented. The success of competing advertising campaigns is largely determined by the relative originality of the governing concepts. In this sense a concept is equivalent to a military strategy. Associations endeavouring to attract funding for a new project must also necessarily find ways to present the underlying "concept".

Issues in this arena include:

(a) the struggle to identify potentially successful concepts and the best way to present or communicate such a concept to investors or to a target group to which it must be "sold";

(b) the problem of protecting people from manipulative concepts to which they have little resistance (e.g. overselling techniques used in developing countries);

(c) the insidious, and potentially corrupting, nature of certain communication concepts associated with some media (e.g. as perceived by those who reject television);

(d) communication concepts perceived as technocratic exploitation or dehumanizing (e.g. as perceived by those who argue for more highly contextual or participative forms, such as street theatre);

(e) the need to identify and reject manipulative symbols (e.g. the attack on certain children's books by those with feminist or racial concerns) or the concern by those with particular political views about the disinformation strategies employed by those with opposing views.

Arena VI: Groupware / Software

Discussion in this arena concerns the appropriateness of classic forms of social organization in the face of existing societal problems and given the opportunity and challenges of the information society. Issues include:

(a) the need for "alternative" styles of organization and the rules by which they can usefully operate;

(b) the requisite complexity of organization if it is to respond effectively to any increasingly complex environment (of Ashby's Law from cybernetics requiring that an effective controlling organization be at least as complex as the phenomena that it needs to control);

(c) the inadequacy of minimalist and token forms of social innovation;

(d) the possibility of a "global village" based on emerging data and other networks;

(e) the design of computer software to support new kinds of organization (e.g. computer conferencing "conferences") and to sustain meta-stable coalitions.

Arena VII: Groupware / Content

Whereas the previous arena is concerned with innovative forms of social organization to take real advantage of the information society in the face of societal problems, this arena is concerned with the appropriateness of the content and the possibilities of innovative content. Issues include:

(a) the challenge of "empire-building" in bureaucratic structures (as well as in invisible colleges of academics), whereby "territory" is staked out in relation to some topic and then vigorously, and often irrationally, defended against incursion by outsiders;

(b) means of countering the reductionist tendencies practised by establishment institutions when handling

have been obliged politically to demonstrate some competence) but to which their structures are not adapted (e.g. treatment of interdisciplinarity by UNESCO, treatment of human development by I.L.O. WHO and UNESCO);

(c) use of disinformation and censorship by organizations and the means of countering their effects;

(d) the challenge of reflecting networks of substantive relationships (e.g. networks of environmental problems) in appropriate patterns of communication between bodies responsible for them individually;

(e) the different (and complementary) types of content that need to be supplied by different forms of organization, if the network they constitute is to function in a coherent and effective manner.

Arena VIII: Software / Conceptware

Discussion in this arena concerns the appropriateness of classic forms of conceptual organization in the face of

recent conceptual advances, the complexity of the challenges faced by society and the opportunities of the information society. Issues include:

(a) the problem of handling complexity;

(b) the wider significance of emerging paradigms from fundamental physics, their relationship to consciousness and to non-Western (and traditional) modes of thought (hitherto rejected as "primitive" by main stream Western thinking and the institutions to which it gives rise);

(c) the potential of the holographic metaphor as offering new insights into realistic ways of organizing information appropriate to any global or holistic approach;

(d) "lateral thinking" procedures, in contrast to linear thinking, as offering a means of breaking out of unfruitful patterns of thought;

(e) the challenge of "marrying" hierarchical modes of organization with non-hierarchical, associative modes.

Arena IX: Conceptware / Content

Whereas the previous group of arenas is characterized by discussions which are critical of the appropriateness of modes of organization inherited from the past as "tried and true", such discussions tend to reject any critical reflection on the innovations which they favour as "positive". Any such questioning tends to be perceived as counter-productive and "negative". By contrast discussions in this arena introduce an essentially self-reflective and self-critical dimension. Issues include:

(a) the mind-set of the innovator as a constraint on appropriate innovation for others, especially those in other cultures;

(b) sensitivity to those dimensions of alternative paradigms (whether from other disciplines or cultures) which call into question aspects of the paradigm with which the person or organization is currently obliged to work - and the tendency to reject such sensitivity with appropriate rationalizations;

(c) the problem of single-factor explanations (conceptual "tunnel vision") and the single solution to any problem complex to which they give rise;

(d) indiscriminate relativism and the problem of transcending it;

(e) the issue of self-reference and self-reflectiveness;

(f) disagreement, incommensurability, discontinuity and paradox, and the appropriate conceptual means of "containing" them.

ANNEX 2

Concrete example: the Union of International Associations

In order to facilitate comprehension of Table 3 (and Annex 1), the information preoccupations of the UIA have been ordered in relationship to the nine arenas and presented in Table 4 in the same format.

Arena I: Hardware / Mode

The focus in this case is on the selection and operation of hardware capable of handling information in the form necessary for the UIA's publications and future developments that may require such equipment. This has resulted in the installation of a local area computer network which links 10 micro-computers. The choice was made in terms of the need to transfer information to sub-contractors capable of high-speed photocomposition and page-make up. Rejected options included use of terminals linked to a main-frame computer in an external service bureau. Experiments are being made with data networks. Options under consideration include use of laser disks and graph plotters.

Arena II: Hardware / Software

The focus in this case is on the selection of computer software compatible with the micro-computers. This included software to operate the network and software for a shared text database on the network. Using such software, further programs were then developed to handle the specific needs of the UIA publications. Investigations are being made into laser disk access software.

Arena III: Hardware / Content

The focus in this case is on the operation of the system for research, editorial, administrative and publication pro-

duction purposes (especially in the case of the descriptive Yearbook Vol. 1 and 2). Other concerns have been the possibility of on-line access of external bodies to such data, the exploration of computer conferencing / electronic mail systems, and the possible distribution of databases on laser disks.

Arena IV: Groupware / Mode

In this case the focus is the management problem of the adaptation of the UIA structure to a local area network, namely the reallocation of workloads, the redistribution of functions and the assumption of new tasks in response to the opportunities of the network. Although well-advanced, this process is not complete.

Arena V: Mode / Conceptware

Here the focus is on how people within the UIA, especially editors, evolve new ways of thinking about their work and ways of handling it. This development cannot be described in specific terms, since it is primarily a shift in attitude in response to a pattern of new opportunities and constraints. It is of fundamental significance to those concerned.

Arena VI: Groupware / Software

Activity in this arena has so far been limited to developing software to handle networks of relationships between organizations (e.g. membership links, working relationships, etc), especially for Yearbook Vol. 3. This could be extended to the operating units of complex secretariats (e.g. those of large IGOs). Further developments might include software to actively facilitate contact between organizations in the light of their programme priorities, and software

to sustain meta-stable coalitions (e.g. "potential associations", "tensegrity organizations" and "resonance hybrids") which have been a theme in UIA research.

Arena VII: Groupware / Content

Here the UIA concerns include discovering means of representing patterns of relationships (especially networks) between organizations, whether through computer graphics or plotted maps (as argued in the UIA Encyclopedia of World Problems and Human Potential). Other concerns include the clarification of the distinct (but complementary) kinds of data which a coalition of organizations can usefully exchange in order to ensure its viability and effectiveness (as partially explored in the Yearbook Vol. 3).

Arena VIII: Software / Conceptware

The need for innovation in this arena has been explored, from the UIA perspective, in the Encyclopedia. The concern is with the possibility of developing software to handle patterns of (possibly incompatible) concepts which guide the way in which the fragmented sectors of society are perceived and interrelated.

Arena IX: Conceptware / Content

Again, the possibility of innovation in this arena has been explored, from the UIA perspective, in the Encyclopedia. The concern is with "trans-conceptual" ways of handling the incommensurable perspectives and sets of data which are so characteristic of the international community of organizations. Particular attention has been devoted to patterns, metaphors and patterns of metaphors, as a largely unexplored resource for the comprehension of appropriateness and as a guide to navigation through complexity.

TABLE 1 FORMS OF ORGANIZED ACTION (tentative)		SHORT-TERM FOCUS		MEDIUM-TERM FOCUS		LONG-TERM FOCUS
		Non-Global regional • local • specific culture	Global	Non-Global regional • local • specific culture	Global	
ELITE Primarily • closed • governmental	Sectarian concern	Summits Ceremonies Rituals Delegations IGO meetings Religious conclaves Sabotage projects		Intergovernmental organizations Inter-institutional networks Intergovernmental lobbies • Group of 77 • Non-aligned movement Intelligence networks Subversive networks Corps diplomatique		Supra-national • UN, E Multilateral Club of Rome Opus Dei Secret Intergovernmental Religious Intentional
	Universal concern					
INTEREST-GROUP Primarily • open • nongovernmental • selective	Sectarian concern	Emergency relief networks Disaster networks Ad hoc lobbies Meetings - professional - academic - trade associations - alternative groups - political Ad hoc coalitions		Organizations and networks • professional • academic • trade association • political Institutional supporters • UNA • UNESCO Clubs • CONGO Permanent coalitions/lobbies • employers • ecological • peace Voluntary service		Organizational • academi • lay • politi • enviro • "alte Sects a Federal
	Universal concern					
MASS Primarily • open • non-selective	Sectarian concern	Mass assemblies - pilgrimage - revivalist - youth festival - music festival Mass demonstrations • ecological • peace march • strike World day of prayer Telephone "call-in"		Mass movements • peace • environment • youth • women Trade unions Personality cults • religious • political • sport • media (fan clubs) Campaigns		Mass movements • environ • peace Religious
	Universal concern					

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TABLE 2 VARIETY OF INFORMATION POLICIES (tentative)		INTERNAL AUDIENCE		CONTEXTUAL AUDIENCE		WIDER AUDIENCE (Target)
		Operational units	Membership	Peers	Patrons	Lobby targets
INFORMING - quantitative data - factual data - essentially neutral	Exploitative	Provide facts - needed by the operational units (to continue functioning) - valued by the membership	Provide facts of value to the source group's context and external supporters	Provide facts of value to the source group's context and external supporters	Provide facts of value to the source group's context and external supporters	Provide facts of value to the source group's context and external supporters
	Non-exploitative					
INFLUENCING - persuasion - educating - propaganda	Exploitative	Select and present information (e.g. "positive" reports) justifying the past and planned ensuring the continuity and coherence of the group as a whole	Select and present information such as to ensure that the interests and initiatives of the source group continue to be appreciated and supported by its context	Select and present information such as to ensure that the interests and initiatives of the source group continue to be appreciated and supported by its context	Select and present information such as to ensure that the interests and initiatives of the source group continue to be appreciated and supported by its context	Select and present information such as to ensure that the interests and initiatives of the source group continue to be appreciated and supported by its context
	Non-exploitative					
LEARNING FACILITATION - innovative learning	Exploitative	Engender exchanges of information which increase the group's self-reflexiveness and improve the ability of the group to undertake new and more sensitive tasks	Facilitate the ability of the group's context to identify and work with new patterns of information (or paradigms) which increase the coherence of the perspective prevailing within that context	Facilitate the ability of the group's context to identify and work with new patterns of information (or paradigms) which increase the coherence of the perspective prevailing within that context	Encourage the group's context to identify and work with new patterns of information (or paradigms) which increase the coherence of the perspective prevailing within that context	Encourage the group's context to identify and work with new patterns of information (or paradigms) which increase the coherence of the perspective prevailing within that context
	Non-exploitative					

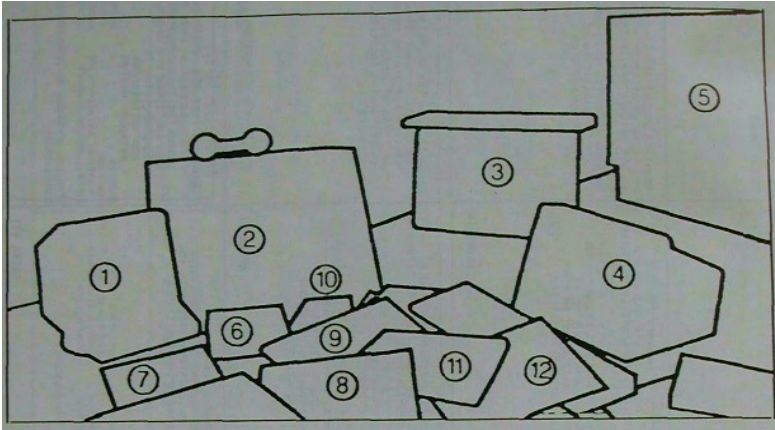
TABLE 3 DIMENSIONS OF THE INFORMATION SOCIETY (tentative)	HARDWARE (Devices or Systems) Transmitters Receivers Computers Satellite networks Telex	GROUPWARE (Formal and Informal) Institutions Organizations Groups Task forces	CONCEPTWARE Context-dependent or Transcon Classification schemes Conceptual relationships Patterns Symbols
MODE • sound • image • sound/image • print Data • text • sound • graphics Unmediated • voice • gesture	TECHNOLOGICAL CRITERIA • availability (incl. cost) • compatibility • appropriateness (incl. cost) • maintenance (incl. parts) • dependency • abuse Possibilities: • enables new systems ARENA I	MANAGEMENT (ORG. DEV.) CRITERIA Issues: • adaptation of organization • appropriateness • erosion of traditional forms • dependency on media • vulnerability to media • manipulation of media/data Possibilities: • new modes of group communication • new mode engendered organizations ARENA IV	PUBLIC RELATIONS (MARKETING) CRITERIA Issues: • identifying viable media "tools" • manipulative concepts • dehumanizing modes of communication • erosion of traditional order Possibilities: • new media "concepts" • new paradigms, metaphors ARENA V
SOFTWARE (Programs) Non-computer • rules • procedures • music Computer • word/data processing • numbers • text • image • sound • graphs • artificial intelligence	PROGRAMMING CRITERIA Issues: • compatibility • user-friendliness • "bugs" • upgrading constraints • abuse and fraud • penetration and sabotage Possibilities: • enables new applications • desktop publishing • computer conferencing ARENA II	ORGANIZATION APPROPRIATENESS Issues: • search for "alternative" forms • requisite group complexity • minimalistic innovation Possibilities: • "global village" • software-engendered groups (e.g. in CC) • meta-stable coalitions • resonance hybrid groups ARENA VI	PARADIGM APPROPRIATENESS Issues: • handling complexity • appropriateness of classic models • operationalizing new paradigms • requisite conceptual complexity • naive holism • reinforce, or reductionist or • reinforcement of linear thinking Possibilities: • reinforcement of lateral thinking • software-engendered • meta-stable • resonance hybrids ARENA VII
CONTENT Hard data • facts • issues • socio-economic problems Soft data • values • opinions • psycho-social problems • reservations • visions • proposals	PRODUCTION (MARKETING) CRITERIA Issues: • hardware/content compatibility • cultural compatibility • "packaged culture" • erosion of traditional values • media-induced violence • electronic surveillance • "blip culture" Possibilities: • learning games • "telephone trees" • CB or CC exchanges ARENA III	INFORMATION APPROPRIATENESS Issues: • empire-building, territoriality • appropriateness of organizations to content • disinformation, censorship Possibilities: • group structure equivalent to substantive relation • new kinds of organization for existing content • new kinds of content for existing organization ARENA VIII	SELF-REFERENTIAL CRITERIA Issues: • sensitivity to alternative paradigms • comprehension of complexity • single-factor explanations • indiscriminate relativism • self-reference Possibilities: • applied metaphors • embodying discontinuity • policy alternation • pattern, of metaphors ARENA IX

TABLE 4 APPLICATION OF TABLE 3 DIMENSIONS TU UIA • a concrete example (tentative)	HARDWARE	GROUPWARE	CONCEPTWARE
MODE	Selection and installation of "local area computer network" composed of: <ul style="list-style-type: none"> • 10 micro-computers • laser and local printers • industrial norm tape unit • hard disk units Provision of link to external photocomposition facilities Link (via modem) to external data bases (incl. electronic mail) ARENA I	Adaptation of network to suit special needs of UIA and ensure acceptability to staff (e.g. noise level, VDUs) Internal organizational problems of adapting distribution of workloads in relation to the computer network facilities ARENA IV	Adapting way of thinking about organization of work in the light of the network facilities - especially the interrelations and the possibilities of publication production ARENA V
SOFTWARE	Network operating system (Novell) Text database software (Revelation) Telecommunication software Word processor software (Word, WordStar) ARENA II	Design of software to handle networks of relationships between: <ul style="list-style-type: none"> • organizations • world problems • human values • concepts Research into possibility of <ul style="list-style-type: none"> • tensesgrity organizations • resonance hybrids • potential associations • intercontact system ARENA VI	Research into the possibility <ul style="list-style-type: none"> • conceptual tensesgrities • pattern sustaining software • patterns of concepts • comprehension facilitation software ARENA VIII
CONTENT	Data bases: <ul style="list-style-type: none"> • international organizations • international meetings • world problems - strategies • human values • human development concepts • integrative concepts Associated Publications: <ul style="list-style-type: none"> • Yearbook of International Organizations (Vols 1, 2) - Encyclopedia of World Problems and Human Potential • International Congress Calendar ARENA III	Research into: <ul style="list-style-type: none"> • production of network maps • complementary data sets in inter-group coalitions ARENA VII	Research into the possibility <ul style="list-style-type: none"> • trans-conceptual ways of handling incommensurable perspectives and concepts • comprehension of appropriateness • metaphor design ARENA IX

TABLE 5

WORKING ENVIRONMENT OF A "FUND MANAGER"

- as a guide to reflection on the desirable working environment for an association
"support negotiator"



This diagram, based on a photograph of the desk of a fund manager (Financial Times, 19 November 1986), illustrates the range of tools now available to financial institutions.

1. Quick (Quotation Information Centre KK) terminal: provides prices and information service about Japanese equities from the Tokyo stock exchange
2. Dealer board: allows telephone contact with market makers and brokers
3. Personal computer: highlights the composition of portfolios, using in-house and external software
4. Reuter information service: gives world news, foreign exchange, market indices and share prices worldwide
5. Topic: gives London financial information and share price quotations
6. Calculator
7. Long-term Japanese equity chart book: shows changes in share prices over 11 years
8. Stockbrokers' information book on Japanese equities
9. Point and Figure charts of international markets, currencies and equities
10. Japan Company Handbook: lists results, earnings, performance and people
11. IBES (International Brokers Estimate System): compiles brokers' estimates of world companies' future earnings
12. China Products promotional booklet: identifies opportunities that could arise in the future (illustrates ways a fund manager may spot opportunities)

Equivalents could be envisaged for project-oriented international associations.