

DEVELOPMENT INFORMATION SYSTEMS: ANOTHER INFORMATION RESOURCE

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ABSTRACT

Against a background of thirty years of development cooperation producing a less than optimum impact upon those countries whose need is the greatest, it is evident that a coordination of donor effort is a very high priority. Information systems which support this effort have to be similarly coordinated. Some development information database consortiums, using a common format, or record, are already in existence, but a newcomer is a universal database of development activities of the global donor community, to be produced as a CD-ROM early in 1992. CEFDA is the Common Communication Format for (the Exchange of) Development Activity Information. Using the bibliographic standards set down by the ISO and OECD's Macrothesaurus, it confines itself to basic data with as much room for local flexibility as possible.

Thirty odd years ago official development cooperation was conceived as a temporary transitional feature of international relations. Currently it is established as a regular function of governments, growing in size and numbers of donors, generally accepted as an indispensable expression of human concern and collective responsibility in the world economy.

Historically, the basis of international cooperation for development was that economies which were viewed as pre-industrial or stagnant, could be made to parallel the rapid acceleration which had been demonstrated by many northern countries over several generations. Efficient use of their internal and external resources in an environment of government policies and leadership which were conducive to sustained development was thought to be the magic potion.

This philosophy of the 50's and 60's was optimistic and somewhat naive, but not entirely misplaced. Experience has shown us, however, that instead of development assistance actually causing the rapid acceleration of an economy, it is merely a catalyst,

albeit an absolutely crucial one. Successful development depends far more on the intangibles, the quality of the country's own leadership and human resources than on just an external injection of money, however well placed.

Against this philosophical background it is interesting to just take a brief look at some socio-economic indicators which provide a quantitative overview of the possible impact of development during the last 30 years. Table I shows four social indicators used to measure the socio-economic well-being of a country in eleven countries which are grouped together according to their rank in the human development index. This index is presented by UNDP in its report on human development and "captures the three essential components of human life - longevity, knowledge and basic income for a decent living standard" (U.N. Development Program, p. 14).

Looking at this table we see that it tries to express the quality of human life using some well chosen qualitative factors. It is also evident that, assuming one accepts these indicators as indeed able to quantify such an intangible experience, then this quality is improving more rapidly for those countries which already had a somewhat higher human development ratio than for those with a low one.

Least Developed Countries.

It is sobering to realise that the number of these countries which have a per capita income of less than US \$ 550 p.a. are increasing every year. This leads on to the conclusion that for the very countries where the need is so great, thirty years of development cooperation has not had the required impact. It has failed the very human beings for whom the initiative was created.

Coordination of donor effort is therefore a major initiative which must be undertaken seriously and with the utmost haste, for there is no time to lose in half-hearted attempts. It is necessary to coordinate all donor activity so as to ensure that there is, at the very least, no duplication of effort. Additionally, it would be more effective if the whole array of development cooperation in a particular country could all be directed towards similar goals which are both appropriate to the country, fitting in with the objectives and policies of the national government. It is thought that this kind of cooperative forward planning has the greatest chance of halting the trend of a world economy containing an ever-increasing number of countries which fall into this category called the Least Developed Countries category.

It is therefore very evident that well designed, carefully implemented **development information systems** are an absolutely vital part to enhancing and improving this coordination of donor effort.

TRENDS IN HUMAN DEVELOPMENT

HUMAN DEVELOPMENT RATIO	LIFE EXPECTANCY AT BIRTH		UNDER-FIVE MORTALITY RATE		ADULT LITERACY RATE		REAL GDP PER CAPITA RATIO	
	1960 years	1990 years	1960 /1,000	1989 /1,000	1970 %	1985 %	1960	1988
- HIGH								
Singapore	64.5	74.0	49	12	74	86	1,530	10,540
Mexico	57.0	69.7	140	51	74	85	2,160	5,320
Malaysia	53.9	70.1	105	30	60	74	1,100	5,070
- MEDIUM								
Jamaica	62.7	73.1	89	21	97	98	1,470	2,630
Peru	47.7	63.0	233	119	71	82	1,720	3,080
Nicaragua	47.0	64.8	209	92	58	80	1,590	2,660
Botswana	45.5	59.8	173	87	41	70	490	2,510
- LOW								
Zaire	41.3	53.0	269	132	42	66	310	430
Uganda	43.0	52.0	223	167	41	43	320	417
Ethiopia	36.0	45.5	294	226	290	350
Chad	34.8	46.5	325	219	11	23	520	510

SOURCE: United Nations Development Program. *Human Development Report, 1991.*

Development Information Systems

These development information systems have many components, all databases of one kind or another, some very structured and standardised, others less formal and individualised, some are computerised, some are not. But they are all descriptive in one way or another of development activities. They include project monitoring databases; contractual agreement databases; financial accounting databases; library catalogues; etc. Some are well developed and useful, some only partially so. Most are individual systems designed by/for a donor agency and used only in-house to satisfy their own internal information needs.

Many donors have initially required a basic accounting system so as to provide them with the necessary financial control, with a possible add-on in the form of some rather cryptic and usually coded information about their development activities. Textual information databases have come only much later, if at all, and have often developed directly from the financial system with limited success. One example involves a UN global project information system about the marine sector which does not have the capability of information retrieval from a single word, not even in the title. And if that isn't bad enough, the controlled vocabulary subject access to the development activities themselves is restricted to only 13 keywords. This truly is an area in dire need of librarians and information professionals! Because, as you can imagine, the numerical manipulation capabilities of this same system are excellent, able to produce statistical overviews very easily.

Luckily there are some textual information database systems which have been well designed and are very useful to the development community (both donors and their partner agencies in developing countries) as well as academic and research institutions. One such example is IDRIS, the Inter-Agency Development Research Information System, which is a cooperative database of international development research projects. Created in 1983 by IDRC and five other international agencies to share information about the research activities in developing countries that each was funding, it now has expanded to a cooperative of nine agencies.

As an aside, it may interest information providers in the US that IDRIS can be accessed from there via SPRINTNET (formerly Telenet) by typing the address "0 3020 20400157" at the SPRINTNET @ prompt.

The records of each organisation are entered into IDRIS in a format which is common to them all. Looking at a record from IDRIS, we can pick out several elements.

Sample Source Record -IDRIS

Agency: JICA File: 60/SDC/3-6 ISN: 105

Donor: JICA Record Last Updated: 19910415 Alternate Language: JPN

Industrial Instrumentation Technology Centre of Espirito Santo/SENAI

Total funding by donor agency: 426544000 JPY

-- Donor Funding by Fiscal Year --

8271000 JPY 19840401 JICA missions
180154000 JPY 19850401 JICA missions, 7 experts,
equipment 238119000 JPY 19860401 JICA missions,
6 experts, equipment

Date Funds Committed: 19850306 Completion Date: 19900305
Status: Closed

-- Recipient Institutions --

SENAI/ES Industrial Instrumentation Technical Centre
Espirito Santo BR
Address: Av.Marechal Mascarenhas de Morais, 2235-Bento Ferreira, Victoria, Espirito
Santo, Brazil

-- Researchers --

Lorenzoni Borgo, Ivan A
Function: Regional Director

-- Cooperating Institutions --
Japan. Ministry of Labour

Macrothesaurus descriptors: /technological institutes/
/instrumentation industry/ /electronics/ /measurement/

Area Under Study: /Brazil/

Abstract: The project will establish the Industrial Instrumentation Technical Center of the Espirito Santo Regional Department of SENAI, to provide Brazilian trainees with knowledge and skill in the field of industrial instrumentation through training programs at the Center. The training programs will be conducted by Brazilian experts with guidance and advice of the Japanese experts. The details of the training program will be agreed upon between the two Governments. The General Director of SENAI will

bear overall responsibility for the implementation of the project.

1. There is an identifying acronym for the participating agency name. Here it is 'JICA', the Japan International Cooperation Agency.
2. the ISN is the record number in the database which is the prime access point.
3. The title is a variable length field of text in English, with a separate optional field for the title in an alternate language.
4. The total funding by donor agency expresses the amount in the currency of the donor country expressed according to ISO standards. Thus 'JPY' is the ISO standard for the Japanese Yen
5. Dates are quoted as a numeric string in the format YYYYMMDD for ease of searching.
6. The Status of the project activity tells us whether it is past present or future. Here the status of 'closed' tells us that all project activity has been wound up, and the project completed.
7. The address of the research institution where the project has taken place is denoted as the recipient institution
8. The names of the researchers from whom additional information can be obtained is then given.
9. Subject Descriptors from OECD's Macrothesaurus (Viet) are used as is the area under study.
10. Finally there is a free text abstract.

All these fields are indexed with the exception of the field involving funding and the abstract.

There is of course a certain specificity to IDRIS in that it involves only research institutions, thus nullifying it as a general database for use by the donor community to coordinate all their development activities. But it has served as a general pattern used in the global response of the donor community to the need for them to coordinate their efforts. In June of this year the Organization for Economic Cooperation and Development (OECD) hosted a meeting of the Informal Study Group on the Exchange of Development Information (ISGEDI) in Paris. Sixty participants, representing intergovernmental organisations, bilateral donors, non-governmental organisations and research institutes attended the meeting.

Many of the 86 participants at this meeting were information professionals who did not need to be persuaded that if an appropriate format exists in which they can enter their development activity records, then information exchange will almost automatically take place, thus fulfilling the major objective of the meeting. The Common Exchange Format for Development Activity Information (CEFDA) was introduced to the meeting by the Steering Committee, to be used by all donors no matter what their discipline, or their size. It is designed to be used just as much by a small NGO as by the World Bank, to build a boat or to conduct a workshop.

CEFDA Design

CEFDA has been designed to be as simple as possible with the MINIMUM of fields necessary to identify and describe a development activity.

The following guidelines are to be applied:-

- All fields are to be of variable length with no maximum.
- Some fields are repeatable.
- None of the fields are to be sub-fielded.
- The coding of information where appropriate, in a computerised system has two advantages:
 - a) standardisation of data which facilitates retrieval,
 - b) overcoming the problem of language in a multilingual environment.

So existing international standards were adopted for the following data elements:

Country Codes:	ISO 3166
Language of record:	ISO 639
Currency:	ISO 4217
Dates:	ISO 2014
Subject descriptors:	OECD Macrothesaurus.
Terms of Assistance:	CEFDA code
Activity Status:	CEFDA code

- No single language is universally understood so to minimise the costs of translation, English was chosen as the common language with the minimum requirement that individuals writing in another language or script will provide the title in English in the 'Translated Activity Title' field.

- A Field Description Manual was prepared for data entry (a copy can be put on display) which describes each field in detail.

Looking at the same IDRIS record that we saw earlier, but now in the CEFDA format, we see a similar record but more generalised and a little simpler.

CEFDA record converted from IDRIS record

Record Identifier: 105
Principal Language of Record: en
Date of Record: 19910415
Activity ID: 60/SDC/3-6
Activity Title: Industrial Instrumentation Technology Centre of Espirito Santo/SENAI
Funding Organization: JICA
Country/Region: BRA
Type of Activity: Research project
Terms of Assistance: 1
Activity Status: 3
Executing Entity: SENAI/ES Industrial Instrumentation Technical Centre Espirito Santo
Start Date: 1985
Start Date Notes: Year funds committed
Completion Date: 1990
Budget Description: 42654400
Currency: JPY
OECD Macrothesaurus descriptors: /technological institutes/ /instrumentation industry/ /electronics/ /measurement/ /Brazil/

Abstract:

The project will establish the Industrial Instrumentation Technical Center of the Espirito Santo Regional Department of SENAI, to provide Brazilian trainees with knowledge and skill in the field of industrial instrumentation through training programs at the Center. The training programs will be conducted by Brazilian experts with guidance and advice of the Japanese experts. The details of the training program will be agreed upon between the two Governments. The General Director of SENAI will bear overall responsibility for the implementation of the project.

The detailed financial and administrative data of IDRIS is largely absent here, as are the references to researchers, etc. There are some extra fields to accommodate differences between organisations but it is a very straightforward informative record. Many donor agencies, however, do not have records formulated in this way. For them the reformatting from an essentially financial system to the CEFDA is by no means trivial, especially where there is a requirement for value-added information such as subject descriptors. For this reason the fields have been categorized according to the importance of their use: ESSENTIAL, SUPPLEMENTARY, or OPTIONAL.

These categories for the whole database may be found in the Field Descriptions.

CEFDA Field Descriptions

List of Fields		
TAG	FIELD NAME	USE*
Administrative Data Fields		
001	Record Identifier	S
002	Principal Language of Record	E
003	Date of Record	S
Development Activity Identification		
010	Activity ID	E
020	Activity title	E
030	Translated activity title	S
040	Funding organization	E
Development Activity Description		
050	Country/Region	E
060	Type of Activity	S
070	Terms of assistance	S
071	Terms of assistance notes	O
080	Activity Status	E
090	Executing entity	E
100	Funding source	S
110	Estimated, planned or actual start date	E
111	Start date notes	O
120	Estimated, planned or actual completion date	E
121	Completion date notes	O
130	Budget description	O
131	Currency	O
140	OECD Macrothesaurus descriptors	S
150	Local descriptors	S
160	Descriptor notes	O
170	Abstract	S

Development Activity Source Documentation		
200	Source Documentation	S
<p>•E = Essential (must appear in record) S = Supplementary (should appear if the information is available in the source record) O = Optional (may appear at the discretion of the reporting organization)</p>		

In order to accommodate local variations, there are two fields for descriptors. The first is for the preferred thesaurus of choice, the Macrothesaurus; but the second, the Local Descriptors field is to accommodate the use of other thesauri. In either case they are supplementary data elements, thus their lack in any individual database is not an inhibition to information exchange.

The access points for information retrieval were chosen to ensure sufficient information retrieval can be obtained by users with a variety of objectives to their search. These are:

- SUBJECT
- GEOGRAPHIC AREA
- ORGANIZATIONAL NAMES
- START DATE
- COMPLETION DATE

Arriving at a format acceptable to all 60 organizations took many long hours and a number of heated discussions, but the willingness of all nations represented there (the great majority being European) resulted in a consensus being reached and CEFDA was accepted. All that remained was to agree to the logistics!

Software:

This was seen as a non-issue, as the CEFDA is exportable in an extended ASCII format or else ISO 2709, the format for the international exchange of bibliographic records.

Medium of Exchange:

Rather than having bilateral exchanges between two organisations it was decided to make a universal database on a CD-ROM, thus eliminating the perceived burden on the large organisations to whom everyone would be applying for their project information. The CD-ROM would be financed by subscription from all

interested donor organizations and any other interested parties.

Process of Database formulation on the CD-ROM:

IDRC was nominated to coordinate this activity for the first 18 months as a pilot project. To date several organisations have committed funds,(US\$ 5,000 per subscription which includes the CD-ROM and its software, plus a to-be-published Directory of available Development Databases) and more will follow. The expected date of publishing the CD-ROM and its accompanying software is early 1992.

Thus, this has all the potential of being a successful venture. The hard work on the part of many librarians and information professionals should make coordination of the development activities of most donor organisations just a little more realisable. But it is important to understand that this is just a first step. There are many other components of development information systems still to be added. One extremely important component is to include the recipient organizations in developing countries with their perceptions of the impact of the assistance given them. It could well be very different to our own.

It is a never-ending and often overwhelming task to be sure. But then, so is development.

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