

<b>ISKO WG-CA</b>	<b>User Evaluation of Information Systems</b>	<b>R-01 Oct.1992</b>
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### 0. A Preliminary Remark

*"Recommendations for Classification" had been started in the early eighties by Special Interest Groups of the German Society for Classification and were published in International Classification\*. As a continuation of this series the International Society for Knowledge Organization, German Chapter, Working Group on Content Analysis (ISKO WG-CA) publishes in the following its first two Recommendations in English as well as in German. Any comments from readers of this recommendation are welcome to the address given below.*

\*) The following recommendations were published:

Gesellschaft für Klassifikation eV - SIG-BK: *Rahmenempfehlung zur Bildung von Signaturen*. EK-02, Juni 1981. Int. Classif. 8(1981)No.3, p.151-152

Gesellschaft für Klassifikation eV - SIG-IS: *Freitext in Informationssystemen. Möglichkeiten und Grenzen*. EK-03, Jan.1985. Int. Classif. 12(1985)No.1, p.23-26; *Free Text in Information Systems. Capabilities and Limitations*. EK-03 (en), Aug.1985. Int. Classif. 12(1985)No.2, p.96-98

### 1. Problems of Evaluation by the Users of Information Systems

An information system can be optimally effective only if it was designed in direct contact with its future users, ideally with an expert from among these users cooperating directly. Also, system users should subsequently have the possibility at all times to submit suggestions as to how to perfect the system and adapt it to a changing demand situation. When, as often happens, the effectiveness of an information system needs to be evaluated, it seems only natural to base oneself first and foremost on the verdict of the system's users.

This verdict alone, however, is not sufficient for a proper evaluation of the information system. In such a system there are always several factors of influence at work which by their very nature fall largely outside the user's sphere of perception or are left out of account by him because of their unusual nature. In substance these factors are: the *survival power* of the system, the *information loss* incurred in retrieval, and the peculiarities of any *delegated query*.

### 2. System Survival Power and Noise

To be able to fully exploit the capabilities of an information system, i.e. conduct retrieval with as little noise and information loss as possible, it is necessary - except in simple special cases - to secure the cooperation of an information specialist. Under these circumstances it usually remains hidden from the user how much noise in the form of irrelevant responses had to be weeded out for him.

As the databases keep growing, with all other conditions remaining unchanged, there is a corresponding increase in the absolute quantity of responses and of noise. In the early stages of an information system the

user himself usually does not overly mind the presence of even considerable amounts of noise in his retrieval results. In an advanced stage, however, this noise proves to be increasingly burdensome to him, too. A dozen useful responses among thousands of other ones are practically undiscoverable. Often an information system supplying 'useful noise' and thus *initially* functioning to the full satisfaction of its users needed to be abandoned after having gradually or suddenly (e.g. when nobody is available any more to help weed out the noise) proven to be largely useless.

It does not fall into the user's area of competence to give thought to the survival power of an information system (i.e. its enduring usefulness in the future) or to the grave consequences a failure in this field will have in the domain of management strategy. These consequences include, e.g., the loss of access to a collection of documents built up during many years and the necessity to take a new information system into operation.

### 3. System Survival Power and Information Loss

In his appraisal the user naturally lets himself be guided purely empirically by the results obtained so far. But an essential, if latent, further quality characteristic of an information system lies in how much information is *kept from the user* because of a malfunctioning of the system. Often a user has had to revise his initially positive evaluation after having become informed some day of the massive information loss he had had to put up with continuously until then.

Also, many users of an information system believe they can content themselves with the retrieval of formal concepts (e.g. author, institution, publication data, etc.), because in a subject search they are able to

remember such *formal* accompanying concepts. Information systems restricted to such searches are indeed simple to install and to maintain. But later on these associations are being more and more forgotten. Therefore, a large part of the information loss occurs only after the system has developed beyond the small-system stage.

Nor does the user of an information system as a rule appreciate the consequences of the - of course steadily increasing - heterogeneity of the terminology of his special subject, which heterogeneity can hinder the accuracy of retrieval to a steadily increasing extent. He will therefore initially be easily inclined to content himself with a primitive system which does not take any precautions against this phenomenon by using, e.g., a pre-established documentation vocabulary. Such a vocabulary will even usually be regarded by the less experienced user as a hindrance rather than as a tool for reducing information loss. A clear indication of such a misappreciation is found in the - usually unjustified - preference given to free text retrieval, sometimes even confined to the titles of texts.

Information loss also comes about, if indirectly, by a user's increasing inability to go through his increasingly noise-ridden retrieval results for checking them, as already mentioned.

Uncovering information loss occurring in an information system is a tedious and expensive undertaking and is therefore usually dispensed with. When the loss is recognized some day, the initially quite positive appraisal is suddenly changed into its negative opposite.

In all these cases the system user has, by his evaluation, supported an underdeveloped information system or even prevented the introduction of a more efficient system of greater survival power.

#### 4. Delegatability of a Search Order

Most users of an information system expect to obtain, as the result of a query, everything which *interests* them, for these texts they would - if performing the selection *themselves* - accept as valuable responses, *regardless of whether these texts correspond to their search or not*.

Here the user overlooks that this subjective selection, going hand in hand with an unconscious modification of the search goal, cannot be made by anyone else but himself. Criticism of the results of a *delegated* search, which naturally cannot comprise such texts, is therefore unjustified.

The deviation of the retrieval results from the search order may be very latent in such a case. For example, a text on "*insect control*" cannot be expected to be among the retrieval results if the query had asked - more specifically - for texts on "*aphid control*", unless the searcher had manifested his interest in more general information as well. Leaving super- or subordinate information out of account is even the rule rather than the exception among system users. (However, the experienced information specialist will - either as he sees fit or after checking back with the searcher - include some of the more general and in any event the more specific information in the query, doing this as a precaution and without being asked to). Some users of information systems are satisfied with primitive results for failure (or inability) to keep abreast of progress in this field, so that they are not accustomed to making higher demands. This may, e.g., cause one to be satisfied with the performance of a library for the mere reason that it is able to rapidly supply or procure a book of which one can name the author, publisher, etc.,. In the case of a *subject search* they do not expect the library to come up with a comprehensive *offer* of relevant books.

#### 5. Conclusion

For these reasons, the evaluation of an information system by its users must always be regarded as only one of several *components* for the proper appraisal of that system. It always requires to be supplemented and interpreted by the information specialist. Otherwise an erroneous and fragmentary image of the system's objectives and value will result, often with grave consequences for the given information system, possibly even including the abandonment of even the most effective system. Similarly, a decision on the design and maintenance of a means of transportation should not be based *exclusively* on the judgment of its users.

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