Information Flow among Computer Scientists and Software Engineers in Israel; Acadamy vs. Industry/ Gloria Hammerschlag

Abstract

An optimal exploitation of the organization's information resources is a major goal in the age of information explosion and communication revolution. The utilization of information, either flowing in from outside the organization or disseminated inside it, is an important factor in the organization's success in attaining its goals. Scientists and engineers are nowadays faced with the elaborate task of choosing from a variety of information resources, as well as efficiently using the chosen resources, in order to create a basis for creating concepts, meanings and ends. There is, therefore, supreme importance to mapping the processes of information flow and to understanding the way information is produced, the channels in which it is communicated, and the processes by which it is searched for.

The aim of this paper is to map the processes of information flow within two groups of users (1. computer scientists and software engineers employed in industry; 2. computer scientists and software engineers employed in the academy), and to compare them to each other.

Mapping the processes of information flow may form a basis for constructing a knowledge management lay-out which will allow the organization to make the best use of the information available to it. As part of the mapping process, special attention is paid to establishing the Internet's role in the information flow processes, in the light of the past spread of the medium and the new horizons it opens to its users. For the purpose of this resource, a special structured and uniform questionnaire was developed, in order to examine the use of different means of communications and different types of tools in communicating scientific and technical information. Additionally, the questionnaire is used to collect data about subjects' demographic backgrounds. The following conclusions are drawn from the research findings:

The Internet holds supreme importance as an information retrieval tool for both groups, though a larger majority (81%) of respondents from the academy tend to identify the Internet as an essential, or at least important tool for communicating scientific information, compared to respondents from industry (65%). The types of information resources communicated through the Internet are different in both groups as well. But in spite of the Internet's perceived importance, users from both groups report a larger flow of information in the traditional printed channels.

The use of many formal and informal information resources is common to the two groups. Nevertheless, there are substantial differences between them as for the types of the prevalent formal means of communication they use. The two groups differ in their use of informal means of communication as well. Scientists and engineers employed in industry show a more varied use of informal means of communication, whereas in the academy the formal means of communication are preferred.

Respondents employed in industry use the services of libraries and information centers less than respondents employed in the academy. The wider use of the Internet reduces their need to physically attend the library. Notwithstanding this difference, a common behavior was found in the two groups of respondents: The ratio of turning to the librarian of information scientist's help is low in both groups, compared to the ration of turning to the library or information center themselves.

Informal oral conversations with colleagues are the preferred means of communication dissemination inside the organization in both groups (64% in industry and 65% in the academy). The rest of the prevalent means of internal communication are not common to the two groups. Although there is much use of informal means in both, there is a wider use of formal information resources in the academy. It is vital to establish proper procedures and processes of institutionalizing information dissemination inside the organization which will be binding and will be exercised routinely.

The means of dissemination information out of the organization are substantially different between the two groups. In the academic group formal means of communication take the first place, whereas in the industrial group first place is reserved to informal means. Though in extra-organizational communication there is a wider use of formal channels than in intra-organizational communication,

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especially in the academy, in this area too the organization is required to establish procedures regulating information communication, thus contributing to its conservation and institutionalization.

The two groups of respondents attribute different importance to the amount of scientific and technical information acquired for carrying out projects. Respondents form the academy attribute considerable importance to the amount of technical information flow (85% of the academic respondents regard the communication of scientific information as important to essential, compared to 69% of the respondents from industry; 91% of the respondents from industry regard the communication of technical information as important to essential, compared to 79% of the academic respondents). Hence there is a link between industry and technology and technical information, as well as a link between academy and science and scientific information. It is possible to infer as well a link between basic research and scientific information, and between applied research and technical information. The two groups of respondents reported a tight link between information communication and carrying out projects.

The importance of the current research lies in its examining the process of information flow from many aspects, while addressing the majority of its facets. In the light of the research conclusions about the position of the library, information center, librarian and information scientist – it is possible to suggest a realignment of the elements, in accordance with the important function that they are expected to carry out in the present age of information explosion.

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