for the performed evaluation. As a result, we determined that complex search characteristics I_1 and I_2 could be recommended for use when evaluating macroevaluated objects. Moreover, we concluded that if in this evaluation complex search characteristic I_2 is used, then the result of this evaluation could always be trusted. At the same time, we were unable to solve the problem of using general search characteristics in the evaluation or, more precisely, the combination of these characteristics (for example, the combination of recall and precision). We only showed an example illustrating the existence of cases for which the evaluation based on the combination of averaged values of general search characteristics cannot be trusted.

Finally, we discussed the possibility of performing a comparative evaluation of macroevaluated objects without averaging values of search characteristics. We suggested an approach to performing such an evaluation and showed that it allows us to substantially reduce time-consuming operations in the evaluation of macroevaluated objects when compared to the evaluation in which the averaging of values of the same search characteristic is used.

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12

Some Directions in the Development of IR Systems

12.1 Introduction

If we take another look at the stages of creating an IR system (described in Chapter 1), we can see that the purpose for its creation, as well as its function and structure, has already been defined in the previous chapters of this book. In addition, several chapters describe the construction of each element of the system, which would allow one to fully automate all processes in the IR system. Furthermore, we have considered problems in connection with the evaluation of created systems. In other words, everything that directly precedes physical implementation of the system has been discussed. The book could conclude at this point, but we would like to move beyond just discussing stages of the systems approach in developing IR systems and to look at least briefly at the future of IR systems. This chapter has been written for that purpose.

Here we should make a reservation. We are not going to predict what kinds of systems will be at the user's disposal in the future; only the future will reveal this. Our task is rather modest: we will discuss the real benefits of some of the directions in IR systems development that today are commonly considered to be promising. Also, we will discuss one of the practical ways of improving IR systems.

Because many researchers associate the future development of IR systems with research in the field of artificial intelligence, it is with this point that we will begin.

12.2 IR Systems and Artificial Intelligence

Before discussing the role and potential of artificial intelligence (AI) for developing IR systems, let us clarify what we mean by AI. It may seem strange