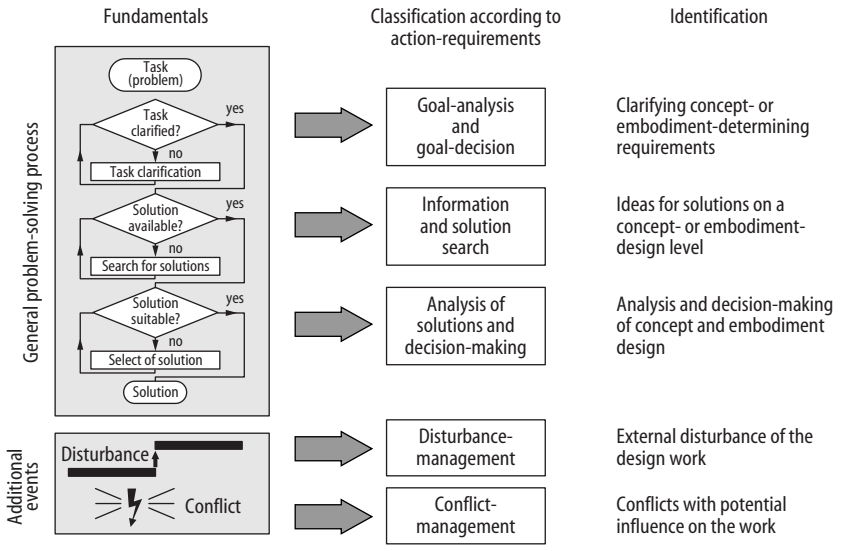

Figure 5.6 Division of "critical situations" according to the general problem-solving process and additional events (social context).

were identified in the four analyzed projects of the two investigations. These explained the course of work through more than 2200 single interrelations between factors, process characteristics, and the result. A reduction to 34 different influencing factors illustrates the suitability of the model (see Frankenberger and Badke-Schaub 2000).

Derived from the steps of general problem solving, we can contrast different types of critical situations that regard their aim in the problem-solving process, such as goal-analysis, goal-decision, solution-search, solution-analysis, and solution-decision. Moreover, we can observe situations that are important in their social context, such as "conflicts" and "disturbances." These situations require "conflict-management" and "disturbance-management."[1] (see Figure 5.6)

Next, we focus on the following question: what kind of information transfer is most commonly used and what kind is mostly successful?

What kind of information transfer is used in critical situations?

In our investigations, the designers were working individually about 70% of the entire working time. However, nearly 90% of critical situations occurred during instances of collaboration. As illustrated in Figure 5.7, communication between colleagues is extremely important for the exchange of decisive design information.

In a different study, interviews in ten R. & D. departments of major German companies underline the importance of colleagues as the most frequently mentioned source of information transfer in everyday design work and verbal communication was described as the most important mode of design representation (Badke-Schaub and Frankenberger 1998). Designers reported that

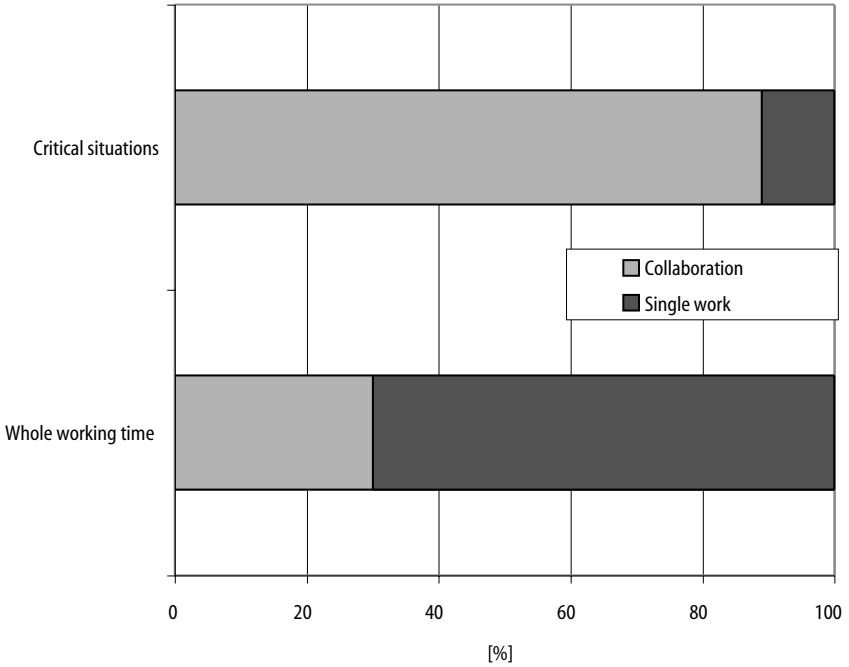

Figure 5.7 Amount of direct communication with colleagues in general (working time) and in critical situations.

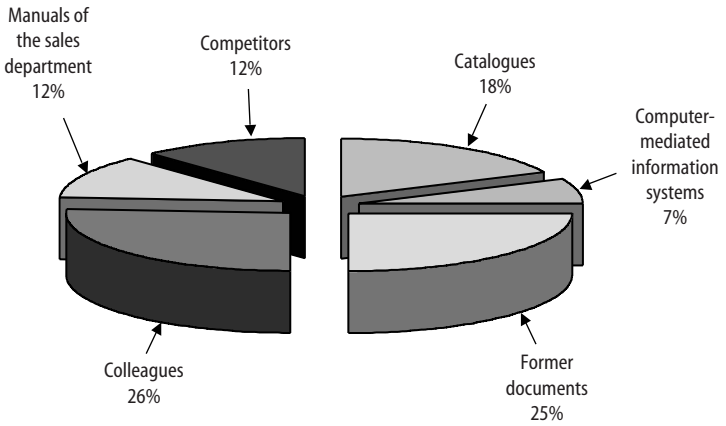

Figure 5.8 Percentage of use of different information systems by designers in their daily work.

26% of their own information-seeking processes are driven by asking colleagues, and only in 7% of cases do they search for information in computer-mediated information systems (see Figure 5.8; Badke-Schaub, Stempfle and Wallmeier 2001).

The heavy emphasis on verbal communication is surprising if we keep in mind that drawing and sketching are said to be the designers' "language." In