

Britain; 1987, Zaragoza, Spain; 1988, Venice, Italy; 1989, Bad Honnef, Germany; 1990, Paris, France; 1991, Denmark; 1992, Sheffield, England; and 1993, Chicago (planned). The distribution of the proceedings of these workshops is limited to mostly the workshop participants. However, selected papers from these workshops and other articles have been published by Springer-Verlag as "Advances in Petri Nets" [20-25]. The 1987 volume [24] contains the comprehensive bibliography of Petri nets [26] listing 2074 entries published from 1962 to early 1987. The "recent publications" section of *Petri Net Newsletter* (published by Gesellschaft für Informatik, Postfach 1669, D-5300 Bonn 1, Germany) lists short abstracts of recent publications, and is a good source of information about the most recent Petri net literature.

In July 1985, another series of international workshops was initiated. This series places emphasis on timed and stochastic nets and their applications to performance evaluation. The first international workshop on timed Petri nets was held in Torino, Italy in July 1985, the second was held in Madison, Wisconsin, U.S.A. in August 1987, the third in Kyoto, Japan in December 1989, and the fourth in Melbourne, Australia in December 1991. The proceedings of these workshops [27 - 29] are available from the IEEE Computer Society Press.

## 1.2 Application Areas

The above is a brief history of Petri nets. Now, we look at some application areas considered in the literature. Petri nets have been proposed for a very wide variety of applications. This is due to the generality and permissiveness inherent in Petri nets. They can be applied informally to any area or system that can be described graphically like flow charts and that needs some means of representing parallel or concurrent activities. However, careful attention must be paid to a trade-off between modeling generality and analysis capability. That is, the more general the model is, the less amenable it is to analysis. In fact, a major bottleneck of Petri nets is the complexity problem, i.e., Petri-net-