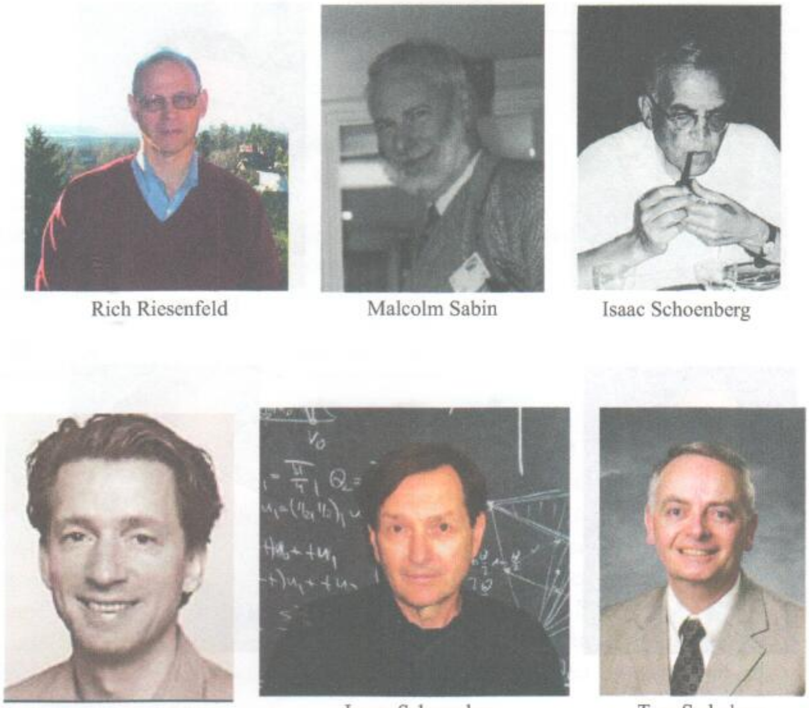

Rich Riesenfeld — Malcolm Sabin — Isaac Schoenberg

Peter Schröder — Larry Schumaker — Tom Sederberg

Figure 1.8 (*continued*)

There are many efficient and numerically stable algorithms that have been developed to manipulate B-splines, for example, the Cox–de Boor recursion (Cox, 1971; de Boor, 1972), the de Boor algorithm (de Boor, 1978), the Oslo algorithm (Cohen *et al.*, 1980), polar forms and blossoms (Ramshaw, 1987a; Ramshaw, 1989), etc.

Another major development in the 1970s was the pioneering work on subdivision surfaces (Catmull and Clark, 1978; Doo and Sabin, 1978). Ed Catmull is the CEO of Pixar and Walt Disney Animation Studios and Jim Clark was the founder of Silicon Graphics and Netscape. The seminal ideas of subdivision are generally attributed to de Rham, 1956 and Chaikin, 1974. Other works of note are Lane and Riesenfeld, 1980, which is intimately linked to Bézier and B-spline surfaces, and Loop, 1987, which is box spline based. Subdivision surfaces have become popular in the field of animation. They generate smooth surfaces from quadrilateral or triangular (Loop, 1987) surface meshes. For engineering design, NURBS are still the dominant technology. Recent generalizations of NURBS-based technology that allow some unstructuredness are T-splines (Sederberg *et al.*, 2003, 2004). T-splines constitute a superset of NURBS (*i.e.*, every NURBS is a T-spline) and the local refinement properties of T-splines facilitate solution of the gap/overlap problem of intersecting NURBS surfaces. A recent work