Abstract. Currently, the involvement of consumer requirements in the early stage of product development has become an important issue in product design. The designer needs to correctly and immediately do customer requirement analysis and make decisions in the process of design alternative recommendation. However, the designer is usually difficult to grasp customer requirements. Fortunately, the enforcement of computer software and upgraded efficacy of computer hardware allow an embodiment representation of design alternatives to link customers with designers. Therefore, the objective of this research is to develop a parametric product design system that can provide designers with an interactive interface to consider customer requirements in the early stage of product development. The design of ear phones is used as a case to explore the applicability of the parametric product design system. The function of parametric design in the CATIA software is also used to help construct design appearance for the generated ear phones. It is expected that the generation of parametric design incorporated with data mining system in the web site will enhance product design efficiency in grasping product design key factors and parameters at the initial stage. Designers can not only generate products fast in the process of product development, but also get the appropriate forms of product quickly and match the demand and preference of consumers.

Keywords. Customer-Oriented Product Design, Parametric Design, Data Mining, Decision Making