Configurators are applied widely to automate the specification processes at companies. The literature describes the industrial application of configurators supporting both sales and engineering processes, where configurators supporting the engineering processes are described more challenging. Moreover, configurators are commonly integrated to various IT systems within companies. The complexity of configurators is an important factor when it comes to performance, development and maintenance of the systems. A direct comparison of the complexity based on the different application and IT integrations is not addressed to a great extent in the literature. Thus, this paper aims to analyse the relationship of the complexity of the configurators, which is based on parameters (rules and attributes), in terms of first different applications of configurators (sales and engineering), and second integrations to other IT systems. The research method adopted in the paper is based on a survey followed with interviews where the unit of analysis is based on operating configurators within a company.