This paper explores how interfirm variations in their in-licensed technology portfolios influence subsequent innovation performance. Existing studies mainly assume licensed technologies are homogeneously accessible to firms, and a prevailing explanation as to why firms vary in their innovation performance lies in differences of absorptive capacity. In this study, we intend to relax this assumption and use data about 186 Chinese indigenous firms to investigate how differences in in-licensing portfolios lead to different effects on innovation performance. We find that firms benefit from prior in-licensing technologies and the result is related to four dimensions of their licensing portfolios. We find that 1) the scale of firms' technology in-licensing has an inverted-U relationship with their subsequent innovation performance; 2) firms that license-in foreign technologies tend to outperform those that predominantly license-in technologies from domestic sources; 3) the newness of firms' technology in-licensing yields a positive effect on subsequent innovation performance; and 4) a diverse portfolio of licensors from whom technologies are licensed-in has an inverted-U relationship with firms' subsequent technological diversity.