This paper revisits the competition-innovation relationship using a panel of enterprise data stemming from various waves of the Luxembourgish innovation survey and pertaining to the period 2002-2010. Using four measures of perceived competition and three indicators of technological innovation, we estimate by full-information maximum likelihood a nonlinear dynamic simultaneous-equations model with pseudo-fixed effects and find that competition with respect to obsolete products Granger-causes innovation activities and eventually innovation success. The enterprise facing rapidly-changing technologies eventually faces the threat of seeing its products obsolete. We suggest a revision of the current policy scheme by Luxembourgish authorities regarding innovation and competition.