We use the IR fixed point predictions for gauge couplings and the top Yukawa coupling in the MSSM extended with a complete vectorlike family to infer the scale of vectorlike matter and superpartners. The preferred scale is in a multi-TeV range which is also independently favored by the Higgs boson mass in the MSSM. Thus adding a complete vectorlike family at the same scale provides a compelling scenario where the values of gauge couplings, the top Yukawa coupling and the Higgs quartic coupling are understood as a consequence of the particle content of the model.