Gravitational weak lensing has emerged in recent years as a powerful probe of cosmology, providing information on the clustering of both dark and luminous matter. This gives a unique opportunity to understand the dark components of the Universe and how these have evolved over cosmic time. A number of highly ambitious galaxy surveys such as LSST have been proposed to measure the impact of weak lensing on galaxy shapes, promising to revolutionize the field if extensive theoretical challenges can be met. In this talk I will discuss the challenges and potential of weak lensing surveys.