We study various tensor quantum field theory with O(N1)×O(N2) symmetry. Working in 4−ϵ dimensions we calculate the beta functions up to second order in the coupling constants and analyze in detail the Renormalization Group (RG) flow and its fixed points. We allow N1 and N2 to assume general real values and treat them as bifurcation parameters. In studying the behavior of the model in the space of N1 and N2 we find points where Hopf, Bogdanov-Takens and zero-Hopf bifurcations occur. In the vicinity of these points, we provide analytical and numerical evidence for the existence of various interesting trajectories like limit cycles, homoclinic trajectories and  Shilnikov orbits. The latter is particular interesting since it induces chaotic behavior in the RG flow. As a simple warm-up example for the study of chaotic RG flows, we also review the non-hermitian Ising chain and show how for special complex values of the coupling constant, its RG transformations are chaotic and equivalent to the Bernoulli map.