Let $V$ be the hypersurface in $\mathbb{C}^4$ given by $x + x^2y + z^2 + u^3 = 0$. $V$ is diffeomorphic to $\mathbb{C}^3$ but not isomorphic to $\mathbb{C}^3$ (the Makar-Limanow invariant of $V$ equals $\mathbb{C}[x]$). On $V$ we have a $\mathbb{C}^*$-action given by $t(x, y, z, u) = (t^6x, t^{-6}, t^3z, t^2u)$. The fixed point set of the cyclic subgroup $\mathbb{Z}_6 \subset \mathbb{C}^*$ is disconnected. Problem:

$$\textit{Is } V \times \mathbb{C}^1 \textit{ isomorphic to } \mathbb{C}^4?$$

If the answer is *yes* than we obtain an example of nonlinearizable $\mathbb{C}^*$-action on $\mathbb{C}^4$ and also an example of nonlinearizable $\mathbb{C}^* \times \mathbb{C}^*$-action on $\mathbb{C}^4$. If the answer is *no* than we are able (more or less) to prove that all $\mathbb{C}^* \times \mathbb{C}^*$-actions on $\mathbb{C}^4$ are linearizable.