This paper considers full data exchange for massive uncoordinated multiway relay networks (mu-mRN) applying coded random access for flexible topology changes and capable of serving massive number of users. We aim to maximize the normalized throughput of the mu-mRN using the multiuser detection (MUD) technique with MUD capability of $K > 1$. Specifically, our goal is multiple times improvement, i.e., ten times improvement, from the maximum normalized throughput of the mu-mRN applying slotted ALOHA (SA). First, we present a network capacity bound of the mu-mRN with general K. Then, we optimize many degree distributions for the MUD-based mu-mRN. However, as K increases, the distributions are no longer optimal to achieve the network capacity bound. We propose doubly irregular coded SA (dir-CSA) to solve the problem. Asymptotically, the mu-mRN applying dir-CSA with $K = 4$ can achieve the ten times throughput improvement. However, for finite number of time slots, we propose to exploit side information (SI) from neighboring users to improve the normalized throughput of the mu-mRN. The results show that the mu-mRN applying dir-CSA with SI and having optimal physical encoding can achieve ten times throughput improvement, compared with the conventional SA scheme.