A complete geodesic metric space of global nonpositive curvature in the sense of Alexandrov is called a Hadamard space. In this talk we will show that there exist metric spaces which do not admit a coarse embedding into any Hadamard space, thus answering a question of Gromov (1993). The main technical contribution of this work lies in the use of metric space valued martingales to derive the metric cotype 2 inequality with sharp scaling parameter for Hadamard spaces. The talk is based on joint work with M. Mendel and A. Naor. (Received January 23, 2019)