We live in a complex world. Unfortunately, information technology systems have been unable to effectively model the real world in all of its rich complexity due to technology limitations and budget constraints. As a result, IT systems have grown up in functional isolation, often making business processes more efficient but not necessarily more effective. Today, organizations are leveraging technology innovations like the mobile, social, cloud, and big data to be more connected through systems of engagement that enable organizations to better model their environment. Yet, there remains a need to break out of functional silos, which is where Multiparty Data Vaults and Data Collaboratives are emerging. Multiparty Data Vaults and Data Collaboratives provide a platform for secure data sharing that span both functions within an organization, as well as across organization boundaries while maintaining data provenance and chain of custody necessary to create, maintain, and enhance trust. This empowers data scientists and analysts to uncover new insights and drive action across the complex systems, spanning domains that exist at a local or global scale, while complying with data security, privacy policies, and regulations.