It has been a decade since the concept of blockchain (also known as distributed ledger) was invented as the underlying technology of the public or permissionless Bitcoin cryptocurrency network. Since that time, several other cryptocurrencies, tokens and ICOs have come into existence. After much speculation and hype, most of them have become worthless! The public blockchain system Ethereum emerged by generalizing the use of blockchains to manage any kind of asset, be it physical or purely digital, with the introduction of smart contracts. Over the past decade, numerous myths have developed with respect to the purported utility and the need for public blockchains. The adoption and further adaptation of blockchains and smart contracts for use in the private or permissioned environments is what I consider to be useful and of practical consequence. Hence, only such private blockchain systems will be the primary focus of this talk. In the process, I will bust many of the myths associated with public blockchains.

Computer companies like IBM, Intel, Oracle and Baidu, and many key players in different vertical industry segments have recognized the applicability of blockchains in environments other than cryptocurrencies. IBM did some pioneering work by architecting and implementing Fabric, and then open sourcing it. Since then Fabric has been enhanced as a project in the Hyperledger Consortium. Currently, there is significant momentum behind Hyperledger Fabric throughout the world. Other significant private blockchain systems include Quorum (Enterprise Ethereum), Hyperledger Sawtooth and R3 Corda.

In this talk, I will describe some use-case scenarios, especially those in production deployment. I will also survey the landscape of private blockchain systems with respect to their architectures in general and their approaches to some specific technical areas. I will also discuss some of the innovation opportunities that exist and the challenges that need to be addressed. Extensive blockchain related collateral can be found at http://bit.ly/CMbcDB