While the current wave of “Deep Learning” business applications is showing some success, the upside of this approach is limited by the fact that it is heavily reliant on data, and ignores the fundamental principles of System Dynamics, Lean Operations, and Agile Management – a concept captured in W. Edward Deming’s phrase, “Profound Wisdom”. In this talk, we will explore how an understanding of the fundamental principles underlying successful organizations is critical to achieving transformational results from implementing the new technologies of Industry 4.0, including Machine Learning and Artificial Intelligence. We will also examine successful ML examples from Google and Stanford Medical School and show that these applications are based on classic Lean and Operational Improvement tools. We will also look at large scale failed applications due to a naïve reliance on “black boxes” led to predictably poor results. This session is a must for anyone looking to apply ML to drive performance improvement and risk reduction in complex, human-driven organizations.