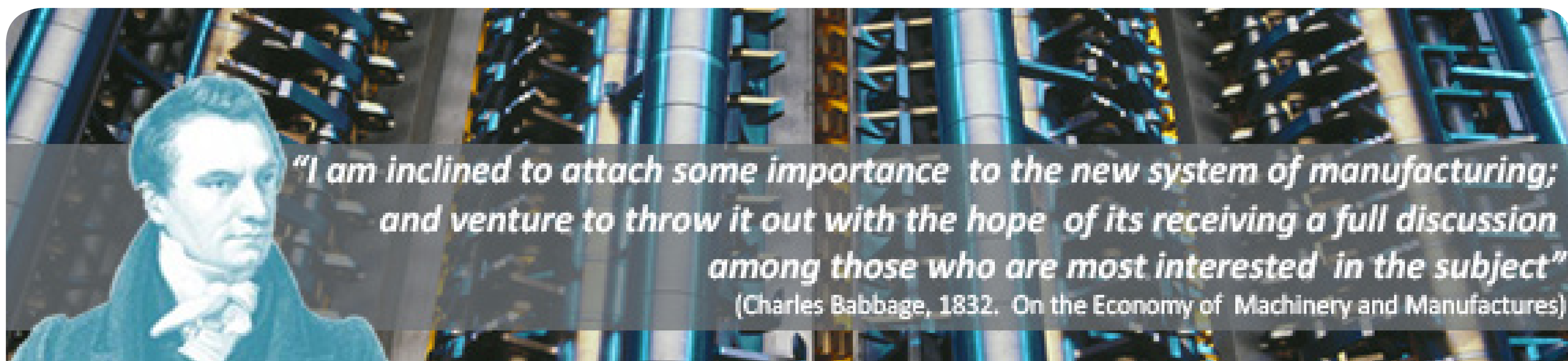


The Babbage Industrial Policy Network

2013 - 2014 Lecture Series



9th Babbage Lecture | Tuesday 13 May | IfM, Cambridge

The Digital Future of Manufacturing, Policy and Technology Opportunities for American Innovation: Thomas R. Kurfess



Biography

Thomas R. Kurfess, Ph.D., P.E. is Professor and HUSCO/Ramirez Distinguished Chair in Fluid Power and Motion Control at The George W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology. During 2012-2013, Dr. Kurfess was the Assistant Director for Advanced Manufacturing at the Office of Science and Technology Policy in the Executive

Office of the President of the United States of America. In this position he was responsible for coordinating Federal advanced manufacturing R&D, addressing issues related to technology commercialization, identifying gaps in current Federal R&D in advanced manufacturing, and developing strategies to address these gaps. His research focuses on the design and development of advanced systems targeting the automotive sector (OEM and supplier) including vehicle and production systems. He has significant experience in high precision manufacturing and metrology systems. He has received numerous awards from the National Science Foundation (NSF), The American Society of Mechanical Engineers (ASME) and the Society of Manufacturing Engineers (SME).

Abstract

Manufacturing has been identified as President Obama's number one priority, as it is critical for the economic prosperity and national security of the United States of America. Professor Kurfess will present an overview of the Administration's endeavors in advancing manufacturing with a focus on the National Network for Manufacturing Innovation (NNMI) which was discussed in the 2013 and 2014 State of the Union Addresses. The NNMI will be presented as it relates to the historic development of interests in manufacturing, and its place in the overall federal manufacturing strategy identifying the technical and cultural strengths of the Nation that can be leveraged to strengthen the country's manufacturing base.

One of these strengths is the Cyber Physical Systems infrastructure that is currently available and rapidly expanding. Professor Kurfess will discuss how such technologies can be employed to move manufacturing completely into a digital domain by employing digital models, in conjunction with readily available High Performance Computing (HPC) platforms (e.g., multi-core, GPU, and cloud) to enable rapid process and production planning for use in both cost estimation/quoting and, ultimately, production and verification. For cloud manufacturing, this will enable even the smallest and least sophisticated manufacturing node in the cloud to rapidly respond to large number of quote requests for complex parts utilizing low cost cyber infrastructure resources that are currently available and expanding on a daily basis. Furthermore, this capability will enable designers and manufacturers to optimize their performance including minimizing costs, energy consumption, waste generation (scrap and chips), and material utilization (light weight designs), ultimately opening-up new markets and business models for local Small and Medium Sized Enterprises that currently employ the majority of many local population segments.

Programme - Tuesday 13 May

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| 17.00 | Welcome refreshments |
| 17.30 | Welcome and Introduction |
| | Babbage Lecture: Thomas R. Kurfess |
| | Discussion |
| 18.30 | Refreshments and networking |

These lectures are free to attend. To register visit: www.ifm.eng.cam.ac.uk/research/brg

For more information contact the Programme Coordinator: Antonio Andreoni (aa508@cam.ac.uk)

The Babbage Industrial Policy Network is supported by the Centre for Science, Technology and Innovation Policy and hosted by the Institute for Manufacturing, University of Cambridge.