

This video outlines the evolution and significance of computer-integrated manufacturing systems, tracing the motivation behind their development back to the 1970s. It discusses the global push to incorporate computers in manufacturing processes through techniques such as numerical control and computer-aided design. The speaker shares personal experiences from working on a complex manufacturing system in Hungary, emphasizing the challenges faced due to overwhelming complexity and costs.

In the late 1980s and early 1990s, a collaborative effort occurred among experts to develop a methodology for creating flexible manufacturing systems, leading to the establishment of reference architectures that guide the design and implementation of such systems. A key milestone was the publication of a book titled "Architectures for Enterprise Integration," which synthesized various proposals and methodologies.

The speaker reflects on the lack of communication between systems engineering and manufacturing control communities despite overlapping interests. Eventually, efforts to bridge this gap resulted in a generalization of architectures and the establishment of international standards.

This video also emphasizes the importance of integrating human elements within these systems and adapting methodologies to account for the interplay between humans and automation. Moreover, it hints at the rapid advancements in artificial intelligence and their implications for the future of complex system architecture. Overall, it underscores the long-standing history and ongoing evolution of architecting systems in manufacturing and other sectors.