

Team 2 GE – Digital Revolution Executive Summary

Over the last few years, there has been a manufacturing industry makeover to improve information technology solutions. Due to the union of conventional automation with cyber-physical systems, big data has enabled device interconnection. There has been an IT transformation from a patchwork of isolated silos to a fully integrated System of Systems (SOS) that enables matching end user requirements. With the advent of the fourth industrial revolution there also comes the challenge of scale and speed. Scale is needed to consolidate and manage massive volumes and varieties of dynamic and time-series machine data. Speed is required to leverage this data with analytics in real-time. The imperative for digital industrial revolution is a secured environment with capacity to grow at the speed of machine data and the technical infrastructure to apply sophisticated analytics that drive insights for more profitable business decisions for industrial companies.

In general companies are turning to cloud computing as a means to solve for speed and scale and to lay the groundwork for competitive advantage in the future. They are examining ways to reduce operating costs, leverage insights for greater production consistency and to create a market advantage using Big Data and analytics. In this regard **GE's Predix** - has proven to become one of the biggest analytics platforms for operational excellence. GE has invested in building an end-to-end industrial cloud infrastructure in secured data centers — including both hardware and software. With Predix, data for various GE's business units is handled exclusively in a managed community cloud. This cloud space is a complete, end-to-end hardware and software environment, built exclusively for industry, and managed by GE to meet the demanding requirements of industrial businesses that it serves. The vision of the Industrial Internet is to connect brilliant machines, analytics and people in a way that enables both asset and operations optimization with benefits ranging from improved fuel utilization to pushing the performance of individual assets through predictive analytics that can learn how equipment degrades more accurately.

The primary responsibility of Predix Machine is to provide secure, bidirectional connectivity to and management of industrial assets (GE or Non-GE), while also enabling applications (analytical and operational services) at the operations site. Predix Machine also provides security, authentication, and governance services for endpoint devices. This allows security profiles to be audited and managed

centrally across devices, ensuring that assets are connected, controlled, and managed in a safe and secure manner, and that critical data is protected and readily available for audit purposes. As the Industrial Internet gains momentum across industries, it is clear there is significant business value from collecting machine data for insights into assets and operations. The introduction of a cloud environment brings benefits of cost reductions, operating efficiencies and organizational transformations for industrial companies. The process of tailoring the analytics platform to business goals leads to efficient strategic management.

This report explores the history and the innovative initiatives taken by GE in leading the digital industrial revolution. It also briefly analyzes the impacts and risks associated with GE's digital industrial revolution to propose relevant recommendations / action plans in keeping guard of the huge investment costs. GE, with its level of investment in Predix, the cloud platform for the Industrial Internet, combined with decades of excellence in operations management can singularly offer industrial companies the assurance of scale and speed they will need to succeed within a highly secured global cloud environment.