Chapter 1

A New Process Model for IoT-Based Software Engineering

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ABSTRACT

Internet of things (IoT) is a new trending paradigm for advanced technological development which has drawn significant research attention in the recent years. IoT comprises intelligent communicating “things,” putting a big challenge on ensuring security, reliability, efficiency, and safety in their interaction. Staying connected always, constant evolution, and grappling with multiple life cycles are the major factors of concern. In this context, a new process model for IoT-based software development has a greater relevance in order to reduce the associated risk. To exploit the capability of IoT-driven innovations which enable organizations to enhance their revenue streams, reduce time to market while increasing business agility, organizations need to determine how best to employ IoT-enabled business models that promote sustainable competitive advantage.
INTRODUCTION

In today’s rapidly changing business environment, it is predicted that ‘Internet of Things’ will become the backbone of future customer value and dedicated IoT platforms will have a significant impact and security will remain a key concern. Organizations are grabbing opportunities around the intelligent IoT products to create novel services and diverse set of IoT-enabled business models which have the capabilities for remote product management, monitoring, and control by creating operational efficiencies and engaging customers through innovative path.

In the IoT based Business context, the following are the identified challenges:

- Market need to follow new strategic ways of interacting with customers through new interfaces like smart home speakers, smart watches, wearable devices etc
- Need of integration softwares that combines diverse set of IoT-enabled business assets into cohesive business process
- Increasing need of IoT platform to have support services for data processing and analysis at both edge and core of the network with a sustainable model
- Accelerated IoT platform adoption from public cloud providers due to developer requirements for low adoption costs, quick deployment, global reach, easy integration with minimal maintenance burden
- Key challenging Process areas to focus are remote machine setup, material supply, product pricing, information reporting and Quality control through corrective and predictive maintenance

The forthcoming sections investigates the feasibility of IoT based Software engineering solutions on how organizations can deliver high business value through technology and operations strategy engagements at the same time can generate return on Investment (ROI) by effectively utilizing the possibilities of IoT in business.

BACKGROUND

IoT is defined as a new paradigm which can make adifference to organizations’ business value by building the right infrastructure, using existing devices and services in new ways, and incorporating the right technology (“13. How the Internet of Things Is Improving Transportation and Logistics”, 2015). Social networks can play a major role in experiences sharing and personalized insights with great possibility of integration for business-centric applications. The integration and interoperability can
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