# Chapter 11
# A Strategic Approach for Patient-Centric E-Healthcare Development:
## Informatics Solution HIT as Case Study

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## ABSTRACT

*Different types of industries, strategic thinking, planning, and management in healthcare have become cornerstones of providing high quality of healthcare services among the rapidly changing competitive environment and the emerging technologies, which is pushing health service providers to adopt the eHealth solutions to automate the treatment workflows during health service. This chapter introduces a new healthcare IT cloud model called HealthGate Cloud (HGC), which is specially designed as a central repository for patients' EHRs. The proposed model provides a technical and business framework for a centralized enterprise healthcare information system and data sharing between all participated healthcare providers in the country or region, which makes them all as if they are one big hospital having one single repository and database for all patients' medical records. It can be used by any HA in any country or region to provide this solution for HSPs through subscriptions business model.*

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## INTRODUCTION

Introducing Healthcare Informatics (HIT) in hospitals, medical centers, and other HSPs is an important strategic decision that can be taken by healthcare business owners or regulators which definitely reflects into better healthcare provision, well-managed workflow throughput and increased revenue for healthcare service provider either public or private (Jabali, 2018). Providing high quality of healthcare services among the rapidly changing competitive environment, and the emerging technologies is pushing HSPs to adopt the eHealth solutions to automate the treatment workflows during health service provision, and keep track of patients' health records by all health service stakeholders that ensure better quality of health services delivery and optimization (Mu'taman Jarrar & Don, 2016).

Accordingly, it becomes highly demanded for HSPs to have not only Electronic Medical Records (EMR) solutions for tracking of patients' records but also Electronic Health Records (EHR) systems that are needed to digitize the daily workflow, automate the services in any HSP, and to establish interoperability mechanisms between different service providers who can share the EHR of the patients, and nationwide adoption of EHRs becomes an emergent policy priority in most of the countries (Adler-milstein et. al, 2015). These initiatives guided HIT vendors and countries' Health Authorities (HAs) such as Taiwan (Wu et al., 2017) to build their HIT solutions on the cloud that can be accessed and shared between several HSPs and stakeholders.

Building a healthcare system on the cloud has been enormously requested these days because of the tremendous advantages and various features that can be gotten from executing such healthcare solutions on the cloud, and because of the continuous innovation upgrades of the cloud and IT technologies which dispense with a lot of considerable disadvantages of utilizing cloud technology at its beginning times. Healthcare enterprises, as other enterprises and industries, are being encouraged to go for cloud to get most of the advantages and benefits of the cloud technology, and to line up with the most recent trends of IT industry, such as Big Data, Machine Learning, Artificial Intelligence, Business Intelligence, and Decision Support Systems.

Implementing HIT solutions on the cloud has too many benefits and numerous features for all health service stakeholders, which yields to better patient care and community healthcare; such as: cost-effectiveness of subscribing to the cloud instead of building a fully hosted data center, which enables small and medium healthcare enterprises to utilize the benefits of such solutions without the need for upfront expensive investment, having a unified patient record that is accessible for all health service stakeholders, sharing a collaborative economic digital health environment that distributes cost overheads and reduces medical services waste, sharing of medical resources and remote health service provision such as Telemedicine and Teleradiology, improving healthcare quality through the online access and the aggregation of medical data by one central solution, sharing of patient medical records between several healthcare providers which has extensive benefits for patient and health services delivery, and reduction of redundant services to be repeated by each HSP in addition to the "increase exactness and effectiveness, better communication among healthcare professionals, and reduced risk of prescription errors" (Rajini & Beulah, 2016) plus many other benefits.

Nowadays; most of the health solution providers and HA in several countries are moving into the cloud according to a recent research conducted by KLAS organization, which showed that ninety percent of provider organizations are considering the off-site data hosting (Nerney, 2017).