Hong Kong Department of Health Monitors Infectious Diseases with Hermes and ebMail

– *XML Schema, ebMail and Hermes Enhance Infectious Diseases Information Messaging Efficiency*

To strengthen the surveillance system for infectious diseases, the Department of Health (DH), HKSAR Government, invited CECID to set up a centralized and standardized disease surveillance system based on XML and ebXML technologies. The project involved XML schema design for 28 infectious diseases, ebMail and Hermes deployment for secure and reliable infectious disease information exchange. The system not only brings enormous economic benefit to the HKSAR Government and Hong Kong in terms of reducing communication lead time and data entry errors, but also improves the efficiency and effectiveness in communication between DH and other healthcare service providers.

The Business Challenges – *Enormous Data Re-entry Effort and Slow Infectious Disease Information Communication*

The unprecedented SARS outbreak has caused tremendous burden to the public health system during the spring of 2003. Special attention has been paid to the surveillance mechanism between HKSAR and neighboring regions. Locally, infectious diseases reporting between community healthcare professionals and Department of Health (DH) is also crucial.

DH has identified altogether 28 infectious diseases, such as SARS, Tuberculosis, and Meningitis. Conventionally, healthcare service providers or clinic's doctors send information on infectious diseases to DH by fax. Staffs of DH subsequently enter the information manually into its web-based system. This mechanism of information exchange involves tremendous manual data input at DH. Also, this makes the infectious disease information communication between DH and the healthcare service providers inefficient.

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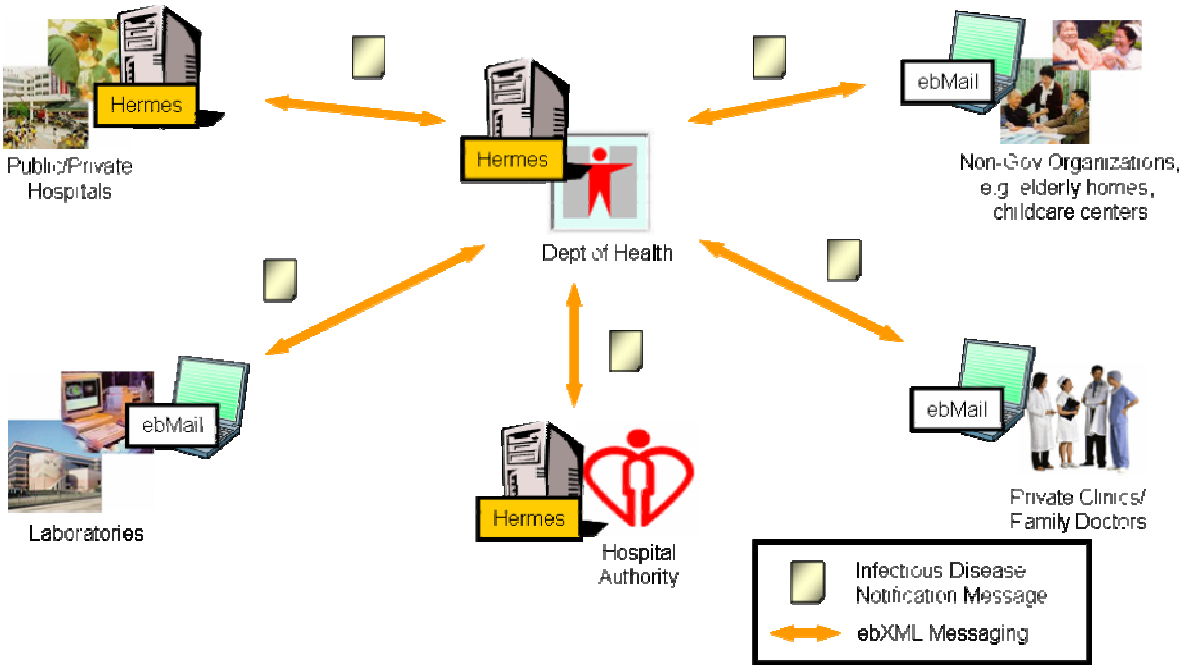
The Business Solution – *Set Up a Centralized and Standardized Disease Surveillance System*

In an effort to improve the efficiency and effectiveness in infectious disease information communication, CECID sets up a centralized and standardized disease surveillance system based on XML and ebXML technologies. This involves designing a common XML schema for 28 infectious diseases to facilitate data communication. Its objective is to define a standard data definition for data exchange. The XML schema is designed according to the W3C XML Schema Recommendation as well as the XML Schema Design and Management Guide under the HKSARG Interoperability Framework. These resulting Schemas are the underlying architecture for the exchange of information on the 28 regulatory infectious diseases.



After the completion of XML schema, CECID develops a software application, the Notifiable Infectious Disease Information Messaging System (NIDIMS), that supports reliable and secure disease surveillance information collection. The messaging framework is based

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on the ebXML Messaging Service version 2.0 (ebMS v2.0) specification developed under OASIS. The flagship products of CECID, ebMail and Hermes are deployed in the software for secure and reliable information exchange. ebMail provides the healthcare service providers a graphic user interface (GUI) environment to enter the patient information about the disease and submit this information to DH electronically instead of fax. Hermes is a Business-to-Business (B2B) Messaging Server that sends and receives relevant XML documents such as receipt acknowledgements between DH and healthcare service providers.

The Business Results – *Enhance Efficiency in Infectious Disease Information Communication*

As a result, a Notifiable Infectious Disease Information Messaging System is available for secure and reliable infectious disease information communication between DH and healthcare service providers. The system is now part of Hong Kong Centre for Health Protection (CHP)'s central notification office (CENO) online reporting system to strengthen the CHP's commitment of real-time surveillance. This system not only brings enormous economic benefit to the Government and Hong Kong in terms of reducing communication lead time and data entry errors, but also improves the efficiency and effectiveness in communication between DH and other healthcare service providers.

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