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Beside Information System

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ECRI's focus is medical device technology, healthcare risk and quality management, and health technology assessment. It provides information services and technical assistance to more than 5,000 hospitals, healthcare organisations, ministries of health, government and planning agencies, voluntary sector organisations and accrediting agencies worldwide. Its databases (over 30), publications, information services and technical assistance services set the standard for the healthcare community.

More than 5,000 healthcare organisations worldwide rely on ECRI Institute's expertise in patient safety improvement, risk and quality management, healthcare processes, devices, procedures and drug technology. ECRI Institute is one of only a handful of organisations designated as both a Collaborating Centre of the World Health Organisation and an evidence-based practice centre by the US Agency for healthcare research and quality.

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*These recommendations are the opinions of ECRI Institute's technology experts. ECRI Institute assumes no liability for decisions made based on this data. DHE (Distributed Hospital Environment). DHE is a healthcare application infrastructure, which represents the hub of the EDITH architecture. It is responsible for the functional and information integrity of the system, according to clinical and procedural requirements of a specific user.

DHE is constituted by a set of services, which are specifically oriented to the healthcare business domain, and in this respect has impressive precursors to contemporary SoA (service oriented architecture). It was essentially aimed at data management for the entire healthcare enterprise and execution of relevant activities, alongside support to interaction of the different IT applications in individual units (ward, laboratory, radiology, patient admission/ discharge, and last but not least, customisable managerial oversight including use of DRGs). The services provided by individual DHE components are invoked through client-server mechanisms.

DHE: The HIS Nervous System of EDITH

In an IT architectural context, DHE consists of a set of software modules/servers, which interact with different client applications. Within EDITH, DHE has the highest pertinence for hospital information systems, and in many senses represents its nervous system. It seeks to ensure the interoperability and integration of individual applications in different units, and is independent of their origin (vendor, environment), time of installation and

synchronicity or network protocols and cross-network distribution conditionalities.

Several applications are now available as products for use with the EDITH approach, thus providing a completely operational Hospital Information System. These include DALI, which supports the organisation and diagnostic activities of the laboratory, FLORENCE which supports the nursing and medical activities in the wards and HERMES which supports the managerial activities at different levels of responsibility.

From EDITH to HANSA

Subsequent to EDITH, another major effort on the HIS area by the European Union was the Healthcare Advanced Networked Systems Architecture (HANSA) in 1997.

Led by Italy's Università Cattolica - Policlinico Gemelli, the HANSA Consortium included corporate and research/university participants from a number of countries, including University Hospital of Giessen (Germany), Intrasoftware (Greece), GESI srl (Italy), HISCOM (Netherlands), Novabase (Portugal), Consorci Hosp. de Catalunya (Spain) and SPRI (Sweden).

HANSA aimed to set a middleware standard which would create a transparent, application development framework, inherently capable of backward integration with legacy healthcare applications. The long-term goal was to lay down the ground rules for a Europe-wide hospital/healthcare information system, which could flexibly accommodate the emergence of new IT and communications technologies as well as developments in the regulatory/policy areas.

HANSA itself was meant to validate the 1992 EDITH initiative. As noted earlier, EDITH was based on the HISA (Health Information System Architecture) standard, but HISA was restricted in scope to aspects of IT systems related to treatment. It had no direct support for administrative and management requirements – which remain key to a meaningful HIS. HANSA had the mission of facilitating such transition, by permitting the federation of the legacy systems atop EDITH's open DHE middleware. The validation of HANSA – to promote the new technology and its standardised approaches by means of demonstrations was undertaken at Università Cattolica Policlinico Gemelli in Italy, as well as Hvidovre Hospital (Copenhagen, Denmark), University Hospital of Giessen in Germany), Areteion Hospital (Athens, Greece), Leiden Hospital (Leiden, Netherlands), Hospital del Mar (Barcelona, Spain) and Sahlgrenska Hospital (Gotheborg, Sweden). HANSA was adopted as a European HISA standard (CEN TC 251 ENV 12967-1).

In 1996, the HANSA Consortium decided to put the API of the DHE services on the public domain, citing its status as the only group adopting and promoting a common healthcare architecture which was open and accessible to all.

Developments to 2000

In subsequent years, the new HANSA EAST project sought to transfer its experience with healthcare and hospital systems to eastern Europe. HANSA EAST was focused principally on Hungary and Poland and complemented by a Concerted Action in top university hospitals in Albania, Bulgaria, Czech Republic, Estonia, Latvia, Lithuania, Slovak Republic and Slovenia.

Alongwith, Synergy Extranet (SynEX), a European Fourth Framework project (1998-2000), defined middleware architecture for the delivery and collaboration of health information components. SynEx aimed at providing an integration platform for integrating both new and legacy applications.

Enriching HIS with RICHE

RICHE (in French, Health Care Information and Communication Network) was also a part of the EU healthcare IT R&D programme in the early 1990s, with specifications (like EDITH) for a DHE distributed hospital environment.

RICHE provided a model of open information and communication systems for hospitals based on relationships and interfaces between different parts of the architecture.

Though both projects professed open standard architectures, RICHE was more collaborative rather than prescriptive – as compared to EDITH. It allowed healthcare organisations and suppliers more room to define strategy, establish supporting infrastructures and organise their markets. RICHE defined a three-layered architecture, with four main components and services.

In 1997, an EU-subsidised publication ('New Technologies in Hospital Information Systems', IOS Press) quoted experts saying: HIS projects which ignored RICHE would be "wasting money," and that "RICHE seems to be the best candidate for an integrated hospital information system."

However, over a decade after this, informed observers told HITM that operationalising the RICHE approach on a large scale was far more difficult than that of EDITH – ironically as it was more experience- rather than concept-driven, at the core.

Hisa

HISA is also known as the CEN (European Standards Organisation) Architecture for Healthcare Information Systems (ENV 12967), and aims at enabling the development of modular open systems to support interoperability in healthcare. Work on HISA is the responsibility of CEN's TC (Technical Committee) 251 Working Group IV. This Committee has also been involved in aligning HISA with the EHR.

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