Emergence of e-health

Contrary to popular belief, Japan is closing the gap between itself and the US in terms of adopting Internet technology in healthcare. Dr Wallace Macindoe reveals how Japan is shaping up to the challenges of e-health

Japan is now beginning to catch up with the US in terms of adopting Internet technology, user profiles and the prevalence of e-commerce. In the past two years several successful e-health websites – both commercial and non-profit – have emerged to provide a web-based service unique to Japan through premium content and/or disclosure of pharmaceutical information.

The consensus is that Japan is lagging behind US and European e-health largely because of structural impediments – despite the Japanese government's five-year IT development policy – rather than resistance to technological change. But, arguably, one of the major factors constraining e-health development in Japan has been the health insurance system and its influence on physicians' and patients' attitudes toward medical treatment.

All Japanese citizens are covered by a compulsory health insurance system, unlike the US, for example, where most people are covered by voluntary private health insurance making them more cost-conscious than patients and physicians in Japan. Patients in the US have much greater access to drug information than patients in Japan, as is evident from the volume and nature of direct-to-consumer (DTC) banner advertising on US websites.

US patients also have no qualms about insisting on a second opinion when medical opinion from a secondary online source differs from the advice their doctor has given them. Until recently, such behaviour was unthinkable in Japan as doctors were revered as professional untouchables. It appears, however, that this attitude is changing.

This is not the only driver for change. Other factors are beginning to affect the Japanese healthcare industry and medical practice with the knock-on effect of increasing the use and implementation of Internet-related technologies.

First and foremost is the Keidanren's (Federation of Economic Organisations) recent campaign to liberalise regulations impeding e-commerce growth. It is petitioning for the Pharmaceutical Affairs Law to be revised to allow Internet sale of over-the-counter (OTC) drugs. The Keidanren is calling on the Ministry of Health, Labour and Welfare (MHLW) to reform drug categories and review the range of medicinal products that can be sold only by pharmacists. Whether the petition will be taken seriously or not remains to be seen, but the MHLW healthcare reform proposal presented in September last year appears to show its commitment to streamlining the pharmacy distribution system and promoting the supply of information using IT.

Towards this end, the MHLW now distributes information to medical professionals and lay people alike over the Internet. The ministry has now set up an Internet-based drug information system (DIS), with the Organisation of Pharmaceutical Safety and Research (OPSR). The database includes new medicinal product registrations, information on drug safety, adverse event reporting, prescribing information revisions, and 'dear doctor' letters, all of which are posted on the Internet via the OPSR.

This year will see important reforms to Japan's healthcare system. The changes have been motivated by the government's need to curtail healthcare costs and Internet-based information systems are seen as a way of doing this. As part of a long-term initiative to overhaul the current 1.1% level of electronic medical record keeping, the MHLW recently announced it will phase in a nationwide electronic medical record and billing system by fiscal 2006. The project aims to make both public and private hospitals more efficient and patient-friendly by:

•Easing access to information about healthcare establishments through a nationwide database.
•Promoting the networking of information among smaller medical establishments.
•Using barcoding and online medical billing to ensure fewer administrative mistakes and minimise prescribing errors.
•Helping patients find the best care through online access to records of hospitals' success rates in treating specific diseases.
•Expanding its online treatment guidelines service to hospitals from the current four protocols to cover 20 diseases.

From CTD to e-CTD

In the regulatory sphere of e-health, delays in integrating Japan into the electronic global regulatory dossier framework, according to International Conference on Harmonisation guidelines, have been attributed to technical differences. These arise, for example, from Japan's early emphasis on SGML, a more formal and complex format than HTML, for submitting Gaiyos (summary of the common technical document [CTD] or global regulatory dossier).

While Japan's acceptance of Modules 3-5 for the CTD submission in English are anticipated by July 2003, certain logistical

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and structural barriers remain for electronic submission, namely the development of a suitable Internet platform to standardise submission online. To date the sobering reality is that the only form of electronic dossier or e-CTD available is that on a CD-ROM.

From a structural perspective, the high barrier to entry is a concern for the growth of the electronic dossier market. The Documentum Corporation dominates, however new entrants such as the Oracle-Itochu Techno-Science partnership may precipitate major changes. For example, a recent joint initiative between Itochu and Oracle will develop a multilingual version of the Oracle clinical development support application. This will enable pharma companies

Ready to learn? E-health providers in Japan are already targeting children with educational websites on the therapeutic value of medicines.

to check for discrepancies between clinical data from Japan and that obtained abroad using an automatic language translation function.

At this stage, however, two impediments must be overcome before the e-CTD is implemented in Japan. First is the development of Internet applications to cope with Japanese specifications and idiosyncrasies. Second is the successful testing and implementation of local specifications in time for the e-CTD global phase by July 2003.

Physicians set the pace

In a further push to close the gap on e-health development with other industrialised economies, the Japan Medical Association (JMA) has set up an online fixed-point survey to assess the business performance of 1,000 medical facilities across the country on a realtime basis. The importance of this initiative is not so much its aim to accumulate data so that JMA can propose its own healthcare policies to the government, but the influence it will have in coercing these facilities to form part of a nationwide intranet system.

Every month cooperating facilities will be asked to upload data – such as the number of employees, patients and beds as well as financial data, such as profit and loss statements – onto the JMA's web-enabled management analysis centre. Throughout the year the centre will analyse profitability, growth and other performance criteria and each facility will be able to compare its performance with others through an encoded system so that the data remains undisclosed to public end-users.

For the past couple of years, primary care doctors have been relying on the Internet as an essential tool in their medical practices with 86% using it to search literature, collect practice and guideline information, and related drug data. Surveys on both sides of the Pacific are now showing that doctors are increasingly looking for a diverse range of information.

Collecting drug data from professional association websites is now more than twice as popular among Japanese GPs than it is among hospital physicians. In view of the great difficulty of independently collecting and supplying all this information, vertical Internet companies could develop one-to-one platforms that provide affordable communication-information systems in this respect.

Companies are gearing up

Various sectors of the healthcare community in Japan are capitalising on the opportunities provided by e-health, and the pharma industry is no exception. Like several multinational pharma players, Aventis Japan is moving towards a multi-faceted 'five C' approach – content, commerce, computer applications, connectivity and care – for its e-commerce development. As part of its effort to expand into web-enabled e-health computer applications Aventis recently unveiled a system application (e-dia) designed to expedite the clinical development process.

The company also has a content strategy which provides information to patients for particular diseases: Kafun-sho (pollinosis); Taisaku honbu (information on allergic diseases); DM Town (information on dia-

betes); and is diversifying into a broader care dimension with E-Net, an educational site for schoolchildren designed to raise awareness of medicines and their therapeutic uses.

Moves to greater deregulation of the promotion of medicinal products have led to much more active efforts from pharma companies in Japan to promote their brands to both medical practitioners and the general public. Both AstraZeneca Japan and Novartis Japan have unveiled dedicated Japanese language sites – zomig.jp and glivec.jp respectively – to coincide with the launch of these products.

Although non-prescription products can be advertised and promoted freely from websites, DTC advertising for prescription products is still restricted and can be done only 'by association'. Companies describe diseases and disorders in public education awareness programmes and then somewhere among the advertising copy subtly mention their products or give a website address.

Such approaches are in line with Japan's attitude to web-based DTC advertising of pharmaceuticals. These follow the push-selling model, but whether the government will seek to curtail this or not is difficult to say. In Japan, like other major markets, there are changes that challenge the viability of this model, creating a need for a more differentiated and customised selling approach. Of course no government has the power to intervene in company affairs about advertising strategy but it has every right to intervene in the actual selling methods a company adopts when consumers' rights and health are at stake.

Models for e-health

Broadly, there are three types of e-health enterprise in Japan: those run by foreign subsidiaries, imitators (emulators), and *bona fide* home-grown entities. An example of the first type is WebMD Japan. When it first entered the Japanese market, the professional healthcare community was curious about the service it would provide doctors, as its core business at that time was handling health insurance reimbursement based on the US health system. Having survived the dot.com crash, WebMD now bases its Japan business model on that of its US service profile – portal, transaction (EDI-based ordering and reporting of research only for Japan) and physician (office management information systems) services.

In the imitator/emulator class there are several variants of the US e-commerce model before the dot.com crash. In pursuing a mixed media strategy, CareNet Japan has adopted a marketing mix of communi-

cations satellite broadcasting, mainstream Internet technology, medical journal referencing and mass marketing of drug company products. Also noteworthy in this class is MyMediPro, which in the late 1990s took the already used name of Medipro, to coin the lacklustre MyMedipro, and became one of the first sites to provide medical information in Japanese. Recently the company has expanded its services to connect medical representatives and doctors – a mere experimentation of an old idea in using one-to-one technology.

Other medical portals have fared even worse. In early 2000, VerticalNet Japan was incorporated and soon launched its dedicated pharma business-to-business (B2B) site Iyaku-japan.com. Although it was initially thought to be succeeding, the site and similar portals, like medicuslinks.com, soon sank without trace.

In contrast to most of the earlier e-health contenders, some of the enterprises, which neither plagiarised foreign models nor blindly followed the current Internet hype, have emerged to epitomise the true success of Japan e-health. One such example is ShareTech, the Osaka based e-health venture company, which is probably one portal that comes closest to the fit. As part of a win-win strategy, the company, by virtue of its referral service, offers discounts to consumers on the condition that they attend dentists designated in their network. The company site has extra features in terms of the '5C' criteria, with news, e-learning, recruiting and auctioning, as well as its mainstream referral service.

Information disclosure

Another success story, Jouhou Koukai Services (www.jouhoukoukai.com) arose from a savvy move to capitalise on the new freedom of information legislation in Japan. The new Public Information Access Law relating to regulatory affairs held by the MHLW came into force on April 1, 2001. It cleared the way for the MHLW to release information on the approval basis of new products, reimbursement price calculations, and adverse reactions and a number of other documentary resources that had previously been inaccessible.

Jouhou Koukai stands for information disclosure in Japanese and thus its services include the retrieval of information, such as important regulatory and approval documents that are held by the Japanese Government. All the profiled services – consultation on the retrievability of documents, placing requests and obtaining the documents, translation and editing in English are provided online. In addition the Jouhou Koukai website offers a free online database of pharma products approved in Japan in the past three years, selected news and a growing repository of regulatory documents.

While the e-health gap between the US and Japan may be narrowing, there are still logistical factors to be overcome. These arise from underdeveloped communication infrastructures, delays in standardisation of terminology and codes for digitalising medical information. Part of the legacy from the bursting of Japan's e-commerce bubble is the challenge to promote the nation's e-health industry. This will include measures to protect patients' privacy, protection and clarification of responsibility for leakage of information and, more critically, personal and health-related damages suffered by patients following advice and suggestions given by doctors over the Internet. ▮SM

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