Standardisation

Mike Morris 12th August 2019

Throughout recent history, there have been all sorts of inventions and developments. Since these invariably build upon previous creations, it is perhaps not surprising that two or more people could come up with the same idea at approximately the same time. Sometimes this gives rise to contention: two scientists, engineers or inventors claiming to have had the idea first. But quite often it will result in two or more versions of the product.

If the two versions are geographically confined, as was the case until the last quarter of the twentieth century, then there is no issue. I draw on the three basic standards of colour television that were in use before digitalisation. The American's came up with the National Television Standards Committee (NTSC) variation – often known as "Never Twice Same Colour", the Germans developed Phase Alternate Line (PAL) and the French produced Séquentiel Couleur À Mémoire (SECAM). These "standards" permeated across the World, with the majority of Europe and its area of influence using variations of PAL, the Americas and some parts of South East Asia using NTSC and the French area of influence using SECAM.

Everything worked well until the World changed. The first of these changes saw an increase in transmission hours, resulting in insufficient content generation. That in turn meant that TV programmes were bought from other countries. This was OK when programmes were bought and sold on film, but eventually the media become videotape, which was recorded in the standard of the country of origin. A means of conversion was therefore required and a highly expensive piece of technology called the Digital Intercontinental Equaliser (DICE) was developed.

Then there was Eurovision, to most people a song contest but to Television Engineers it was an enormous challenge to watch live TV broadcast that used a different standard. I think it was the 1966 World Cup, which was not only famous for the English win, but also as the first live outside broadcast that could be "switched to" during programming without a frame roll (for anyone under 40, that is an annoying black line that rolls up the picture, dragging the image with it, until source and destination feeds are synchronised). Most people missed this, but it was a phenomenal leap in technology.

Next comes the need for home video recording, three systems were developed: Betamax, Pneumatic and VHS. This time market pressure forced standardisation and over time VHS dominated, so for the first time, manufacturers had a common standard for round the World production – although they had PAL, NTSC and SECAM variants and the tapes were not interchangeable. This was enhanced with the Digital Versatile Disk (DVD), which was an international standard, although with format variations to allow for the different power frequencies in different countries (60Hz in the US, etc). Eventually digital television has overcome all of this and we now have an international TV standard.

This is just example of how technology and market demand eventually lead to standardisation as a result of internationalisation and sharing of information. Can you imagine the internet if we had different formats in each country and could not share data? Hence the development of HTML.

So, I have to ask when this will happen in Healthcare?

In Britain, we have always developed and used our own standards for information transfer in healthcare, often using a base standard and creating a variation for our own needs. After all, we are told, the NHS is different. But is it?

People travel, estimates say the half a million people are flying in aircraft at any given moment, the British contingency all (hopefully) have insurance that allow them to be treated in countries outside the UK, but they have very limited opportunities to have their treatment relayed to their own GP. They are used to getting emails and phone calls virtually anywhere in the World; they can get updates or information across the internet regardless of where there are. This capability seems to exist in almost every field of modern life, except Healthcare.

Of course, when I say Healthcare, what I mean is Healthcare in the UK. A trial called EPSOS demonstrated that a (non-UK) European citizen could get his prescription fulfilled in any of several participating countries, including the UK. This meant that Europeans travelling to London for the Olympics could walk into a participating pharmacist, sign a form and allow him to look up their drug regime, make regional variations and dispense the drugs. Unfortunately, the visitor to London from Manchester had to phone his GP and ask for a prescription to be sent by post.

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So international interconnection within Healthcare is possible at least across Europe and the USA, so why isn't it happening?

Well one of the reasons is standardisation, the UK uses a form of HL7 FHIR as its standard for passing healthcare data. Of course, it is an NHS variant, which will always cause interesting issues. So, what was used for the EPSOS experiment and for many subsequent implementations around the globe? The answer is an international standard called Integrating the Healthcare Enterprise (IHE). This still utilises HL7 but is a mechanism for significantly enhancing the information exchange capabilities, as it was developed with functionality to link across domains, enterprises and countries.

We may be leaving Europe, but we are remaining part of the World (at least so I believe) so we need to be part of the international Healthcare community and have our complete healthcare information available wherever and whenever we need it. Let's get with it, NHS; I am travelling again next week and it would be so nice to know that my medical records could be seen by a doctor treating me overseas and that my GP has a record of the treatment. Unlikely I know, since this won't even happen in other parts of the West Country, but I can dream!