The Current State of SNOMED CT (SCT)
Jon Patrick

At the moment SCT is a bride all dressed up for a wedding but with no groom and no wedding date. Let me explain the metaphor. The key content of SCT has been defined by CAP and now the world is ready to launch the SSDO to manage the roll-out of that content, but there is important member missing - the groom. A computational engine that will put it to work in deductive and inductive tasks necessary to take medical practice into systematic exploitation of the knowledge buried within the content of their medical records.
The engine will support clinicians in their dual role as practitioner and researcher through two different pathways of development;

- deductively, in practice at the point of care, by:
  - ensuring that data inserted within a patient record is both complete and medically correct,
  - rule driven support for the delivery of externally provided advice and protocols on patient care plans.
  - real-time audit of patient care compared to best practice
- inductively, for the reflective practice of research and analysis, by:
  - opening the way to a systematic approach to providing ad hoc analytics over patient records for the clinician-researcher.
  - concomitantly providing for ad hoc analytics up through the chain of health care administration fundamentally grounded in the patient data.

The problem confronting all of us is how to build this Analytical Engine (AE). I don't believe there is an incentive for the vendors to build the engine and hence some other stimulus needs to be provided.

I wish to propose to you that the engine be built as an opensource project funded by the NHS. In this case we have to recognise that such a processor will make a contribution to the public good in a way no other investment in Health IT can make. It will in effect enable conversion of the data in the EHR into knowledge about the health system at all levels from the point of care up through all the administrative layers to the desk of the Minister of Health.

I think it goes without saying that the vendors will react negatively to this proposal, mostly out of fear. However, there are circumstances in which it can enhance their activities and others which might see them exit the market. If the NHS funds this project then it has the option of providing some funds to vendors to participate. If you view their early buy-in as valuable then some means to encourage them would be helpful. In particular an Analytics Engine as I propose would need to be based on a canonical model of an EHR that all vendors could map their systems models to. Their early engagement would mean that they would be able to commence the customisation of their systems at an early stage. Their late participation would not be a problem for the project but could be for the vendor, they then being in a position to only react to the canonical model. If on the other hand the NHS chose not to fund vendor participation then those vendors with the in-house resources to participate would steal a march on the others and position themselves better to meet NHS deadlines and performance standards for the introduction of the AE. This might well cause a shake out in the market which might be to the NHS's benefit.

To return to the metaphor, if the NHS were to support creation of the groom then they could fix the date of the wedding, that is the launch of the union of the content of SNOMED CT with the Analytical Engine to exploit it. However, it is one thing to have a wedding and another to have a successful marriage for another 70 years. At this point the metaphor may be a little thin but let us try to get more out of it. Over the next 70 years both the bride and groom will change and need to adapt to the environment around them. We have a system for managing the change of the bride, that is the content is to be managed through the IHTSDO, but not yet one for the groom, the AE. An opensource project is clearly an efficient and effective mechanism for achieving just that public management that is needed for the life of the marriage, furthermore if we need a public mechanism for the ***content*** it beggars belief that anyone could reasonably argue that we don't need a public management mechanism for the ***engine***.

However that is not all that is needed, and here the metaphor breaks down a little; a third party is crucial to the success of the marriage, that is the co-operation and engagement of the clinical and health professionals. For the AE to be truly fit for purpose for the whole health sector it needs to be designed in a highly generalised way with the creation of a language of health management as a superstructure for formalised question-making which is then contextualised by the reference to medical terminology as contained in the contents of SNOMED CT. This can be interpreted as saying we need a health management analytics language, into which is inserted content in the form of SCT items to create an advanced information extraction and question answering system.

I hope that you consider this suggestion seriously and advance it as a way to go forward so as we can all reap the benefits of a successful SNOMED CT wedding and marriage.