Assessing SNOMED CT for Large-Scale eHealth Deployments in the EU

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Abstract Semantic Interoperability, the holy grail for integrated eHealth services, seems an illusive goal without consistent use of terminology. Some argue that if a single terminology system, such as SNOMED Clinical Terms (SNOMED CT) is endorsed for large-scale eHealth deployment throughout the Europe Union (EU), citizens would reap significant benefits in quality of care and patient safety. What is not evident is the assumptions, costs, benefits, and time frame associated with such a decision. This workshop starts with an introduction to the way the International Health Terminologies Standards Development Organisation (IHTSDO) offering SNOMED-CT works. Then, a discussion on the state of play with terminology management within and across European Member States, and around the world, aims to engage the audience in fruitful discussion and debate on best practices and prospects. The second part of the workshop, starting with use cases and tools for semantic interoperability, reflects on key elements of a socio-economic framework for the analysis of costs and benefits associated with the adoption of SNOMED CT as the unique terminology system throughout Europe.

Keywords. Terminology, SNOMED CT, semantic interoperability, eHealth

Introduction of the topic

Terminology systems, it has been argued, are key resources in our efforts to improve data interoperability and reuse and maximize the value of clinical data in optimizing care and minimizing harm in care delivery. Does SNOMED CT offer a viable cost-effective option for large scale eHealth deployment in Europe? This workshop attempts to unpack the issues that could help us answer this question.

1. Aim of the Discussion

The aim of the workshop is twofold: (a) to reflect on preliminary findings of a survey on the use of SNOMED CT in the European Member States (b) to present key use

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cases and tools for semantic interoperability and unveil key elements of a socio-economic framework to assess costs and benefits of adopting SNOMED CT throughout Europe.

1.1. SNOMED CT in Europe: State of Play

A study about the past and current use of SNOMED CT in the Member States (MS) of the European Union is underway and considers several different dimensions (including policies/guidelines; purpose/domains and use cases; plan for adoption; lesson learned; how semantic interoperability issues have been addressed, etc.) building upon, extending, and updating previous studies and surveys [1]. Stakeholders are engaged in EU member states (MS) and beyond e.g. health professionals, executives, managers, entrepreneurs, industry, terminology authorities, politicians etc. in eight European and two non-European countries (Germany, France, Nederland, Spain, Portugal, Slovak Republic, UK, Denmark, US, Brazil) both members and non-members of IHTSDO.

Through questionnaires and focus groups, the ways of establishing, using, and maintaining the necessary terminology infrastructure in MSs and at the EU level in the context of large-scale eHealth developments, prepare the ground for stakeholders to assess the costs and benefits of eventual adoption. Stakeholders are also invited to reflect upon cross-border experiences and lessons learned in flagship EU initiatives such as epSOS, EXPAND, and Trillium Bridge. Experience from epSOS in cross-border eHealth services and EXPAND in the semantic maintenance shop offer prospects to be reflected upon. Trillium Bridge and the related S&I initiative in the US supporting the EU/US Memorandum of understanding in eHealth cooperation contribute with lessons learned from the comparison / gap analysis between the European and US Patient Summary and the prospects of pursuing an international patient summary.

Preliminary results of the survey will be presented to the audience that will be invited to present their own views on the topics. Questions asked to SNOMED CT adopters are: How is SNOMED CT used? What were priority use cases and the anticipated benefits? How did SNOMED CT adoption started? What activities were undertaken to make SNOMED CT adoption-ready (tasks, resources and timescales, expertise, incurred cost)? What obstacles were encountered? How were obstacles overcome? What was the anticipated timeline towards realizing originally sought or newly identified benefits? What are the key lessons learned and success factors they would now recommend for wide roll out? Where the original requirements accurate or did they have to be regularly updated? What were the strengths and weaknesses of SNOMED CT in relation to their needs? For not-yet adopters the questions are slightly different: Why is SNOMED CT has not been adopted? Is there another terminology system in use? How do you address multi-linguality issues? What are the main challenges in not adopting SNOMED CT?

1.2. The challenge of assessing benefits and costs of SNOMED CT

Systematic analysis of evidence on the impact of SNOMED CT from real life implementations is limited. In this part of the workshop, having set the stage, elements of a socio-economic assessment framework for the adoption of SNOMED CT as a core terminology to solve semantic interoperability issues will be presented and discussed with the audience. As a first step, a structured analysis of possible benefits, cost
categories and respective indicators will be proposed. This value assessment aims to investigate financial, institutional, governance, and business aspects, including:

- use of SNOMED CT to solve semantic interoperability issues from an economic and financial perspective
- indicators and assessment of the costs and benefits of SNOMED CT
- issues and impacts of adoption barriers that are of political, institutional, legal, and governance nature.

Overall, the impact assessment of SNOMED CT as clinical terminology of choice aims to critically collect, analyse, and interpret the benefits and costs (tangible and intangible; financial and non-financial) of using SNOMED CT for eHealth deployment. This socio-economic perspective encompasses the impacts to all affected actors. This includes all stakeholders and aggregates their respective gains and losses, or benefits and costs.

The speakers will argue that only through a robust methodological approach based on policy and public investment evaluation tools, we ensure objective investigation of the benefits SNOMED CT for semantic interoperability without inserting bias towards underplaying the costs. Avoiding bias, for example, means to confront the positive impacts of SNOMED CT with analysing further the reasons for some countries not adopting SNOMED CT.

2. Contribution from each speaker

Veli Stroetmann will chair the workshop and moderate the discussion. Sylvia Thun will provide an introduction to SNOMED CT and the way in which IHTSDO operates. Giorgio Cangioli will discuss the experience in terminologies within epSOS, EXPAND, and Trillium Bridge in the context of patient summaries. Catherine Chronaki will present initial findings in the state of play with terminologies in Europe drawing experience from member states and beyond. A Q&A session and a questionnaire distributed in advance will allow the audience to engage and contribute in the discussion of the state of play for terminologies in Europe.

Reiner Thiel will introduce key elements of a socio-economic framework for the cost benefit analysis of adopting SNOMED CT in Europe. Stephan Schulz will introduce key use cases and tools. Ronald Corne will comment on impact assessment. A Q&A session and a second questionnaire distributed in advance will allow the audience to engage with elements of the framework for assessing SNOMED CT in the EU.

3. Expected results

This workshop aims to educate the audience on the role of terminology systems and specifically SNOMED CT in semantic interoperability engaging participants in a reflection process on what is the state of play, what are the prospects, and how to formally assess the balance of costs and benefits.
4. References