

# Standards Setting for Enhancing Online Services for the Technology Transfer Industry

The time is ripe for developing standards for advancing technology transfer and commercialization. The purpose of this white paper is to initiate the development process. It proposes a few 'internet minded' standards useful for the tech transfer community, as well as processes for developing, refining, and implementing them and future standards. A brief cost benefit analysis is noted for each stage. It is not intended to be comprehensive in scope, just provocative. The emphasis will be on web-based standards since these are the most internationally unifying and often transfer over to print media and to general business practices. To get started, here are four projects to enhance technology transfer ecommerce:

1. XML Schema for Licensable Technologies that would allow web listings and marketing pieces to be aggregated and semantically searched
2. A classification system for Licensable Technologies that would allow clustering into useful categories and subgroups
3. XML schema for calendar events that would allow organizations to easily share postings about conferences, meetings, and special events
4. XML schema for Rolodex information that would allow international directories of Technology Transfer professionals

There are many additional standards worth considering, such as those for research funding, specialized facility utilization, and strategic alliances. The roundtable proposed will need to develop an agenda and prioritization for what is handled at the first meeting and later ones.

## Background

There are few standards that have been developed by the tech transfer community. Most are actually related to government reporting requirements, through the PTO or the iEdison program. The UBMTA (universal biological material transfer agreement) is a treatise that was developed in the 1990's by technology transfer professionals seeking common language and understanding for MTAs. The development of the World Wide Web and XML has led to the potential for effective aggregation, searching, sorting, and clustering of information such as licensable technologies, people and their interests, events, etc. Industries such as information technology have already utilized current Internet tools to achieve effective information hunting and gathering.

Technology transfer professionals need to focus on usability and value in developing new standards. The challenge for our profession is to develop standards that meet the cost-benefit needs of academia, government, and industry. For instance, the PTO has a wonderfully detailed classification schema for patents, but it is too granular and requires specialized training to use. Our industry needs standards that work in the trenches and most importantly work internationally. The beauty of XML-based standards is that you can actually map one standard to another (e.g. the PTO classification system to/from the WIPO IPC to/from the TechTransfer Classification System to be created by our roundtable).

## Example 1: One-stop search engine for licensable technologies

Almost every technology transfer office maintains a web site listing licensable technologies from their institution, but there is not a single place you can go on the web to search all of them at once. If you search for the words 'cancer diagnostic' on Google you get over 1.5 million hits! To find a licensable technology among that many hits requires unique identifiers, such as an inventor name or patent number. The NIH, NTTC, BirchBob, and a working group of university and government lab tech transfer executives created the first XML schema for licensable technologies in 2003. These XML tags are then applied to the web content at each institution. A web spider can then go to each institution and gather the content and place it into a searchable web database. Because the title, organization name, summary and field of use are tagged, advanced searching can be done to find 'gene' in the field of use or 'Gene' in the name of the organization.

**An XML Schema consists of hidden tags that are placed on web pages to indicate what the text between the tags means. HTML uses tags that indicate how the text should look (e.g. bold) while XML represents what the content means (e.g. phone number). Here's a sample XML Schema:**

```

<AssetType>LICENSABLE_TECHNOLOGY </AssetType>
<AssetTitle>Diterpene Production in Recombinant Yeast </AssetTitle>
<Organization>Rice University </Organization>

<Summary>
Through genetic modification of Saccharomyces cerevisiae and defined culture conditions, the production of diterpenes through fermentation has been achieved. This provides an opportunity to synthesize rare or novel diterpenes in a cost-effective manner.
</Summary>

<FieldOfUse>Biotechnology, Bioengineering</FieldOfUse>

<BBURL>http://ott.rice.edu/Portfolio.cfm?PortfolioID=32 </BBURL>

<Language>EN-US</Language>

```

## Example 2: Classification system for licensable technologies

Neoplasms are described in the National Library of Medicine MESH system by 4 levels of classification and hundreds of subtopics. To a prospective licensee there should be a way to cluster technologies that allow easier searching and grouping of results. The diagram to the right shows a sample clustering from a licensing perspective that has built-in redundancy, so you could find a technology by Type of Cancer or by its application. There are web clustering search engines such as Vivisimo that use computer algorithms to cluster, but the logic of a licensing professional surpasses automated ones as evidenced by the inclusion of off topics such as astrology or people's names within the cluster results. Updatability is also important as new subfields arise. Standards will need to evolve along with the fields of technology.



## Goals

- ? Develop open standards available to anyone who wants to use them
- ? Make standards usable by technology transfer staff members without requiring specialized training
- ? Allow international implementation through mapped cross referencing and translations
- ? Utilize XML schemas from other groups for greater content sharing and faster development of standards
- ? Customize the benefits specifically for the technology transfer community

## The Aggregation Paradigm

Develop standard ? Refine standard through usability testing ? Implement standard ? Spider and aggregate tagged content ?  
Mirror content worldwide ? Search, filter, and sort content on many different web sites

## The Players

It is important that the cost and benefit be considered in standards setting for large and small organizations including:

**universities, not-for-profits, government agencies, startups, mature companies, and financial investors.**

Utilization will not be just within the technology transfer profession. For instance, conference site promoters should be able to track the locations of all technology transfer events in order to pitch the advantages of their location. Regulatory, legislative, research, industry, and professional groups will all be holding different parts of the elephant, and standards need to incorporate multiple implementation and utilization requirements.

## Proposed Participating Organizations

- ? AUTM - Association of University Technology Managers
- ? BIO - Biotechnology Industry Organization
- ? CORDIS - European Community Research & Development Information Service
- ? FLC - Federal Laboratory Consortium for Technology Transfer
- ? JAUIPTM - Japan Association for University Intellectual Property and Technology Management
- ? LESI - Licensing Executives Society International
- ? NIH - National Institutes of Health
- ? NSF - National Science Foundation
- ? NTTCC - National Technology Transfer Center
- ? NVVC - National Venture Capital Association
- ? WIPO - World Intellectual Property Organization

## Proposed Plan

### Develop

*Action:* convene a roundtable to set the standards setting agenda, spawn and coordinate working groups, and solicit input from interested parties

*Cost:* host location donation of a conference room and refreshments; travel to be born by each participating organization or by a sponsoring organization

*Time:* One pre-meeting conference call for representatives of invited organizations, 1 day roundtable meeting, 1 day working group meeting, follow-up involvement

*Benefit:* The technology transfer community has many diverse organizations and perspectives. A broad roundtable insures representative views and needs can be addressed.

### Refine

*Action:* Solicit and gather feedback on proposed standards; prepare revisions and submit to roundtable representatives for approval

*Cost:* These activities would be done electronically and through conference calls, and will cost the time of the people involved.

*Time:* 3-6 months to allow for publication of proposed standards and requests for suggestions.

*Benefit:* Each participating organization will benefit from taking the proposed early drafts back to their constituencies for feedback, improvement, and conceptual buy-in.

### Implement

*Action:* Publish standards on representative organization's web sites; present at conferences

*Cost:* Minimal Web page design and posting; conference presentations could be done by an organization's own participating representatives at no cost

*Time:* 6-12 months to allow for presentation at national annual conferences.

*Benefit:* Adoption requires the ability for different groups with different goals to share information using common standards. International adoption of standards takes time but can be expedited by creating systems of great utility based on these standards.

## Proposed Roundtable and Working Groups

Summer 2005  
Washington DC

## Potential Sponsoring Organizations

Suggestions welcomed

