

Prototype of Technology Online Platform

1 Design of the Online Platform

Based on the reviews of existing platforms and technology related websites, the design of the prototype is conceived. In order to build a full-featured, interactive, accessible, informative, secure, and user-friendly prototype of online platform, Key factors in aspects of data source, quality management, and so on are considered, and the following aspects are the main content of our design:

1.1 Usage Scenarios

The platform brings together a wide range of provider, requester, transfer service, investor, policy maker and so on, in the fields of science, technology and innovation (STI). Different kinds of users of the online platform may possess different requirements. Generally, the usage scenarios of the platforms can be summarized as follows:

(1) Business Organizations

Business organizations, mainly the companies, are key support of modern economy, and also key users of the online platform. Through this platform, business organizations can try to find the technologies they need, or sell their own research results, or look for financial and technical support.

(2) For Researchers

Scientists and experts can learn about the latest technology, research, and the market demand. They can also know more information about encouraging and funding of science, technology and innovation, thus supporting their further research.

(3) For Transfer Service Providers

The opportunity for commercial promotion, or technology transformation can be found on this platform.

(4) For Investors

Investors can find technologies and projects that worth investing, and have a good prospect in application on this platform.

(5) For Policy Makers

The online platform can provide a variety of worldwide policy measures, including international conventions, initiatives, etc. Policy makers can thus learn the experience. And through analyzing of the information of the platform, policy makers can know more about the market, making more efficient policy based on evidence.

1.2 Functions and Tools

(1) Items Submission and Searching

Through this platform, registered users can submit provisions, requirements of technology and project under required format. All the items will be stored and managed in the database, and the

searching and browsing of these items is accessible to everyone.

This platform offers an intuitive and easy way for searching, which can efficiently complete both fuzzy search and exact search. The items in the technology and project can be browsed by different categories, and searched by keywords or by advancing filters. To make the searching progress more efficient and intuitive, the searching results are presented with refined filters, related keywords recommendation(Related searches), and interactive maps.

(2) Information Searching and Browsing

This platform is also a gateway for information publishing and access. Publications, case studies, events and activities notifications, meeting information, and policy briefs, will be found on the platform.

(3) Match Making

To match technology demand side and supply side, and to promote technology transfer and technology application, is an important function of the online platform.

There are two ways to achieve this, one is through the keyword matching, correlation analysis and other technical means, filter out the users that may be interested in each other, then recommend the information to each other to promote cooperation. The other way is the offline organization of communication activities, through the research of consultants or staff, bring relevant groups under specific topics together to communicate face to face, and establish cooperation projects.

(4) AI query Assistant

In order to help users to gain a more clearly understanding of their needs, and assist them to find the precise information, this platform provides an AI query assistant. By continuously asking questions to the user, analyzing the answer, and narrowing the field, the assistant can obtain more comprehensive information on user's needs, and ultimately provides accurate information to the user.

1.3 Key factors

In order to make this platform to run efficiently, and to play a greater role, the following key factors should be taken into account:

(1) Member Registration

The platform is generally an information repository, collecting and receiving information about technology supply, technology demand, policy, research, etc. Data quality will directly affect the operation of the platform. So we have to ensure that the data submitted are in high quality. To achieve this goal, we should set different thresholds for users, confirm the qualifications of the users who apply for the authority to submit, by ensuring the quality of advanced users, to ensure the quality of data.

(2) External Resources

The online platform is considered as an online knowledge hub and an information-sharing platform. To achieve this purpose, in the actual implementation process, we should try to find other partners, extensively contact with other sites and platforms, and link with external specialized technology

market. If possible, for the use and integration of other existing sites' data and services, we can try to find a way to establish an STI platform operating mechanism that combines other online platforms and offline activities, and shares data and services.

1.4 Framework

In order to apply the designs above, this prototype uses the framework shown in the following figure:



Figure 1.1 Framework of the Prototype

2 Main Functional Requirements of the STI Online Platform Prototype

This section provides a main functional overview of the platform and prototypes of main pages, and interactive flows.

2.1 Homepage

Homepage is the portal of the STI online platform, including main entrances to all subpages. On the top, there are the main secondary portals of Database, Funding, Training, Resources, News & Events. A big banner area is designed to display latest contents needs to be highly recommended.

Five important tools of Knowledge Database, Interactive tools, Forums, Inter-agency working group, and Capability Building Programme are the listed as interactive tools. The Knowledge Database is a collection for users to query an learn the knowledge related with STI, the Interactive tools provide a lot of online functions for users to find the most matched solution, such as match-making function, forums are the place for people from all of the world to discuss and communicate, Inter-agency working groups are listed for easy orientation, and Capability Building Programme will listed latest

training or supporting plans for users who want to improve their technical capabilities.

Top news, new products of the platform, latest released reports, events, blogs and recommend friendly Links are as also displayed on the homepage.

The site map, contact information, policies and terms are listed at the bottom of this page.



Figure 2.1 Homepage

2.2 Database

Database is the core in this platform that is a collection of global technical solutions, patents and needs, where people can seek technologies or release your own projects, and the one they will be using for longer periods of time. So it needs to have an efficient search function to help users to find what they want, which supports key words searching, institutions searching, and categories searching.

Hotspot categories of STI are designed with labeled rectangle icons and displayed below the search box, such as water, energy, transport, and users can click each icon to go to some classification and browse details.

A map is designed to display all the provisions and requirements worldwide with a cluster, and you can also click the cluster to zoom in and query each item.

Provisions and requirements are also listed where users can browse and order by date, visits and names.

Browse topics



Map Provisions Requirements



Order by : Relevance

- A wireless sensing based method for wind turbine**
 Key Words: wireless ,wind turbine blades,monitoring
 Brief: Wind energy has been, and continues to be, a rapidlyof energy in the United States. Yet, wind turbines are underused throughout the due to the high co....
 Last updated: Aug.03.2017
 Submitted by: University of Massachusetts Lowell
- A wireless sensing based method for wind turbine**
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 Last updated: Aug.03.2017
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Figure 2.2 Database

If you input some keywords and click the search button, the results will be list on the page like the following screenshot. The records will be counted and can be filtered by some conditions, such as

provision or requirement, types, SDG fields, patent status, etc. Results can also be ordered by the date, name and relevance.

The screenshot shows a search results page with a blue header and a white main content area. At the top left is a logo. The header contains navigation links: Home, Database, Funding, Training, Resource, News & Event, and Sign in. A search bar is located in the top right of the header.

The main content area has a blue search bar with the text "Search technologies/projects/Training/Fundings...". Below the search bar, there are several filters on the left side:

- Filter by location:** A map showing 20 records in Europe, 15 in Asia, and 80 in North America.
- Provision & Requirement:** Provision(240), Requirement(49).
- Types:** Technology(200), Project(40), Fundings(10).
- SDG Fields:** SDG 1(10), SDG 2(20), SDG 3(3), +More.
- Patent Status:** Granted(200), In application(10).
- Collaboration Types:** Licence(200), For sales(40).
- Preferred region:** Middle east(20), +More...
- related searches:** Wind, Energy, Water, +More...

The main content area displays "1025 records found" and "Order by: Relevance". There is a button "I want to submit" and a user profile icon. The search results are listed in a table-like format with the following columns:

- Title:** A wireless sensing based method for wind turbine
- Key Words:** wireless ,wind turbine blades,monitoring
- Brief:** Wind energy has been, and continues to be, a rapidly of energy in the United States. Yet, wind turbines are underused throughout the due to the high co....
- Last updated:** Aug.03.2017
- Submitted by:** University of Massachusetts Lowell

 This structure is repeated for four identical records. At the bottom of the results, there is a pagination bar showing "1 2 3 ... 28 >".

At the bottom of the page, there are three columns of links:

- Site Map:** Accessibility, Privacy policy, Disclaimers, Viewers & Players, Site Feedback
- Contact Us:** Yellow pages, Rss Feeds, Information sharing and exchange, Matchmaking for technology transfer, Technology installation & implementation
- Assistance:** Financing, Data policy, Information sharing and exchange, Matchmaking for technology transfer, Technology installation & implementation

Figure 2.3 Search Result

2.3 Advanced Search Function

The advanced Search function is provided for users who want to query some solution precisely, and

you can combine some search conditions together, including provisions & requirements, categories, SDG fields, price range, released date and application areas.

- Provisions & requirements: With radio buttons of all, provisions and requirements.
- Category: it includes the followed first classifications:

A: Electronical Information Technology

B: Biology and New Medical Technology

C: Aeronautical and Space Technologies

D: New Material Technology

E: Hi Tech Service Industry and Public Utilities

F: New Energy and Energy Saving Technology

G: Resource and Environment Engineering Technology

H: Hi-end Equipment and Advanced Manufacturing

I: Chemistry and Chemical Engineering Technology

J: Modern Agriculture and Food Industry Technology

Others

- SDG fields: it includes 17 goals.
- Price range: to specify a price rang which user can accept.
- Date range: to specify a period when solutions released.
- Region: to specify a recommended areas for application the technologies, or to draw a rectangle to specify the areas.

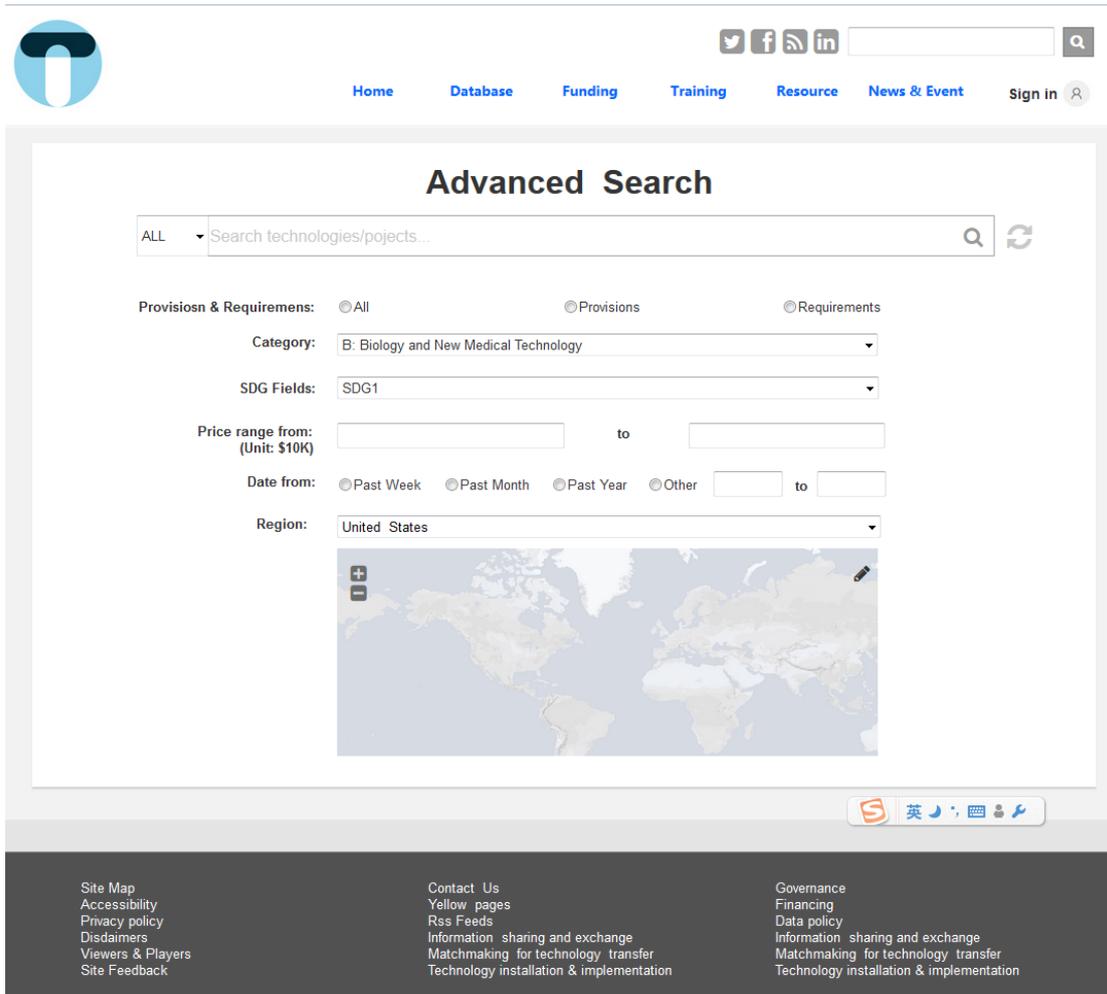


Figure 2.4 Advanced Search

2.4 Search Guidance

If you have no idea about the technology or the needs, a search guidance is provided with some simple questions to help you find what you need. Let us take the forest area monitoring technology as an example. You just need to click the icon of a headshot, and an interactive page will be pop-up.

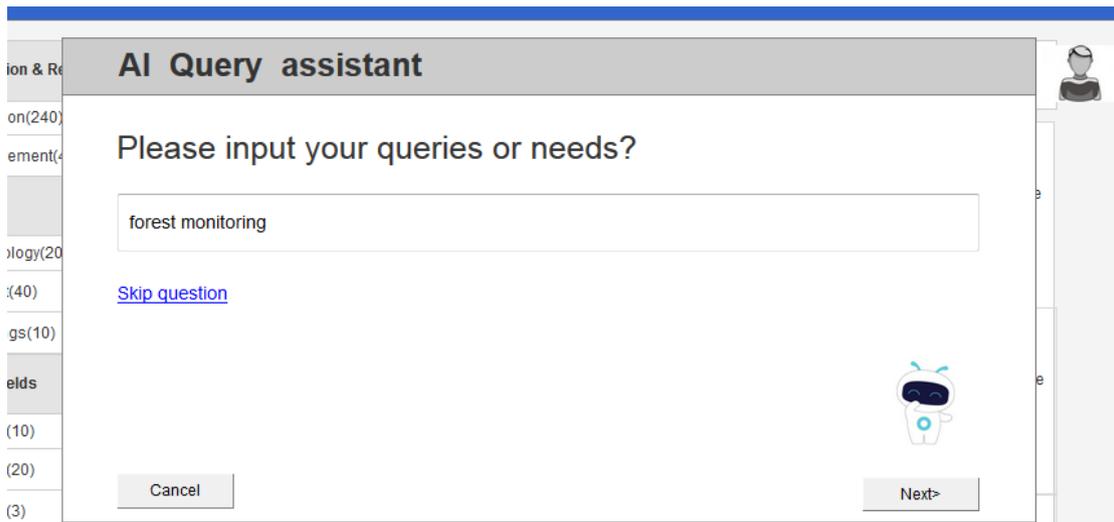


Figure 2.5 Assistant Portal

If you skip the input, a category of technologies will be listed for you to select, which is another interactive way to input keywords.

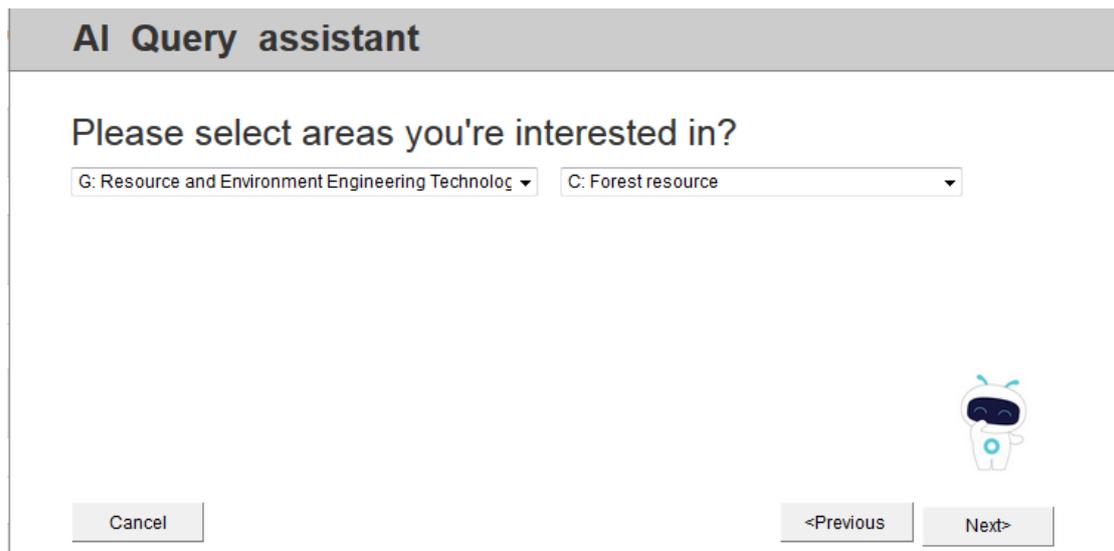


Figure 2.6 Category Selection

If you input “forest monitoring” and click next, some related recommendation will be listed for you to select.

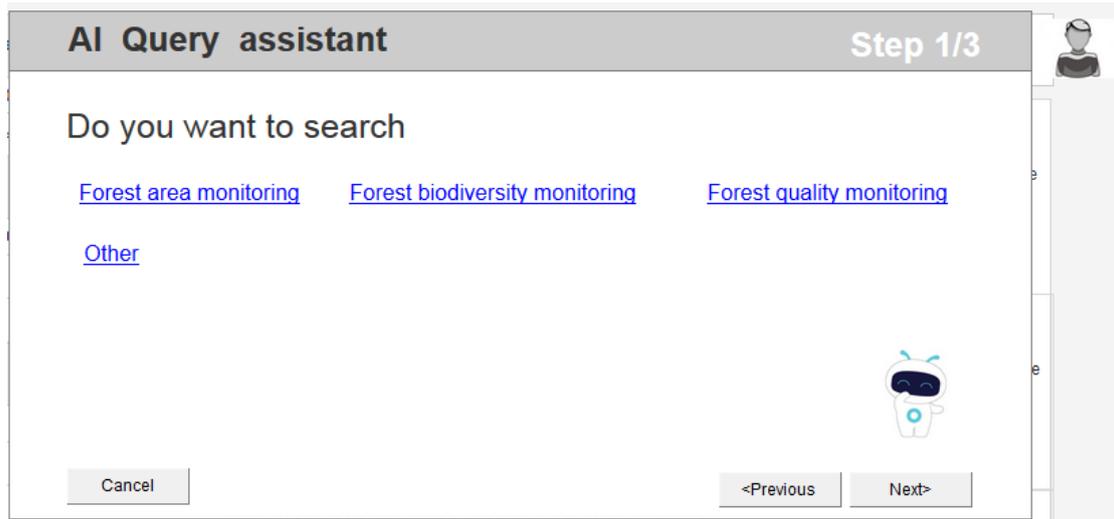


Figure 2.7 Keywords selection

Choose forest area monitoring and click next, some related technologies will be recommended. You can select only one technology or more.

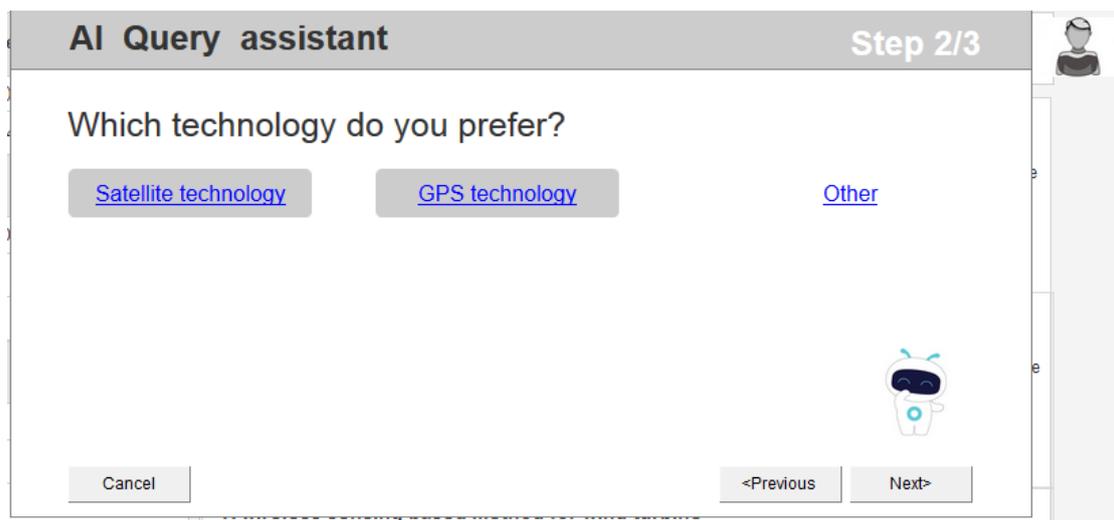


Figure 2.8 The technology selection

If you select some technology and go to the next step, another question will appear to ask whether you have data.

AI Query assistant Step 3/3

Do you already have data?

Yes
 No



Figure 2.9 Data situation

If you choose Yes and the result of this search guidance will be finished, and the search result will be listed which is the same as searching with keywords directly.

The screenshot shows a search results page for the query "forest area monitoring". The page features a navigation menu at the top with links for Home, Database, Funding, Training, Resource, News & Event, and Sign in. A search bar at the top right contains the query and an "Advanced Search" link. On the left, a "Filter by location" sidebar includes a world map and various filter categories: Provision & Requirement (3), Types (Technology(3)), SDG Fields (SDG 1(1), SDG 2(2)), Patent Status (Granted(2), In application(1)), Collaboration Types (Licence(2), For sales(1)), and Preferred region (Asia(3)). The main content area displays "3 records found" and lists three identical entries for "A wireless sensing based method for wind turbine". Each entry includes key words, a brief description, the last updated date (Aug.03.2017), and the submitter (University of Massachusetts Lowell). The bottom of the page contains a footer with site map, contact us, and governance information.

Figure 2.10 Search Result

2.5 Technology Submission

Although we can create the initial database by corporation with other existing platforms at the beginning, it is very important to provide the portal for users to submit projects by themselves, because this is more convenient to manage their own projects.

The technology submission page includes 8 parts of needed information: General information, Brief information, Technology features, Development status, Conditions for use, Intellectual property, the publisher and contact person.

- General information is consist of Name of the project, Key Words, Category, SDG Fields and patent status.
- Brief information includes Background, Technology Description and Applications.
- Technology features are provided to help users understand the characteristics of the technology and what they can benefit from it, which include two inputs of Benefits and technology website.
- Development status is to describe the stage of development and the application situations, which includes stage of development and project summary.
- Conditions for use is to describe how can apply the technology, which contains Collaboration Type, Preferred region and the price.
- Intellectual property is the key of each technology, especially for the technology with one or more intellectual properties. Each intellectual property is consist of patent name, patent type, patent number, issued office, application date, issued date, and Patent/Know-how information.
- Publisher is the information about who provide the technology, including agency name, introduction, county, address, email, website, etc.
- Contact person is provided to let someone who is interested in the technology can contact the provider if necessary.



Technology submission

General information

Name:

Category:

SDG Fields:

Key Words:

Patent Status: Granted In application Unpatented

Brief information

Background:

Technology Description:

Applications:

Technology Features

Benefits:

Technology Website:

Development Status

Stage of development:

Project Summary:

Conditions for use:

Collaboration Type:

Preferred region:

Intentional price:

Intellectual property: [+Add New Patent](#)

Patent Name:

Patent Type:

Patent number:

Office:

Application Date:

Issued date:

Patent/Know-how information:

Publisher

Agency:

Introduction:

Country: City:

Address:

Zip Code: Phone:

Website: Email:

Contact Person

First Name: Last Name:

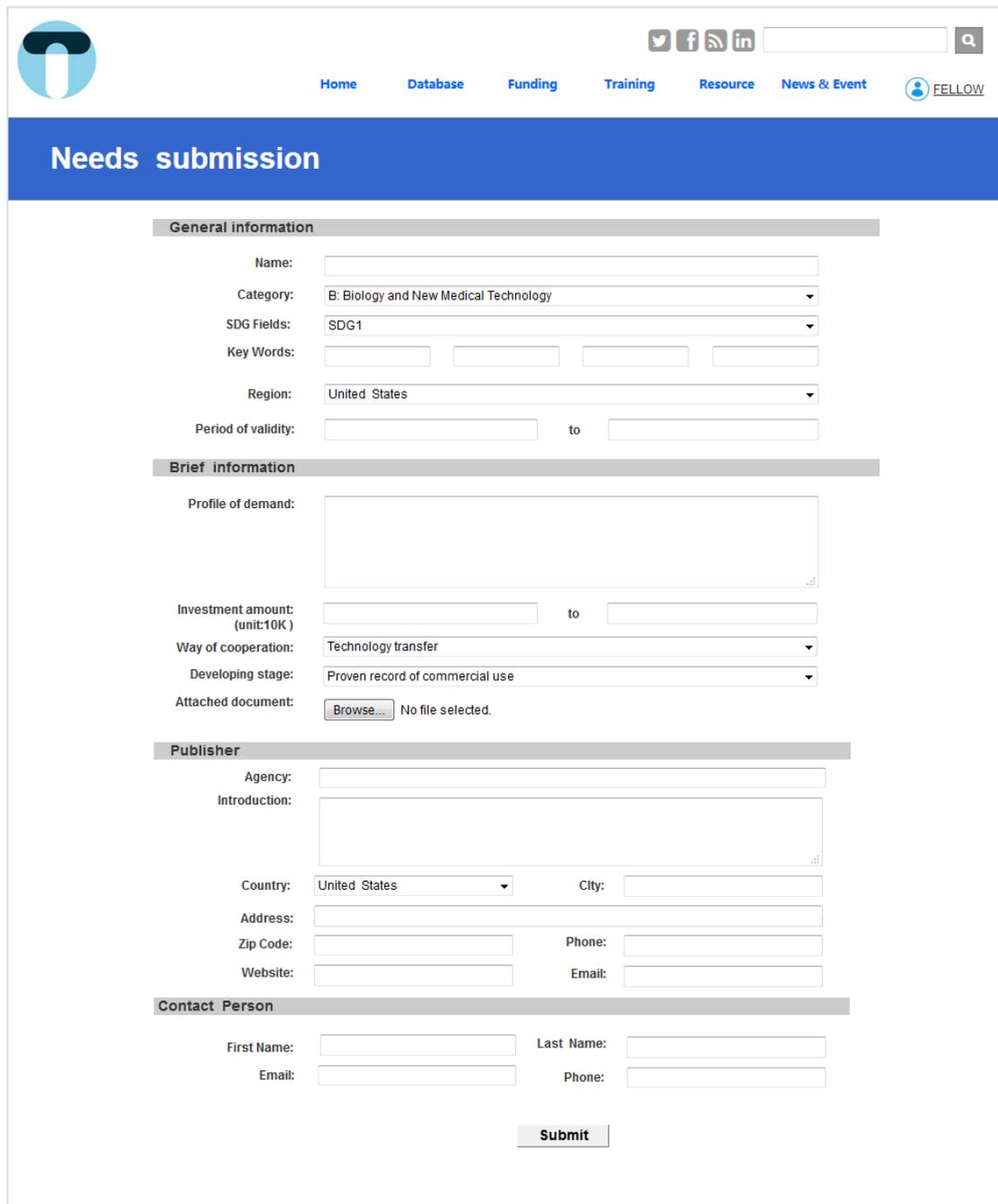
Email: Phone:

Figure 2.11 Technology Submission

2.6 Needs Submission

The Needs submission page is provided to submit needs and is similar to the technology submission page on the main contents, including 4 main parts of General information, Brief information, the publisher and contact person.

- General information is consist of Name of the project, Key Words, Category, SDG Fields, application areas and the period of validity.
- Brief information includes the field of Profile of demand, Investment amount, Way of cooperation, Developing stage and attached files if available.
- Publisher is the information about who makes the request, including agency name, introduction, county, address, email, website, etc.
- Contact person is provided to let someone who is interested in the need can contact the presenter if necessary.



The image shows a web-based form for submitting needs. At the top, there is a logo on the left and a navigation menu with links for Home, Database, Funding, Training, Resource, and News & Event. A search bar and a user profile icon labeled 'FELLOW' are also present. The main heading is 'Needs submission'. The form is divided into four sections: 'General information', 'Brief information', 'Publisher', and 'Contact Person'. Each section contains various input fields, dropdown menus, and a 'Submit' button at the bottom.

General information

Name:

Category:

SDG Fields:

Key Words:

Region:

Period of validity: to

Brief information

Profile of demand:

Investment amount (unit:10K): to

Way of cooperation:

Developing stage:

Attached document: No file selected.

Publisher

Agency:

Introduction:

Country: City:

Address:

Zip Code: Phone:

Website: Email:

Contact Person

First Name: Last Name:

Email: Phone:

Figure 2.12 Needs Submission

2.7 Funding

The page of funding is a collection of existing funds related with STI and SDGs provided by agencies all of the world.

Each funds including released date, title, description, who it is for and total amount. Users can click the title to browse the details.



Finding Sources of Funding

Green technology innovation requires access to finance, which can be a major challenge for inventors. International organizations, regional and national banks, governments and private organizations have increased their levels of financing available.

Browse our list of funding opportunities below to kick-start your search for funding.

[Funds submission](#)

Release Date	Title	Description	Who it's for	Total amount*
09/07/2017	South-South Global Assets and Technology Exchange (SS-Gate)	SS-Gate analyses its client's specific situation including project status, industry attributes and national policy and then selects the appropriate source of funding, using various financial instruments (relying on banks, investment institutions, government funding and other financing methods) in order to provide clients with a comprehensive financing services solution.	Policy makers Project planners	\$ 500M
12/04/2016	Korea Technology Finance Corporation (KOTEC)	SS-Gate analyses its client's specific situation including project status, industry attributes and national policy and then selects the appropriate source of funding, using various financial instruments (relying on banks, investment institutions, government funding and other financing methods) in order to provide clients with a comprehensive financing services solution.	Policy makers Project planners	\$ 200M
03/14/2015	EcoMachines Incubator	SS-Gate analyses its client's specific situation including project status, industry attributes and national policy and then selects the appropriate source of funding, using various financial instruments (relying on banks, investment institutions, government funding and other financing methods) in order to provide clients with a comprehensive financing services solution.	Policy makers Project planners	\$ 100M

Figure 2.13 Funding Page