



Regional Economic Models, Inc.

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Request for Proposal:
REMI Forecast Web Application Developer

Section 1: Summary

Regional Economic Models, Inc. of Amherst, Massachusetts, United States, is accepting proposals from offshore web application programming firms to assist this expanding software company with the development of a new web application. The purpose of this RFP is to provide a fair evaluation for all candidates and to provide the candidates with the evaluation criteria against which they will be judge.

Additional information about our company can be found by visiting our website at www.remi.com.

Section 2: Proposal Guidelines & Requirements

This is an open and competitive process.

Proposals must be received by **Wednesday, April 4th at 5:00PM, Eastern Standard Time**. Any proposal received after this date and time will not be considered for contract execution.

Prior to submitting the final response, any firm who wishes to submit a proposal to this RFP must contact REMI with an “intent to respond” by **Wednesday, March 21st at 5:00PM, Eastern Standard Time**. REMI provides the following contact information:

Hoksung Yau, Senior Analyst
433 West Street, Amherst, Massachusetts 01002
Phone: (413) 549-1169
Email: Hoksung.yau@remi.com

The proposal must contain the signature of a duly authorized officer or agent of the company submitting the proposal.

A detailed price quote should be included with this response and should contain the following information:

- Persons assigned to this project
- Proposed hours of labor for each individual
- Rates per hour
- Any additional fees or charges (if applicable)

If the execution of work to be performed requires the hiring of sub-contractors, this must clearly be stated in the proposal. Sub-contractors must be identified, their address given, and the work they will perform must be identified. REMI will not refuse a proposal based upon the use of sub-contractors.

Section 3: Contract Terms

REMI will negotiate contract terms upon selection of the best fit candidate. All contracts are subject to review by REMI legal counsel and the qualified applicant will be awarded upon signing of an agreement or contract, which will outline terms, scope, budget, and any other necessary provisions.

Section 4: Purpose & Data Description

4.1 Purpose

Founded in 1980, REMI is the sole provider of PI+, the world's leading economic-forecasting and policy-analysis model and TranSight, a tool for evaluating the total economic effects of transportation improvements.

Currently, all of our products are desktop based. Our models predict future economic data, such as GDP, population, income, etc., for desktop users who purchase the rights to use the model. The purpose of this project is to build a modern web application to publish our economic forecast data online for worldwide non-client users. This web application will be most effective for users in that it should be:

- Easy and intuitive
- Aesthetically pleasing
- Informative
- Safe and secure
- Quick and easy to load and operate

4.2 Data Description

4.2.1 Concepts

Unlike the desktop based software, the web application will not support real-time forecasting. The online forecast data will be static and only update once a month or year. Forecasts may contain multiple elements including the following:

- Geographic Regions (i.e. states, cities, etc)
- Codes (economic or demographic)
 - Each code represents a category of data forecasts. For example, 'OD' means Employment by Occupation, which represents industry Employment that has been distributed to occupations based on a national occupation-by-industry matrix.
 - The level of granularity which determines the level of detail available for each code is called "forecast resolution"
 - Each code implies the unit of measurement such as currency.
- Resolution
 - For economic forecast data, there are three standard existing resolutions: low, medium and high. In the case of the subcategory resolutions used in most economic codes, this translates to granularities of 19, 66 and 165 subcategories, respectively.
 - Each code may have a different standard grouping of items used in their resolutions.
 - Demographic codes are subcategorized by a combination of variables, age, gender and race. These sub-categorizations are represented as a numeric index.
- Years
 - Our forecast timeframe is 70 contiguous years (1990-2060)
- Data Value
 - Positive or negative decimal value to varying degrees of precision

- o Most of the data types are floating

4.2.2 Data Dimensions

The data consists of large multi-dimensional arrays and a single query will often require retrieval of thousands of values (e.g., an employment chart with 66 industries over 70 years contains 4,620 values.). A complete forecast with all concepts will be on the order of a billion values, which means the entire data storage size could be huge. The data dimension details are shown in the table below:

Geography	Periods	Time	Categories/Detail	Type	Options	Display
States	History	Single Year	Economic	Units	Levels	Tables
Counties	Baseline Forecast	Range of Years	i.e. Employment	Currency	Differences	Charts
Metro Areas	Alternative Forecasts	Every X Year	aggregate		Percent Change	Pyramids
Major Regions	Scenarios		by major industry		Growth Rate	Maps
Congressional Districts			by detailed industry			Export
			by major occupation			
			by detailed occupation			
			Demographic			
			i.e. Population			
			by gender			
			by race/ethnicity			
			by age cohort			
Maximum: 4000	Maximum: 20 ?	Maximum: 100	Maximum: 10000	Maximum: 10	Maximum: 4	

Section 5: Project Requirements

This section of the RFP outlines the specific services being solicited (“Scope of Work”) to offshore web application design firms. The scope of work will give Project applicants a clearer view of REMI’s vision for our user friendly web program and outline the specific technological requirements we need to be fulfilled by the most qualified candidate.

5.1 Web Application Required Features

Users will be asked for a user name and password upon initial attempt to access the application. The user information system should include the following parts:

1. User Information Database including basic information such as name, email address, type, status, etc. User types include anonymous, authenticated, paid and administrative. These different user types will have different privilege levels to access the data. The administrative user should be able to manage the user accounts (Add/Modify/Delete Users). Users register by submitting a form online and the user type is determined by whether or not they chose to pay. To prevent automated registration, a random image examination process should be applied.
2. Login/logout Process. User’s password must be encrypted with md5. Access should be denied if a user requests the paid-to-access data by unpaid users. Users should be active during a session and if there is no activity within a specific period of time (e.g. 60 minutes), the session will be ended and the user logged out. A process of “forgot username or password” should also be implemented.
3. Commerce: Users will be asked to contact salesmen for payment details. When the payment is confirmed, users’ accounts will be manually updated to “paid” in the database.
4. Other security issues may be considered later.

5.1.1 Forecast Data Storage

The primary challenge in this web application project is to deliver large volumes of data to our users in a real-time manner. The forecast data is therefore required to be stored and managed properly as to minimize data transfer time. REMI proposes two approaches to this challenge below, and encourages applying firms to propose alternative solutions. The approaches are as follows:

Approach 1

The data can be stored in a relational database (MySQL/InnoDB or PostgreSQL). Server performs query requests, and prepares the data for remote client users. The data access time may be long in the event that the volume of the data request is large. The advantage is more flexibility in data query.

Approach 2

The data can be pre-rendered into small JavaScript native units (JSON). All data required for visualization will be prepared and available on a file system ready for the user to download. This approach could be faster than approach 1, but the disadvantage is an increase in search difficulty when a user has a complex data query.

In either approach above, we will consider deploying AJAX to retrieve data from the server asynchronously.

Our raw data will be generated in comma separated value (CSV) format by using desktop software. Once the online data store format is decided, an internal tool needs to be developed to automatically read and verify the data in CSV files, and then convert it to the required format.

5.1.2 Graphic User Interface

It is an imperative requirement that this web application be user friendly. Therefore, an interactive map of the United States with state and county boundaries is the most necessary required feature. Users will need to be able to see the results of their query by clicking on a region of interest. An example can be found at <http://geofred.stlouisfed.org/>. For our application, the following products may be included, but not limited to:

- Google Chart - Map
- ESRI – ArcGIS
- Map Server
- OpenLayers

The map should be interactive, and have the following functions:

- Direction Move (North, East, West, South)
- Zoom In/Zoom Out
- Drag to move
- Display boundary upon user's choice, either county or state
- Display different color on regions based on data ranges

5.1.3 Web Functionality

In addition to the application, the web site should also contain the following functions, tasks or pages:

- Main web page layout design

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- Dialog indicating to users what data display options are available to them. These options include state, industry, demographic codes, etc. When a user clicks on the map, the data will reflect the field options that they chose in the form of a table or chart
- Data display in chart
- Data display in regular table
- Data display in a pivot table in order to aggregate, compare, calculate growth rate, etc.
- Data download: Users will be allowed to export or download the data table/chart/pivot table in CSV or PDF format
- Location search: User can define state/county/zip code and see the result
- Print or save picture
- Help/FAQ page
- User feedback page
- My Profile: Contents will include user information
- User Favorites: Contents will include region, industry, variables, etc.
- Simple data analysis tool: e.g. ability to sort the regions by population

www.bea.gov (regional state and local personal income data), and www.census.gov (the American FactFinder) are two examples for comparison reference.

5.2 Techniques/Tools Requirement

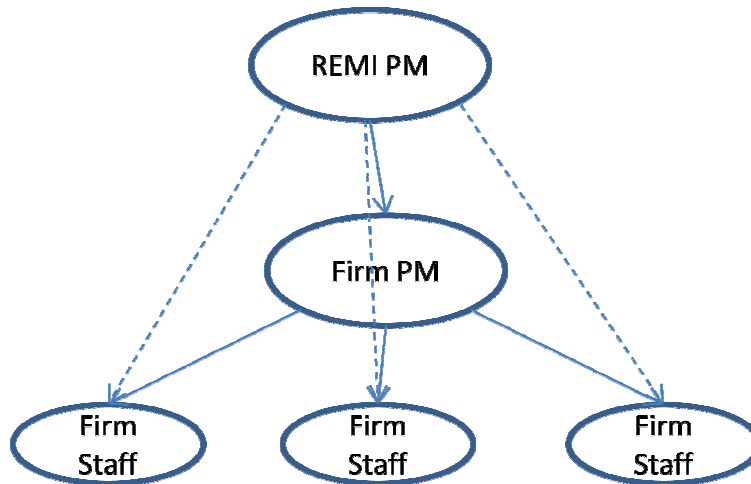
We prefer to use LAMP, JQuery, Durpal/Wordpress in this project. If you think other techniques or tools might be a better fit for this project, please state your reasoning in the proposal.

5.3 Project Management Requirements

5.3.1 Staff & Communication

For this project, REMI is requiring a team of highly qualified staff member's solely dedicated to this project. These team members will work closely with REMI staff throughout project duration and therefore will also be requiring easy and ongoing communication such that we can contact developers and project leaders during their and our coinciding work hours. We will request that team members from the qualified firm be available to us via phone, email and/or Skype during the hours that REMI's and the outsourced firm's work hours overlap.

We prefer an organization of which the firm's project manager supervises the firm staffs, and reports to the REMI project manager. The REMI project manager should be allowed complete access to the firm's terminal staff members. The ideal management structure is shown below:



We would like to hold brief meetings everyday between REMI project managers and the firm's project manager to track the progress of work done the day before and to create a plan of action for work to be done on the day of. Weekly meetings with the entire team may be conducted as needed as well.

5.3.2 Source Code & Development Environments

REMI should have full ownership to all work related to this project. All source code and other work shall be delivered to REMI project manager during the course of the project. REMI project manager should have the source code documented explained to his satisfaction. Documentation should occur in tandem with development.

The outsource firm can have their own development environments, but we prefer a main version control server such as SVN located in our office of which the outsource firm will have access to. The firm staff members may then upload their completed code to the server via version control tool.

We may request offshore visits upon project progress as needed.

5.3.3 Planning and Design Phase

REMI staff will interact closely with outsource firm staff members during the planning and design phase. We expect the design process to be collaborative with prototype designs presented and structured to REMI satisfaction. REMI reserves the right to cancel the firm contracted if we are not satisfied with the work in the design phase.

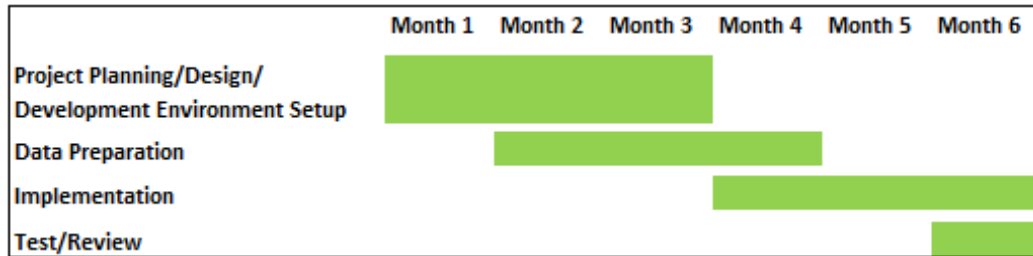
5.3.4 Maintenance

Although the first phase is expected to be complete within 6 months, this forecast web application could be a long term project. After the first phase is delivered, the outsource firm is expected to continue maintaining the web site, and be responsible for any technical questions. We may request training to REMI employees if necessary.

Section 6: Qualifications & Experience

Applicants will be evaluated based upon their understanding of the full scope of work as its stated in this RFP, experience with similar projects and qualifications in performing the same or substantially comparable services. REMI requires the following documentation to be submitted with this response:

- A list of five (5) web sites your firm has produced that best reflect your work and relevancy to this project. Briefly list the role your firm played in each project. The URL should be submitted. Only sites that are live will qualify during evaluation.
- Current reference information for three former or current clients
- Briefly describe your firm's organizational capacity to produce our web site (e.g. staff, equipment, software, physical space, office location, etc.)
- A list of full-time staff your firm employs. Please include a copy of your firm's organizational chart.
- An accurate, realistic time frame for completion that will be part of the eventual contractual agreement. Our estimated timeline for this project is shown below:



*Applicants should propose their own timeframe and schedule of tables.

- Resumes of persons who will be assigned to work on the final Project.
- Working schedule: We are requiring that the proposed work schedule includes at least 3 hours of overlap time with our U.S. office schedule (9am-5pm EST) in every weekday.

Section 7: Proposal Format

Please use the following as a guideline to format your proposal:

Length and Font Size:

Please use fonts no smaller than 10 point. Maximum proposal length including title page, cover letter, proposal, qualifications and budget should not exceed 30 pages (not including Attachments).

Cover Letter:

Signed by the person or persons authorized to sign on behalf of the company.

Proposal:

Discuss your proposed solution, including approach, features, benefits and uniqueness of your solution. You should also address your ability to deliver the project in the timeframe discussed in Section 6 of this RFP.

Qualifications & Experience:

Provide the information requested in Section 6 of this RFP.

This section should also contain the names and qualifications of staff members that will specifically dedicated to this project. If less than full time, please specify hours. REMI also requires an outline of your firm's management structure as we will be working with a project manager directly.

Budget and Fees:

List budgets as requested in Section 2 of this RFP. Identify staff you anticipate working on the project, hourly rates and work to be performed.

Attachments:

Resumes of staff members to be assigned to this Project are to be submitted as attachments. This section may also be used to submit any documents or information you feel is necessary in promoting the qualifications of your firm.