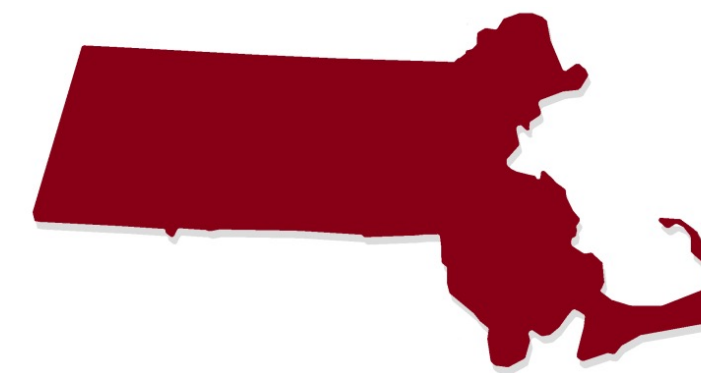


MOTIVATION

Data that impacts Massachusetts' economic health

- The Massachusetts Technology, Talent, and Economic Reporting System (MATTERS) incorporates data from across many diverse online sources into one platform for extraction, exploration, and visualization
- Metric Builder tool provides users with the ability to use pre-existing metrics in the system as a part of their own economic indicators
- Access to rich collection of data and tools for exploration helps business leaders and policy makers evaluate the competitive position of Massachusetts among top technology states in the nation



DATA EXPLORATION

States	2012		
	State Technology and Science Index	Top States for Business	State Business Tax Climate Index
CO - Colorado	4	8	17
MA - Massachusetts	1	28	20
PA - Pennsylvania	11	30	21
TX - Texas	19	1	9
NY - New York	13	24	10
CT - Connecticut	9	27	11
MD - Maryland	2	29	12
VA - Virginia	6	25	13
WA - Washington	5	26	14
MN - Minnesota	12	23	15
UT - Utah	7	22	16
NJ - New Jersey	15	21	18
CA - California	3	20	19
OH - Ohio	28	19	20
IL - Illinois	18	18	21

```

[ ] JSON
  [ ] 0
    [ ] state : "Alabama"
      [ ] metrics
        [ ] 0
          [ ] MetricName : "Total Tech Employment"
            [ ] Data
              [ ] 0
                [ ] Year : 1990
                  [ ] Value : 149058
                [ ] 1
                  [ ] Year : 1995
                    [ ] Value : 165096
  
```

Outputting data extracted via the MATTERS API

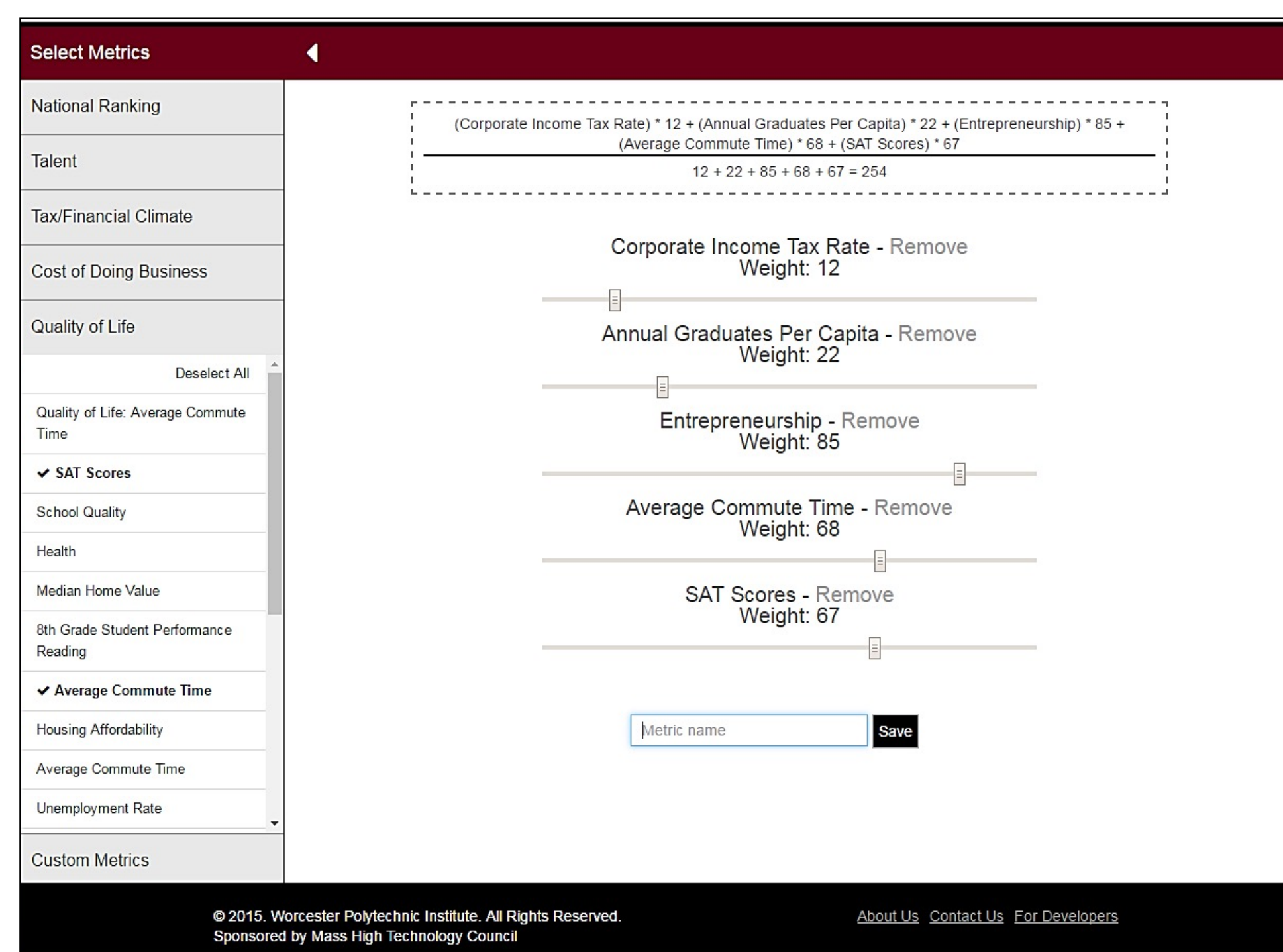
PUBLIC FACING API

Access to high fidelity data resource

- Application Program Interface (API) - code that allows two software programs to communicate with each other
- Allows other software systems to make use of MATTERS data and analytics
- API controller returns states and metrics information, as well as data for requested metrics, states and years.
- End users are programmers – they can easily use MATTERS data in their software

CUSTOMIZED METRIC BUILDER

- Create custom indices using pre-existing metrics
- Assign weights to components and normalize
- Edit or delete your metric
- Save your metric
- Visualize your custom metric seamlessly



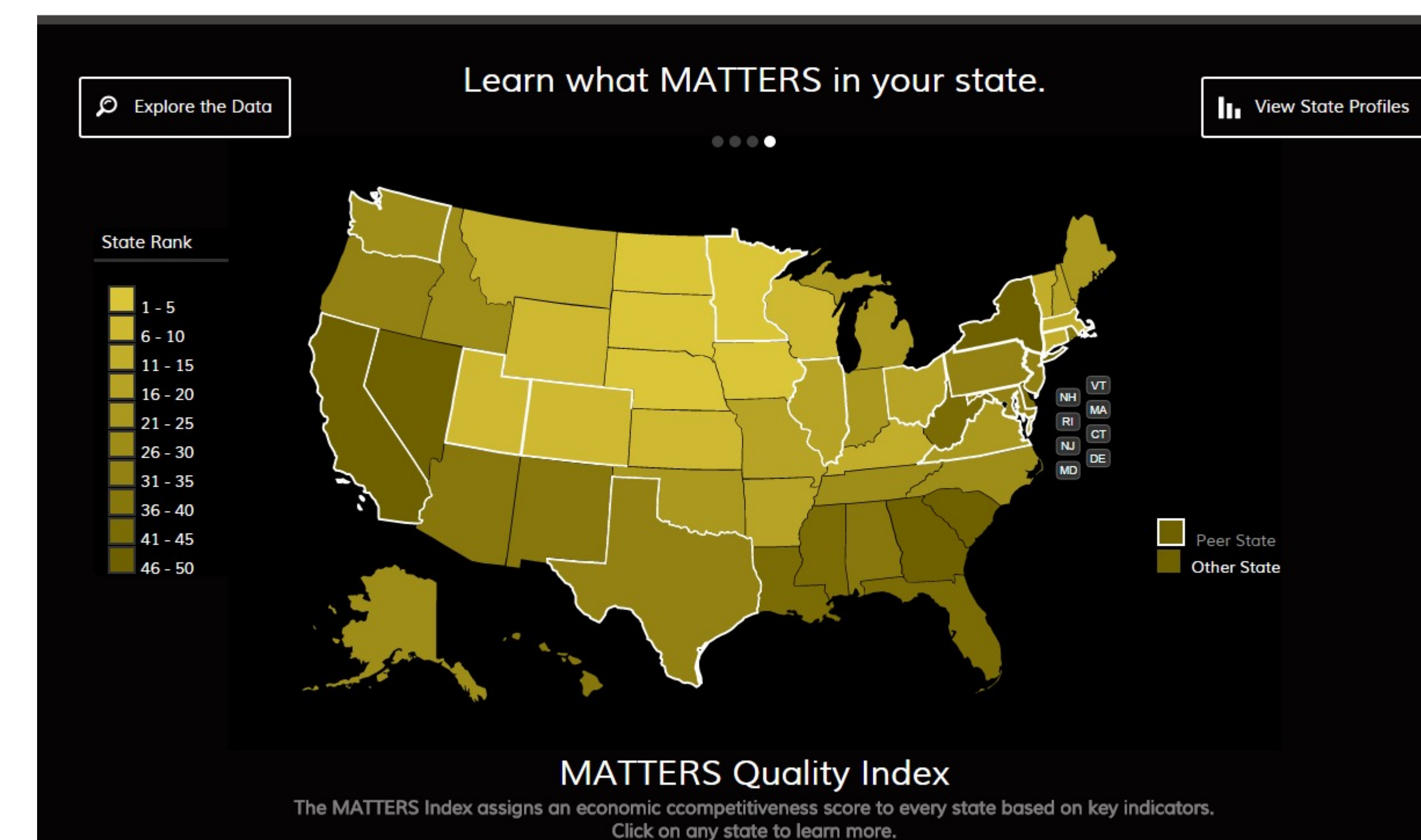
EVALUATION

Metric Builder and API Documentation User Studies

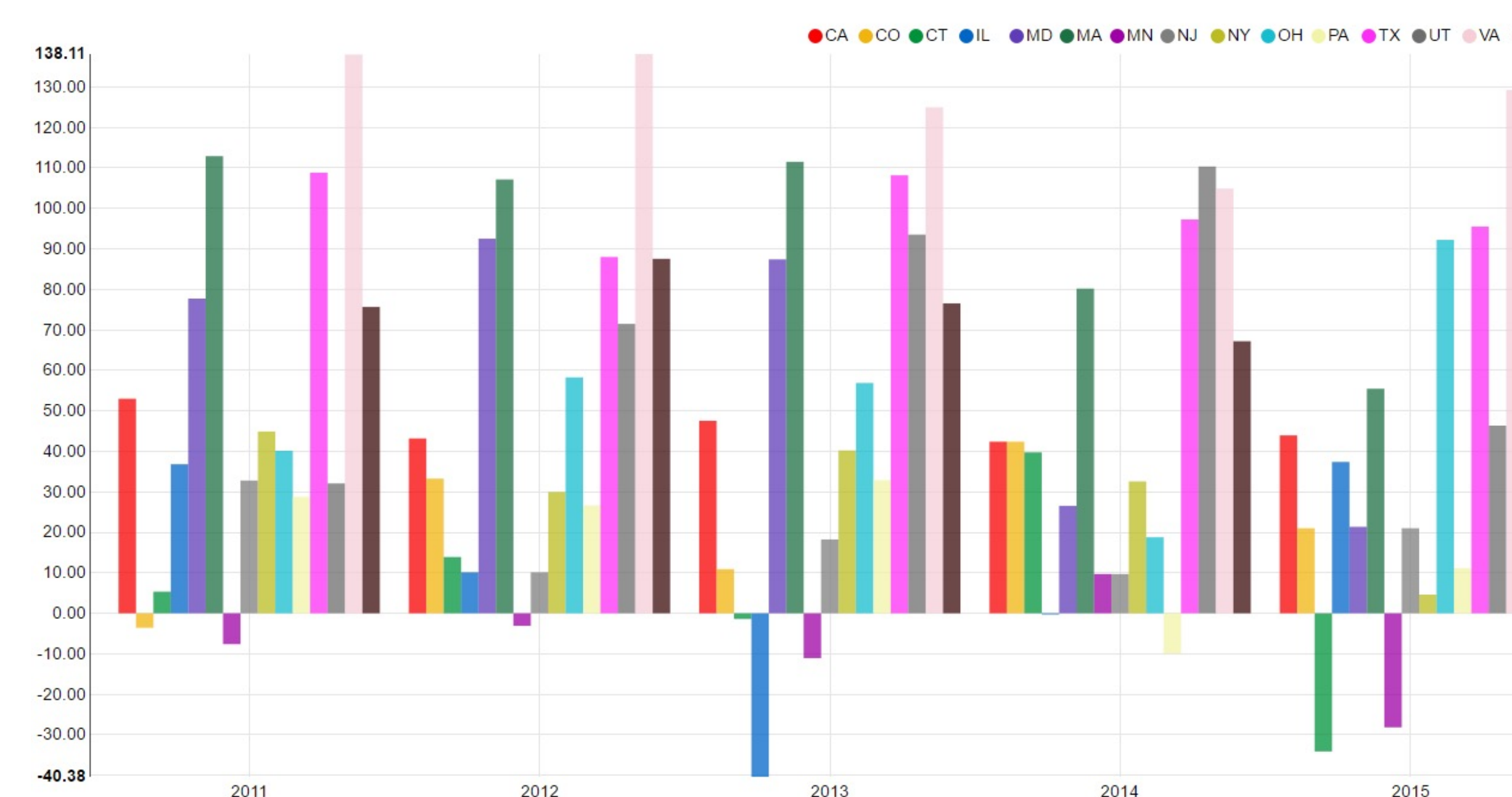
- 14 WPI students took part in a user study to test both the Metric Builder and API Documentation
- Students rated the ease of use of both features through a survey and provided additional feedback

Results:

- Overall, found to be very intuitive
- API Documentation link was put in an easier to locate place at the footer
- Edit feature of custom metric made easier to find from Explorer page

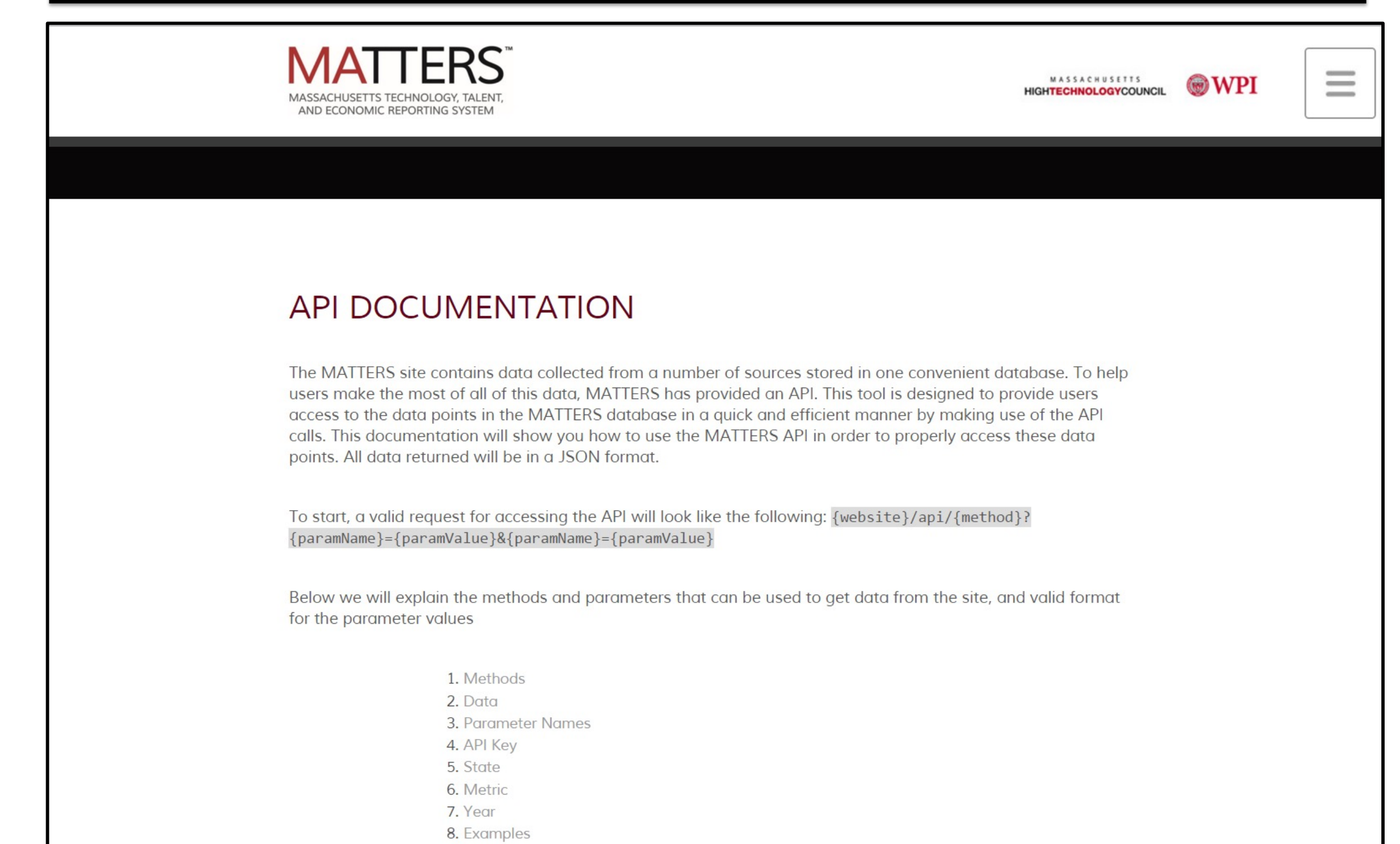


MATTERS custom quality index displayed on home page



Visualizing custom made metrics in the MATTERS Data Explorer

API DOCUMENTATION



IMPACT & ACKNOWLEDGEMENTS

Impact:

- MATTERS usability extended key features to be deployed to public domain as MATTERS 2.0

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- Professor Elke Rundensteiner for her guidance throughout project
- Caitlin Kuhlman PhD student from WPI for her assistance on all aspects of the project