RentRocket.org: Final Report

RentRocket has been a challenging project. The concept rests on access to large amounts of data, and on the hypothesis that renters (especially student renters), with access to this data, will make better housing decisions.

Here is what we know:
- The split incentive problem that governs the renter/landlord dynamic has confounded cities across the country. Various initiatives have focused on altering or bypassing this dynamic, but to date these initiatives have had limited effect.
- The RentRocket concept generates excitement. A great many people and organizations have attempted to increase the availability of data as a means of addressing the split incentive problem, including the winner of the Chicago hackathon, for-profit ventures like EnerScore, and not-for-profit initiatives led by the Center for Neighborhood Technology.
- The logistics of actually implementing RentRocket are complicated. Gaining access to reliable energy data was always expected to be a challenge. However, since project partners have spent so much time focusing on energy data (critical to proving the viability of the RentRocket concept), incorporation of basic rental amenity data has also lagged. City-held rental data has also been difficult to access in some cases.
- Better rental data remains critical to improved rental performance. RentRocket may or may not be the long-term vehicle for addressing this gap, but in any case creates the basis for discussions with universities, real estate websites, non-profit partners, and others about how to make rental housing more sustainable.

Project Background

Cities across the country, particularly college communities, face challenges in meeting energy, climate change, and general sustainability goals because of a split incentive problem and a data deficit regarding rental housing.

Renters pay utility bills, but lack the knowledge or ability to make major efficiency investments in properties they do not own. Landlords could invest in the energy efficiency of their properties but often lack an incentive to make them because they do not pay the utility bills. If landlords paid the utility bills, renters would lack any incentive to change their behavior. This is the *split incentive problem*.

The *data deficit* refers to renters' lack information about and/or interest in utility bills, recycling availability, and access to active transportation when they search for housing. Landlords lack

information about energy and resource consumption at their properties because utility bills are usually in the tenant's name.

The end result is that landlords fail to perceive sustainability investments as a need because renters fail to consider or articulate them as an important factor in housing decisions. We hope to address this issue by improving the information and tools available to both the renter and the landlord.

A survey conducted of Indiana University students in 2012 indicated that a large proportion of students desire a comprehensive housing tool.

To satisfy both the general desire by students for better housing information, and the cities' desire to make sustainability information more accessible to both renters and landlords, a group of primarily college towns began working together to develop a prototype rental housing website called RentRocket. The website aims to:
  (1) help renters consider sustainability factors (such as utility costs, energy efficiency and access to transit and recycling facilities) alongside other factors (such as rent, number of baths, and access to laundry facilities) when making housing decisions, and
  (2) help landlords both grasp the value of sustainability investments as a marketable asset and share their sustainability achievements.

A grant was received in early 2013 from the Urban Sustainability Directors Network (USDN) to support the creation of a prototype of this website, and 14 total cities signed on as partners. A second round of funding was received in 2014 to fully develop the website in four focus cities.

Outcomes

The project has exceeded expectations in some ways, and fallen short in others. Nevertheless, the Phase 1 and Phase 2 funding received from the Innovation Fund has put us in a good position to continue the development of the site in the future. By creating a proof of concept that anyone can see and use, it is now easier to communicate the goals and challenges of the project. This is a useful point of reference for future discussions and developments on this topic.

During Phase 2, we accomplished the following:
  • Created a largely functional website and platform for communities to begin gathering and sharing data. While certain functionality was not developed due to the challenges outlined below, we were unexpectedly able to incorporate EnerScore, a newly developed energy cost rating system based on widely available property data.
  • Explored numerous means of gathering difficult-to-obtain energy data, refining strategies as we went along. Strategies included:
    o Working with landlords (several large landlords shared bulk amenity data for all of their properties),
    o Tabling and outreach to student renters,
    o Scraping data from other websites (the import of electric and water usage data from Columbia, MO rentals will continue after the end of the grant)

o Blast texting to gather more detailed data from willing renters, among other things.
More details on crowdsourcing efforts are available in the Crowdsourcing Plan (Appendix A).
- Continued the dialogue about the need for better data – despite all the difficulties in pulling the info together, interest in the outcome remains high.
- Explored next steps for the project with the Association for the Advancement of Sustainability in Higher Education (AASHE), the Center for Neighborhood Technology, Indiana University, and EnerScore (a start-up focused on developing estimated energy costs based on property data).

We've confirmed that this project has a lot of potential, but there are still many tasks left to do.

Next Steps

RentRocket will continue to be an active project for the City of Bloomington, including a dedicated intern, partner meetings, and other ongoing work.

Long-term project goals:
- Shift priorities among student renters to increase focus on broader sustainability impacts of housing decisions by sharing information on utility and transportation costs, recycling availability, and other factors.
- Shift landlord investment in rental properties by sharing performance data publicly and increasing student renter demand for quality sustainable housing.
- Increase university attention to off-campus housing, including the impact of that housing on university sustainability and other goals. Create a culture of sharing responsibility for off-campus housing with the surrounding community.
- Continue building additional partnerships, including a potential expanded partnership with EnerScore.
- Create a framework (including organizational structure) for ongoing development of RentRocket.org as a means for sharing the information that will facilitate the above goals.
- Evaluate the long-term impacts of better data on renter behavior. Once the database is further developed and the website more functional, working with university and other partners to evaluate the impacts (including a follow-up survey to the one completed in 2012) will be a major priority.

Short-term:
- If all proceeds as planned, the New England project will continue development work and expand the site to incorporate additional cities.
- Formalize the RentRocket.org organizational structure, probably as a 501c3, as a way to facilitate long-term partnerships and development. This will facilitate discussions with possible partners, enable us to apply for grants, etc. Bloomington staff will pursue this in 2016.
- Identify university partners willing to work together around developing better off-campus housing information in order to meet financial education, sustainability, community development, and other goals.

- Work with the American Association for Sustainability in Higher Education (AASHE) and others to increase dialogue around "owning" off-campus impacts as a standard practice for universities.
- Identify classes, student groups, faculty, and departments able to work on the project, including marketing, impact analysis, technical development, data analysis, data gathering, etc. (ideally in collaboration with a group of university partners).
- Work with landlords to share their information on the site and increase the value of the database as a "go-to" location for rental information.
- Explore funding and other resources to support the project, including outside grants, university support, member community subscriptions, premium services, etc.

Two areas in particular warrant more detailed explanation: organization development and website development.

Organization Development and Ongoing Support
Taking this project to the next level will eventually require a small core team of people working on the project full time. Ideally this will involve at least one person dedicated to the management and operations of the project and another person dedicated to the technical implementation of the project.

Over the course of this project we have discussed and explored many possible routes for sustaining a small team, but none of them are clearly better than the others. It may be possible to combine some of these options, and these options generally do not depend on the classification of the organization (non-profit, corporate, etc). However, based on a number of discussions we plan to explore incorporating as a non-profit in order to maximize the potential for both grant funding and cross-sector partnerships.

Other potential sources of funding and support are outlined below.

Municipal Funding
In this scenario, the cities participating in the service would pay an annual maintenance fee. The amount required would depend on the size of the team and the number of participating cities. The benefit of this approach is that the annual cost could be minimized as the service grows and adds new cities. This also provides one of the steadiest forms of income for the project. The downside is that bringing a new city on to the service requires considerable effort, so much of the work is upfront. However, this is the case no matter which route is chosen.

Data Subscriptions
Other sites that contain apartment rental information (e.g. Zillow, Trulia, Apartments.com) may pay a subscription fee in order to access RentRocket's utility data or some distilled score, similar to a Walkscore. This would require a more robust data set before serious interest would be possible.

Advertising Support
In this scenario, ads shown on the site would generate revenue. This requires a large amount of traffic, and has the potential to deter users from using the service.

Premium Listing Fees
Landlords interested in showcasing their properties could pay a fee for that service. To make the service useful for renters, a fee should not be required for a basic listing; renters will only look at the service if the data is comprehensive. This also requires a fairly large established user base to justify the cost to landlords.

Grants / Fundraising
Similar to how the project was initially funded, it may be possible to find additional grant sources or funding to support the project. With additional site development, there may be potential to crowdfund RentRocket – similar to Wikipedia.

3rd-Party Adoption
If there is an existing organization with similar or related goals, they may be interested in adopting the RentRocket project and moving forward with the project's goals.

User Support
If there is enough perceived value in the service from the perspective of users, it may be possible to solicit support directly from them. This would most likely need to be in the form of a voluntary donation; mandatory subscription fees would deter access to the information and prevent the growth of the service.

Web Application Development
Most open issues related to the website are tracked on GitHub at: https://github.com/city-of-bloomington/rentrocket/issues

New comments and feature requests can be submitted directly to Github. Creating an account on Github is free and open to anyone, not just developers.

Open issues have been grouped by related tasks using "milestones" as a category system: https://github.com/City-of-Bloomington/rentrocket/milestones

These categories currently include:
- Data Import / Edit Utility Data
- Home Page
- Search / Map View
- User Account Features
- Server / Testing
- Building details page

Of the remaining tasks, these are the top 3 priorities:

- Implement search filter options
- Way to add a rental listing
- Apply building details layout to current site

Challenges/lessons learned

From the beginning, project partners anticipated that gathering the necessary data (particularly energy data) would be a challenge. However, the project experienced a number of unanticipated challenges as well.

1) City-owned data was often harder to access than anticipated, either because of format challenges, process questions, or staff resistance. This is reflected in the on-boarding process (see Appendix B).

2) Energy data was almost universally unavailable, whether investor- or municipality-owned. The one exception to this is the City of Columbia, MO, which owns its electric and water utilities and whose city council voted to release monthly cost data for all rental properties in the city. The process of importing this data (which is automated but slow) to the RentRocket.org website is time consuming, but will continue after the grant is complete. We hope to have this data available by the end of January.

3) Finding and retaining skilled developers with experience in Python and the other languages involved in the RentRocket site proved extremely challenging. A single developer worked on the project throughout Phase 1 and partway into Phase 2; however, once he stepped back from the project to take a full-time position, we were unable to get another developer to take his place. Between process delays in getting a contract approved for the new developer (based in Columbia, MO), and his limited availability, we were unable to achieve some of the basic functionality improvements we had hoped to in the course of Phase 2. Priority functionality includes:

    - Property search and filtering capabilities
    - Rental listing capabilities to indicate whether properties are currently available (including bulk-upload capabilities for landlords with multiple properties)
    - Integrating redesigned property details and new search filter designs into the site.

    As noted above, additional to-do items and/or desired improvements are tracked in GitHub.

4) We had to learn that websites are never finished – they are a constant work in progress. As we move forward, we will continue to track desired improvements while prioritizing those that are the most important.

All of that said, the project has been rewarding, educational, and an adventure in the barriers to sustainability in rental housing and beyond that we anticipate will inform the conversation on data accessibility and rental sustainability into the future.

APPENDIX A: Crowdsourcing plan and next steps

Over the course of the RentRocket.org project, crowdsourcing has emerged as a critical tool to fill in data gaps – particularly those that emerge because energy data is not widely available.

For the purposes of this effort, crowdsourcing is defined as follows (adapted from Merriam-Webster.com).

> The practice of obtaining needed ideas or content by soliciting contributions from a large group of people and especially from the online community rather than from traditional employees or suppliers.

Crowdsourcing can be very focused (e.g. asking one individual to share 2-3 basic pieces of information) or broad (asking a landlord to share basic amenity data for the properties they own), in-person (at a tabling event or class presentation) or online (through the homepage) depending on the context and audience.

Key lessons from crowdsourcing efforts
In our efforts to gather information from student tenants, we learned a number of things.
1) Potential sharers of data need to be able to decide whether they are interested in sharing their information within 5-10 seconds.
2) Those who have elected to click on the data-sharing link need to be able to complete the data-sharing process within about 30 seconds.
3) A subset of the population is willing to contribute more effort, and can be used to collect more detailed data, spot-check data, etc.
4) Texting works better for collecting basic data from interested student renters than email or web forms.

In other words, simplicity is king, and long explanations and appeals have limited effect. For this reason, we abandoned our original efforts to gather detailed data (e.g. monthly usage data, downloaded from the utility; additional details on rental properties) from our general target market, and focused instead on our most critical data gap by asking simply for an estimate of the average yearly energy bills.

The purpose of many of the outreach activities outlined below, then, is to gather the data outlined on the short form on the website homepage (address, energy costs, # of bedrooms), since so much of the other data (e.g. info on laundry facilities, availability of recycling services) is available from sources other than the tenants themselves. This information can be gathered instead from landlords, online rental sites, etc. and formatted for bulk upload.

The basics of crowdsourcing
As noted above, keep it simple! You can develop more detailed strategies once you've identified individuals who might be willing to do more. For the general student/young professional renter population, try these steps to get started.

1) Crowdsourcing takes time! Find ways to expand your reach.

       a. Partner with classes or clubs to gather individual data points and/or contact info to enable future data gathering.
       b. Hire an intern.
       c. Work with faculty to gather data as part of a larger project (marketing, behavior change, data analysis, social networks, etc.).
       d. Identify volunteers who are interested and willing to commit a few hours a month to outreach.
       e. Identify organizations with a parallel mission who might be able to include RentRocket information as part of their own outreach.

2) Identify events and locations where your target audience is present and receptive to a short conversation. The purpose of these events is to make people aware of the RentRocket.org website and, ideally, to get them involved in building it.
       a. Consider starting with a question to get the person thinking, like "where do you keep you thermostat set in the summer/winter?" or "Have you ever received a really high energy bill?" You can collect data on a single question for a whole day to see what types of answers you get.
       b. Let them know what RentRocket is and why it can help them – the focus may vary depending on your audience.
          i. A website focused on sharing info on the full cost of housing.
          ii. A "smarter housing search"
          iii. A website focused on aligning rental housing decisions with your values and/or your pocketbook.
       c. Focus on what you're trying to gather:
          i. We're gathering information on the average cost of energy in local rental properties. What are your average monthly gas and electric bills?
          ii. We need your help to build the database so renters like you can benefit. Would you be willing to share your email or phone number? We'll send you a text/email once a month to ask for the dollar amount of your most recent energy bills.
          iii. If you're interested in following RentRocket as it develops, sign up for our listserve.
       d. Enable people to get on the website at the event so they can load their info directly.

3) Have volunteers go door-to-door to gather average bill information and recruit future data contributors in areas with dense rentals. We also used door-to-door to share very basic info on how to save energy: keeping thermostats below 68/above 75 in the winter/summer, etc.

4) Share the data form link (http://www.rentrocket.org/#share-data) widely, through partner organizations and others.

5) Encourage landlords to share information on the site with their tenants.

6) Once you have a list of phone numbers (or emails) from interested renters, experiment with monthly text/email blasts to gather info on energy bills. Bloomington can help coordinate if you don't already have this capability.

7) Organize periodic "data parties" to organize and/or enter any data that has been gathered in a non-digital format.

8) Consider targeting a specific neighborhood or area, and focus on building out the data as completely as possible in that area. This helps show what RentRocket is intended to be, and provide a foundation for building additional participation.

9) For non-energy data, focus on building relationships with landlords and property management companies, which may be willing to share bulk data that can be uploaded directly into the site. Data parties can also be a venue for tracking down details on specific rentals using sites like Trulia, Zillow, Craigslist, etc.

The development of additional features on the site will help facilitate crowdsourcing. These include a search function (to enable users to locate specific addresses quickly) and landlord listings (landlords will be more willing to share data when they can also list properties for rent), both anticipated in 2016 if the New England grant continues forward.

Following the end of the grant, efforts to build the website through crowdsourcing will continue.

APPENDIX B: New Community Onboarding Process

A number of communities have expressed interest in joining the RentRocket.org website. As noted in the final report, the situation can vary from city-to-city, so the steps outlined below are general guidelines that will likely need to be modified for each community.

Step 1: Evaluate goals and interest in signing on to RentRocket.org.

RentRocket.org is not a turnkey service, and in almost all situations will require a significant commitment from the interested community in tracking down and sharing the necessary data. As noted in the crowdsourcing plan, the potential sources of data and potential partners are numerous, so clear goals and strategies can lend structure to the community's effort.

Step 2: Identify the community's rental properties.

Many communities maintain a rental database, generally for the purpose of facilitating rental inspections. These databases can be maintained in the office responsible for rental inspections, the IT department, the planning or building department, or in other locations. Determine who manages the data and begin working with them to access data to be uploaded into the site.

For communities without a rental database, the process can be more complicated, and so far the communities in this situation have elected not to move forward. However, broader property datasets can be used to identify properties with different location and mailing addresses (indicating an off-site owner) or through other means. Cooperative local landlords may also be willing to share spreadsheets with information on their properties.

If a rental dataset is not available, and the community is committed to working with RentRocket, further discussion and brainstorming will be needed.

Step 3: Incorporate the data into the website

Once data is obtained, the developer/webmaster will need to create a community map and upload the data into the website. This process is automated, but can be somewhat time consuming, particularly for cities with many rental properties.

Step 4: Reach out to potential partners

To date, the RentRocket.org partner communities have found interest in a wide range of people. Landlords (especially responsible landlords) are eager for the opportunity to share info on the investments they've made in their properties; student classes and student groups are eager to improve access to better data. Organizations focused on financial responsibility and affordable housing may also be allies in developing better information on the full cost of housing. The local tech community, campus sustainability offices, local schools, and others may also be potential targets for collaboration.

As noted in the report, utilities have generally not been amenable to data sharing, but there are exceptions to this rule (i.e. Columbia, MO). A friendly discussion of the effort will help identify possible ways of working together. Possible topics:

- Would the utility consider allowing customers to agree to share data, either when they sign up for a new account or through targeted marketing?
- Could account holders sign a physical form agreeing to share their data with the website?
- Is there some form of data (average, high or low monthly costs, for example) the utility would consider sharing in bulk?

The site will already include EnerScore, which calculates energy costs based on age and size of home and other generally available details. The actual usage data (from the utility and/or the user) will help elucidate and add depth to the EnerScore, and help identify properties that may have high costs due to resident behavior vs. the structure itself.

Step 5: Get the word out

Start with a soft launch, and start building a network of people interested in helping to build the database. This can include collecting phone numbers for blast texting, emails for mass emails, scheduling "data parties" focused on gathering specific information in specific areas of the community. Coordinate with landlords to upload both basic amenity data and listings (once available) into the website.

The intention of a soft launch is to build enough information into the database to create interest, get additional people interested, and begin driving traffic to the site.

Step 6: Hard launch

Set a goal that will trigger a hard launch. For example, once 10% of all rental units have relatively complete data, the community will begin marketing the site widely. Each community will need to develop their own outreach plan, but as RentRocket matures, the organization itself may be able to provide customizable materials and ideas.

Step 7: Maintain the data

Over time, RentRocket.org will develop standards and guidelines for routine updating of data, including importing rental databases into the site annually or more frequently, monitoring user-shared data for inconsistencies and problems, etc.