Super Roundtable, “From Data to Decisions at Your Nonprofit”: Event Description and Assessment

Michael P Johnson, Jr.
Super Roundtable, “From Data to Decisions at Your Nonprofit”: Event Description and Assessment

Michael P. Johnson
University of Massachusetts Boston
June 15, 2017

Summary

Tech Networks of Boston (TNB) and Third Sector New England (TSNE) hosted a three-hour “Super Roundtable” at the Boston Nonprofit Center in Boston on Friday morning, April 28, 2017. The event, titled “From Data to Decisions at Your Nonprofit”, was directed by Michael Johnson, associate professor in the Department of Public Policy and Public Affairs, University of Massachusetts Boston, with assistance from Public Policy doctoral students George Chichirau and Jason Wright. The event was sponsored by Tech Networks of Boston and Third Sector New England; Deborah Elizabeth Finn, TNB’s senior strategist, served as the event host. The purpose of this roundtable was to give nonprofit professionals an introduction to storytelling and decision-making with data, allowing the notion of ‘data’ (qualitative and quantitative), ‘storytelling’ (descriptive and explorative analysis through words, numbers and pictures) and ‘decision-making’ (identifying decision opportunities, quantifying values, generating alternatives and choosing most-preferred courses of action) to be understood as broadly as possible. This document summarizes the event, presents some event feedback and discusses next steps in the area of nonprofit and community data analytics and decision science.

About 54 nonprofit professionals from 47 identified organizations attended the event. Attendees represented a wide range of workplaces, including the AIDS Action Committee, Little Brothers-Friends of the Elderly, New England Aquarium, Rose Kennedy Greenway Conservancy, YouthBuild Boston, and many others. Almost 60% of participants worked in the city of Boston; almost 90% were nonprofit professional staff (as opposed to volunteers, educators, board members, or consultants).

The event was organized in three parts: an introduction to data analytics and decision-making, presented by Prof. Johnson, participant work on each of three case studies, and talk-back on case study findings and open discussion. Presentation slides, photos and case study materials are available online, at https://drive.google.com/open?id=0Byup0CJ5XH-vdlhIUmx2UmR6MVE.

1 ‘Analytics’ encompasses all manner of knowledge-creation through the study of data, thus including the fields of operations research and management science (Liberatore and Luo 2010). In practice, ‘analytics’ more often refers to the process of creating insights from data, while terms like decision science, management science, operations research or decision analytics refer to improved decision-making and associated operational, tactical and strategic prescriptions through modeling and analysis (Winston and Albright 2016). In this document I use the terms ‘data analytics’, ‘data analytics and decision science’ and ‘data analytics and decision-making’ interchangeably.
Analytics presentation

The introduction to data analytics presentation covered the basics of analytics: how analytics can tell a story about what has happened (descriptive analytics), why events may have occurred (diagnostic analytics), what events are likely to happen in the future (predictive analytics), and what actions can be taken to achieve specific organizational goals (prescriptive analytics). These phases of analytics can enable organizations to generate insights about operations and strategy that may support improved decisions and thereby enhanced program and policy impact. The presentation made these notions tangible through three scenarios: qualitative data on values and ideas associated with a hypothetical school district re-design initiative; quantitative data on client-service provider encounters at a hypothetical family support service provider, and descriptions of a range of potential actions to be pursued by a local economic development organization. For each of these, Prof. Johnson described the type of analyses that could be performed, the nature of insights that might be extracted from the data, and the nature of decisions based on the data that could enable organizations to better achieve their missions. Prof. Johnson also discussed the special challenges associated with nonprofit data analytics, and resources available to assist nonprofit organizations in improving their capacity to do data and decision analytics. One of the presentation slides is presented in Figure 1 below.

Common challenges in providing operations research and analytics to nonprofit organizations

1. Limited capacity of community partners to collect and analyze data, and to make productive use of analytically-advanced solutions
2. Skepticism among community partners that outside experts really understand their problems
3. Need for analysts to move from client-consultant relationship to peer-to-peer relationship to support collaborative problem-solving
4. Tension between a specific problem to be solved, and underlying community needs that may not align with funders’ immediate priorities
5. Acceptance by analysts trained in OR/analytics that qualitative as well as quantitative data and solution methods may be necessary

From: Data to Decisions - Johnson

Figure 1: A slide from the introduction portion of the nonprofit analytics presentation
Case studies

The case study section of the event consisted of descriptions of three distinct problem types designed to be familiar to nonprofit professionals, and data intended to enable participants to generate insights on their own. The three case studies were: a community development organization attempting to make sense of stakeholder discussions during a focus group to develop new strategies; a charitable organization providing recreation services to homeless families seeking guidance on choosing program partners, selecting agency providers and deciding on cities in which to expand their services, and a credit union seeking to set staffing levels to meet customer demands that vary over time. Although two of these were adapted from Prof. Johnson’s professional engagements, none reflected the experiences of any nonprofit represented at the event. A summary of the homeless family services case is presented in Figure 2 below.

Case study: Homeless children services

Super roundtable participants, seated at tables of five to eight persons, were assigned one of three case studies to examine. Each table contained a large sheet containing spaces for participants to work through responses to five questions: “What is the problem?”, “What do the data tell us?”, “How can we solve the problem?”, “What should we do?”, and “What did we learn?” Using the case study data, participants brainstormed and did calculations with pen-and-paper and computer spreadsheets to generate insights. The largest proportion of case study participants chose tables investigating case 1 (highly qualitative) and case 2 (moderately quantitative and focused on decision-making) – about 77% of the total, split nearly evenly between the two cases – while the remaining 23% of case study participants...
chose the third case, which was the most quantitative in nature, and oriented around management and operational analytics insights as opposed to strategic decision-making.

Below are photos from the case study portion of the event (Figure 3) and one of nine worksheets filled out by participants (Figure 4).

Figure 3: Roundtable participants discuss the case studies

Figure 4: One of nine case study summary sheets completed by tables of roundtable participants

During the case study discussion, participants were asked to write on one Post-It note their most important or salient finding or insight from this session; participants attached their notes on a wall, in sections devoted to each of three cases, as well as another portion devoted to general insights about the super roundtable.
The talk-back and open discussion portion of the event enabled participants at the various tables to share what they learned about the case study related to each of the five questions listed above, as well as general insights about data analytics and problem-solving. Examples of these posted comments are in Table 1, below.

<table>
<thead>
<tr>
<th>Case #1: Economic development</th>
<th>Case #2: Homeless services</th>
<th>Case #3: Credit union staffing</th>
<th>General comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• What is the problem? Is what an org “knows” actually supported by data? Or current data?</td>
<td>• What do the data tell us? Data tells us the trends of how cities are generally doing based on our criteria, if it’s too close or similar need to be more specific</td>
<td>• How can we solve the problem? You can use more or less sophisticated ways (graphs, summary tables, more complicated stats) to solve the staffing problem. It depends on the amount of data you have/organization site/etc.</td>
<td>• Values analysis and creating a map is a fantastic way to demonstrate data and decisions</td>
</tr>
<tr>
<td>• How can we solve the problem? No one stands alone: include community to build community</td>
<td>• What should we do? Raw data tells us very little...that shareholder input needs to weight the decision matrix</td>
<td>• Become sufficiently critical of your own assumptions</td>
<td>• Become sufficiently critical of your own assumptions</td>
</tr>
<tr>
<td>• What did we learn? Building a community advisory forum composed entirely of community members who are a part of the organizations decision making and offer their community knowledge as capital</td>
<td>• What did we learn? Pre-analysis of the most important or ideal criteria to use when making decisions can simplify and streamline the data collection and evaluation process</td>
<td>• What should we do? Once we implement our best fit solution, we need to develop a metric to actually track whether the intervention was successful</td>
<td>• Variation in case studies nice to have but perhaps some are more applicable to nonprofit needs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• What did we learn? A lot of data does not always solve the problems...have to collect the right data!</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Roundtable participant reactions to the event, represented by notes posted to an event wall

Event impressions

The event seemed to be successful. Case study tables had a wide variety of participants. Tables ranged from very quiet to very active. One table (Case 3) consisted of data experts, included a university professor, who spent of their time on professional networking. Nobody appeared frustrated, at a loss for ways to participate, or dissatisfied with the roundtable format, case content or case discussion. However, the level of interest varied. Some people changed tables. Some participants expressed to Ms.
Finn an appreciation for a teaching style that reflected a desire to incorporate comments and feedback into the presentation, and to value participants own impressions, referred to as a ‘growth mindset’. Surely the event would not have been a successful without nonprofit professional participants who were enthusiastic, engaged, and willing to learn new ideas from the instructor and each other. The event also benefitted enormously from the support of the two doctoral students, who circulated among the case study tables, answering various technical questions, recording data and taking photos.

Some evidence to support these subjective impressions comes from a post-event participant survey conducted by Tech Networks of Boston. Responses to the question, “How likely is it that you would recommend Tech Networks of Boston's Roundtables to a friend or colleague?” were strongly positive (N = 23), with 74% of all respondents choosing 9 or 10 on a ten-point scale.

Responses to the question, “What can Tech Networks do to improve the roundtables included the following:

- “Circulate an agenda prior to the event; having 1 hour of networking before the session started was more than I expected.”
- “Maybe we could've spent a little less time discussing our case studies, while being really intentional about quickly pulling out our initial ideas, observations, and questions... and then we could've had more time for reflection as a large group!”
- “Thank you for offering opportunities to network, to actually PRACTICE skills in context with actual non-profit opportunities/challenges, and dreaming big about difference course ideas.”
- “I loved today's roundtable with case studies. It would be great to do case studies of actual participant problems. A staff training on data analysis in excel would be hugely helpful.”

The post-event survey also asked for specific ways that participant organizations could benefit from follow-on events, summarized in Figure 5. It is striking that while interest in assistance for software purchase or engagement with consultants was fairly low, there was strong interest in staff training in a variety of analytic methods, as well as training in Microsoft Excel.

**Next steps**

I expect to incorporate the activities from this roundtable into my classroom teaching, so that lecture experiences can be more participatory and collaborative. In particular there is substantial experience at UMass Boston in co-learning through in-class case studies and student presentations of group findings (‘gallery walks’).
I plan to do a presentation at an upcoming national conference of the Institute for Operations Research and the Management Sciences on research findings associated with analytics training and capacity building for nonprofit professionals. I am exploring the possibility of a research proposal for site-based nonprofit analytics training for organization change and community impact.

Finally, there appears to be an opportunity to design an executive education-style program (a full-day course, a short series of workshops, a collection of courses leading to a university certificate), taking places at various sites (a professional space such as the Nonprofit Center, on-site at specific nonprofit organizations, a learning environment like UMass Boston), that could be especially responsive to and reflective of the needs of resource-constrained, and community-focused nonprofit organizations in
Boston. While there are multiple textbooks devoted to nonprofit data analytics, and many degree and certificate programs on topics such as ‘Urban Informatics’ (Northeastern University), ‘Marketing Analytics’ (Bentley University) and ‘Data Science’ (Merrimack College and Worcester Polytechnic Institute), there appear to be few instances of degree or certificate programs devoted to nonprofit data analytics.

**Resources**

There are a number of books and articles that can serve as presentations or tutorials on data analytics and decision-making at the introductory or advanced level that may be of interest to participants in the Super Roundtable and other nonprofit professionals. Some suggested resources follow:


