Accessibility Map for HRM

Addressing the Navigation Needs of People Experiencing Disabilities

Jamie C. Newman

(www.jamiecnewman.com)

Halifax, Nova Scotia
December 17, 2012

NEED:

Digital maps have become a navigation necessity for many. Being able to see the shortest path to a destination helps alleviate anxiety. We now type in an address and know the exact route to take – every turn and stop. With access to a smart phone, we can check our route along the way. Digital maps have revolutionized travel; in turn, we have greater access to our communities. Now imagine you had to consider much more than street names and addresses to get around. Imagine you had to consider the potholes in your way or the grade of the streets you will be taking or if there were stairs anywhere along your route. Imagine you had to consider the curb indentations so you could safely cross the road. Imagine you required special features like parking spaces or textured sidewalks to help you negotiate streets and facilities. Imagine you could not even use maps in their typical formats.

Many do not have to imagine – this is their everyday reality. It is hard to imagine the amount of stress traveling would involve. People experiencing disabilities do not have to keep guessing; maps can contain everything needed to satisfy their navigation needs. Users of these maps can continuously and consistently interact to communicate their specific travel issues. This is a low-cost and effective way of creating a powerful navigation resource.

This resource can also help our municipal officials spread their investments further. As budgets tighten governments need to get better at doing more with less. The accessibility map reveals the issues facing people with disabilities straight from those whom are acutely affected often as soon as barriers are encountered. This is an excellent method for maximizing finite investment. For existing assets, the map advertises their whereabouts; effectively ensuring better utilization.

PRODUCT DESCRIPTION:

The above describes a crowd-sourced accessibility map. Crowd-sourcing allows those clients, customers, or citizens to provide input to shape their products and services. It offers an innovative solution for addressing the navigation needs of people experiencing disabilities. Only others experiencing similar disabilities truly understand what it is like for them to get around. Most existing navigation resources present information that their developers deem useful; they rarely ask what information users find most useful on an ongoing basis. This map encourages user input by making it convenient to do so and by demonstrating the immediate and, potentially, profound impact of this input.

The map can also contain a variety of objective features that are pertinent for travel planning like accessible public transit vehicles and stops, disabled parking spaces, textured sidewalks, lifts and public stairways, the grade of streets and sidewalks, curb indentations at intersections, and any other information available and deemed to be useful. It can encourage commentary to contextualize user-provided ratings for the accessibility of facilities and infrastructure. Information can be uploaded instantaneously to ensure the map represents current conditions creating an up-to-date powerful resource to be used by anyone anywhere for free.

So how would one use this for navigating their community? Imagine you are someone who uses a wheelchair. You are scheduled for an appointment. Using the accessibility map, you type in your destination's address. You see the shortest route available using accessible public transit. This route has you going three blocks after getting off the bus. When looking closer you see that route has a street segment marked in red, which indicates poor accessibility. You click on the segment and find from the commentary that there is no sidewalk. You alternatively choose another route that is a little longer but has a fine sidewalk and avoids you being in harm's way. You then look at the business and see there is no information available. At this point you feel fairly confident about your journey and head out. Everything goes as planned until you reach the business and find that there is only access using stairs. While waiting for help, you decide to provide information about the business on the accessibility map. You rate it as poor and describe why. Ideally, the poor rating on the map will prompt the owners to make improvements but at the least this information will allow others to make arrangements prior to arrival.

DEVELOPMENT PROCESS:

Although users are doing the heavy-lifting, there is work to be done to develop, promote and maintain the map. I separate this work into four phases:

Phase 1: Assessing Needs

The first step is to gain a better understanding of needs and resources pertaining to navigation for people with disabilities. We do this by talking to anyone that may benefit from this initiative (e.g. those with mobility, visual, auditory disabilities and the elderly). We cannot speak to everyone but we can speak to enough to get a sense of everyone's needs. These needs will likely differ so talking to a variety of people is important. We want to know more about navigation needs, what tools are being used currently, initial impressions of various aspects of the map solution, and comfort with and access to technologies like smart phones. All of this will help us to effectively move forward. For instance, if it is found that there are significant unmet navigation needs but many do not have access to a computer or smart phone, immediate efforts should focus on getting these crucial tools in their hands.

Phase 2: Solution Development

The second step is to establish a solution that best addresses the needs identified. The solution can be creating a completely new product with a full suite of capabilities or maybe it is applying resources used elsewhere exactly as are here. There are a number of possibilities for solutions that will efficiently and effectively address these needs which is why phase 1 is crucial. If phase 1 leads us to the conclusion that building a custom application is the best option, we have a great opportunity to be a world-leader by unifying best practices. Many of the existing applications are open-sourced making it easy and cheap for us to build on the efforts of others and tailor the product to HRM's unique and specific needs.

Phase 3: Establishing Baselines and Testing

The third step is capitalizing on early-users to grow the map and establish a high-quality resource. A persistent issue with crowd-sourced resources can be the chicken-before-the-egg dilemma – reliable users are needed to reveal the power of the resource which then attracts more users. There is a significant amount of objective information that can be uploaded to improve on what is currently available acting as a good attractor early on. Volunteers can also be solicited to initiate crowd-sourcing. This initiation is necessary to encourage others to interact and also to establish credible baselines. Information integrity can be a concern but early users help surmount this issue. They also allow us to monitor how users best interact with the application. Creating the most user-friendly environment possible is crucial to get more people using more facets of the application.

Phase 4: Maintenance and Promotion

The last phase is maintaining and promoting the resource once generally released. Promotion is all the more important for any crowd-sourced product or service, which rely on the interaction of many different users in many different ways. User accounts help monitor and verify input. Others have found that it is unnecessary to require an invasive amount of information which can be viewed as an infringement on personal privacy and actually inhibit usage. Often users will provide enough information to adequately validate input voluntarily especially those whom engage regularly in more detailed ways. User input remains valuable as long as the map is used; it updates information and reveals the experiences of people with varying types and severity of disabilities. The full potential of this map is unknown but what is known is its potential is maximized when all are represented and it is perpetually evolving.