Brion Hurley: Applying Lean Six Sigma to a Nonprofit Fundraiser Conference

Running a small nonprofit

My entire work career has revolved around process improvement. I studied statistics and quality management in college, then worked for 18 years at Rockwell Collins as a Lean Six Sigma Black Belt. About 10 years ago, I started to transition to sustainability work, applying improvement techniques to social and environmental problems.

In 2015, I got involved in a nonprofit organization called Recycling Advocates[22] in Portland, Oregon. After a year, I was asked to take over as President of the 30-year-old organization (founded in 1987). I was new to the nonprofit board member role, so I was nervous about becoming the President. However, I figured my passion for the environment, along with the support and mentoring from other board members would help me figure out what to do.

We are a small nonprofit, so we didn't have many products or services that we offered other than education to our members. In the past, we have supported campaigns to improve recycling and other environmental causes (such as plastic bags ban, reusable beer bottles, bottle deposit bill, and e-waste regulations). Since I came on board, we have spent most of our time working on the problem of disposable and non-recyclable coffee cups.

[22]Recycling Advocates, http://www.recyclingadvocates.org/

However, that was also one of the challenges I had to deal with first, to make the organization more financially viable. We would ask for donations to support our causes, but it wasn't working very well. We were not bringing in enough money to cover our minimal expenses (overhead costs plus a part-time Resource Director).

One of the ideas that our board members came up with was to setup a conference and charge money for tickets.

I agreed that it would be easier to provide our members with some value for their money, instead of just asking for a donation. I was noticing that there was a lot of discussion in Portland around the topic of a "zero waste lifestyle," focusing on minimizing purchases and reducing the amount of trash being generated at home. Some people have even reduced their trash down to one bag or container per year!

In the business world, there was also a growing interest in companies becoming "zero waste" to support their sustainability programs. I recently achieved a certification as a TRUE Zero Waste Business Advisor[23]. I felt that hosting a conference to bring people together to educate them about how they can apply zero waste principles to their life would be a great idea, both for our organization and for our supporters.

But I hadn't ever setup or run a conference before, especially an event with more than 20 people with a focus on raising money for a nonprofit organization.

Since my background was in Lean and Six Sigma, I felt confident that I could use these tools and techniques to help me figure it out. I've also attended a lot of Lean Six Sigma conferences over the years, so I felt like I was experienced as a conference attendee. I have often thought about ways to improve the conference experience.

[23]TRUE Zero Waste Advisor, https://true.gbci.org/true-advisor

Will anyone attend?

The first thing I did was partner with someone who knew the potential audience better than I. I connected with a friend of mine to help me out, Chloe Lepeltier. She ran a Facebook group called "Zero Waste PDX"[24] and it was gaining in popularity. I pitched the idea to her, and she liked it and was interested in helping me set it up.

The next thing we did was to figure out if there was actual interest in having a conference. If there was interest, what would people want to learn?

We didn't want to waste too much effort putting on a conference that nobody wanted to attend. As with any effort, we need to know if we are offering value to our customers.

A few years ago, I read a popular book called "The Lean Startup"[25] by Eric Ries. He talks about ways you can test out your ideas first, before you design and develop a new product or service. These concepts were developed based on the principles of the Toyota Production System (which is the foundation of Lean methodology). There was another book published shortly after, explaining how these Lean Startup concepts could be applied to nonprofits in the book "Lean Startups for Social Change"[26] by Michel Gelobter. I was excited to test out these startup concepts on this conference.

We first setup an online survey, to see what kind of response we would get for our conference idea. I was confident there would be interest, but I didn't know how much interest there would be. That is the whole point of the Lean Startup approach, to get actual data on uncertain ideas from the customers and stakeholders. It's also a core principle in Six Sigma (gathering and analyzing data), so I really liked this approach.

[24]Zero Waste PDX Facebook Group, https://www.facebook.com/zerowastepdx
[25]The Lean Startup, https://amzn.to/2QkRgXn
[26]Lean Startups for Social Change, https://amzn.to/2PV4c6Z

After a couple weeks, we reviewed the feedback from the survey. We had about 115 people fill out the survey, which I thought was a positive response. That gave us confidence that we could get at least half of those people to attend an event.

Next, we went through the different topic ideas and comments, and tried to categorize those results into a Pareto Chart (like we often do when attempting to reduce defects in a process or prioritize our improvement work). See Figure 1 below.

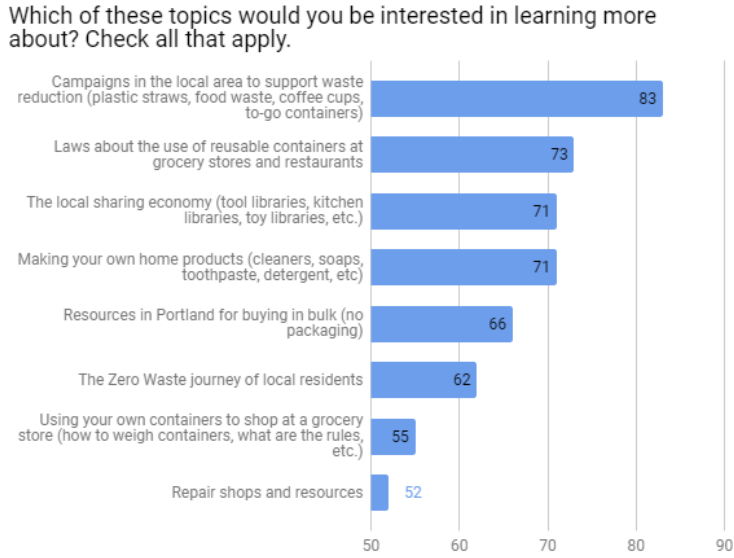

Figure 1: Survey Responses about Potential Conference Topics

We took the top ranked categories and tried to determine who we should invite to be a potential speaker on each topic.

As we went through each category, we had a few names of people we could invite, which gave us more confidence that we could provide good value to the attendees.

We also had to figure out how long the event should be, which day of the week it should be, which month of the year it should be,

and how much to charge people to attend. These questions were included in the survey.

Based on the results, we decided to charge $25 per person for a 4-hour event, to be held in the fall on a weekend during the day.

Some of these results surprised me. I was originally planning to do a full day event during the week, or in the evening during the week. However, that was not the most popular choice. That really helped guide our planning, and I think it was one of the keys to the event success.

Mitigating the risk of problems

Another powerful tool of Six Sigma is called the Failure Modes and Effects Analysis (FMEA). It is used to identify the risk of something going wrong, and mitigate the risk to reduce the chance of it actually happening. It is often used to prevent new product designs from running into problems during the manufacturing process, or when the product is being used by the end customer. However, this was a perfect tool to use in this situation, especially since it was our first time planning an event. I was really nervous that I was overlooking something that would become an issue during the event. I really wanted this event to be a great success. However, I did not want to perform a full FMEA, where you go through every single step and prioritize each risk based on severity, occurrence and detection.

Over the years of teaching, facilitating and promoting the use of FMEA's, I have found that many people like the idea of the tool, but are scared off about the time commitment required. I completely understand, as I didn't have a lot of time either, since this is all being done on volunteer time.

I've developed an approach to ease into FMEA's[27]. The idea is that you start simple by just having a discussion with others

[27]Tips and tricks for more efficient and effective PFMEAs, https://bit.ly/2BBAZFz

in your team, and simply ask "what are some of the risks?" As you brainstorm the risks, you discuss how well prepared you are for these risks. This exercise will help you determine if you feel comfortable with the potential risks or not, and decide if you should go deeper into your risk assessment.

If you realize that there are more risks than you thought, then the next step I recommend is to walk through the full process all the way as the customer (conference attendee), to see what their experience might be as currently setup.

First, they're going to sign up on the website, then decide how to pay, receive an electronic ticket as confirmation, travel to the event location on event day (using different transportation methods), walk to the event entrance, look for signage on where to go, check-in, and find a place to sit.

As we talked through these steps, many questions came up.

Do we have directions to the event? Do they know where to park? Do they need to bring their ticket? Was the event entrance easy to find? Do they need a name tag? Do they want something to eat or drink? Are they going to want to take notes during the event? How do they find and get into their seats? Will the aisles be spaced in a way to make it easy to get into their seats?

Finally, we tried answering these questions, and discussed ways we could mitigate the potential problem.

As an example, for the seating problem, I anticipated that people would come in later, and this would make it easier for them to quietly sit at the edges of the rows. What normally happens is that the open seats are often in the middle of a row, and people are climbing over each other and creating a distraction.

To mitigate the seating problem that I've experienced at other conferences, I created a PowerPoint slide that was rotating at the beginning that would remind people to move to the center of the seating. I also encouraged people to introduce themselves to their

neighbors, so they would be more comfortable sitting next to each other.

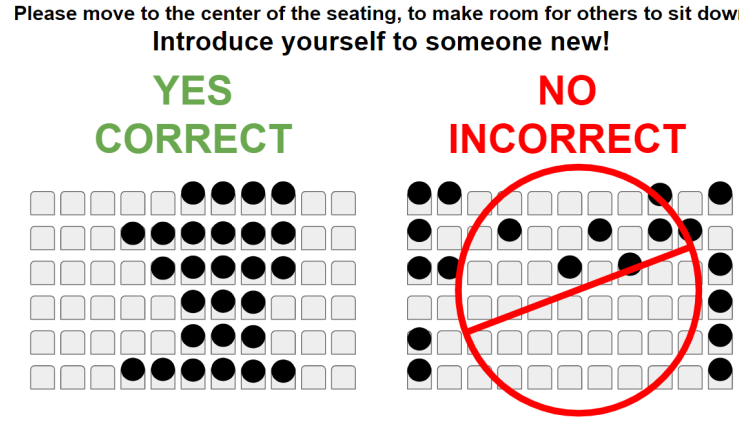

Figure 2: Slide presented to attendees to encourage better seating arrangements

We didn't have as many people show up as we were planning for, so it didn't end up being as big of a problem as I expected. A quick glance at the seating arrangement showed mixed results with the sign, so a future improvement would be to remind people during the event to move to the center.

We also thought about the speaker experience, not just the conference attendee. Where will they be standing? What digital format will they use for their presentations? Are they going to engage the audience?

After we brainstormed the questions for our risk discussion, the next decision was whether the questions and answers we came up with made us feel comfortable with the event planning so far, or raised a lot of "red flags" and concerns.

If it raised some serious questions and concerns, then it might justify performing a full FMEA. A full FMEA would require us to go step-by-step through the process, and brainstorm every potential failure we could think of, and score the risks from highest to

lowest in order to prioritize what to work on. This takes a while to complete, but for large and important events, it might be worth the effort.

For our event, we felt good about the answers we had, so we didn't feel that a full FMEA was necessary. We simply listed out the questions, and the mitigation we were going to take for each risk. Here are a couple examples…

- Projector doesn't work or dies during event
  ** Bring 2nd projector as backup
- Credit card payment device doesn't work due to poor internet connection
  ** Bring 3 devices and phones as backup
- Presentation is hard to see on white screen (contrast/lighting)
  ** Arrive early to test and adjust lighting in room
- Room gets too hot due to number of people
  ** Setup fans near exits if weather looks to be warm and we have full attendance
- Attendees only have cash and want change
  ** Withdraw $50 in one dollar bills and bring to event

Skipping ahead, I felt like we did a great job overall with the event. There weren't any major hiccups, so I feel like we addressed or avoided many of the risks we identified, or some of them never came to fruition. The only thing we didn't consider as a failure was not having the speaker show up. We had no mitigation plan for that. Luckily, everybody showed up as expected, but that was something that we need to have a mitigation plan for next year. We also didn't have a place for the speakers to sit, which was minor, but an improvement we can make next year.

Obviously, small things came up that we didn't anticipate. But I think overall the event went pretty smoothly, so I think we did the right amount of risk assessment.

Flow of attendees at check-in

From a lean perspective, one area I was concerned about was the flow of attendees into the event space. The ideal scenario in lean is that your customer demand is consistent and steady. For this conference, that means that attendees trickle into the event in a steady flow one at a time, not all at once. Large groups can overload the process and back up the line, which makes people wait in line, and it puts stress on our volunteers.

To deal with this issue, I wanted to figure out how to help spread out the arrival times of the attendees, and keep the check-in process quick and simple.

The first thing was to avoid technology. I love technology, but I was concerned that it would slow down the check-in process, and increase the risk of something going wrong. We opted to print out 3 copies of the attendee list. We simplified the process, so all the volunteers had to do was cross off the name of the attendee, and that's it. It only took 5-10 seconds per person. It also gave us flexibility to help out if we saw the line getting longer, instead of only having one person with the list (creating an unnecessary bottleneck). We also tried to spread out the volunteers near the entrance to create more space and room. This would allow people to get around each other and go to the next check-in person who was available, and not interfere with people trying to enter the room.

I didn't actually observe anything about the sign-in process, but the feedback was good, and the volunteers said they weren't overwhelmed, so I took that as a success. One minor issue was that the name tag creation station wasn't located in the most ideal spot. Luckily, the majority of people brought their own name tags (to stay aligned with the purpose of the event), so it didn't impact the flow very much. The "bring your own name tag" program worked out really well. We minimized waste, and it ended up being a good conversation starter, especially for those who made their own fancy one, or had a unique badge from work.

Minimizing environmental impact

Here are all the things we did in our conference to reduce our impact on the environment.

- Encouraged attendees to bring their own name tag
- No printing of agendas or schedules
- Very few printed flyers for promotion, almost all was done online
- Promoted "Bring your own cup" (BYOC) and provided reusable mugs for those who forgot
- Provided reusable fabric squares made with beeswax for the snacks
- Told everyone to "Pack in, pack out" if they brought anything to the event
- Check-in with electronic tickets, not printed tickets
- Encouraged attendees to take public transportation or carpool
- Told sponsors to minimize or eliminate any handouts or freebies

Attendance Predictions

One area that was a negative was the actual attendance. We had many more sign-ups than actual attendees, and we had a waitlist, so there were people who signed up but didn't attend, and those that wanted to attend but were not able to attend. That is another problem we need to fix for our next event.

Because of my Six Sigma background, I was really interested in accurately predicting attendance numbers. Here is how we ran the event for determining capacity.

The room capacity was set at 150 people. Based on other free Lean Six Sigma workshops I've put on over the past 2 years, I had some data on attendance rate for those that register for a free event. This

event is a little longer and a different topic, but it's the best data I had at the time. We also had a small sample of data from workshops where people donated money to attend, and it was 100% attendance for all 17 people.

We broke up the attendees into 5 categories, and estimated actual attendance based on sign-up numbers. Because we did not anticipate having people show up at the door who were not signed up, I added a 6th category below called "Pay at door."

Free

Free attendee signups = 20
Expected attendance based on past Lean Six Sigma workshops = 50%
Expected attendees = 10
Actual attendees = 12 (60%)

Sponsors

Sponsor allotment = 22
Expected attendance = 80% (estimate only, no data)
Expected attendees = 18
Actual attendees = 14 (64%)

Speakers

Number of speakers = 9
Expected attendance = 100% (estimate only, no data)
Expected attendees = 9
Actual attendees = 9 (100%)

Paid (donated at least $5)

Paid signups = 74
Expected attendance = 95% (based on 17/17 attendance for paid Lean Six Sigma workshops)
Expected attendees = 70
Actual attendees = 51 (69%)

Volunteers

Number of volunteers = 14
Expected volunteers = 90% (estimate only, no data)
Expected attendees = 13
Actual attendees = 10 (71%)

Pay at door (day of event, not registered)

Number of signups = 0
Expected attendees = 0% (estimate only, no data)
Expected attendees = 0
Actual attendees = 8 (5% of room capacity)

Based on our estimated attendance, we expected 120 people, but only had 104 (including 8 people who showed up at the door), so there were far more people we should have invited from the waitlist to attend. I did want to stay under the capacity number (ideally around 140 people), but I did not want to be that far under the room capacity. In hindsight, we should have invited 30 more people off the waitlist to get us closer to 125-130 actual attendees (as 140 would have felt very crowded in that space).

That is something we will improve next time, now that we have at least one data point. As we continue to conduct these events, we can add more statistics and probability to the attendance to get even more accurate predictions.

Results

Overall, we were able to raise over 1500 dollars for Recycling Advocates. We got some of the money from sponsors, and the rest from the attendees.

That is a lot of money for our nonprofit, since we only bring in about 5000 dollars a year. It was also my first major fundraising effort since I became President 2 years ago, so this gave me a lot of confidence to put on more events in the future.

Pete Chism-Winfield presents at the Zero Waste Conference

But like everything, we could have done better. The key to establishing an improvement program within a nonprofit or for-profit business is to measure your results. Surveys are popular approaches to gather data, especially for events and conferences. We created a short survey to see how we did.

Net promoter score (NPS) is a popular way to determine if we will likely gain support and word-of-mouth recommendations for future conferences.

Although not often mentioned as a Lean or Six Sigma tool, it is a great indicator or customer metric that can drive the need for improvement.

We included one question to measure our NPS,

"**On a scale of 1 to 10, how likely are you to recommend the next zero waste event to like-minded friends and family?**"

Results of this question are shown in Figure 3.

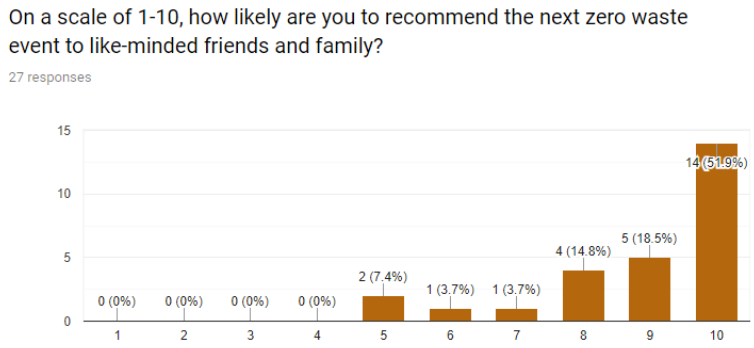

Figure 3: Results of Net Promoter Score Question

A definition of how to calculate NPS is provided by Wikipedia[28] below.

"Those who respond with a score of 9 to 10 are called Promoters, and are considered likely to exhibit value-creating behaviors, such as buying more, remaining customers for longer, and making more positive referrals to other potential customers. Those who respond with a score of 0 to 6 are labeled Detractors, and they are believed to be less likely to exhibit the value-creating behaviors. Responses of 7 and 8 are labeled Passives, and their behavior falls between Promoters and Detractors. The Net Promoter Score is calculated by subtracting the percentage of customers who are Detractors from the percentage of customers who are Promoters. For purposes of calculating a Net Promoter Score, Passives count toward the total number of respondents, thus decreasing the percentage of detractors and promoters and pushing the net score toward 0. An NPS can be as low as −100 (every respondent is a "detractor") or as high as +100 (every respondent is a "promoter"). A positive NPS (i.e., one that is higher than zero) is generally deemed good, and an NPS of +50 is generally deemed excellent."

[28]Wikipedia - Net Promoter Score (NPS), https://en.wikipedia.org/wiki/Net_Promoter

Score	Category	Count	Pct
9 or 10	Promoter	19	70.30%
7 or 8	Passives	5	18.50%
0 to 6	Detractors	3	11.10%
Total		**27**	**100%**

Figure 4: Summary results of Net Promoter Score Question

Using this definition, we calculated NPS as follows.

NPS = % Promoters - % Detractors = 70.3% - 11.1% = 59.2

Our score of 59.2 would be considered excellent. I am pretty happy with the score, but I know there is more we can do to increase the score next time.

If you are interested in watching the presentations from our event, you can check them out on the YouTube channel[29] for the event. The video recording and editing was donated by one of our sponsors (Stumptown Media Group[30]), which would have eaten into our expenses if we had to pay for it ourselves, or would not have turned out as professional as it did.

If you're involved in setting up a conference or event at work, or want to help with an event for a nonprofit organization, I hope some of the Lean and Six Sigma concepts I mentioned will be useful for you. I also hope you consider the environmental impact of your event, and consider ways to make it more "green."

If you have questions or want to attend the next Zero Waste conference, go to ZeroWasteConference.org[31], or contact me directly.

[29] Zero Waste Conference YouTube Channel, https://bit.ly/2Bzm26F
[30] Stumptown Media Group, https://www.stumptownmediagroup.com/
[31] http://www.ZeroWasteConference.org

Proceeds

Proceeds received from my chapter will be donated to Recycling Advocates[32], an Oregon nonprofit based in Portland that is "dedicated to creating a sustainable future through local efforts to reduce, reuse and recycle."

Contact

Brion Hurley is the owner of Business Performance Improvement (BPI)[33], a Lean Six Sigma consulting firm in Portland (Oregon) focused on sustainability. He currently teaches Six Sigma and Lean classes, facilitates lean events and kaizen workshops, performs statistical analysis, and mentors practitioners through improvement projects in manufacturing, service and office processes. He volunteers his time with local nonprofits through Lean Portland[34]. Prior to BPI, he spent 18 years at Rockwell Collins as Principal Lean Six Sigma Consultant. He is certified as a Master Black Belt and Lean Master, and has numerous sustainability certifications. He has a bachelor's degree in Statistics, a master's degree in Quality Management and Productivity, and lettered four years in football as a placekicker and punter at the University of Iowa.

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[32]Recycling Advocates, http://www.recyclingadvocates.org/
[33]Business Performance Improvement (BPI), http://www.biz-pi.com
[34]Lean Portland, https://www.LeanPortland.com
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