Shane Greenstein:

This is professor Shane Greenstein with the HBS Digital Initiative from the 2019 Future Assembly at Harvard Business School. We are pleased to present Flash Talks, Exploring Technology in a Multidisciplinary World.

Ayelet Israeli:

Hello everyone. My name is Ayelet Israeli. I'm a professor here in the marketing unit at Harvard Business School.

Ayelet Israeli:

I'm going to switch gears a little bit. I'm going to talk about just one project, a completely new one that I'm super excited about just to get the chance to tell you a little bit about.

Ayelet Israeli:

It's going to be about the value of data analytics and it is as provocative as it sounds or maybe not. I don't know. You'll judge.

Ayelet Israeli:

There's such a wide availability of data. Data analytics is so popular. I just love this data every time I look it up. 2.5 quintillion bytes of data created each day.

Ayelet Israeli:

The last stat I've seen is 90% of the world's data was created in the last two years and we just keep creating more and more data. Everyone heard big data, data analytics, huge, huge buzzwords.

Ayelet Israeli:

For the most part, we use small to medium data. If I can save it on my computer, it's not big data. Right? Companies have actual big data. Firms are investing heavily in data analytics, and we see this in infrastructure, in the talent that they are hiring.

Ayelet Israeli:

To compliment those efforts universities are investing heavily. There are tons of degrees for data analytics education. It seems like this is everything we need, but my question is, what is the actual value of data analytics to business?

Ayelet Israeli:

Can we actually quantify how much does it help? Then the second part, so I think everyone knows the first part of this quote, "data is the new oil". But a lot of people don't know the rest of it.

Ayelet Israeli:

It's valuable, but if it's unrefined, it can't really be used. It has to be changed into gas, plastic, chemicals to create a valuable entity that drives profitable activity.

Ayelet Israeli:

So, must data be broken down and analyzed in order for it to have value? And that's the big challenge that a lot of companies that I work with and I'm sure your organizations also faced with. So the second question is do firms actually are able to derive actionable insights from data?

Ayelet Israeli:

Now I know these are two big questions and now I'm telling you how I'm going to approach them in a smaller sense. So we're going to look at a particular data analytics platform that is useful for online retailers.

Ayelet Israeli:

And we're just going to look at those who adopted it and how they react, how do their actions and outcomes change after adoption? We're going to have two major research question that to the ones I just brought up.

Ayelet Israeli:

The first one is going to be does the adoption of the service actually add value to the firms? And we're going to look at revenues, new customers repeat business. We're going to look at the number of transactions versus the basket size.

Ayelet Israeli:

What is changing if at all? The second thing that we're going to look at, okay, suppose that we believe it now data creates a change. How does it work? Is it that those that actually use the service gain more benefit?

Ayelet Israeli:

Is it that they're changing the four Ps of marketing? Are they changing the advertising that they're doing? Are they changing the targeting, their promotion? Maybe they're just doing other investments and technology.

Ayelet Israeli:

Today I'm going to focus on the first part. The second part, maybe next year. We'll see. So we're going to look at this data analytics service provider that does it for online retail website.

Ayelet Israeli:

It basically gives them a dashboards that you can look at performance. I'll show an example in a moment. It also gives them benchmark as to how well they're doing compared to other companies within the same industry.

Ayelet Israeli:

So you have a little bit more information than just your own company's data. The cool thing about the data for a researcher like me is that once you adopt a platform, it connects to all of the platforms that the retailer uses.

Ayelet Israeli:

So it connects to their Shopify, to their PayPal, to their Google Analytics, to their social media information. So all of it is available in one platform and it also takes all of the data back two years.

Ayelet Israeli:

So I can actually look at what happened before they adopted the platform and after they adopted the platform, which is what we want to know because how can I look at change if I don't know what happened before? Right?

Ayelet Israeli:

Then I collect additional data on like what are they actually doing, their advertise expenses, the products, et cetera, et cetera. So this is an example of a dashboard that is like a monthly report of a bunch of analytics.

Ayelet Israeli:

The main things in this dashboard is customer retention, customer acquisition. I can see where our customer is coming from, how much revenue I'm making out of these customers, et cetera, et cetera. We have this for many, many, many metrics.

Ayelet Israeli:

This is the example of a benchmark. So the blue line is a particular company and the green and orange lines are how they're doing compared to other companies. So we can utilize all this data to kind of look at how well companies change and adapt after adopting the platform.

Ayelet Israeli:

Now I'm looking at about 1,000 retailers that adopted this data analytics service. The annual revenue of these retailers is $100,000 or more. So they're not small, but they're not a huge either.

Ayelet Israeli:

Some retailers use Amazon, Big Commerce, Shopify, PayPal, so I have a 1,400 different kind of stores or store fronts. 60% of them are in the US and Canada and the rest are around the world.

Ayelet Israeli:

The total revenues in the data is about $2 billion. So they're not small either. This is just an example of where are these retailers coming from? So about a quarter is from clothing and fashion. We have health and beauty, food and drink many different industries.

Ayelet Israeli:

The average monthly revenue for a retailer in our data is about $54,000. The average basket size is $174 and about 700 transaction per months. About 650 of them are from unique customers.

Ayelet Israeli:

Now, like I said, the cool thing is that we can actually look at what they did before and after. And the second cool thing is that we have this staggered adoption.

Ayelet Israeli:

So some people adopt in January, some in February, some in March. Then we can use the late adopters to kind of compare as a control group is in an experiment to those that did it that adopted in the earlier times.

Ayelet Israeli:

I'll show you what I mean in a sketch. So this is exactly how my data looks like the way to read this graph. So you look at the timeline. Once I start observing a particular retailer, I see a blue line. Once the retailer adopted the platform they become red.

Ayelet Israeli:

So you see that in certain times of the data there are groups of red retailers and blue retailers. So I can kind of compare them to figure out is there any change, what is the change between the two groups?

Ayelet Israeli:

I use a few other kind of metrics method that I won't get into, but I'll be happy to talk about them offline. I was told once you have to have an equation in every presentation. So here it is.

Ayelet Israeli:

I actually use it too. These are also the regression results, but let me just highlight the main findings. So what we find is that once a firm actually adopts this platform or this data analytics services, their revenue increase in about 8%, which translate to about $3,700.

Ayelet Israeli:

This is looking at things monthly. So the difference between before and after. They get about 36 additional transaction compared to before they adopted this data analytics service.

Ayelet Israeli:

About 33 of them are from unique customers. And the interesting thing for us was that they're actually kind of better at getting repeat customers. So some of it comes from new customers, some of it come from old customers.

Ayelet Israeli:

But what we didn't find is an increase in basket size. So people don't buy more things per transaction, but they just tend to buy more often than before and they are newcomers to the platform.

Ayelet Israeli:

Now to sum up, does the adoption of data analytics service add value to the firm? My answer is yes. It does so through increasing revenues, the number of transactions, there are more new customers as well as more repeat business.

Ayelet Israeli:

Then the second question, through which channel does it actually work? Like I said, TBA, Future Assembly 2020. Thank you very much.