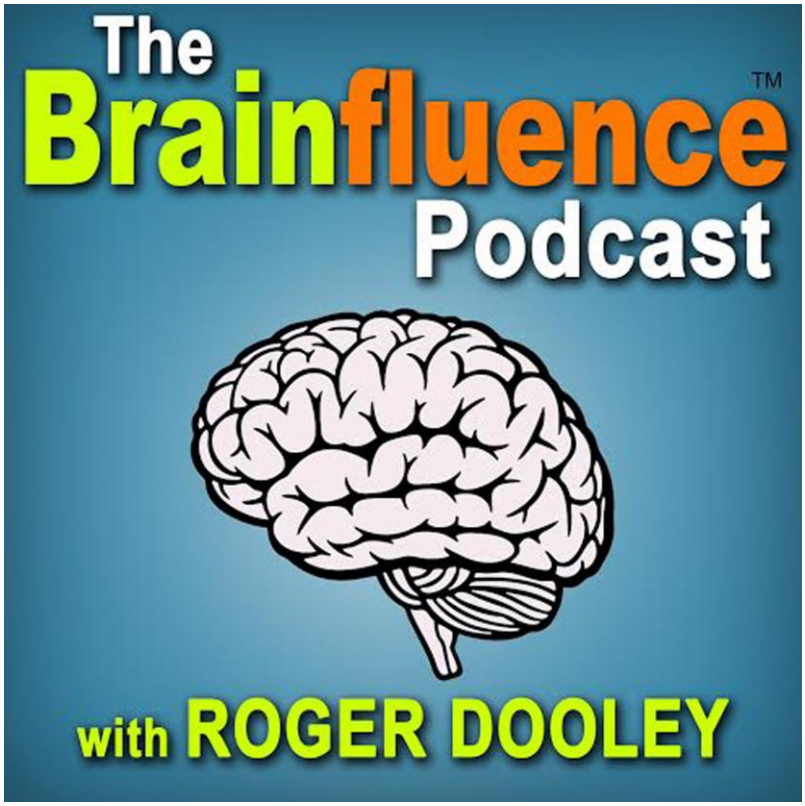
Ep #69: The Smart Future of Ecommerce with Jeffrey Battin, Eric Nyberg, Ph.D., and Sanjay Chopra



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Roger Dooley

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Welcome to the Brainfluence Podcast with Roger Dooley, author, speaker and educator on neuromarketing and the psychology of persuasion. Every week, we talk with thought leaders that will help you improve your influence with factual evidence and concrete research. Introducing your host, Roger Dooley.

Roger Dooley: Welcome to the Brainfluence Podcast. I'm Roger Dooley and today is a little bit of a departure from our usual format where we interview typically a marketing expert or an author of a new book. Today we've got three people who are involved in a start-up company that has some really exciting things going on from a customer experience standpoint, but now so far is pretty much under the radar and we have the three founders. We have Jeffrey Battin, Eric Nyberg, Sanjay Chopra, and what I'm going to do first is let each of you give sort of a one sentence introduction as to who you are, and we won't get into the exact details of the company are yet, but Jeffrey why don't you lead off.

Jeffrey Battin: Sure. First of all Jeffrey Battin. For the last 27 years, I've been in data-driven marketing, 22 of those years as an entrepreneur in customer acquisition, direct mail, digital marketing, and mostly using advanced analytics, and what we call smart marketing to drive efficiencies and consumer acquisition cause down.

Roger Dooley: Great. Okay. Eric.

Eric Nyberg: My name is Eric Nyberg. I'm a professor in the Language Technologies Institute at the School of Computer Science at Carnegie Mellon University, and my research has focused primarily on intelligent information systems and

team learning to make those systems work including some work that I did on IBM Watson for the Jeopardy! challenge.

Roger Dooley: Okay. Sanjay.

Sanjay Chopra: Hi. My name is Sanjay Chopra. I am a serial entrepreneur. I am a graduate from Carnegie Mellon. I've known Eric while there. I've started a few companies. I also have experience at IBM and most recently at Giant Eagle launching a lot of e-commerce and digital commerce initiatives.

Roger Dooley: Very good. Thanks for handling the intro part. I think it's a lot more interesting to have you guys to do it than me recite a bunch of dry facts. First Eric let me congratulate you and IBM and rest of the certainly massive team that put Watson together. I know at the time when Watson succeeded in the Jeopardy! challenge that it was really an amazing feat of technology that compared to sort of previous AI efforts that involved very specific domains. Carnegie Mellon was behind IBM's Big Blue that won chess championship which was no small feat but by comparison being able to answer seemingly random questions by accessing vast stores of knowledge in just about every domain is another level of complexity entirely.

Eric Nyberg: Yes. I think what's interesting is there has been a trend toward attacking the complexity of what we call unstructured information. Something like Deep Blue is very successful because although there are many, many possible chess games to be played, the board is finite and it can be modeled and all the possible game states and outcomes can be modeled very simply, but if you ask a question in plain English there are many different ways to

answer, many different places you might be able to find the answer and Watson was really the first big system to address that complexity of unstructured text, and now we're seeing similar attempts to deal with that complexity in audio and video, and other multimedia where the computer has to deal with information that was primarily produced for humans to process rather than computers.

I think that's the big difference is that AI systems now are really trying to focus a lot more on essentially reading the same way that humans read and then viewing and listening the same way that humans do so that computers can directly process existing information.

Roger Dooley: Oh yeah, it's great. There is really such exciting work going on at Carnegie Mellon. I know that most of my listeners are familiar with some of the other folks there particularly those involved in the CNBC are written about, interviewed George Loenstein, Michael Tarr is doing some great work. I mean all these folks are really at the cutting edge and their case of combining a neuroscience and computing so fun stuff, but let's talk a little bit about Cognistx. Some of the buzz words that I've seen in sort of very brief discussions of your products and your intentions are things like a cognition engine. What do you mean by that and what is the fundamental objective at Cognistx?

Jeffrey Battin: Well. I think we speak about our cognitive engine since we are talking now about a practical company that needs to deliver value in a particular market segment. We're not really trying to address the idea of building a cognitive model of human thought like some of those guys that you mentioned a moment ago where the goal is to do pure

science to understand the human mind and human cognition. What we're really focusing on is developing specific elements of cognition that are really important for solving important business problems. What we're looking at with the back-end in Cognistx is the ability to recognize when texts are talking about entities, relationships between those entities, information about entities that attributes various meta data and so on.

This is what you really need in order to answer questions in the case of someone like Watson or for trying to match our customer who's just come to our website with the sort of product that is best suited for them, we want to be able to match all the information that we know about that person and all the information that we have about all of our products and since that information is typically represented as text, we have essentially what amounts to reading problem in cognition, but we're not trying to sort of model brains that can do higher mathematics or spatial recognition or things like that. We are really focusing on text understanding I guess you could say and that's the sort of main area of cognition that we are focusing on.

We've also worked on cognition that involves speech understanding where you transcribe let say a transcript of a telephone call between a person in the call center and the customer who is calling in and then work with the result in text that you get from the transcript. We talk about cognition because we want people to understand that it's very complex computing and it is analogous to what humans do what they actually read and process text, but we're not doing generic research on human brain for example. The guys in the CNBC really try to

encompass everything, and we're really I think a lot more applied in terms of the cognition that we're doing.

Sanjay Chopra: Of course, from a business perspective, this is Sanjay, our focus is mostly taking the time into consideration, taking location into consideration, taking understanding of customers into consideration, events, preferences, behaviors, and then delivering the right product information within the right context in terms of promotion, or sale, or discount, so that they say "Wow, this is great. This is exactly what I was looking for" is what we want to do. Taking all the structured, unstructured data, synthesizing and understanding the customer preferences, understanding product attributes and then presenting it to the right customer at the right time and that is the problem that we have synthesizing which we are attempting to solve within Cognistx.

Roger Dooley: True. I guess, if you have to compare what you are doing, I think of recommendation engines, I think of Amazon or Netflix. Amazon clearly is based on user behavior, things people looked at. Perhaps how long you've looked at them, perhaps you've looked at other products in the categories as well as actual purchases that you've made. Whereas seems like Netflix is very focused on things that you graded. They're looking at that sort of behavior not so much what you may have browsed, but based on these 150 movies that you've graded, you probably liked this other movie here and combining both your information with that of other people and both of these seem to have some shortcomings.

I think that Amazon does a great job. I have definitely been goaded into purchasing things because they came

up with a particularly apt recommendation an E-mail. I was like “Hey I was looking at that the other day and I really do need that,” but at the same time they can come up with some sort of off the way things, like I bought a particular brand of a dog food the other day, so now they're recommending that I buy the same brand of puppy food or other products that might fall into that same family, but I really have no need for.

It seems like that they are just a little bit smarter it would figure out that if I am buying a dog food I quite don’t need puppy food. Netflix do sometimes relies a little too much on those. Other people liked this so you will too because … and they've put some rather odd recommendations which seems just like complete non sequiturs. But what you are trying to do is actually go beyond that right and interact with the customer in either a live manner or perhaps analyzing past interactions to take what they are saying and incorporate that into the whole process. Right?

Jeffrey Battin: Absolutely. Absolutely. Taking it to the next level and in fact, this is Jeff. It was serendipitous, we use the term a lot of here because what we create is customer serendipity and I came to both Eric and Sanjay with a problem and it always begins with "why" and in our case the why is the massive amount of irrelevance that exists today in digital media is just simply out of control and causing consumers to essentially push the whole button on brand loyalty. In order to create a multidimensional opportunity where we can take massive data sets in terms of past behavior, combine them with real time context data sets in terms of events and time, place, location, and use national language and be able to interpret a

customer's needs essentially on demand 24 x 7 while they are at the shelf and then push them pre-approved content autonomously without a campaign management system getting involved.

We felt we really had something there where we could do autonomous marketing in real time and pushing the right product to the customer at the shelf.

Roger Dooley: What would this interaction with the customer look like when we're perhaps in that learning phase and trying to figure out what's this customer about? I show up at the website. I don't have a history with that website. What could that interaction possibly look like?

Jeffrey Battin: Well. First of all, we are omnichannel. To us we're agnostic in terms of, it depends on how the consumer wants to communicate, but relative to smart devices which are likely to be the candidate here branded mobile applications. We are talking about a relationship where the customer offers national language preferences in exchange for what we call the grand bargain which is "Look let's have a relationship. Let's have a real meaningful relationship where you're simply not going to spare me anymore" and you empower us with information about your lifestyle, about your needs with regards to our brand, and then through what we call the cognitive push you're able to … we pick up on the massive data DNA.

If I was watching TV last night and I was looking at Golf Digest and I clicked on a sporting goods ad that took me to a major sports company's website, and then I'm served a video. We pick up on that DNA and when that person shows up at Starbucks 500 yards from the store the next day, we carried that omnichannel DNA and are able to

then push the consumer an ad for let's say it was the Adidas shoes and all of a sudden we can use, we know there is co-op money available for Adidas for $25 and if this person happens to have told us that they're running a marathon this weekend, and there is a $147 a pair of shoes that they were looking at. Now we have got an event which is the run, we've got the event that occurred the night before which was the customer came into the top of the funnel from the Golf Digest so we can offer attribution there in real time, and we've got them sitting 500 yards from our store.

We push the $75 or $50 offer to the customer. They swipe their iPhone and up comes the offer with the countdown timer of 24 hours. We want to get them in the store, they trip the near frequency Bluetooth devices in the store. We now know they have entered the store and we've got them captivated, and so that then begins the in-store part of the process. So it's all a combination of 100% permission, customer allowing us to, you know, we don't spam anyone. This is a total relationship that's built on the customer understanding that there's a … for them which is relevance, relevance, and relevance and it's all about value adding, incremental customer value.

Roger Dooley: Right. To go back to my Amazon dog food example would you for instance perhaps in way, when I am making that purchase the first time, or maybe I'm browsing dog food or something. They say "Dear Roger, you've a dog right?" If you purchase, it will be a logical assumption and may be in a series of two or three questions they could determine that I have a dog that's a large dog that's an adult, and I do not have any cats or other pets, and then from that point on any offers could be far more relevant. Is

that something one of the things that you could do with your technology or am I still going in the wrong direction with that?

Sanjay Chopra: Eric, I don't know if you want to handle this or I could …

Eric Nyberg: Yes. Sure. I think the idea here is if you look at your Netflix example, they basically have a very simple model which is based on what you've voted on. What we try to do is create an omnivorous mall where anything that could potentially be relevant we want to be able to capture that and in particular when you're doing retail what you've bought and when is very important. You used the example of being offered the wrong kind of food for a younger dog let's say, but if I make you an offer even on the adult dog food that we just bought that yesterday you're not going to need it yet.

I should really be waiting until you're going to need it again and in fact I should be monitoring your past sales history to know when you're going to be ready to buy that, and then make you the offer before you even know that you need it and then you'll think "Hey! I actually need this," and then I might bundle that with another offer or something to make that available to you. The idea of time and also the actual geo location or mobile context where you are at those are very important and what other companies haven't done yet in doing these kind of predictive analytics is to make it possible to capture that data and secondly to make it possible to learn how best to use that data to actually provide you with some value.

On the software side what this means is that you have to have a … it is almost like a memory or a context where you remember something not only about everybody that's

bought this product but about a person individually and Jeff's worked through some really nice use cases where having shared information about family members and interests, we can do things like trigger special offers around Father's Day or because we know the kids are going back to school and they're going to need new soccer equipment. I think that's also the depth of the model, the richness of model adding those additional features or things that other, you know, that's a new element here, and then also using that at the level of individuals to make decisions is also very new.

Ideally we are going to get away from a world where a marketing team decides on offers for let's say large segments of the customer demographics and looks at ways of actually coming up with very personalized offers that really depend on who you are and what you've been doing in the last day or 15 minutes or something.

Roger Dooley: How do you keep from getting creepy with that? Obviously relevant offers for me alone are generally great and obviously much before to get an advent is for something that I really want or suppose something that I don't, but the classic example is when Target started sending new mother products to women they determined behaviorally were pregnant based on all their purchases and in some cases they had not even told their family. That clearly crossed the creepy line, but I think in general there is that feeling that gee, I want stuff that's relevant but it just gets a little bit too relevant and suddenly it feels like "Wow! these guys know too much about me."

Eric Nyberg: Well I think when anyone signs up for service like this it's going to be when you install an application on your

phone. For example, you are going to have to read the policy about what data are collected and what those data are used for, the same way that Facebook and so on have this kind of relationship with the customer, but differently from Amazon we're really trying to get into a mode where the user can get feedback. Every time a suggestion is made or one of these analytics is used to offer a serendipitous moment to the customer, we're going to make it possible for them to immediately give us feedback that that's not the kind of thing that they are interested in. The whole collaborative filtering thing in Amazon can go wrong sometimes.

The case for my life is where I get on and one time I bought some baby dress for my little niece. Then ever afterwards Amazon decided that it was going to offer me kids' clothes or you buy a text book or a book one time as a gift for somebody and it's not at all in your area of interest. A smart system that looked collectively at everything that you had done might be able to discern that that was an exception, but ideally you want an interface where you can just swipe left, swipe right, you can immediately get feedback that this is not the kind of offer that I am interested in.

Then you are in an interesting situation, kind of a creative situation where you can offer crazy stuff or be very speculative and then see what somebody says. You're going to find out immediately whether they like it or not, and Sanjay in fact worked in the past on the ability to even vary prices at which you offer products online based on some estimation and current demand and the idea there is that "Hey! Why not find out if somebody will pay a little more for this," or whether they buy something that

they haven't bought before if you lower the price by a certain amount.

We want to make it very interactive, so that nothing is we can… not seem as clunky as recommendation system are in the past, and we also want to be creative and proactive where people who are designing marketing schemes might thing of very interesting ways of offering things and then we'll find out whether they work or not by seeing what kind of feedback we get.

Roger Dooley: I think it's a great point because Amazon does let you tell them that "Okay I've not really been seeing things like this" but the way of doing it is so obscure that I will guess that almost nobody sees it or finds it.

Eric Nyberg: Yes. I should be careful here. May be it is there.

Roger Dooley: Yes. It sounds like. I think they do have that option although I couldn't say that it's on the site right now and although they are constantly testing stuff, and that is one thing that they are brilliant at, running a whole lot of tests. But by and large really it's not easy to tell folks that "Well, I'm really not interested in this." Do you see a sort of a human-like interaction at all ... I am visualizing something like a website, a live person interface where you can talk with the customer service rep except in this case it's not a customer service rep, it's your software.

Eric Nyberg: There are some context we're having a natural dialogue is the right way to go. For example, if I want to get a little more information popping up a nice-looking avatar then say "Hey! Before I help you out here, can I get a little more information?" I'm much more likely to say yes and answer a couple of questions than if the system throws

some kind of form-based questionnaire for me to fill out before I can go ahead. I do think that there are context for having a dialogue is great. We're not really just focusing on creating a better series or better dialogue agent in a box because people are actually used to accepting certain kinds of offers and more interactive on the screen way.

Jeff's got some nice use cases where certain push notifications will show up on my phone because now I walk into the store, and because I'm in the store, there's a special one-time on-site offer, if I buy here today in the store that's not going to be effective if the system tries to call me up or have a dialogue with me. It's going to be effective if a little flag shows up or a little notification shows up on one of the buttons. My app that says, "Hey! There's three new offers for you in your cart. Why don't you check them out?" I think natural language is good especially when we want to get free form information where it will be too laborious for the person to type it in with their thumbs on the phone. We want them to be able to use speech to do that.

I think there are lot of other ways of interacting that are actually easier for the user if doesn't involve a speech dialogue. From constantly opening up my card to look at the offers that the system is providing to me, and then I can left swipe to save the ones that I think look good for later, and right swipe to get rid of the ones I'm not interested in. I could be doing this every time I check my Facebook. I could also be checking my offers to see if there is anything interesting. That will be a lot more efficient when you are not using a dialogue. You wouldn't use a dialogue especially where there is sort of open

ended information that would be too laborious to type, but we don't' think that we're going to recreate a super Siri that does everything for you because we think people are actually quite used to certain ways of interacting with mobile devices that don't involve for speech.

Roger Dooley: Right. Speech is great in certain ways but it's also kind of overrated compared to as you say a swipe or perhaps just a tap of the button that might, a smiley face or a frowny face or something could be lot simpler than any other candidate reaction.

Jeffrey Battin: Roger, this is Jeff. The exception to that is that one of the areas that we really want to focus on as a product we call the intelligent pulse survey, and I found that a lot of CMOs are particularly interested in the CX, the customer experience post purchase and one of things that we are able to push is highly intelligent post purchase surveys. Keep in mind, we know when they came into the top of the funnel and we know every action that's taken place right through to check out. We know who they spoke to in the store, we know who checked them out.

Wouldn't it be great to understand immediate and have immediate context as to every single users' sentiment and be able to measure that to the store level, to the manager level, to the customer level, so we have a customer that is extremely valuable and we're seeing scores drop off we can be attentive to their needs. At the same time, if customers are scoring high why not take that opportunity and instantly offer the consumer an incentive to share the good news with their friends.

Roger Dooley: By scores, what do you mean?

Jeffrey Battin: Well. We're able to ... I'll let Eric answer the algorithmic way of managing a score, but customers are scored typically today by odd measurements like recency, frequency, and spend. We don't believe that that's the future of loyalty marketing.

Roger Dooley: Everyone knows the catalog marketing of 30 years ago.

Jeffrey Battin: Yes. We're not a number in a computer anymore. It's a relationship. What about the 1000 friends that I have on Facebook and you mentioned yourself with social media these days. Word of mouth and word of the customers are so important. What we're talking about is if I have 1000 friends and I've had a great experience in a store, and I score high, meaning the answers that I'm … through natural language we're able to gauge the relative sentiment of the customer. If we based on rules set by our client, if the customer is forced high enough then we would want that customer to share that news with any other social media outlets, and then certainly if their friends download the mobile application and activate, why shouldn't they be rewarded. We're talking about expansion and growth of the loyalty market in a whole new direction where rewards for interaction and sharing are taken into consideration.

Roger Dooley: When you start talking about sentiments have you thought about incorporating any biometric measurements like now that people have all these wearable devices?

Sanjay Chopra: We have. In terms of fit bit data or your typical data that's collected on any of your new iPhone 6's that it does. In fact, we're also looking at taking some of that information, if it's retailer that also has a pharmacy associated with it, medication information, taking behavioral sentimental

analysis all as inputs to then present the right offer, or say that "Hey! Based on what we have seen some of the data and the purchase you are making this may not be the right product for you also" and take it completely off the list. The positives and the negative, it kind of works both ways.

Roger Dooley: Right. We just got out of time here. Let me ask how far away are you from national commercial implementation do you think?

Sanjay Chopra: Our goal is to get something live in the next two to three months, by the fall of 2015. We'll have active customers working with us, or typically what we like to do Roger is do a beta program with them where we take their information, ingest all their data, augment that information with third party, structured and unstructured data, build the right models, start small, and then begin to expand it.

Roger Dooley: Let me remind our audience that we are talking to the founders of Cognistx and they are Jeffrey Battin, Eric Nyberg, and Sanjay Chopra, and we'll have links to their various social profiles and personal websites and so on and also any public information about Cognistx on the show notes page at rogerdooley.com/podcast. And there will be a text version of the conversation will be there too. Jeff, Eric, Sanjay, thanks for being on the show.

Jeffrey Battin: Thank you Roger.

Sanjay Chopra: Thank you Roger.

Eric Nyberg: Thank you for having us.

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