Keep Moving Episode 1. An Introduction to Professor John Donovan

Intro
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Hello and welcome to the Keep Moving podcast with MIT Professor John Donovan.

Over a 40 plus year career Professor Donovan has impacted thousands of organizations and founded 27 companies, six of which went public. He is a sought-after entrepreneur and business adviser throughout the world. We will dig into what makes businesses tick and how to make them more successful. Welcome.

Paul: John, how are you today?

John: Good.

Paul: You were born in 1942.

John: Yes.

Paul: And you were born in Lynn, Massachusetts.

John: In Lynn, Massachusetts.

Paul: Lynn, Lynn, the city of sin.

John: That's right. It's a unique town. We have a song.

Paul: That's true. It's not a very flattering song though.

John: No.

John: So, not a lot of good things come out of Lynn. What's the best thing to come out of Lynn? I don't know. Maybe Lynn Creamery.

John: For you, Lynn Creamery. We had in the 1940s a strong shoe industry. In the 1950s, we had the GM electric company and some wonderful advancements in technology, and jet engines came out of Lynn at that time.

Paul: So, you got from Lynn... I know you want to Yale. You want to MIT. You've been a professor at MIT, a professor all over the world. How does a young boy from Lynn get to Yale? Tell me about your parents.

John: I had two parents.

Paul: Just two.

John: Just two. They're a unique situation. My mother was a social worker and a teacher. My father was an elementary school teacher, the first male elementary school teacher in Lynn, Massachusetts. He taught 3rd grade in Lewis School. He gradually moved up and taught algebra at junior high school in Lynn, and then became principal of the Connery Elementary School, which he loved working with children. And he said to me when I became a professor that he liked his job better because he could have reached further into the future than I could reach because I was dealing with older kiddos.

What really was key to everything was probably three or four things. I picked the right mother. If I had to pick any parents in the world, I would have picked the ones I got. The second key thing was I had some wonderful mentors, and I had a mentor in college; I had a mentor at MIT; I had a mentor in the Navy. These mentors taught me and reached down and grabbed me and pulled me out of various problems that I could have had in advancing. But each time, there was a mentor there, and he did it for me.

Paul: Tell me about... You were in school in Lynn. You went to public school?

John: I went to public school, Lynn English High School.

Paul: What gave you the thought to say, "I'm going to go to Yale"? Did you think of that yourself? What was the deal?

John: What happened was the following. Again, a mentor. There was this mathematics school teacher that I had in my high school. His name was Mr. Thornton. He noticed something about me, and I always think that it's because I wasn't that smart that I had to exhibit this trait, that on complicated problems, I would look for a pattern and then, from the pattern, I would then extrapolate.

So, one day he was asking me in an algebra problem, "How did you solve this problem?" It was like x = cos(y) times E to the fourth power times the log to the base E, or something like that. He said, "You're were able to solve it."

I said, "It's easy. I don't memorize anything. What I do is treat both sides of the equation equally. It's like our political systems. Whatever you do to the left hand side you do to the right hand side. So, if 2x = 10, you've got to get rid of the two, so you divide the left hand side of the equation by two, and divide the right hand side of the equation by two, so you get x = 5.

He said, "Gee. That's pretty good. Could you teach the class?" So, I started teaching the class. When you teach a class, you learn it twice. And then I started doing some tutoring on the side. But the main thing is the teaching. He then said, "You're going to go to school."

I said, "How do I do that?"

He said, "I'll take care of it."

Paul: Could your parents afford that? Were your parents expecting you to go to college?

John: My mother always had high ideals. She was not fortunate enough to go to college. That is, when she was a girl, she wasn't fortunate enough. Now, later on, just as an aside, I became successful enough that when she was 60 years old, I helped her get into Harvard University. And she ended up getting a degree from Harvard University.

Paul: That's a small school in Boston, right?

John: That's the safety school in Boston.

Paul: I'm sure we'll get into that.

John: I should tell you one little thing as an aside. Lynn is little bit of a disadvantaged community. This is not a high-income community. So, the answer was yes, my mother thought

that I should go to college. How I would get there and how would I ever afford it on an elementary school teacher's salary was something that nobody could explain.

Paul: So, it was impossible.

It was impossible. And I didn't know the system, how to do that. So, this teacher said to me, "You're going to go to a good school." Well, he had graduated from Yale. And when he graduated, it was during the depression. So, he just started teaching, but he loved teaching. So, he stayed in that. But his classmates ended up being president of Yale, for example. So, what he did is he wrote a letter to the president of Yale and wrote a letter to the deans at Yale that I should go there. And I was accepted.

So, I ended up getting into and going to Yale. Then the story continues.

At Yale, I then said I want to be a professor. That's just what I always wanted to do.

Paul: Why did you want to be a professor?

John: I love teaching.

Now, when I graduated from Yale, or before graduation, I had done sort of an interesting thesis. I had enrolled in three schools at Yale, the engineering school, the graduate school, and the medical school. And my thesis really touched all three areas.

Lessons learned during professorship

Paul: Now, is this your undergraduate?

John: No. This is my graduate. By this time, I'm to graduate school. So I've got these three possible fields that I did my graduate work in. I then started interviewing schools, and since it was on a fairly interesting thesis, I immediately got offers from Princeton--

Paul: And this is to be a professor?

John: To be a professor.

Paul: I see. So you went out saying I want to realize my dream.

John: That's right. I want to realize my dream. And there's a process for doing that. And my thesis advisor was very good. He told me the people that I should write notes to at Princeton, Stanford, Berkeley, Harvard. And I wrote notes to these people, and I immediately got interviews. You went out, you talked, and I got offers from those schools immediately. I also sent a note to MIT.

The offer that I got from Princeton was a very attractive offer. This was way back in 1970. It was for, essentially, a tenured professor, essentially head of the computer science department.

Paul: And this is where?

John: This is at Princeton. They mentioned more times than once that this was the school that Einstein had been a professor at. So, you ought to come here. And it fits with Yale. So, you could continue your preppy life. The financial terms were wonderful. They were something like $40,000 a year in 1970.

Paul: So, how old were you? 28?

John: I was 28 years old. Then, Stanford made me a nice offer. Harvard made me a nice offer, not quite as nice as Princeton did. But they were all faculty positions, long-term. And Berkeley made me an offer.

Princeton called me on the phone in the afternoon and said, "We have to have an answer because we're holding this chairmanship open for you." Then they said all of the reasons we I should go. The dean of engineering called me.

I said, "I'll accept." Then I thought about it. I'm in New Haven, Connecticut. I thought about it. It's 7 o'clock at night. I'm at the grocery store. It was the equivalent
of an A&P. There's a payphone out in front of the grocery store. I called him. I said, "I'm sorry. I can't accept the offer."

He said, "Why?"

I said, "I want to go to MIT."

Paul: But you hadn't interviewed at MIT.

John: I hadn't interviewed at MIT yet.
Paul: So, you're taking this guaranteed position at one of the most prestigious schools in the world. You say, "I accept it." And then you're going back and saying, "I want to go to MIT, and by the way, I haven't talked to anybody there."

John: That is correct. I didn't quite give him that story. He then said, "What you interested in?

I said, "I want to go to MIT."

He said, "Well, what are they offering you? We'll match it."

And I said, "Well, I haven't got an offer yet."

He said, "What are they thinking about?"

"I haven't been interviewed yet, but it's scheduled."

He said, "Do you realize if you give this up, I can't hold this offer for you because the head of the department, I've got to fill this one. Maybe you can come back and we can talk about some other offer, but I can't hold this offer out for you."

I said, "I understand. I really want MIT."

He said -- this was his words -- he said, "You're going to take a chance of a guaranteed offer at Princeton with presumably a very good salary and a very good position for an unknown at MIT."

I said, "Yes."

He said, "That's precisely why we want you to come here. We need that sort of thinking here."

Well, MIT, I finally went for the interview at MIT. MIT has a tradition in the electrical engineering computer science department. Within MIT, this is the most prestigious of their departments. It's the only department, for instance, that you cannot transfer into if you get accepted into MIT as an undergraduate. You have to be accepted into the department. Every other department you can transfer however you want to. And it's rated as the number one in the world.

I took the interview. They made me an offer for an assistant professorship for two years. $7000 a year. And they made it clear to me, at the end of the two years, I probably wouldn't stay at MIT, because they never hire from outside. They only hire from inside, and that's where their thesis advisor is their mentor, so he can get you through that professorship system and the tenure system and everything. And I'm coming in with no air cover and no mentor.

Paul: I see. So, they want homegrown people.

John: They want homegrown people. And they feel as though their people are the best to begin with. They're the best when they accept them. They've got the best education. That's their rationale. Other schools have something similar to that. For example, the Harvard B school does a unique way of teaching, namely they use case studies. So, the people they hire as professors are people that go through the DBA program at Harvard because they learn how to do case studies, where another university doesn't use that method.

So, MIT has that intensity of technology. That's what they do. They do technology excellence. They've never given an honorary degree in the history of MIT. It's the diligence of useful work. They mark on a curve. It is an intellectual powerhouse. So, I said, "Yes. I'll come."

Then, mentor-e number two steps in. It was at the end of the first year. What happens is I'm getting off the train, and a professor, Paul MacAvoy, a senior professor in the economics department says, "How are you doing, Donovan?"

And I said, "Really great."

He said, "What do you mean?"

I said, "My book has just sold 50,000 copies this year. No textbook has ever done that." It's used in virtually most computer science departments--

Paul: Which book was that?

John: Systems Programming. It came right out of a course that I taught at MIT. And I said, "It's achieved tremendously well. And then secondly, I've just been given the award as the best teacher in all of MIT."

Paul: Is that the Schultz Award?

John: The Schultz Award. That had never been given to an individual. As a matter of fact, they established the Schultz Award just for me.

Bird Atomic was the name of the company that he was chairman of. They established the award at MIT to be spread out in all of the departments. But this year, the first year, they offered it only to me. So, I said, "Paul, I've been elected the best teacher in all of MIT, and my book has turned around and sold 50,000 copies. It's terrific."

He looks at me, and he says, "Donovan, this is a disaster."

I said, "What do you mean?"

He said, "If 50,000 people can read your book, it has no intellectual content whatsoever. And if you taught a course in pornography, you would have been a popular teacher too."

MIT doesn't care whether or not you're a good teacher today. The key to MIT -- now this is key, different from other schools -- they want to know whether or not you've got something to say in 20 years. That means whether or not you're doing the research today that's good in 20 years. Because if you don't, you won't have anything to say.

And I must say, some of the schools that I've gone to, professors who would come in and use the same notes that they've been using for 20 years, and they'd be yellow. I remember their yellow faded notes.

MIT -- nope. You've got to be doing the research. In 20 years, you'll still have something to say.

He said, "Stop all that. Go and do research, and I want you to publish in the following journal articles. And he wrote to me what the journal articles were: The Association and Computing Machine, the New England Journal of Medicine." He wrote down the articles, the publications that I was to publish in. I then stopped all that. And he said, "If you want to then go back to doing all of those extra things and teaching and stuff, you can. But you're going to be out of here. They're not going to renew your contract. You'll be out of here in two years, and you'll be a teacher someplace else."

So I wrote in those journals, and I became one of -- if not the, but one of -- the youngest tenured professors at MIT. If it hadn't been for that mentor, that discussion, I would have been teaching someplace else.

Paul: Was it a surprise to you what Paul MacAvoy was saying?

John: Yes, it was. And this is something that I've learned in life. And I've got all of those Donovan-isms. But this is one good one that I like to share with people. You have to learn the system. If you're in a system, you have to learn the system.

I was shocked because I thought I was doing everything right. I call it roar of the applause. I thought I was a good teacher.

Now, at different times, when I was associated with other universities or other businesses and companies, sometimes I had to change that system. So, as I jokingly say, in many of the companies that I started, over the first year or two of the company, I was a who's who. I had to raise the money; I had to gather the team; I had to get the ideas; I had to look for the disruptions in technologies or in business and formulate the company. But then, you have to put structure. After you form the company, structure has to go in. And then I have to change the system. The system then becomes a system of structure -- not of changing structure but of putting structure in. I then go from a who's who to a who's he.

I've had to adapt, depending on the environment that I'm in. In the corporate, entrepreneurial environment, I have to behave one way, the stable companies another way, in certain universities a certain way. The answer is you have to adapt to the system that you're dealing with.

Engineering vs. Entrepreneurship and what they don't teach

Paul: If you were to pick one word to summarize who you are, would you choose -- I'll give you some examples -- professor, an entrepreneur, a teacher? What would you pick, if I had to force you to pick one?

John: I would take teacher with a little bit of an asterisk and say mentor. Because I'm more of a mentor than a teacher. My style of teaching is really a Plato style. It's going back and forth with the students. It's going back on the one-to-one basis, or on a thousand to one basis. I really mentor people. So, I'll have mixed in with my teaching, stories.

Paul: Now, I've known you a little while here, and I don't get the sense... What was your undergraduate degree in?

John: The undergraduate degree was a joint degree in electrical engineering and in liberal arts.

Paul: But, I don't get the sense that you go home and have soldering iron projects and things like that. You're not that type of electrical engineer.

John: No. I'm not that type of electrical engineer. But I should tell you, I could be that type of electrical engineer.

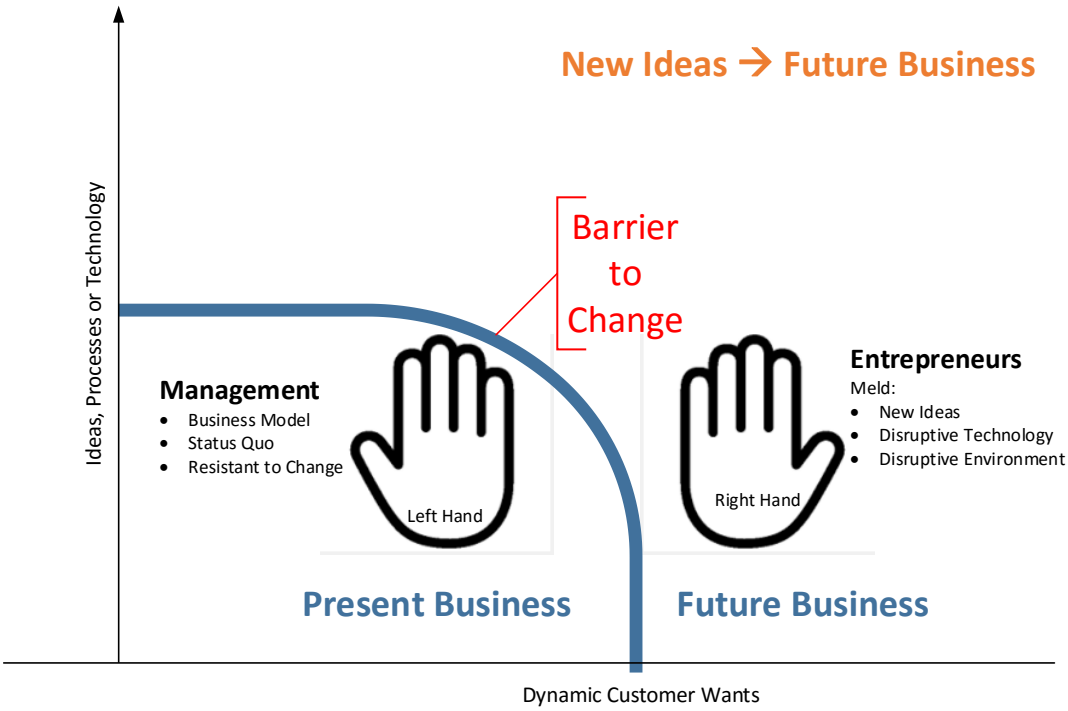
Paul: You'd just burn yourself. You don't know which end of the soldering iron to...

John: I know which end of the soldering iron. When I was a little boy, I used to do those woodworking things by which you burnt things into wood and such.

So, the answer is, there's an engineering side to me, but in the world of academia, it started off being quite technical.

I did the code in machine language. So, I would be very, very detailed.

Today, I've become broader in that spectrum, where I know a little bit of the technology and the details to off on **the right hand side** to very strategic.



How do you find lazy assets in companies? How do you develop wealth in companies? How do you change organizations? So, I've broadened from a technical engineering person, that never did the soldering iron working, but I did do a little bit of that, to where I did the actual programming in software, to I designed the entire systems.

Paul: We've talked a lot in the past about engineers, and I'm from a family of engineers. You're very familiar with the behavior of an engineer to come up and say to whoever, "Did you solve the problem?"

"Well, I did, but, it doesn't do this or it doesn't do this." Tell me your story about that, because when I first heard that, I so identified with it.

John: Well I find that perfect is the enemy of good. The problem with many, many people, is they will not even start something until they see how to do the whole thing.

Or, the biggest thing that I call, that most people are guilty on, is an expression I'll use, "A hole in your sock." A person gets up in front of an audience. He's all dressed up in his best suit, his tie. Everything is perfect. He starts his presentation saying, "Excuse me everybody. I ought to start this presentation and tell you a truth. I have a hole in my sock. You can't see it, but it's there. Now, let me continue."

Now, I bring that into the technical world, where what people do is they'll start a presentation, that they've worked on this system, this extraordinary system, but they'll start off first thing, "We built this system, but you ought to know, there's a performance problem we've got. There may be a security problem we've got. And screens aren't quite right." They'd say all of those things before they even tell how great the system is, and what the system can do, and everything else.

They're doing all the bad things first. It is not the right approach to do. What you want to do is you want to start a presentation, not with your holes in your sock, but with what you've prepared, what you've done, the incredible this that you've done.

Paul: Thanks for listening to Keep Moving. To get in-depth show notes or to contact Professor Donovan please visit professordonovan.com

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