Reflections on Digital Transformation in Design

An Interview with Dr. John Maeda[1]

Laura Scherling[2]

"As the years change, technology changes. Digital transformation means that these changes are happening. The transformation in the design world means we are adapting to changing tools and business models. But today, it is hard to figure out what you are supposed to do in a world where there is so much stock photography and so many design templates. This is a question that is going to arise continually. Digital transformation means moving from non-digital to digital, and now going toward pure digital. This can lead to the question: How much of it do we need humans to participate in?"
— *Dr. John Maeda, US*

1 Microsoft, US.

2 Columbia University, US.

In 2020 Dr. John Maeda completed his first class at MIT Sloan, "not teaching it" but rather "taking it."[3] With a long and impressive career as a designer and computer scientist, he wanted to learn more about what "digital transformation" could mean. While the digital transformation process has been widely discussed and debated, particularly by businesses and consultancies, Maeda observed that he could not quite pinpoint a "crisp meaning."[4] When you search the Internet the definition is fairly straightforward: Digital transformation is the adoption of digital technologies. Yet, while technology adoption can drive gains in efficiency, the process is arguably more about "the organizational culture and processes that determine the use of digital tools."[5] Maeda concluded that "digitizing is easy, but succeeding in digitalization these days requires care and attention to the design of an experience."[6] Maeda also pointed out that computation is powerful, but it is the humans or the creators of these powerful computation tools (quite often designers) who help to keep the "ethical side of technology in check."[7]

The power of computation and the way we approach digital transformation is perhaps one of the most pressing design challenges today. A flawed design can be a hindrance to millions of users. For example, sentencing algorithms can unjustly "punish people" from low-income neighborhoods. Alternatively, a thoughtfully designed product can help millions of people.

This interview builds on the idea that digital transformation is more than a technical process, but also a means to critically interpret the "nature of computation." It underscores that the major technological transitions happening at work, educational institutions, and in day-to-day life, require

3 John Maeda, "How I Learned What 'Digital Transformation' Truly Means after Waving to a Couple Gs," *Medium* (blog), December 24, 2020, https://johnmaeda.medium.com/how-i-learned-what-digital-transformation-truly-means-after-waving-to-a-couple-gs-3be62c4cef7a.

4 Maeda.

5 Behnam Tabrizi, Ed Lam, Kirk Girard, and Vernon Irvin, "Digital Transformation Is Not about Technology," *Harvard Business Review*, March 13, 2019, https://hbr.org/2019/03/digital-transformation-is-not-about-technology.

6 Maeda, "How I Learned What 'Digital Transformation' Truly Means after Waving to a Couple Gs."

7 Liz Stinson, "How to Speak 'Computer' While Still Speaking 'Human'—According to John Maeda," *Adobe XD Ideas* (blog), December 7, 2019, https://xd.adobe.com/ideas/perspectives/leadership-insights/john-maeda-how-to-speak-machine.

a deeper look. It is urgent to consider how digital technologies can be used for social good while also mediating and preventing "unintended consequences."[8] This interview explores the multidimensional definition of digital transformation, while also examining some of the possible educational and economic implications.

Interview

Dr. Laura Scherling: Can you share some of your thoughts about the meaning and importance of digital transformation today, particularly in design and creative work?

Dr. John Maeda: Today, we are dealing with the fact that many standard business models are shifting. One of my favorite "aha" moments about the field of graphic design is that so many staples, like print, are no longer staples anymore.

There is a statute that strongly recommends—maybe mandates—having a printed annual report. Someone's got to design that report, and printers used to be able to print them. It was not credited often. And when you think about digital transformation this way, it is interesting, isn't it? Here's a required multi-page document. It was a job for many elite design companies in New York. Today's staple is a website that always needs more work. I used to think that it was great to have the annual report industry, but websites are great, too. Once, the agencies made it all by printing it out and gluing things together. Then they got computers. They were able to do it on a computer and start publishing digitally.

As the years change, technology changes. Digital transformation means that these changes are happening. The transformation in the design world means we are adapting to changing tools and business models. But today, it is hard to figure out what you are supposed to do in a world where there is so much stock photography and so many design templates. This is a question that is going to arise continually. Digital transformation means moving from non-digital to digital, and now going toward *pure* digital. This can lead to the question: How much of it do we need humans to participate in?

8 Stinson.

On the education side, there will always be people who want to skill up and follow a dream. However, the business model of education is changing and unfortunately, the price of education can exceed what normal humans can afford.

LS: Is there a disconnect between education and the design profession? Many young people are now entering a situation that is largely "digital."

JM: Both "sides" are going to have a problem because of digital transformation. The job market itself is going to be transformed. Education is going to transform as well. In many instances, transformation is happening rapidly outside education walls. On some days, I wonder what's wrong with making something classic like taking a piece of wood, and carving it down, and making a stand. Maybe these timeless approaches can withstand time. When I took a class recently, I loved it. It was all about digital transformation.

We need more transformed educational experiences. Today, we need more educational services that persist after you finish and help you continue transforming what you are doing; so there is no exact "end." When you have an interaction with your students or your teachers, it *starts* and *ends*. But imagine if you had to talk to them forever? In theory, though, digital experiences are those that you should be able to keep a part of and continue a conversation past the end of the course. Education should help the busy person and not just expect all this information to have been implanted. A truly digitally transformed experience would know how to operate like that.

LS: In your research, you write about some of the "unintended consequences" of digital transformation. How can we mitigate or prevent such consequences of unethical tech use?

JM: To foster ethical tech, we need people who are diverse and "different." People running or managing something together tend to be similar-minded. Whether you are in a university or an agency or company of any size, when you interview someone, you think that if they are like you—if they are one of us—they are going to fit. And because we like "culture fit," organizations tend to be biased towards it. When you create a bias about what culture fit is or should look like, you make it harder for different kinds of people to feel safe and comfortable with new technologies, selecting like-minded, similar-minded people. So the best way to address biases is to ask yourself; how many

kinds of people do you have in your company or in whatever you are doing? And that tends to change the outcome because, number one, you'll hear things you aren't used to hearing.

For example, you can have a team with 18 men and one woman, and someone will say, "Wow, we have a woman here who can represent her opinions; that is great." But what if there were more women in tech? They might have a stronger voice. If you do not consider the importance of diversity and different kinds of thinking, it will not be good enough.

LS: There is a risk of creating homogenous cultures in design.

JM: When you consider the Bauhaus, many people have trouble naming a famous female Bauhausler. In our lives, we can fail to prevent these unintended consequences of tech by not thinking, knowing, caring, etc. Once you create a more diverse group of people around you, there are gradients of diversity that people can identify with, and being able to embrace diversity and complexity is an advantage. It takes a lot of energy, but it is worth it.

It is also helpful to count the visible differences, and then to also count the *invisible* differences. You can then ask yourself how much bias is built around you.

LS: It's an interesting part of a designer's education where there is a debate about what to fit into four years.[9]

JM: We have been in the four-year model probably since the establishment of normal schools. The design field exists because of various business aspects. The Bauhaus was created by the German economic ministry, who competed with the British. In the mid-19th Century, the British had a department of science and art, and they funded the Victoria & Albert Museum (V&A) and the Royal College of Art because they were in competition with the French. Therefore, the V&A was made to educate people about how to make products, the Royal College of Art was created to accelerate industry.

LS: What you are talking about is a form of competition …

9 Michael W. Meyer and Don Norman, "Changing Design Education for the 21st Century," *She Ji: The Journal of Design, Economics, and Innovation*, Design Education. Part I, 6, no. 1 (March 1, 2020): 13–49, https://doi.org/10.1016/j.sheji.2019.12.002.

JM: It has been an economic play. You could also argue that in a digital transformation era—which is interesting—if you tell a computer to do something, it never gets tired. It is mental labor that you do not need to pay for, and it is hyper-efficient.

LS: It is hyper-efficient. What do you think it looks like when designers feel empowered to use new technologies?

JM: Digitally trained people do not necessarily digitally transform because it impacts people's jobs and lives. Maybe the "customer" is super happy, but the toll on an organization is great. Some institutions are extremely hard to transform because of the rules of engagement. When you shake the system and try to transform it, and it shakes back at you, do not be surprised—number one. Number two, industries behave in different ways.

I was a digital transformer. When you first replace a system, you can imagine how unhappy people can be. After I did that, people forgot it happened, and they are collaborating easily at a global scale. I am telling this story because every time I transformed something, nobody was happy because I was interrupting people's jobs.

Sometimes, we forget that an organization is made of people and when you digitally transform it, the people in it have to be ready. When I was talking to other people who were doing this, I heard about a summer program at a university where the university hired students to teach the faculty about how to use different technologies. I thought it was the most brilliant thing because it created a "buddy system." It compensated the younger person and enabled them to see that even though someone may not use technology, they are quite intelligent, and they know a lot. If we had more of these programs, we could learn much faster. It is two-way versus one-way, and then everyone can benefit. If someone gets technology and the other person gets wiser faster, it is a win-win.

LS: Two-way tech mentoring in schools and organizations seems more intergenerational.

JM: We can use concrete examples to institute at a policy-level and let people build, test, learn, and try them out. The design space that can be very tool-driven … I also once thought it'd be great to have a design school that froze all the versions of software and computers for years so that no changes could

occur. This would then force everyone to become good at whatever was out there at the moment. That would be interesting.

LS: Like a constraint … in that case a student could master exactly what they were doing rather than fall behind the latest update.

JM: Yes. Another idea I had was that we should remove all desktop computers and do everything on mobile. Everything would be handled on mobile … I felt like those constraints, unless you have a specific vision, would not deliver a quantum leap. I learned so much. But one thing I remembered was that the traditional ways are interesting because they aren't storable on the Internet easily. It is important that we understand this generational gap so that we can preserve some of these ideas.

LS: Design often requires an incredible amount of precision, and the use of some tools could become obsolete.

JM: Obsolescence can also mean something "special", "diverse", and "different." It is a way to balance the scale where all this old stuff is still really cool, and all this new stuff is super relevant and cool, too. I always found that balance is difficult to forge no matter who you are. Why is this valuable? It is valuable because as "digital" gets faster, slow seems even slower. Let me give an example; I take my slow knowledge of the creative world and I bring it to a fast business world.

Recently, I found a way to be very calm. I work in this space of crisis management and all kinds of calamitous things, so the space I am in is just fascinating. I realized there are three factors to why you do not need to worry about things anymore. You cannot control them.

The first one is super important; the Earth revolves around the Sun. Depending upon where it is, you are either cold—far away—or if it is summer—you are nearby. And depending upon the orientation, you'll get hotter or colder by default. It is a basic pattern; that is number one.

Number two, in school, they say the Earth is covered by a lot of oceans. We learn that about 70 percent of Earth's surface is covered by water. We learn that the moon rotates around the Earth and attracts the ocean. Gravity changes the wave patterns and the weather patterns and we only see that Moon once in a while doing all kinds of stuff on the Earth; that is number two.

Number three, Earth is hurtling through space at about 1000 miles per hour, and its molten core is extremely hot. It causes volcanoes and earthquakes, and what I like about it is that I cannot change the molten core of the Earth. I cannot change the Moon's rotation around the Earth and I cannot change the Earth's rotation around the Sun.

That it is wonderfully humbling because if I can't do all that, then what can I do? I have crossed different digital ages. I find that my function now is using my digital knowledge to preserve the past, and diverge the present so it is less calcified, and then provide paths for others who will come after me who are divergent themselves. These are little pieces to consider on your journey.