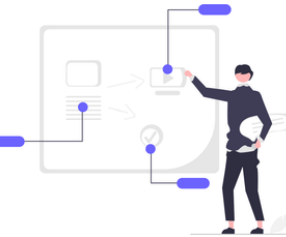




Digitize and Disrupt Transcription




So when you add up the aggregate disruption across a dozen technologies, moving this quickly, the best way we found a framing, this is what we call the four D's. Digitize, Disrupt, Demonetized, Democratize. So let me cover each one of those very quickly. The first is very obvious, right? We're digitizing the world incredibly rapidly.




Our memories aren't in our heads anymore they are on our smartphones, all our relationships are now digital because of social media as opposed to analog. 10 years ago, we had maybe half a billion internet connected devices out in the world. We're up to date to about 20 billion. Ericsson made this graph, predicting that we'll be at 50 billion by the end of the decade.




Well, pretty quickly after that, because we're doubling every year, we'll go from 50 to a hundred, to 200 to 400 to a trillion. Okay. Think of that one statistic we're 20 billion today going to a trillion and a few years. We think we're 30, 40 years into the information revolution. On this metric where 1% or 2%, we're just starting.



Right? So most of the disruption is ahead of us as opposed to behind us. And now we're digitizing all sorts of crazy areas of our life. The company Beyond Verbal out of Israel can take 10 seconds of your voice and just by analyzing the variation and the tone, they can assess your mood and your attitude to an 85% accuracy.



So now we can just digitize emotion and detect it using just the tone of your voice. And so this kind of starts to see how fast and how pervasive this pattern is. And I mentioned already the Tesla example where a car is now really an app, in a sense. Now, when you digitize something, we found, this becomes very, very disruptive and that's the second D, and the best way we found a framing that is photography.



Some of you are old enough to remember film photography. You're operating from a scarcity model, right? You can only take so many clicks. You can only carry so much film. Each click costs you like a dollar for processing the photograph. When you move to digital photography, and you information enable the fundamental substrate three really, really important things happen.

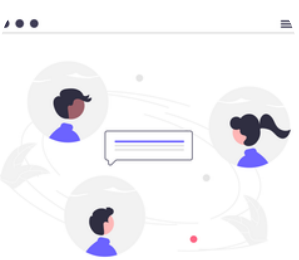
First marginal cost goes to zero. Right now you can take a thousand photographs. The cost stays the same. As a result that domain completely explodes. In film photography I'm very carefully clicking here. I'm very carefully clicking there, but today we're basically holding the button down on all of our devices and taking billions of times more photographs.



The third thing that happens is very subtle, but really important from a business perspective is that you shift the problem space. So what do I mean by that. In a scarcity problem space, I may sell very expensive cameras. I may offer courses on photography. I may publish books on composition to help people optimize for that scarcity.



Right. And I can create business models around that. But in an abundance problem space we all have eight copies of our photographs on 10 devices and you can't find anything. And so you've gone from a scarcity model to an abundance model, a sourcing model to a filtering problem. Nobody in the world can make money anymore selling very expensive cameras or courses on photography.



Uh, we now have different models like Instagram and others to filter a lot of photographs using social techniques or algorithms and other ways. And so the, when you have a disrtransformation, the incumbents are often trapped in a material scarcity based world, and the world is moving very, very quickly.



Now, this transition is happening across all of these, these technologies. And you saw that earlier, but technology after technology is going through the stack and going from a scarcity to an abundance model. Technology, does that technology takes something that is scarce and it makes it abundant whether it's photography or music or transportation or whatever. Okay. Now we are seeing, as I said, this transformation in all of these areas, we've just never seen this before. This is a very unique point in time. In the robotics, those \$20 helicopters that you play with on Amazon and throw away or used to cost \$800, and now they're 20.



Okay. And so this is a fundamental pattern that we see across all of these. And as I mentioned, solar is maybe the most fundamental paradigm shift that we'll see, but autonomous cars will change the landscape pretty completely also. We've worked out the ones who have about a 20% penetration of autonomous cars we'll see the existing capacity of roads and highways increased by about 10 to 15 times. So that'll totally change the car landscape in a fundamental way. And so between these technologies and the underlying disruption, We see very fundamental change happening, in, across all of these ways. In the next segment I'll talk about the broader impacts for society as we roll this paradigm app.

