

4Ds Introduction

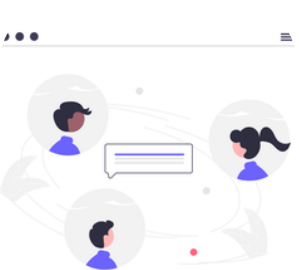
Transcription



So the reason this is so fundamental today, this linear to exponential doubling pattern, is that while we've seen Moore's law and this information, various paradigm or curve for 60 years, that doubling pattern is now occurring in a dozen technologies. Drones, 3D printing, neuroscience, biotech, AI robotics, solar we have never seen this before in the history of the world. In the past one technology was accelerating or another, but now we have like 12.



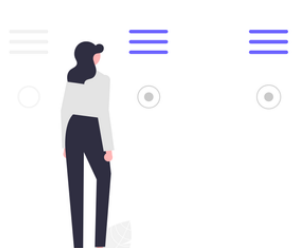
And that number is increasing because we're information enabling more and more over time. For example, in neuroscience the resolution at which we can image the brain is doubling every year. In gene sequencing, we're doubling every six months. Drones are doubling in their price performance every nine months. Solar energy is doubling every 22 months in its price performance.



And the doubling, remember once you have an information based paradigm that doubling just keeps going. And so this is a very profound point. If here's a one way, look at it, here's the [00:01:00] cost of light. Over a 700 year period from 1300 to today. And what you see is it was very, very expensive to light up a room or a building or a house, and now and then it plateaus for a while.



Right. And then it crashes to near zero as we industrialize the heck out of it. And that's a 700 year look, but look at the pattern in gene sequencing and you see the very same shape. Expensive plateaus for a while, and then literally crashes to zero, over the last say, few decades as we industrialize that.



Now here's the same shape of the curve in solar energy, very expensive plateaus. And then literally you can see that the curve, as it crashes to near zero. We have never seen this before where technology after technology, the cost is crashing to zero. Let me just touch on solar as an example. The solar has been doubling in its price performance of every 22 months now for over 40 years, since the seventies. At this pace, we will be able to deliver a hundred percent of world energy supply using solar in 13 years. This will completely shift the global economy. The middle East will have a massive problem. The poorest countries in the world are the sunniest countries in the world.



Right? And so all sorts of interesting impacts as a, as a Canadian, I can joke that the U S has to find other reasons to go to war, for example. And so fascinating ripple effects. The country of Chile is already generating so much solar. They're giving it to their neighbors for free. This is not a joke.

This is a happening today. And maybe in the ultimate of all irony, the coal museum in Kentucky is now using solar power to do to power itself. And how did they look in the mirror is really an interesting question around this



Technology is a forcing function with four of these technologies accelerating or a dozen of these technologies accelerating has four fundamental kind of outcomes in the world, and I'll cover each of these in a particular way. But number one is we're digitizing the world. Very rapidly. Number two is we're. This has a hugely disruptive effect, right? Number three, this demonetizes the world, because as you go to an information based paradigm, you literally the money disappears.



And a huge question that we'll think about is where is the revenue in the future as this transition takes place. And number four, this is unstoppable because of the sheer democratization of each of these. In the next segment what we'll do is drill into each of these and just drill into why this, these forties are so profound.

This is taken from Peter's work, where he has six D's, one, the other one is deceptive, and so on, but these four are very, very critical. So I want to drill into that in the next section.

