

Masters of Scale Episode 55 Transcript – Bill Gates Part Two

The biggest success story you haven't heard

In part two of this special two-part episode with Bill Gates, we're talking about the biggest success story ever told on the podcast – and not just for Bill Gates, but for humanity. And it was achieved not through Microsoft, but through the [Bill & Melinda Gates Foundation](#). Bill and Melinda Gates have built the foundation into one of the world's single largest private philanthropies and they've done it by taking lessons learned at Microsoft – on how to massively capitalize on inflection points – and applied them to the nonprofit world. Here's how.

Premiere: December 20, 2019

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TRANSCRIPT

REID HOFFMAN: Hi listeners, it's your host Reid Hoffman. Welcome back to Part Two of our landmark episode with Bill Gates, on how to accelerate history. In Part One, we heard how Bill scaled Microsoft. In this episode, we turn our attention to the Bill & Melinda Gates Foundation. I believe this episode includes the greatest success story ever told on the show. All that is ahead. We'll start, as always, with a story.

HOFFMAN: There's a piece of technology we all use every day but barely notice it. This technology has been around in some form or another since the dawn of civilization. The Ancient Romans, Chinese, and the Abbasid Caliphate all used it.

But product development plateaued over the years. And billions of potential users aren't served by its current design. That is what I call a neglected opportunity. And a legendary tech founder stepped in.

BILL GATES: We got universities involved. We did prototypes. Now we're getting big companies drawn in.

HOFFMAN: That's Bill Gates. In recent years, he's taken on an audacious goal: to completely reinvent a ubiquitous tool. Most people turn up their nose at this essential invention, if they notice it at all. Through the centuries, this item has acquired a multitude of names: The dunny. The privy. The chamber of commerce. The thunderdome.

That's right. We're talking about the toilet.

And if you're not familiar with its history, you're not alone. But its origins are fascinating. The modern lavatory was born in England in 1596, when John Harington presented Queen Elizabeth

with his invention: a flush toilet. A bowl fed with water from a cistern that banished the royal business out of sight.

Flush forward to 1866. London is suffering from “The Great Stink,” a putrid smell that overwhelmed the city. Its cause? The use of the Thames River as an open latrine. The solution? Master engineer Joseph Bazalgette creates London's first sewer, an underground system of pipes that clears the air and drastically reduces deaths from cholera.

From that point on, sewer-based sanitation becomes the norm worldwide. And the toilet innovation pipeline stops flowing. Cities throughout the developing world still lack sewers. Huge swaths of humanity are stuck with “The Great Stink.”

GATES: It's one of these things that you're never exposed to until you really are going out there. And as you're touring those slums it feels impolite to bring it up, but it doesn't smell very good.

HOFFMAN: This isn't down to a lack of know-how. It's down to a lack of engineering solutions appropriate to the geography and income of these cities. The problem isn't just unpleasant, it causes the deaths of 1 million children every year. And yet, progress has stalled.

GATES: So unless there's some breakthrough, you're going to literally be living in human feces with the unpleasantness and disease impacts that implies.

HOFFMAN: We expect consistent upward progress in tech. But there are areas the market doesn't fund, where inflection points cease to come. The toilet is one. And Bill is asking: Why can't we build a better one?

GATES: On paper, it looks very solvable.

HOFFMAN: It looks solvable. But no one was trying to solve it. So in 2011, the Foundation launched the “Reinvent the Toilet Challenge.” They hold expos. They court research partners from universities and corporations. And they fund promising ideas: a solar-powered toilet; a toilet that uses worms to break down waste; a nano membrane toilet that burns waste to ash.

GATES: We're still not there, but it did take some audacity to say, “Let's bootstrap a completely different approach,” – because it just wasn't going to happen otherwise.

HOFFMAN: “It wasn't going to happen otherwise.” Bill Gates' career is a testament to what happens when the right person has the right idea at the right time, and they do everything they can to accelerate history.

Change comes about differently in the nonprofit world than the commercial world. But Bill's work with the Bill & Melinda Gates Foundation shows clear parallels. I believe it's not enough to just

take advantage of inflection points in history, you have to accelerate those inflections if you want to achieve huge scale.

[THEME MUSIC]

HOFFMAN: I'm Reid Hoffman, co-founder of LinkedIn, partner at Greylock, and your host. And I believe that it's not enough just to take advantage of inflection points in history, you have to accelerate those inflections if you want to achieve huge scale.

In Part One of this two-part episode, we saw how Bill Gates took Microsoft to massive scale by spotting and accelerating a string of inflection points in technology. And the same kind of remarkable effort has driven their success at the Bill & Melinda Gates Foundation. But in philanthropy? It's not enough to just spot an inflection point. You may have to will them into existence, with persistence, partnerships, innovation – and yes, money.

I should probably mention that the Foundation has become the world's single largest private philanthropy, handing out more than \$50 billion dollars in grants. But it's one thing to give money away and quite another to have impact with it.

So I want to start with a success story. I'd argue it's the biggest success story we've ever told on Masters of Scale. And to be clear, it's not Bill Gates's success. It's humanity's success – and the Foundation played a pivotal role accelerating it.

Now, normally on Masters of Scale we reveal the success story slowly, over the course of the episode, knowing that you already kind of know how the story turns out. But despite the magnitude of this global success, there's a good chance you've never heard about it.

Here it is: in the past two decades, [we reduced childhood deaths by fifty percent](#), from 10 million to just over 5 million deaths annually. What does that mean? It means that this year, four and a half million children who would have died before the age of 5 of something completely preventable are still alive. It's an achievement that ranks among humanity's best work.

In this episode, we'll focus on the story of this one extraordinary inflection point. It's the perfect illustration of the playbook that allows the Gates Foundation to accelerate history. And we'll start at the beginning.

The Bill & Melinda Gates Foundation launched in 2000, combining two older foundations. What inspired them was [a shocking article they both read](#) about children dying – by the millions – of preventable diseases. I asked Bill about it.

HOFFMAN: What was the opening theory of, "This is how we're going to do something different than anyone's done with foundations before"?

GATES: Well, our big theory was that there were innovations that the market wasn't funding. As I'd learned about why, at that time, 10 million children die every year, and then looked into how many resources were going to fix those problems – malaria, diarrhea, pneumonia – I was completely shocked. When you have a disease that only poor people have, the market doesn't have an incentive to come up with drugs and vaccines for those diseases.

HOFFMAN: The lack of attention to fatal childhood diseases would be the first of many jarring discoveries. But at first, the challenge seemed straightforward to Bill. There were diseases that needed cures. So...

GATES: We would go in and solve that.

HOFFMAN: This wasn't arrogance. It's more a testament to Bill's optimistic belief that technology can overcome almost any problem.

GATES: And that's natural for me because Microsoft created a software economy by hiring top engineers and riding the wave of more powerful microprocessors to create software and software platforms.

HOFFMAN: Bill wasn't underestimating the problems, he was remembering what worked for him in the early days of Microsoft. Then, he leaned into the inflection point around newer, faster microchips. Here, he was eyeing another inflection point. This time, biotechnology. The tools were emerging – they just weren't being used to solve the challenge of childhood disease.

GATES: Here you have biological science moving ahead: DNA sequencing, stem cells, all sorts of deep knowledge. But then applying that knowledge to create actual tools and making sure they could get out to all the children in the world, there was this stunning vacuum, which was tragic, but it excited me because I thought, "Okay, that plays to my strengths, plays to the values Melinda and I have. Let's go build a team to go do that."

HOFFMAN: "Let's go build a team to do that." Bill was ready to solve. He saw a challenge: childhood deaths in developing countries. And he saw a toolset in biotech that would enable new vaccines and drugs. Now he just needed to know which problem to solve first. For this, he needed data. And Bill found himself foiled from the start.

GATES: My assumption was that the same type of measurement and celebration of great successes and discussions of great failures would exist in this global health community that existed in private markets. In fact, the underinvestment in knowing how many children died and what they died of was unbelievable.

HOFFMAN: You can't save kids lives if you don't really know what they're dying from. And you can't know if you succeeded unless you measure what you achieve. It was a riddle at a global

scale. And untangling how Bill and the Foundation found a meaningful way to make a difference here is like following a detective story from an especially convoluted case. At each twist in the tale, just as Bill thinks a solution is in sight and the riddle is solved, another thorny issue stalls progress. But the story begins with their search for answers and partners.

GATES: You'd think the field that the pride, and the energy, and visibility of that work would draw in more and more people and a lot of top talent. In fact, it was truly obscure.

HOFFMAN: When the United Nations issued its [Millennium Development Goals](#) in 2000, Bill and Melinda latched on to them as the kind of clear, measurable goals they could get behind.

COMPUTER: Among the eight Millennium Development Goals, there were targets like: "Eradicate Extreme Poverty and Hunger," "Achieve Universal Primary Education," and "Reduce Child Mortality."

GATES: We got involved in the Millennium Development Goals and that was the first time there was something that brought that through in a crisp way. That the world does have a report card that is not just increased global GDP. That deaths, and hunger, and malnutrition, or responding to crises like the HIV epidemic – even though the market system alone isn't going to solve those problems, we should think of that as being part of our report card.

HOFFMAN: Here's the first lesson of accelerating any historical inflection point: Don't go it alone. Even when you're Bill Gates and you've funded the world's largest private philanthropy. Don't go it alone. Bill and Melinda immediately saw that Millennium Development Goal number four, "Reduce Child Mortality," was the inflection point they were looking for.

And the foundation would ultimately become the largest philanthropic contributor to this goal by far, contributing \$17.9 billion. But it's one thing to write a check. And quite another to solve a problem. The Foundation was determined to do both. And for that, they needed to understand why, exactly, so many kids were dying. Remember what Bill said earlier:

GATES: The underinvestment in knowing how many children died and what they died of was unbelievable.

HOFFMAN: Everyone knew the number of child deaths was staggering. But no one knew exactly what they were dying from. It turns out that causes of death were often not recorded. And when they were, they were often vague. For example, two of the most common listed causes of childhood death were pneumonia and diarrhea – and that didn't add up.

GATES: Even the term "diarrhea" is a symptom, it's actually not a cause. There's one thing, rotavirus, that was causing over half of those, but the balance wasn't understood. Likewise, pneumonia. Again, there was pneumococcus was about 40%, but the balance

wasn't understood. And so the idea that nobody was funding that data infrastructure which would guide your innovation, your delivery, that actually was pretty shocking.

HOFFMAN: This is a great example of the problem-solving required to achieve scale on social issues. You have to dig beyond what's visible to the underlying cultural roots. As Bill dug deeper into what was known about childhood deaths, he realized the lack of data wasn't due to a lack of interest. But rather, a set of complicated cultural and economic factors. Here's one example: the lack of autopsies in developing countries.

GATES: Well, an autopsy is a super expensive thing. The skill and cost isn't in this world at all and it's very disfiguring to the body. You have many reasons why only rich people do we actually know what they die of.

HOFFMAN: Bill had discovered two factors that were limiting the data. Autopsies are expensive. They're also invasive – and that makes them unacceptable in many cultures. He and his team went looking for a solution rooted in innovation.

GATES: So then we found somebody who invented this thing called “minimally invasive autopsy,” where you take a few samples that don't disfigure, the puncture wound you can't see. You take two lung samples, two gut samples.

HOFFMAN: The tech already existed. Now the challenge was getting families who had suffered the loss of a child to agree to the autopsies. So the Foundation funded an ongoing effort to work with affected families and respectfully secure the data. They helped create an independent organization, called [CHAMPS: Child Health and Mortality Prevention Surveillance](#).

GATES: But, we're now out and actually getting permission from 80% of the mothers, as we explained, "This will help us. Your death is tragic, but, if you agree, this will help."

HOFFMAN: More autopsies would mean more data about the causes behind child mortality. But that data would only be worthwhile if there were reliable, standardized collection efforts worldwide. As Bill looked around, he found those efforts noticeably, even bizarrely, absent.

GATES: The idea that nobody was funding that data infrastructure which would guide your innovation, your delivery, that actually was pretty shocking.

HOFFMAN: Bill's quest for reliable data led him to global health researcher Chris Murray.

GATES: When I first met Chris Murray, he actually worked in Geneva for the World Health Organization, and he said, Look, there's a basic paradox that WHO isn't allowed to write documents saying that countries are all messed up because that's our, our managers are from those countries. A sort of dispassionate look at those numbers needs an independent institution.

HOFFMAN: An independent institution could cut through the politics that kept data in the shadows. Chris made that case and in 2007, the Foundation helped establish the [Institute for Health Metrics and Evaluation](#), which Chris leads to this day at the University of Washington. It wasn't a one-time donation but an ongoing commitment to drive inflection points in global health.

GATES: That aspiration, "Hey, we better know what's killing all these kids. What's killing them? The diarrhea. What's killing them? Pneumonia." We've spent hundreds of millions of dollars and had to get smarter and smarter, and created new institutions

HOFFMAN: The creation of independent institutions has become a hallmark of how the foundation gets work done in the world. But as they started out, in 2000, holistic solutions were elusive. Let's go back with Bill to the beginning. In the early days, you'll remember that Bill was eager to innovate. Developing a new product and bringing it to market, that was something he knew how to do. But it turns out, the problem wasn't just the lack of cures, it was the lack of access.

HOFFMAN: In Microsoft, a market intervention is straightforward in one sense, which is, "Here is an amazing product that you should buy." But here we actually have to change the market. So what does the tool set look like for changing the market?

GATES: Yeah, in the case of Microsoft, the evolution of the hardware technologies – including the chip, and the storage, and the connectivity – came together with the software and partly we saw that we could bet on really powerful hardware because it wouldn't be too expensive.

In the case of global health, I thought that the research piece and the breakthrough, say new vaccines or drugs, was the only missing piece. Sadly, the delivery mechanism in many of these countries – the primary healthcare system – was also very, very poor.

And it was kind of shocking that for that diarrheal disease, rotavirus, we found out that the rich world had a vaccine and it wasn't getting out to the kids who needed it most. So that's just deep irony, that the kids who are least at risk of dying are getting the vaccine and the kids at most are not.

And I admit for a year or two, I thought, "Gosh, isn't someone else going to solve this financing and quality of delivery problem?" And eventually got convinced that, no, it wouldn't be solved, and so it would be almost pyrrhic to invent more new vaccines that wouldn't get financed and wouldn't actually get delivered.

HOFFMAN: This realization marked a key pivot for Bill and the Foundation. It's one that will be familiar to many founders trying to bring about a change, whether commercial or nonprofit.

Often, the problem you set out to solve has to wait until you solve a whole lot of other problems first. In Bill's case, he couldn't just focus on vaccines. He also had to solve what Bill calls "the delivery problem." Why was it that vaccines and drugs could be effectively delivered in some regions and not others? It comes down to government.

GATES: Governments in rich countries, even now in middle-income countries, are pretty amazing. We kind of take for granted that the water system, electricity system, education system, justice system, these things work pretty darn well.

As you get into very poor countries, the fact that salaries don't get paid, and even vaccines that are life-saving, the funds don't get allocated, they could even be stolen. It's pretty shocking how bad government can get.

HOFFMAN: In his years at Microsoft, the government was at times more of an adversary than an ally. But at the Foundation, Bill had to re-think this relationship. The Foundation may have contributed billions to the Millennium Development Goals. But governments contributed hundreds of billions. They needed each other.

HOFFMAN: Microsoft didn't need government intervention to build and sell products or get them involved. Matter of fact, it was kind of more challenging the other way. But the question about saying, "All right. In order to fix these problems, we actually in fact have to get on side with governments."

If you could call through time and call the younger Bill Gates and say, "Here's how you should start dealing with governments in the beginning. This is what you should do." What was the learning curve there?

GATES: You always have to decide: Are you going to get the government to step up to its role there or are you going to try to go around it?

Eventually we realized we have to get governments to step up. It's the only long-term solution. So there had been a huge learning curve on the delivery side.

HOFFMAN: There are huge learning curves on delivery – and also huge differences between countries. On one end of the spectrum, there are governments that prove to be exceptional partners, like Ethiopia.

GATES: One of the greatest experiences we've had is that the Prime Minister of Ethiopia wanted to have a good health service. So the relationship on building up their health system, and even improving their agricultural system, we got to do that in partnership. That became an exemplar for us: found a willing government that was allocating its money the right way, was willing to put a measurement system in place,

and when the figures said things were going poorly they didn't try and reject the data, that they were in it for the long run. That was pretty fantastic for us.

HOFFMAN: But not every country partnership works out this well. A case in point is Nigeria, which once accounted for half of the world's polio cases, largely because vaccines weren't reliably delivered, especially in the troubled north of the country. The Foundation backed an effort that went around the government: 200,000 volunteers immunized 45 million children. It made a tremendous dent on the disease. Nigeria hasn't recorded a new case of polio for three years. But it's an ongoing effort to maintain the partnerships that ensure vaccines get to those who need them.

GATES: We did a much better job getting new vaccines introduced in all countries than we did in improving the coverage. The coverage thing, even today in northern Nigeria, I spend a ton of time on it. I do conferences multiple times a year with these governors of the states in the north. So we're hopeful – but that has proven to be tough.

HOFFMAN: But even the toughest efforts have long-term payoffs, Bill says.

GATES: In parallel, the biological sciences that give us new ways of inventing vaccines, that's gone super well. Even though there's some miracles that haven't emerged yet – an HIV vaccine, a TB vaccine – over the next 10 to 15 years we are going to have those. So it's well worth making sure that the delivery system is going to be there, not only for what we have today, but for those things that are so exciting that are coming down the pipeline.

HOFFMAN: To paraphrase the ancient Greek inventor Archimedes, with a long enough lever and a fulcrum on which to place it, you can move the world. The challenge is finding that lever, and convincing enough people to grasp it with you.

After the break, I'll share the most telling moments from my conversation with Bill on the comparisons between scaling a global company and a global philanthropy. These were the questions I couldn't wait to ask him.

[AD BREAK]

HOFFMAN: As I mentioned in Part One, when you think of the people who've achieved huge scale in both a global business and a global philanthropy, the intersection is literally one person: Bill Gates. This is what interested me most when I sat down with Bill. I'm fascinated with how he reflects on both those similarities and differences between Microsoft and the Gates Foundation.

I asked him about this from a number of different angles when we talked. And I started with the idea of a co-founder. Bill's first co-founder, Paul Allen, came along early in Bill's life. And Bill is clear about Paul's importance.

GATES: Well Paul was totally critical to there being a Microsoft at all.

HOFFMAN: The Foundation was also explicitly launched with a co-founder. It's called, after all, the Bill & Melinda Gates Foundation. I was really curious how this experience of co-founding compared.

HOFFMAN: So how did you and Melinda meet?

GATES: Melinda was an employee at Microsoft. She went to Duke and got both her undergrad and MBA there in five years. She and I ended up sitting next to each other at this big dinner in New York and talking to each other. And a few weeks later I asked her out and for five years we were kind of off and on, getting to the point where we decided to get married.

HOFFMAN: So obviously it's something of a challenge in the intensity of founding a new organization and co-founding. To do it husband and wife adds an extra, both probably delight, but also some stresses. What was that like?

GATES: Well, I'm sure that if I'd tried to partner with my spouse in my twenties or even in my thirties I couldn't have achieved it. I'm a lot more mellow. Melinda's just very mature and thoughtful. And the fact that I was used to being a CEO did require some adjustment. That, okay, she sees things that I don't see. We need to have a common view of things. And so in our case it's been fantastic that we get her skills and my skills going together.

HOFFMAN: Leaving aside the complexity of working with your spouse, this partnership with Melinda would be quite different than the partnerships he had with Microsoft co-founder Paul Allen and eventual CEO Steve Ballmer.

GATES: It was always a challenge that I managed Paul and pushed him to work super hard. Steve and I, it was a little complicated, because Steve worked for me and then he became CEO and the whole thing of who was leading, who was following during that period wasn't that black and white, but it all had a happy ending.

HOFFMAN: And so what did that initial team look like? Because obviously at Microsoft it was engineers, but it was more focused on biology. What would you say was like the "Okay, these are the people we must have and this is how we start building this new kind of foundation."?

GATES: Yeah. The mix of deep skills you need in an organization is always a question and how do you get those people mixing together? Here, understanding how to work in poor countries, and get things delivered – that hadn't been an area of specialization at

Microsoft. Hiring smart engineers was, but this was more biology focused than software focused.

So I had to really study the pharmaceutical companies, which were doing a mixed job. I tried to figure out who was doing it best, in terms of both design and going in and drawing some of the best people out of pharma, because in a virtual way, we needed to become a pharmaceutical company and actually create more successful products than any pharmaceutical company was.

So that first group was there to help us sort of bootstrap. We had an amazing person, Patty Stonesifer, who in partnership with my dad were the first executives. So they looked around and said, "Okay, how do we go down this science path?", with a little bit of part-time help from me.

HOFFMAN: And so when did you start thinking that actually, in fact there were more interesting parallels between the business innovation of creating these markets and the foundational work than might have first appeared? "Let's metricize what saving a human life is worth and then let's drive that metric across all of the innovations," is one of the earliest things I remember hearing the Gates Foundation talking about.

GATES: It wasn't so much that I thought I was bringing my business approach, it was that I was shocked that those foundational elements really weren't present. You know, it's partly lack of attention, lack of funding, and bringing that type of business thinking in was actually fairly new.

HOFFMAN: Because one of the parallels that I recall from when you were building Microsoft from a small organization to a global organization was this notion of being very customer-focused: Find the most challenging customers that were important, and surprise and delight them. Then that created the whole market.

Did you find a similar pattern going on with the Foundation? Is that a pattern that also kind of was figuring out like, "Well how do we actually in fact have the right purchasers of these new kinds of drugs? The right understanding of how we're trying to save children's lives?"

GATES: Yeah. There have been sort of two miracles in global health in the last 50 years. There was the smallpox eradication. And so looking at the great people who did that and how that worked. And then Jim Grant, who ran UNICEF in the 1970s, had gotten a focus on getting vaccines out to lots of children. Now, it was a very small set of vaccines, but he got the coverage up dramatically by celebrating the countries that were doing it well and, to some degree, shaming the countries that were not doing it well. And so this idea that we would pick diseases and have some of them be exemplars, we would pick countries and really highlight where they had done things well.

Part of the good news was then when I looked at child survival versus GDP, it wasn't a perfect correlation. You know, if you have to wait for the GDP of a country to grow before you can get the death rate down, that's definitely worth doing. But the fact that countries like Tanzania, Rwanda, Senegal, had a third of the childhood deaths of other countries who had the same or more GDP, that suggested that they were getting the tools out and managing their system, their primary delivery system in a way that was affordable and impactful.

You know, telling the stories of the heroes individually and the system's approach – which is less exciting, but also important – that was key to us. So I really dove into the historical exemplars, like Costa Rica, Sri Lanka, and the contemporary ones, including some of these African countries.

HOFFMAN: Part of scaling Microsoft when you were leading it from its startup to global transformation. It's always hard work, a bunch of lessons learned about how to scale an organization because it's how the rule changes when you're 100 people, 200 people, 500 people, 1,000 people. All of a sudden the organizations get large. Has the pattern been the same with building the Foundation in terms of what the scaling of what the organization had been?

GATES: Yeah, so geographic scaling is very different than engineering scaling. Geographic scaling, you can have this central assumption that your activities in each of the countries are going to be ninety percent similar. Understanding what that 10 percent should be, you know, what does Japan really need that's different, what does South Africa need that's different? That's a fun, interesting problem, but the basic approach used is going to be the same.

The engineering piece where you're adding more products, for Microsoft that was fundamental, that most of our competitors were single product companies. Microsoft knew that we wanted to be a very multi-product company and we wanted to be way more international than the other guys. We wanted to own all our subsidiaries, do direct distribution everywhere in the world, and we wanted to understand how we avoided top management not being bottlenecks so that we could just keep adding product groups.

For the Foundation, we like that same sort of engineering scaling, so that we created budgets for each of the program groups: so the malaria group, the tuberculosis group, the HIV group. The thing I underestimated is that in drug creation, there are a lot of horizontal skills around manufacturing and regulatory approval. So until we hired the current head of our global health group, Trevor Mundel, we thought we tried too much to have those engineering groups, science groups, be too independent of each other. We didn't have a central manufacturing expertise, central regulatory expertise. Trevor came in and said, "No, you need to have both."

So our engineering design is actually somewhat more complex at the Foundation. Yes, at Microsoft there's a central engineering group about tools and training, but that's like five percent of the head count. In the case of the Foundation, we have over 30 percent of the headcount and budget is in these horizontal things. And that's a management challenge because you have the two different groups, but the nature of the problem demands that you do it that way.

HOFFMAN: And so when did you start also figuring out how to deploy technological innovation, not just of the biological sort, but of the more wide ranging. Here I'm gesturing at the grand prize technological challenges with the toilet and so forth. When did that start factoring in and how did that start saying, "Okay, technology also gives us unique leverage here."?

GATES: What we mimicked the thing that Hilbert did in terms of the great unsolved problems – he did that for mathematics around the turn of the century. So very early on we did that for global health. If we look back on it, we didn't pick exactly the right 10 things and yet, by putting money behind those things and creating visibility for the field, you'd think that the field that is in the process of cutting childhood deaths from 10 million a year to five million a year, you'd think that the pride, and the energy, and visibility of that work would draw in more and more people and a lot of top talent. In fact, it was truly obscure.

HOFFMAN: And so when did the technological elements come in? The fact that you built two amazing huge scale organizations is that there's parallels in business models, there's parallels in organization, there's also parallels in technology, and the toilet is one of the ones we've talked about before.

GATES: Well the toilet's an example where trickle down doesn't work.

HOFFMAN: Unintended pun aside, Bill is right. When developed countries invent breakthrough technologies, the benefits don't always trickle down to poorer countries. It's one of the reasons they have trouble catching up.

GATES: Where you get a failure of trickle down to work is when you have things like a sewer based sanitation system where you have to build all that piping and those processing plants. And the cost gets stuck at a level that's barely affordable by middle income. And in these big African cities, it'll just never happen.

HOFFMAN: And this brings us back to the top of the episode: An inflection point that will never happen, unless the right people – and organizations and nations – get together to make it so...

GATES: So the engineering craziness to say that you could do the toilet as this self-contained filter, could you get down to five cents a day, and can you make it so that it matches the gold standard that is the rich world flush toilet? On paper, it looks very solvable.

HOFFMAN: For Bill Gates solvable problems at both Microsoft and the foundation start with technology. For you, they may start somewhere else. But with a powerful combination of people, partners and persistence, you can accelerate history – and even will a new inflection point into place.

I'm Reid Hoffman, thank you for listening.