Ramona Schindelheim, WorkingNation editor-in-chief:

You're listening to Work in Progress. I'm Ramona Schindelheim editor-in-chief of WorkingNation. Work in Progress explores the rapidly changing workplace through conversations with innovators, educators, and decision makers, people with solutions to today's workforce challenges. Right now, the United States has over 700,000 open computing jobs, but only 80,000 computer science majors graduating from college each year. In high school, only about 5% of students even study computer science. In an effort to get more students interested in a career in computers, more than 500 business leaders, educators, and nonprofits this morning released a letter calling on education leaders in each state to make computer science a standard part of the K-12 curriculum. Leading this call to action is the nonprofit Code.org. Joining me now is the founder and CEO, Hadi Partovi. Thank you for joining me this morning.

Hadi Partovi, Code.org founder & CEO:

Thank you so much for inviting me. And it's great to be here.

Ramona Schindelheim, WorkingNation editor-in-chief:

I was looking at the list of companies that you have brought together in this initiative. It's amazing. It's CEOs and founders of Microsoft, Amazon, American Express, Walgreens. And then important partners in this are the education organizations themself, such as the American Federation of Teachers. You're at the center of it. You've brought all these people together. How did you do it?

Hadi Partovi, Code.org founder & CEO:

Code.org organized this letter that came out today and we did it in time to release right before the National Governors Association meeting. And what's been astonishing about doing this work, it's not normal, but it's not surprising to have the top names in tech calling for computer science to be taught. It's still fantastic. And we're so excited to know that Bill Gates, or Jeff Bezos, or Mark Zuckerberg, or Satya Nadella, or Tim Cook are getting behind a call for computer science in schools, but nobody is shocked that they would do that. But when the largest players in banking, in air travel, in coffee, in footwear, when you have Nike and Hasbro and UPS and Walgreens, these are the companies you don't expect, or the United States Chamber of Commerce. And for me, the most important ones to include at the same time are the teacher unions because we're at a time when America can't agree on almost anything.

Hadi Partovi, Code.org founder & CEO:

Every week there's some terrible piece of news that somebody's getting excited about and somebody else is getting really traumatized and angry about. And it goes in both directions. Whereas here's a piece of news where we have Jeff Bezos and the teacher unions on the same page. And I think as Americans, we should celebrate that. You asked how did it happen? This started in March, right after the, at the National Governors Association, Governor Asa Hutchinson in February announced that he was going to make a drive for governors to make a joint commitment for computer science. And I knew that that was aiming towards something happening at the National Governors Association and that's their summer meeting. And I figured let's make a parallel drive to get CEOs and business leaders to say this is important. And to then use the voice of those business leaders to encourage governors to get behind this.

Hadi Partovi, Code.org founder & CEO:

And I started by reaching out to my own network to some of the donors for the work of Code.org to our board members. And then I asked them, "Who do you know? Who can you reach out to?" And first of all, almost everybody we asked said yes. I think 4 people out of over 500 people we asked said they wouldn't participate. Almost everybody asked said yes. And they were like, "Who else can we include?" The number of people who've been recruiting names for us is one of the best stories. The college board, for example, has been getting universities to get on board. There's various venture capitalists that are basically asking all of the companies they've invested in to also support this.

Hadi Partovi, Code.org founder & CEO:

So, the spreading of the word by people who believe this is a good idea is why it's created such a large coalition. But for me, the most beautiful thing about it is that it's not just tech companies and it's not even just companies. It's nonprofits, like Khan Academy or Teach for America. It's university systems, like the North Dakota or the Nebraska state university systems, the teacher unions. This is a broad coalition that represents employers and education leaders all around the board saying that computer science is important for every student.

Ramona Schindelheim, WorkingNation editor-in-chief:

I think a lot of people understand this, that technology touches everything we do today. So, you mentioned food companies and Walgreens. Everyone in those businesses, they need people who have those tech skills as well.

Hadi Partovi, Code.org founder & CEO:

Yeah. There is no company today that doesn't have significant technology needs. If they don't need coders, they need data scientists. If they don't need data scientists, they need cyber security. You can't find a large employer that doesn't need either a computer programmer for their website or somebody, a data scientist, just to look at their customer data or a cybersecurity expert to prevent their emails from getting hacked. For a long time, everybody's known technology as the future. After the pandemic, people realize technology is the now. This is not some future need. All of these companies are feeling imminent pain that our education system isn't providing enough people for them to get these opportunities.

Ramona Schindelheim, WorkingNation editor-in-chief:

Were you surprised that only 5% of students in high school even study computer science? Because when I saw that number, I was surprised.

Hadi Partovi, Code.org founder & CEO:

Well, I've been doing this for nine years now, since we launched code.org. So I'm not surprised. And in fact that number's been growing up. Did you know the AP computer science exam has grown tenfold in the last nine years of our work? So, it went from 20,000 students a year to 200,000 students a year. When Cod.org started, AP computer science was less popular as a AP exam than multiple individual foreign languages. It was down next to music theory and studio art in terms of popularity. Now it's getting up there in sort of the middle tier of courses.

Hadi Partovi, Code.org founder & CEO:

But at this point, roughly half of all schools don't even offer computer science. If your child is going to a school that doesn't offer computer science, I'll tell you what a hundred percent of those students are not studying it. It's not even on the menu. And if you look at who doesn't have access, it's directly correlated to family income, to race, and also whether you live in a rural area. So, the reality is Black and Latino kids are almost half as likely to have access to computer science. Native Americans are even less likely to because on tribal reservations, the schools don't even offer it. Lower income students or students in rural neighborhoods, it's not even on their schools. So 0% of those kids are enrolled.

Ramona Schindelheim, WorkingNation editor-in-chief:

In order to be able to offer the computer science courses though, it sounds like there needs to be a much bigger commitment to the budget because you're going to need laptops. You're going to need broadband, especially in the rural areas. Although there's a lot of broadband deserts in the urban areas as well. So, you're going to need the money to be able to put that kind of education into people's hands because you can't just learn it in the book.

Hadi Partovi, Code.org founder & CEO:

In some places that's true, but in a lot of places, it's just about the will to do it. In terms of the laptops, ever since the last two years of the pandemic, we're now at a point where 90% of America's high school students have laptops given to them by their school. And that's a major change relative to two years ago. It's more than doubled almost in the last two years. The other thing I'd say is many states actually have a surplus in their budget.

Hadi Partovi, Code.org founder & CEO:

For example, in North Dakota, not only is there a giant state surplus, they have the best broadband connectivity of the entire country. And still roughly half the schools don't teach computer science and their state superintendent has said, "We want every school to do this. We will fund it. The state has the dollars. You have the broadband, you have the laptops." And really the hardest problem is for people to think computer science belongs in the basic curriculum because most of us adult as adults didn't learn it at the same time as we learned algebra and biology and chemistry and history. All of us as adults have a set of things that we learned that just feels like that's part of school. And this is on the side because it wasn't part of school when we went to school and times have. And so the reason for this letter is more than anything to help change that mindset. The mindset is the hardest challenge. It's actually more challenging than the funding.

Ramona Schindelheim, WorkingNation editor-in-chief:

There's a lot of programs that are auxiliary programs. Through Google.org, you can get an IT certification or you can go to a community college and get this. So, those always feel like afterthoughts, just to your point, which is we all use computers, but we don't learn it when we're learning to read.

Hadi Partovi, Code.org founder & CEO:

Yes, computer science in the schools that offer it is taught more sort of like for the special kids, for the science oriented kids. Teachers will then impart their own stereotypes thinking, oh, you would be good at this or you wouldn't be good at it. And that then impacts the diversity of who gets involved. But when we think about math, every kid is learning math. Why is algebra not something you learn, like you're taking this, get a certification for algebra. We just take it for granted that certain things are foundational and computer science belongs in that list today.

Hadi Partovi, Code.org founder & CEO:

If you have to wipe the slate clean of just erase everything in school and decide what are the most important skills, for sure you'd want reading and writing. Everybody needs that. For sure you'd want basic math. But digital skills and facility with technology is high up on the list. If you ask parents, it's the first thing they give as the priority of what they want their kids to learn after reading, writing, and basic math. And so our school system needs to figure out how to incorporate computer science as a foundational thing, not just for the kids who want to work at tech companies. If you want to become a nurse or a farmer or a lawyer, all of these jobs are increasingly technical.

Ramona Schindelheim, WorkingNation editor-in-chief:

Had you gotten any feedback? I know you mentioned North Dakota, but have you gotten any feedback from the governors or state education leaders yet?

Hadi Partovi, Code.org founder & CEO:

I'm really excited to see what happens because I know that basically Governor Hutchinson and his staff and the NGA staff have been collecting commitments from governors. And I'm hoping that they'll unveil them later this week. And I don't have an advanced knowledge of it. What I do know is we've been telling the governor's office for the last month that this letter is coming. We've been telling them as signatures join. We've been... Starbucks is on board. Walmart is on board. Costco is on board. Target is on board, UPS, Walgreens. And as each governor hears about employers in their state joining this letter, I think there's been an increase of sort of need for them to make a statement about this.

Ramona Schindelheim, WorkingNation editor-in-chief:

The other thing I was thinking about is that you're going to need to get the teachers who know how to teach this as well. So, that's something that education programs that are teaching teachers to be teachers who are going to have to start incorporating in the curriculum as well.

Hadi Partovi, Code.org founder & CEO:

Absolutely. That, by the way, when you mentioned funding that needs more funding than laptops and broadband. If you had to say we need money to solve this problem, the number one place funding is needed isn't more laptops. We actually bought all the laptops a couple of years ago because of the pandemic. The number one funding need is training teachers. And by the way, my organization, when it comes to training existing teachers, we're one of the largest providers of that. And in most places we do it free of charge to the school. Either we provide a scholarship to the teachers or the state provides funding. And so the school doesn't need to pay to have their existing teacher get trained to begin teaching computer science.

Hadi Partovi, Code.org founder & CEO:

So in the last nine years, we've helped 100,000 teachers who were previously a math teacher or an English teacher or a history teacher or a social studies teacher or even an arts teacher, a music teacher go through our training program to begin teaching computer science. However, to do this in the long run, as you said, the colleges of education where students study to become teachers should give you the prep so you don't need to go through some secondary training just for this one subject. It should be just part of the basics of learning to be a teacher. If you want to become a math or science, if you want to become a STEM teacher, learning how to teach computer science should be part of that.

Ramona Schindelheim, WorkingNation editor-in-chief:

I'd love the audience to hear a little bit more about Code.org. Training the teachers, that's something I wasn't aware of. What else do you guys do?

Hadi Partovi, Code.org founder & CEO:

We are a unique organization. Our vision is that every student in every school should be learning computer science. And we go about that vision in multiple ways. The way that we're announcing today is around advocacy, spreading the word, getting companies, business leaders, governments to get behind this. And it's more of a social movement. But we are also the largest player creating the actual online curriculum that's used in schools and teaching teachers. How to teach it in roughly one-third of us schools, computer science is taught using Code.org's platform. We have a global campaign called the Hour of Code, which hundreds of millions of students globally have participated in to get introduced to computer science. And because of that, there's over 70 million students on our platform and over 2 million teachers. There's more students on Code.org learning than there are students in the entire United States of America.

Hadi Partovi, Code.org founder & CEO:

We're a global provider of computer science education courses and our courses are designed for schools. So, they're not designed for your child to learn at home. Many kids do that. And in fact, probably about a quarter of our students are students who are learning at home because they're mom or dad told them to. But they're designed to be taught in the school by a teacher. And so when schools decide I want to teach computer science, Code.org is the number one way they do that. We're not the only option, but because we're high quality and free of charge to schools, we're a common choice that schools pick.

Ramona Schindelheim, WorkingNation editor-in-chief:

What was the moment that made you decide to found the organization? Do you remember?

Hadi Partovi, Code.org founder & CEO:

That's a really good question. I've had a number of points in time where I've thought I should do this, I should do this. Because my own story is I grew up in Tehran, Iran. I lived through the Iran, Iraq war. My neighborhood was bombed. And for me, I was living in a terrible place. And part of getting out of that place was immigrating to the United States and leaving the war. But a big part of it was I taught myself coding while I was living in the war. And when I came to the United States, as a young student, I started working at tech companies and basically my family was poor, we didn't even have a home, but I was basically helping pay my way through high school and university by working as a coder. And I wanted everybody to have this opportunity as I grew up and got more successful in my career.

Hadi Partovi, Code.org founder & CEO:

But the turning point surprisingly was when Steve Jobs died, the day he died, because he was actually has always been one of my inspirations as a technologist. There's a quote by Steve Jobs that is just inspirational to me. He said, "Every child growing up sees the world as a limited world, as a world that doesn't change. And they're living in its boundaries until they learn one thing, until they learn that everything around them was built or invented or thought of by another person no better or no smarter

than them. And once you realize that, you realize you can change the world." And that is important for every child to learn.

Hadi Partovi, Code.org founder & CEO:

The best way to teach that to kids is through computer science because kids are going to school learning all this stuff that feels like memorization and work. In school, you're memorizing dates and memorizing topics of books. Whereas with computer science, it's like what do you want to make? What app do you want to make? What game do you want to make? What website do you want to make? The creativity teaches you not only some skills, it also teaches you that the world is something you can change. Giving students the confidence, the optimism, the persistence, and just the knowledge that the world is something that they can have an impact on is something that I think is important for this entire generation to learn, especially the kids in underserved communities.

Ramona Schindelheim, WorkingNation editor-in-chief:

I'm going to give you the last word that and those were great words. I really appreciate you joining Work in Progress today.

Hadi Partovi, Code.org founder & CEO:

Thank you so much.

Ramona Schindelheim, WorkingNation editor-in-chief:

I've been speaking to Code.org founder and CEO, Hadi Partovi. I'm Ramona Schindelheim, editor-in-chief of WorkingNation. Thank you for listen.