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## BUSINESS

# Why Big Blue is betting on an AI reboot

IBM's Arvind Krishna has witnessed huge upheaval in his 30 years at the tech giant. Now it's his job to save it. By *Jim Armitage*

**W**hen Arvind Krishna joined IBM as a fresh-faced engineer straight out of university, it was one of the most prestigious companies in America. The army of salesmen at "Big Blue", as International Business Machines was known, had it easy. As the saying went: "Nobody ever got fired for buying IBM."

Its engineers were the best and got paid well for the brainpower they deployed in its sleek, 1960s-designed Yorktown research campus in the rolling woodlands of New York state.

"It blew me away," Krishna recalls as he sits in a meeting room there, 33 years later, as the company's chief executive. "The kind of work they were doing, the meritocracy."

IBM had, since its formation making punchcard machines in 1911, been at the tip of the spear of what we now call information technology. Electric typewriters, calculators, ATM machines and, most importantly, mainframe computers were all developed by its engineers. In the Eighties, it dominated the new market of personal computers, too.

In the year Krishna joined, it had a share of the global computing market of nearly 60 per cent and made revenues of \$69 billion. "IBM was at its absolute height. Everything in the business was booming," Krishna says.

But underneath profits of nearly \$6 billion, a series of catastrophic decisions were eating through it like a virus. First, management had made massive investments in kit and manpower for what they wrongly predicted would be a doubling in the size of the market for big, centralised mainframe computers.

Second, rather than use its own chips and software in its PCs, it collaborated with two young companies, Intel and Microsoft, letting them make the processor and operating system – but failing to tie them into exclusive supply deals.

What happened next is the subject of business school folklore. Not only did offices switch in droves from mainframes to PCs, but Intel and Microsoft had been busily supplying their wares to a host of cheaper brands. Soon, the IBM PC was an expensive relic from a bygone age.

"It taught me a big lesson," remembers Krishna of his early time at the firm. "Because over the next three years, IBM went from peak to trough."

From 1991 to 1993, IBM lost almost \$16 billion. Former American Express boss Lou Gerstner was helicoptered in to save the business, which he did through a decade of tough restructuring. But soon after he left, IBM was behind again.

Thanks to massive investment in building powerful cloud computing capacity, Amazon, Google and Microsoft Azure

have marched into IBM's stronghold of big business clients and eaten its big blue lunch. Cloud business Amazon Web Services (AWS) made revenues of \$22 billion (£18 billion) in April, May and June alone.

Into this catastrophe, Krishna was promoted three years ago to "do another Lou" at IBM and sort out the mess.

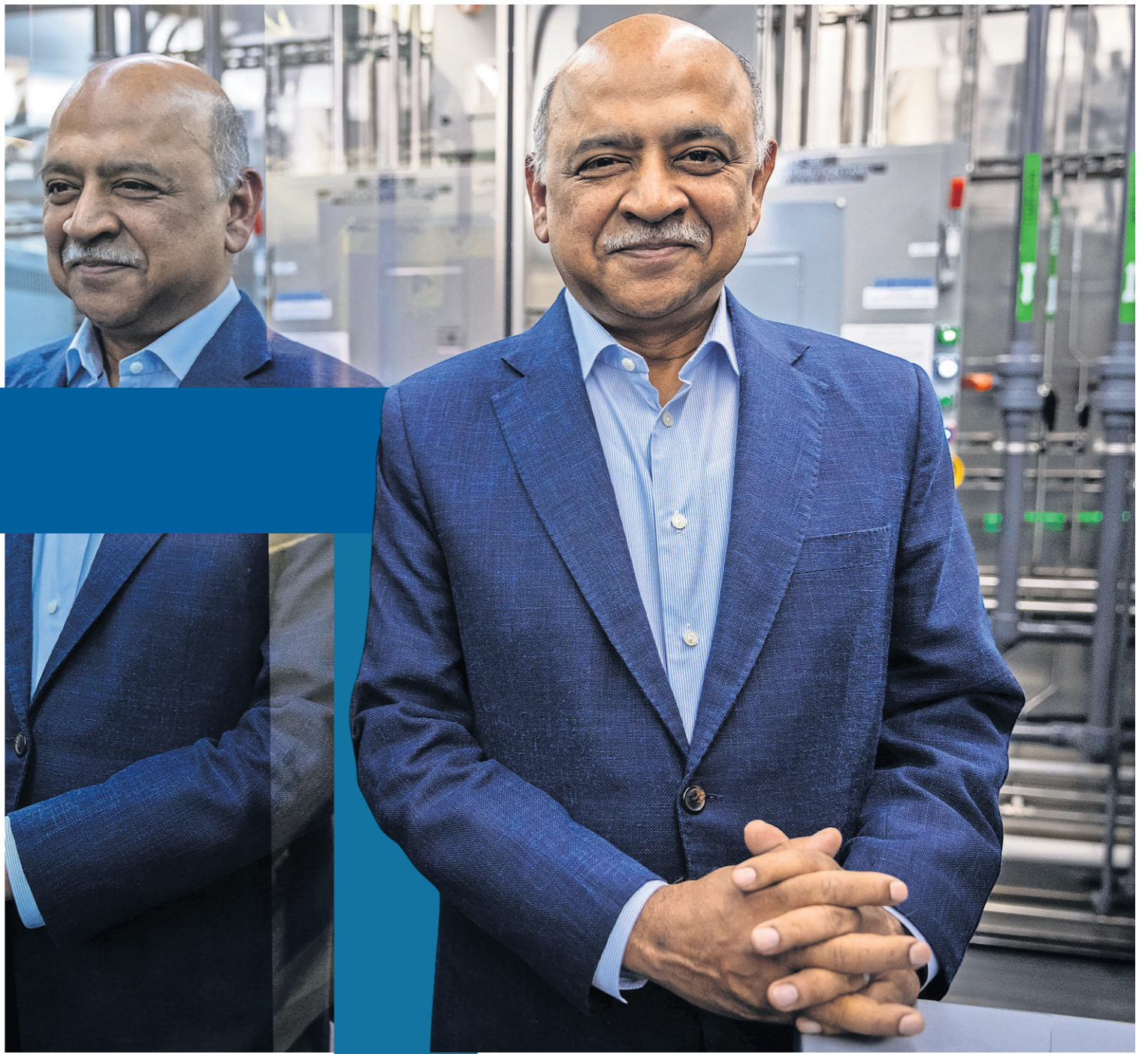
Compact, brainy (the head of IBM Consulting, Paul Papas, calls him a "genius"), and with a neatly clipped moustache, 60-year-old Krishna is lively company. With an Indian accent untouched by his decades living in America, he has a penchant for an ironic turn of phrase, delivered with a glint in the eye. He's the first chief executive to be drawn from the research and development side of IBM.

His plan for saving the company is to focus on selling business clients dependable AI software as well as "hybrid cloud". The AI bit involves a new set of products designed by IBM engineers called WatsonX, aimed at helping organisations boost their efficiency safely without making embarrassing or even dangerous gaffes with customers. Several dozen big UK businesses are trialling it.

Hybrid cloud, meanwhile, aims to help businesses use a combination of multiple companies' clouds (including IBM's) and in-house data centres. Most corporations already operate like this, perhaps using Gmail on the Google cloud and Amazon's AWS cloud for other data.

"We think very few clients are going to be using only one cloud," Krishna says. "And think – every bank is going to want its own data centre [for security reasons]." The idea is that IBM will offer the kit and advice to link companies to AWS, Azure, Google and others around the world, as well as selling its own cloud service. On both AI and hybrid cloud, IBM is already making big money selling consulting services as clients try to figure out how to best use the new technologies.

Krishna has also placed bets on build-



ing quantum computers, housed on the ground floor of the research campus at Yorktown Heights in upstate New York. Making money from quantum, he says, will take maybe "two or three years" as clients work out how to make use of it. To speed up his refocusing of the company, in 2021 Krishna made a massive call: to spin off IBM's huge but slow-growing infrastructure services division now known as Kyndryl, which runs companies' old IT systems for them. It was, he says, "gut-wrenching" to do, as it involved splitting off a third of IBM's employees, disrupting 2,000 clients and shedding a third of its revenue. But to do turnarounds like this, "you've got to make those big, tough decisions". Splitting off Kyndryl, now valued at \$3.4 billion on the New York Stock Exchange, compared with IBM's \$125 billion, was one of the first moves he made. "We could have waited," he says, "but the best advice I've ever had is to do the hardest things first."

The deal freed up capital to invest more into hybrid cloud and AI, which he has boosted with some 30 acquisitions. And that is on top of the \$34 billion takeover of

**“ I was always a tinkerer. I took apart my trike aged three**

Red Hat, a hybrid cloud firm whose takeover he steered before becoming chief executive.

Will Krishna do more takeovers as big as that? He refuses to rule it out, but says that over the next three years, he has the firepower to do up to \$20 billion of deals.

Krishna's predecessor, Ginni Rometty, 66, was criticised by many in the industry for IBM's failures to grab the cloud and AI markets sooner. Krishna refuses to condemn her – but acknowledges that he has taken risks his predecessors did not.

His upbringing is far from conventional for a major US corporate boss. "A military brat," he grins, he spent his early years moving between Indian army bases, staying with his maternal grandparents in Dehradun, a town in the foothills of the Himalayas, when his father's postings got hairy. He recalls a happy childhood of cricket, football and hard schoolwork at the insistence of his mathematician grandfather.

The family's life in the services did not leave them well off, he recalls – so he realised he needed a good education to be financially secure himself. He felt an

affinity for engineering: "I was always a tinkerer. I remember dismantling my first tricycle when I was two or three."

He studied electrical engineering in an Indian Institute of Technology university before winning a scholarship to do a PhD at the University of Illinois.

Krishna bristles at media hype that AI will make us all redundant. "What's going on is that, for the first time, technology is going to hit white-collar more than blue-collar [jobs] – and, with respect," he says, shooting me a wry glance, "people who write about it are mostly white-collar."

Even then, he says, white-collar workers doing decision-making, design or collaborative roles will be safe. He estimates that only about 6 per cent of the entire workforce is at risk. "Now, over five years, are you saying we can't retrain 6 per cent of the working public? We need more people in healthcare, elderly care, teaching children, IT and cyber."

Krishna has reassurance, too, for youngsters not suited to doing the STEM degrees needed to be an AI-programming master of the universe. The key to a successful career, he says, is to learn the critical thinking skills that will enable you to figure out how to adapt to change. "Psychology, engineering, history, they all teach you that."

Ask around big company IT chiefs and you'll find plenty of critics of IBM. "Always behind the 8-ball," says one; "Way too expensive," says another; "Horrible to deal with – I would never work with them again," says a third.

One in London who has tried the new WatsonX AI tool says it is fairly impressive – and more transparent than rivals, which operate like a black box. That is important when, say, you are a bank whose regulator wants to know why you rejected a loan application.

Early signs of green shoots? Perhaps, but IBM is up against an array of formidable Big Tech opposition with almost limitless resources.

Krishna says he has an engineer's ability to tackle big, seemingly intractable problems, but he has a major job ahead if he is to crack the problem that is Big Blue.

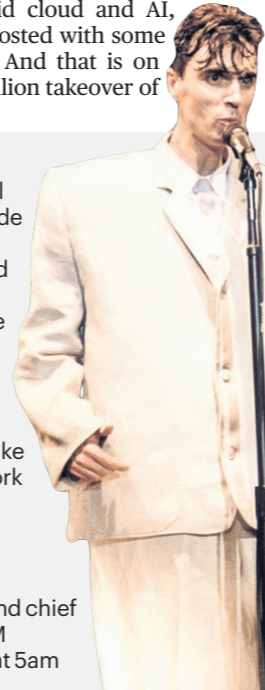
## THE LIFE OF ARVIND KRISHNA

**Born:** November 23, 1962, in Dehradun, India  
**Status:** married with two children  
**School:** Stanes School Coonoor in Tamil Nadu, and St Joseph's Academy in Dehradun. He grew up all over India, moving every few years  
**University:** Indian Institute of Technology Kanpur –

bachelor of technology degree in electrical engineering; the University of Illinois Urbana-Champaign – PhD in electrical engineering  
**First job:** IBM's Thomas J Watson Research Center, New York, in 1990, on projects related to computer systems and networks  
**Pay:** variable, depending on company performance. He earned \$17 million last year  
**Home:** Connecticut  
**Car:** Porsche Taycan  
**Favourite book:** *The Mathematical Theory of Communication*, by Claude Shannon

**Drink:** coffee  
**Music:** personal favourites include Talking Heads, Eric Clapton and Pink Floyd  
**Gadget:** Breville coffee maker  
**Watch:** Breitling Aerospace  
**Last holiday:** Lake George, New York  
**Charity:** Meals on Wheels

**WORKING DAY**  
The chairman and chief executive of IBM typically starts at 5am



**A music favourite is Talking Heads, while the IBM boss wears a Breitling watch and drives a Porsche Taycan**



and finishes at 7pm (10pm if there is a business dinner). Arvind Krishna spends his days meeting clients and partners, conducting reviews and working on business strategy.

**DOWNTIME**  
Krishna enjoys reading, and learning about, topics from history to science, technology and business. He also enjoys listening to music, gardening, playing with cars and spending time with his family.