

FROM THE INDUSTRY

My Passion

FOR TELECOMMUNICATIONS

BY DAVE KEANE-MIRAJKAR



DAVE KEANE-MIRAJKAR REFLECTS ON A LIFETIME IN TELECOMS, SHARING A HEARTFELT JOURNEY THROUGH DECADES OF INNOVATION AND CONNECTION.

FROM COPPER LINES TO CLOUD NETWORKS, HE CHARTS THE HUMAN IMPACT OF A RAPIDLY EVOLVING INDUSTRY. IN THIS DEEPLY PERSONAL PIECE, HE EXPLORES HOW CONNECTIVITY HAS TRANSFORMED LIVES — INCLUDING HIS OWN.



My passion for telecommunications has captivated me for over four decades. Throughout this time, I've been in awe of the remarkable advancements we've made, and the future possibilities are nothing short of mind-boggling. I consider myself fortunate to have spent the majority of my career during a period of unprecedented growth and transformation in the world of ubiquitous communications. At one pivotal moment in our development, the phrase 'How the Internet Will Change How Society Works, Lives, Learns, and Entertains' became a guiding vision. Today, as an industry, we've made that vision a reality.

Yet in the face of this monumental achievement, we've rarely paused to reflect or take pride in how far we've come. One great British leader who comes to mind is Sir Winston Churchill. I wonder right now, how he might have addressed the country or Parliament in one of his rousing speeches, especially about communications in the UK:

"Dear Mr Speaker, we Britons have long had a peculiar habit of talking to ourselves, then, thankfully, to each other and eventually to the world. It began with smoke signals and semaphore, then with copper coils and crank-handles. We sent telegrams across oceans, voices down wires, and at one proud moment, the Queen herself emailed from an army base. What a time to be alive! From the whispering walls of the Telegraph Office to the laboratories of Marconi and Turing, Britain did not merely keep pace, we set it.

Ours was the spark that lit the fuse of global communications. We were the first to string cables across continents, to conjure invisible signals across air and sea, and to give the world that marvellous invention: the 'Speaking Clock'. And now, Mr Speaker, we find ourselves on the brink of yet another great leap, not from copper to fibre, but from classical certainty to quantum strangeness. Where information is no longer just fast it is 'entangled'. Where security is not just strong, it is absolute. Some speak of this as if it were tomorrow's dream. I say it is already underway here, in Britain. From our universities in Cambridge and Oxford to the quantum corridors of Harwell and Bristol, we are not passengers, we are pilots and path finders. Let others broadcast their ambitions, we shall quietly secure the future. Let others boast of their satellites and networks, we shall build ours with rigour and reason. For as it was in

the days of Wheaton, Faraday, Maxwell, Berners-Lee, so it is now: the signal rises in Britain and long may it transmit."

FROM COPPER WHISPERS TO QUANTUM DREAMS

A few months ago I found myself standing in front of Weybridge Telephone Exchange building in Surrey. A squat, grey and brick structure perched at the edge of the town.

Long been forgotten by most, barely noticed by those who pass by now. The paint was peeling, the door, once bustling with the steady rhythm of engineers coming and going, now rusted and still. There was no plaque, no sign to commemorate its once-vital role. Yet, I knew exactly what it was. As I stood there, a deep sense of recognition stirred within me.

I remembered being told off for not wiping my shoes correctly on the door mat adorned with the GPO emblem on one of those wet winter days heading on to the Exchange floor, something that evoked a deep sense of pride that was instilled in the era.

It may seem strange to feel a swell of emotion in front of such an unassuming building. But for those of us who have walked the long road of telecommunications, who've soldered lines, tuned signal paths, provisioned services, and optimised networks, these structures are far more than just buildings. They are the cathedrals of progress, silent but resolute sentinels of connection. As I stood before it, I couldn't help but trace the journey in my mind, from the days of clunky electromechanical switches to the near-magical fibre-light symphonies of

today.

The story of telecommunications is not merely one of technological innovation; it is a profound tale of the human desire to connect, to bridge the vast distances that separate us, and to make our presence felt, even when we are not physically there. What a journey it has been. From those humble buildings, we have built an intricate web that ties the world together. Silent threads that hum with the pulse of human connection. In these places, long overlooked, rests the essence of progress itself.

FROM SILENCE TO SOUND

The story begins, humbly, with a wire and a whisper. In 1876, when Alexander Graham Bell placed that first call: "Mr Watson, come here, I want to see you" the world shifted ever so slightly on its axis. It wasn't just a voice that travelled across the wire it was the possibility and potential that would have intrigued me, should I have been party to that era.

It was the first thread in what would become a vast, humming, global web of human connection. The early days were about marvel and mechanics. Wooden switchboards with 'Doll's Eye indicators'. Copper lines stretched across forests and fields. Manual operators, patching calls like weavers of some invisible living fabric. You could almost hear the breath of progress in those clicks and clacks. For decades, telecommunications grew like ivy: slow, methodical, and deeply rooted in its physicality. Each new telephone exchange, each cable trench, each handset was a small miracle of human ingenuity and determination. The phone wasn't just a



Signage wordplay on a sorry-looking redundant telephone exchange in Ottershaw, Surrey

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convenience it became a revolution. It brought mothers closer to their sons at war, lovers across continents, merchants to markets. It changed everything.

FROM MANUAL TO AUTOMATIC

As the 20th century progressed, so too did our ambition. Out went the human switchboards and in came the Strowger Electro-Mechanical switch era, clunky and loud but groundbreaking in its implications. It was the beginning of automation, the first step toward a world where machines would carry the load of connection. Long before the digital age the Strowger Telephone network quietly stretched across continents, a vast mechanical mind invisibly connecting humanity in what may have been the largest living machine the world has ever known. Anyone else still remember the distinct smell of burning Bakelite and the scent of lubricating oil from the Strowger Exchange era? Ah, the good old days when technology came with its own perfume!

For many, the telephone became a lifeline. I still remember stories from GPO technicians who spent winters climbing poles, thawing frozen lines with blowtorches just to make sure a grandmother in Yorkshire could call her daughter for Christmas. These weren't just jobs; they were more an act of service and duty. The electro-mechanical hum of the Strowger system was the beautiful sound of innovation in motion, a symphony of progress that marked the dawn of automated telecommunications.

THERE ARE ONLY 10 TYPES OF PEOPLE IN THE WORLD: THOSE WHO UNDERSTAND BINARY, AND THOSE WHO DON'T

Then came the digital dawn. It was a quieter revolution, unfolding in code and carrier signals. Analogue voice, with all its crackle and charm, gave way to the precision of binary.

With PCM (Pulse Code Modulation), voice was transformed into data. Data was broken into packets, and those packets learned how to move. With network protocols came the new language of data transfer, and algorithms gave it intelligence. The saying 'hardware makes it faster, software makes it smarter' once rang true, but today, the lines are blurred, hardware's getting smarter too. Now, both are in a race to outsmart each other, speaking a

language that even the data's still trying to decode!

The Telephone Exchanges we once knew, clattering behemoths with miles of cabling were replaced by cabinets, then racks, then cards. Yet the significance was not in the size reduction, it was in what it meant for our future. Digital meant Scale Speed, Efficiency and most crucially, it meant we could do more than talk. The birth of ISDN, ADSL, early broadband; these were not just upgrades, they were tectonic shifts.

CELLULAR DREAMS: THE ERA OF MOBILITY

If the landline gave us reach, mobility gave us freedom. The first mobile phones were bricks, heavy, awkward and rare. But for those who had one, it was pure magic. To speak while walking, to call while driving, to connect without being tethered to a cord - it was science fiction made real. Like all great revolutions, it didn't just stop; it accelerated. From 1G to 6G, each new generation brought new capabilities. What began as a simple voice connection evolved into a platform for everything: work, love, learning and play. Today, mobile networks are the nervous system of modern life, and we trust them with everything from our hearts to finances and our health plus a great deal more. When you think how far we've come, I can't help but laugh. Who would have thought that, back then, a simple thing like ordering a pizza on the way home from work would feel so liberating and revolutionary?

THE FIBRE FRONTIER: TO INFINITY AND BEYOND

And now we come to the age of light. A technology so elegant, so deceptively simple, yet so profound. A single strand of glass, thinner than a hair, pulsing with light at near lightspeed, carrying the world's information with barely a whisper of delay. The first time I saw a fusion splice under a microscope, I was stunned. Two tiny glass filaments fused by heat, transmitting light as though they'd always been connected. It felt poetic. FTTH—fibre to the home—has brought this miracle to doorsteps. In many parts of the world, the speeds we now take for granted would have been unimaginable even a decade ago. 1Gbps. 10Gbps. Soon, terabit-capable links. But more than speed, it's what fibre represents. It's permanence. Resilience. A commitment to the future. It's laying down roots not just for today's internet, but for tomorrow's innovation.



THE NEW REALMS: CLOUD, SDN, AI AN QUANTUM

Now we stand on the edge of something even greater. Software Defined Networks, Artificial Intelligence powered Orchestration and Edge compute. The idea that networks can now learn, predict, and heal themselves is no longer fantasy, it is happening. Our backbone is no longer just copper or fibre—it's software, elastic, scalable. Intelligent and often virtualised. Beyond that, quantum networks. Hollow-core fibres carrying entangled photons through vacuum. Secure, instantaneous communications across impossible distances.

The laws of physics bent to our will. It's still emerging, still being shaped in labs and pilot projects, but it is coming, and it will change everything again. I wonder if those early switchboard operators could have dreamed of this of AI routers and virtualised cores, of fibre-light highways and quantum encryption. Would they even believe it? But perhaps the real question is: What will the next generation look back on and marvel at?

THE PEOPLE BEHIND THE PROGRESS

In every generation of telecommunications in the UK, the greatest constant has not been the technology, but the people. The thinkers, software and hardware designers, splicers, architects. Commissioning engineers, planners. The ones who walked trenches in rain and snow. The ones who sat through late-night maintenance windows praying the patch would hold. The ones who debugged code at 3.00 am. The ones who picked up the phone when a hospital's link went down and worked until it was fixed. They are the unsung heroes of modern civilisation. Every email you send, every FaceTime call with a loved one, every bit of news that reaches you in real-time it's because someone, somewhere, built and maintained the invisible threads that make it possible. We rarely see them. But we owe them everything.

THE ROAD AHEAD

What about the future? We talk about artificial intelligence, quantum networks, and software defined clouds that think faster than we ever could. Let's not shy away from this frontier, we must move forward with the same boldness

that once stretched wires from coast to coast, with the same daring spirit that changed the course of history. Our work isn't done yet. Half the world still waits in silence, unconnected. Villages, nations and even continents remain in the dark, still untouched by the promise of modern communication. The gap between the connected and the disconnected continues to grow, and it's our responsibility to close it.

We will build the infrastructure of inclusion, ensuring that every person, no matter where they are, can be part of this new world. We will go to the deserts, the jungles, the islands and the inner cities, places that are often forgotten and left behind. We'll lay the fibre, raise the towers, launch the satellites, automate networks, aid the simplification of technology and open the ports, building bridges of connectivity to every corner of the Earth.

A CLOSING THOUGHT

I began this article with a reflection on a humble building. Perhaps you've seen one like it: weathered, moss-covered, with the faint remnants of the words "TELEPHONE EXCHANGE" still visible on the brick. Don't pass by such places too quickly. They may not be grand, but they are far from ordinary. They are quiet monuments, not made of marble or steel, but of meaning. Within these walls, connections were made that shaped the way we live today. From them, we laid the foundation for the world we now know, a world where distance is no barrier, and communication is a bridge between us all. So, let us take a moment to appreciate their legacy. Let us remember how these humble buildings helped form the fabric of our society. And above all, let us continue to build on that foundation, connecting with one another as we move forward.