TechScape: Can big tech grab a chunk of the billions earned by mobile operators?

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Author: Unknown

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A shocking thing happened when I upgraded to an iPhone 15 Pro: my sim card figuratively dissolved into a tiny pile of ash, or rather, was transformed into a wholly digital e-sim. I blame myself, but I blame Apple even more: while transferring my data from my old iPhone, I was asked whether I would also like to move my phone number. I frowned – of course I would – and tapped yes. A minute later, my new iPhone had a mobile signal, my old phone did not, and my sim card was utterly redundant. I can't feign total ignorance. I'd heard tales of woe from friends forced to move to e-sims when they bought a US version of the iPhone 14, which lacked a sim slot. New iPhones sold outside the US still take sim cards however – and I'd been planning to keep my old one, if only for convenience. E-sims have a lot to recommend them: they free up precious space in smartphones and wearables that can be used for bigger batteries, they don't take any time to deliver, you can't break them and they reduce waste. The main downside is that setting up and moving e-sims can be a finicky process involving QR codes, custom apps or, worst of all, calling up your operator. When it comes to something so personal as your phone number and so central to your online security, the apparent loss of control feels troubling, even if sim cards have always been revocable by providers. But big operators such as EE, Three, Vodafone and O2 aren't necessarily overjoyed at the advent of e-sims. When I visited Japan earlier this year, I bought a cheap 10GB e-sim from Ubigi for £11.70 instead of shelling out for an expensive roaming plan. Because I was able to buy and activate it before departing the UK, I had data the moment I landed. Sure, you can get a local sim card in Japan or rent a portable wifi router, but it's far more pleasant to arrange everything beforehand rather than doing it jet-lagged after a long flight. The latest Google Pixels and iPhones now have dual e-sim support, meaning you can have two phone numbers active simultaneously, each with their own data plan. It's easy to see how savvy users could switch between the cheapest e-sim plans even more frequently than they do now, threatening the bottom line of incumbent operators. In practice, it's still a little confusing to set up, but a software update could make it trivial – or even build the purchase process into iOS or Android itself. Indeed, last year Ofcom speculated that e-sims might lead big tech companies like Apple, Google, and Amazon to offer mobile network services to users directly, on an even larger scale than Google's existing Fi Wireless service in the US. Grabbing a chunk of the billions earned by mobile operators will be a tempting prospect for big tech, but not without risk. Phone manufacturers benefit from mobile operators promoting their products and encouraging upgrades, and they might not want the hassle of being responsible for mobile service, even as a mobile network virtual operator (MVNO) that doesn't own network infrastructure or wireless spectrum. There's more on the horizon when it comes to smartphone connectivity, however. Apple recently introduced Emergency SOS, enabling users to text

emergency services directly via satellite, and last month, Vodafone and AST SpaceMobile claim to have conducted the world's first space-based 5G voice call between a Samsung Galaxy S22 smartphone and the BlueWalker 3 test satellite. This feat of technology works partly thanks to BlueWalker's sophisticated phased array, but mostly because it's absolutely enormous. At 64 square metres, it's the largest commercial communications array in low Earth orbit and one of the brightest objects in the sky, drawing complaints from astronomers around the world – and AST SpaceMobile wants to launch another 90 satellites to fill out its 5G service. There is also SpaceX's controversial Starlink, created by Elon Musk, which plans to offer similar services with a new version of its ubiquitous satellites. Aside from worsening light pollution, the end goal is to provide complete global mobile service without building cell towers in sparsely populated areas or making everyone buy new phones. For now, satellite companies are teaming up with existing mobile operators, but with Apple having already joined the game and other big tech companies watching in the wings, it wouldn't be surprising if mobile operators get left behind one day, unless regulators and politicians object. Even with space-based cell towers, we'll still need e-sims, or something like them. Their purpose lies in their name: Subscriber Identity Module. They securely identify your account to wireless networks and, if it's in good standing, allow your device to access data. Whether you're connecting to a tower a hundred metres away or a satellite a hundred miles above – or both – there's no such thing as a free call. Adrian Hon is the founder of fitness game studio Six to Start and writes the games newsletter Have You Played? If you want to read the complete version of the newsletter please subscribe to receive TechScape in your inbox every Tuesday.