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The Third Transport Revolution

TELECOMMUNICATIONS ARE NOW RECOGNIZED as the third of the three great transport revolutions that have, in swift succession, transformed society in the past two hundred years. First were the railways; second, the automobile; and third, telecommunications-attached-to-the-computer, which was bound to be the most far-reaching because in telecommunications, once the infrastructure is installed, the cost of use does not depend greatly on distance. So by the early years of the twenty-first century brainworkers—which in rich countries already meant most workers—no longer needed to live near their work. They could live on the beach of Tahiti if they wanted to, and telecommute daily to the computers and other colleagues in the New York or London or Hamburg or Timbuctoo-tax-haven office through which they worked.

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All three revolutions were opposed by the ruling establishments of their time, and therefore emerged fastest where government was weak. All three brought great new freedoms to the common man, but the railways and motor-car manufacture temporarily made access to capital the most important source of economic power. As most men did not like being bossed about by capitalists who could become powerful because they were born stinking rich, they voted to give greater economic power to governments during the railway and motor-car ages. This was economically inefficient, and also made tyrannies more likely and more terrible. The information revolution was fortunately the exact opposite of the steam engine's industrial revolution and of Henry Ford's mass-production automobile revolution in this respect. The steam engine and mass production had made start-up costs for the individual entrepreneur larger and larger, so that in both the steam and automobile ages, to quote Bell Canada's Gordon Thompson in the early 1970s, there was "no way an ordinary citizen would walk into a modern complex factory and use its facilities to construct something useful for himself." But, as Thompson forecast, the databases of the next decades were places into which every part-time enthusiast could telecommute. In all jobs connected with the use of information, start-up costs for the individual entrepreneur in 1975–2025 have grown smaller and smaller. It was "never thus," said Thompson, "with power shovels and punch presses."

In consequence, in the TC Age the most important economic resource is no longer ownership of or access to capital, but has become the ability to use readily available knowledge intelligently and entrepreneurially. This has taken the ground from under the feet of political parties and policies based on a jealous egalitarianism. During the Capitalist Age, politicians had felt progressive when they called upon the workers of the world to unite to fight the idle rich. In the TC Age the cry "Dummies of this land unite against those brighter people" has not stirred electorates as readily as the old class battle cries. Western politicians went on trying for a long while to impose excessive

government and taxes, but the bright and entrepreneurial and successful found it a simple matter to emigrate from their rule and telecommute from Bermuda. It seems incredible now that national governments wanted to block such freedom, but a look at the two previous transport revolutions shows reactions as short-sighted as those of thirty years ago.

As railways spread across early Victorian England, the first Duke of Wellington—he of Waterloo—is said to have expressed his displeasure to his peers. “My lords,” he warned, “these things will enable the working classes to move about.” That was very shrewd of him. The railways broke up the system whereby every yokel was so immobile that he had to be constantly subservient to the most powerful employer in his district, a system that had been nice for dukes and the very upper classes, but for nobody else. The railways also created the United States of America, and did all sorts of other unnerving things like that. The old duke and his kin would have stopped the British railway revolution if they could, but dukes were by 1830 not quite confident enough to dare to stop anything in Europe. It was only half a lifetime since tumbrils full of dukes had rolled to the guillotine in France.

By the time of the second (or automobile) transport revolution, Britain and Europe were unlucky enough already to have bossy but fairly respectable, because half-democratic, governments in place. The first two great peacetime prime ministers in Britain—the first two whom most people can now remember by name—were Disraeli and Gladstone in the 1870s. It was no coincidence that, as soon as they appeared and over-government displaced Adam Smithism, Great Britain started its decline. The first reaction of the British Parliament to the horseless carriage in the 1870s was to pass a law saying that no such carriage could appear on British roads unless a man carrying a red flag walked in front of it. One hundred years later the British Parliament attempted broadly the same policy in relation to cable television.

The horseless carriage law was repealed in the 1880s, but in those dozen years a dynamism was lost, so that economic lead-

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ership in the automobile age passed from the then great British Empire to the then hick United States of America. The U.S. had the good fortune, in the wake of its Civil War, and in view of its vast distances, not to possess a coherent government at the time. It therefore did possess rumbustious entrepreneurs. Henry Ford opened his motor manufacturing plant in June 1903 with a capital equal to the 1975 price of a small suburban house. He sold his first car that October, and made a profit from then on. Lots of competing American automobile entrepreneurs lost money, but their competition helped put America on wheels.

The United States followed Europe by relapsing into over-big government during the automobile age, but not to quite the same extent. In the late 1870s Gladstone's supposedly left-wing Liberal government absorbed 4 per cent of Britain's gross national product in government expenditure. By the late 1970s Thatcher's supposedly right-wing Conservative government absorbed 44 per cent of it. When the information revolution began, most governments in Europe were spending around 35–45 per cent of their people's money for them. The European governments therefore over-controlled telecommunications from the start.

Telephones in much of Europe had early been put under the control of the post offices, those extraordinary public monopolies which took root even in the United States because, in the seventeenth century, England's King James I and King Charles I had wanted to censor the mail of those, like Guy Fawkes and Oliver Cromwell, who successively plotted to overthrow them. The royal monopoly on letter-carrying created by these frightened Stuart kings meant there was a colonial post office in being when the American colonies revolted 150 years later. Benjamin Franklin won kudos by re-adapting it for the infant United States, where, like so many public monopolies, it became an inefficient porkbarrel from which politicians fed those to whom they owed political debts.

When a North American invented the telephone and an Italian invented the radio, American politicians did not quite have the power to put them under post-office instead of under mar-

ket control. Europeans not only put telephones under the control of their post offices, but also created public-sector broadcasting in the image of the first British Broadcasting Corporation (BBC). In cultural matters the BBC first, in 1923–39, imposed on the working classes the old highly moral inhibitions of the European upper-middle classes; the BBC's original director-general, Lord Reith, sacked any staff who became divorced. After about 1960 the BBC imposed on the working classes the new sleazily immoral attitudes of the European upper-middle classes.

The switch from upper-middle-class puritanism to upper-middle-class smuttiness came with the new efficient birth-control devices. Before the birth-control pill was readily available, the upper-middle-class masters of national culture through bodies like the BBC were most afraid that their daughters might become pregnant like proletarian parlormaid. After the pill they were most afraid of not being regarded as trendy. Since most television critics in every country belonged to the upper-middle class, public service television won critics' acclaim, but no single work from this era lives on in high regard of our culture today, except Dylan Thomas's *Under Milk Wood*, a play originally written for radio by a rebellious drunk. The period from 1920 to 1990 was a cultural desert except in youthful popular music, largely because the old cultural centers of Europe put broadcasting into insufficiently competitive hands. The great post-1990 flowering of culture began first in the scattered communes of rejected artists where the airwaves were entirely free.

Despite that, by the time our history starts in 1975, the first stage of the television revolution was already having the familiar and marvellous equalizing effects of any transport revolution. Most American and European millionaires were by the 1970s spending their main leisure hours each night doing the same thing as most welfare mothers; they were sitting in the same sorts of armchairs watching exactly the same television programs. Lovely, lovely.

The second stage of the television revolution, before the real

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start of the move to TCs, was the switch from broadcasting to two-way narrowcasting. The history books say that the failing countries in this period were those whose government imposed tighter regulations on cable and other narrowcasting, but in fact the new technology rather quickly overwhelmed government defenses in almost every land.

Scotland, for instance, which in those supra-nationalistic times was subject to a British government based in London, was one of the potential telecommuting areas which was only temporarily held back in its dying oil age when the Labor-cum-Alliance government headed by Mr. Neil Kinnock in 1992–5 imposed some pro-public-service cable television regulations. There were good things among the Kinnock dross. One example was the local “jobline”—a very cheap publisher of all local jobs, however temporary or short-notice. People just keyed in their requests for a baby-sitter that night or for somebody to cut the lawn. Soon came “sportsline.” Anybody wanting a game of football, mixed field hockey or any other team game next Saturday keyed in their availability. The computer put the teams together, using its knowledge of the players’ grades, and found the nearest pitch. Another innovation was the “talkline” for the elderly; the old-age pensioner could advertise for free what were his interests and that he would like a chat, and soon various younger people were paid by the community to chat to them.

These derided do-good public-service experiments speeded the realization that cable television systems, especially when combined with computer terminals, could provide a means of publishing that was cheap, quick, easy to update, intricately indexable between people dispersed between locations, and conversational in style. But it was the introduction of commercial narrowcasting that led the way to the true twenty-first century community.

The new narrowcasters were aided by the fact that telecomputing is much easier than motor-car driving. When the motor came in, there had been the worry that people learning how to drive it would run others over; indeed if the number of

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automobile deaths had been foreseen, perhaps the man with the red flag would be marching still. But with the computer terminal, experimenters could sit at home playing on their keyboards by trial and non-expensive error. Soon there was astonishingly wide participation in the quite intellectual interactive treasure-hunts and other games which the commercial narrowcast channels carried. Anybody could key in their answers to world-wide quiz games that required out-of-the-way knowledge. Gradually, and more importantly, anybody could participate in the communal and transglobal research experiments on which much of innovative twenty-first-century industry was to be based.

So far in the twenty-first century Scotland has done rather better than England, just as in the late twentieth century Arizona did better than New York. Neither was anticipated fifty years ago. In 1975 much of the population of Scotland lived in or around the sad city of Glasgow, which had the worst alcoholism and some of the nastiest local-government-owned tower blocks in Europe. Population was flowing away from the beautiful highlands and islands, and it was assumed it would continue to do so.

Today most of the rich workers of Scotland live in the highlands and islands. A typical telecommuter is Mrs. Gillian Macleod who keys in figures from her terminal in Brodick on the Isle of Arran to the computer in Saudi Arabia of the insurance company for which she works.

It is extraordinary that more of our grandfathers did not see that this sort of job was the wave of the future. There were four main requirements if an area was to be a success in the Telecommuting Age. They are satisfied in places as far apart as Guam and the Gambia and Queensland and Cape Province and California and Penang, but let us take Scotland as an example.

First, as the prophet John Naisbitt said in 1982, the "languages needed for the immediate future are computer and English." Scotland spoke a variety of one of these. Second, the area had to be a nice one in which to live. Although the Gorbals never was, Scotland's highlands and islands always have been.

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Third, it was important that all income earners should adapt happily to the “cafeteria of compensation” schemes that had begun to appear in the 1970s. These allowed the individual employee to decide which mix he wanted of salary, job objectives, career aims, flexitime, job sharing, long or short holidays, fringe benefits or fringe nuisances. After about 1990 the advance in computer power meant that individualization of contracts became the rage. Soon firms with 1,000 staff found that a different contract was preferred by each of the 1,000. It became recognized that any firm which signed a generalized contract with a trade union would attract few workers and would go bust. Some people in the 1980s feared that Scotland’s strong trade union tradition would impede its forward path. They muddled the past with the future. In 1975–2025 labor unions have declined in all the areas which had powerful free labor unions before. Free labor unions have been popular and restrictive only in areas which previously had not enjoyed them. The economy of post-communist Russia has been impeded by this.

The fourth pre-requisite was a competitive and quickly changing telecommunications system. Scotland in 2025 is a successful country not just because the next-successor-but-five to cable television’s fiber optics is running out of Mrs. Macleod’s Brodick back door, but because the salesman of the next-successor-but-six to fiber optics is knocking insistently on her front door to bargain that his new system will link up better with the next-successor-but-four to the old satellite dish.

Governments at first tried to impede and regulate much of this, but an early discovery of the Telecommuting Age was that we could change the way we chose our governments. Until the 1990s we had pretended to ourselves that we could alter our lifestyles by voting on one Tuesday or Thursday every four years whether Mr. Reagan or Mr. Mondale, Mrs. Thatcher or Mr. Kinnock was putting on the tribal demonstration which at that particular moment annoyed us less. After the advent of the TC we found that the most sensible and direct way in which a free man could choose his government was by voting with

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his feet. The individual could go to live in any area where the government—which could from then on be a very local government—permitted the lifestyle, rules and customs that he liked.

And thus began what became known as the de-politicizing revolution.