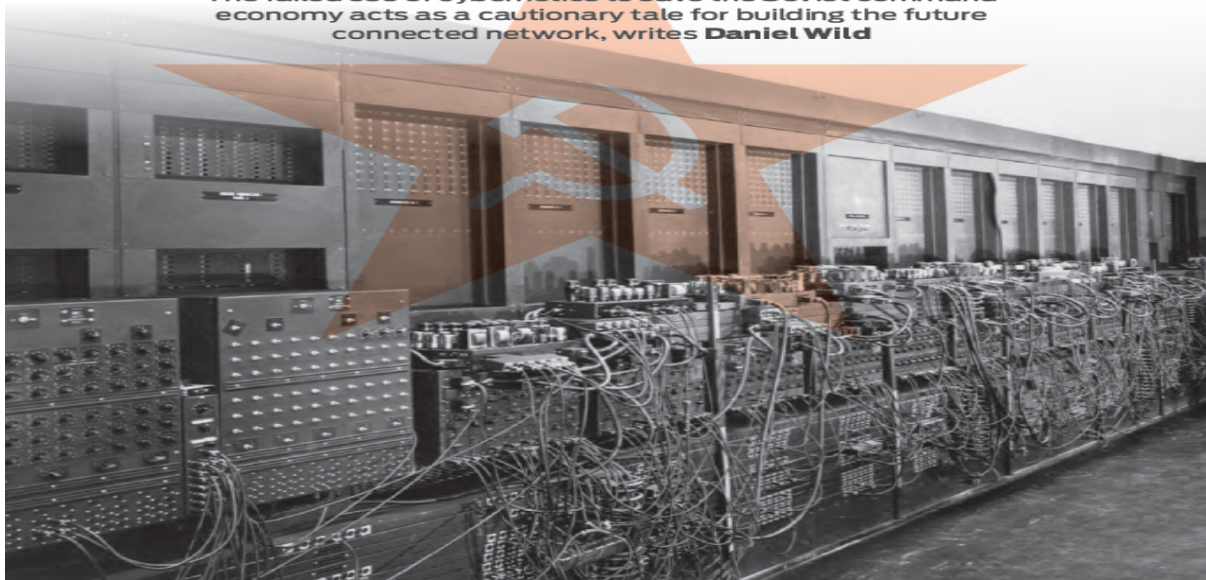


SOVIET CYBERNETICS

The failed use of cybernetics to save the Soviet command economy acts as a cautionary tale for building the future connected network, writes **Daniel Wild**



Soviet Cybernetics

Publish Date:

August 2016

The failed use of cybernetics to save the Soviet command economy acts as a cautionary tale for building the future connected network, writes Daniel Wild

The story of the failed attempt to save the Soviet command economy using cybernetics (the systemisation of all organisational problems with computing technology) from 1959 to 1989, may seem distant historically, ideologically and geographically, the key theme in *How Not to Network a Nation* by Benjamin Peters is close to home: the ascendance of bureaucratic empire building and institutional self-interest over reform.

The ultimate failure to network the Soviet economy, according to Peters, was not the result of technological ineptitude, lack of skills or totalitarian ideology. But the interception and disruption of change by the parties who benefited from the status quo – often the military, the Central Statistical Agency (CSA) and influential individuals who didn't want to cede control of information as a result of digitisation and decentralisation

In exploring this failure, the central question the book turns to is a practical rather than moral one: How do you actually plan an economy? What takes the place of a price system in directing resources? What replaces the profit motive in incentivising work and allocative efficiency? How does one coordinate action?

As has been documented elsewhere, the Soviets tried to do this through a huge bureaucratic and administrative apparatus. The two central economic bodies were Gosplan (the state planning commission) and the Gossnab (the state commission for materials and building supplies). Gosplan created economic plans by defining economic inputs such as labour and capital, the time table for execution, wholesale and retail prices and divided the plans into five-year increments (the five-year plans). Gossnab was responsible for implementing the plans by procuring and supplying producer goods to factories. Using the analytical tools from Hayek, one can immediately see the problems with this: the information needed to allocate resources is decentralised and scattered across communities and societies, not available at a central location. Attempts to coordinate actions and allocate resources based on this conceit will be futile at best and catastrophic at worse.

And so, predictably, the planned economy never worked as planned: Gosplan would plan things but Gossnab wouldn't deliver. Or Gossnab would implement such poorly designed plans from Gosplan that the outcome did not meet the 'economy's needs'. Or when things were planned and coordinated properly, by the time they reached Gossnab they were irrelevant – life had moved on.

This epic coordination failure drove the search for a better way of planning the economy. The attempts to digitise this paperwork empire were, according to Peters, genuine attempts at making the Soviet Union's economy work better driven by publically-spirited reformers. They wanted to build a national computer program that would digitise and 'network the planned economy, automate and optimise the immense coordination problems besetting that economy, and thereby speed the grand socialist experiment toward a prosperous and stable Communist future.' They were essentially trying to solve Hayek's information problem without introducing prices.

The book analyses four main attempts at digitisation: the Economic Automated Management System (EASU) system, the Unified Communication System (ESS), the unabbreviated Rational System of Central Control and that biggest attempt of them all, the All-State Automated System for Management of the Economy (OGAS). Although all of these systems had problems relating to technological feasibility and cost, they all ultimately failed because they spelled the erosion of the power of those who benefited from the status quo.

For example, the EASU aimed to apply the technical networks used by the military to the civilian use of economic planning. But the military, with all of its political clout, opposed this because it was seen as an existential threat to their domination of key technological resources of the Soviet Union. Similarly, the ESS 'fell prey to strategic veto points in the state administration that depended not on bureaucratic rules but on charismatic leadership and personal power'. And the rational system of control was kyboshed by those who would lose their place at the centre of the socialist economic planning empire: Gosplan, Gossnab, the CSA and regional and branch

committees.

All of these examples are essentially a political-economy primer to the main event in the book – the development, attempted implementation and ultimate failure of the grandest attempt a reform: the OGAS.

The OGAS was a gargantuan project that aimed to digitally connect the entire Soviet Union through decentralised command and control protocols that would automate, mathematically model, optimise and rationalise away the profound inefficiencies that beset the planned economy. It was to provide the same outcome as a perfectly competitive economy, except with preferences determined centrally rather than by individuals. It would be designed so that economic planning could be transmitted, modified and managed in close to real time up, down and laterally across the networked administrative pyramid. The original version, which ultimately was scaled back, was of a three-tiered model, including twenty thousand computer centres at the regional level, one to two hundred in the middle of the chain and one at central command.

The ambitious project had many problems independent of institutions – it was beset by technological problems and came with a massive price tag. But ultimately it was the institutional environment that sounded the death knell for the Soviet internet.

After a series of delays and setbacks the project was passed to the CSA for review. The CSA just happened to be headed by an outspoken critic of the project primarily because its success would see his agency (and his career) pushed down the pecking order.

Still, despite protest from CSA head, the Central Committee mandated the CSA finalise the project. Unperturbed the head of the CSA employed a tried and true bureaucratic strategy – he used bureaucratic processes to grind the project a halt. Reviews, costings, testing, meetings and committees were thrown at it. Ultimately, the CSA sent the program for finalisation review out to regional departments in Siberia. There it went through a series of ‘reviews’, ‘tests’, and ‘feasibility’ studies. Ultimately a ‘cost-benefit analysis’ which found the project would cost ten times the amount as the equivalent done by hand killed the prospect of reform (since when did costly administration ever deter central planners?). Anyone who has read a Regulation Impact Statement which magically finds a huge net benefit for the preferred option and a huge net costs for alternatives would recognise this as a vehicle to prevent change.

So the attempts to network the Soviet economy to make practical the seemingly intractable and inherently corrupt process for planning was crushed by information power arrangements. It is a story of the political economy of the Soviet Union as much as it is of cybernetics.

The story of institutional resistance to change is, in my view, the right framework for thinking about why policy may or may not succeed. We see this every day, from legalising Uber through to tax, education and industrial relations reform. The best ideas won’t win if they cut the powerful off at the knees. But I have one quibble. The author suggests that issues with digitisation were not primarily ideological, but mostly a function of political economy. But isn’t the political economy of a country at least partly determined by its ideology? The institutions and administrative processes



that establish the incentives and 'rules of the game' are different in totalitarian economies than they are in western liberal democracies. Our own bureaucracy has its fair share of corruption and personal empire building that comes at the expense of national welfare. But the reach of the public sector is limited by the extent of our market economy and rule of law. At its core totalitarian ideology is the centralisation of control and the dismissal of individuality and associated markets based on preferences, prices and profit. Communism and central planning go hand in glove. In my view this goes part of the way to explaining why the civilian internet succeeded in the west and not in the Soviet Union. While the political institutions may not have always been favourable to the civilian use of the internet in the west, their ability to grind change to a halt were more limited.

But the book also explores broader issues relating how to reform a system when no one in that system has the incentive to reform. The author suggests reform needs to be based on the actual economic behaviour of organisations not their stated or formal workings. For example, if the actual behaviour of the Soviet Union was actually to execute central planning in the best way possible, it is more likely cybernetics would have won out. But because the objective was directed toward other things, such as power preservation, career building etc. the changes did not work. We see the same problem here. Trying to cut the pay of bureaucrats by arguing that money could be re-allocated for purposes that would increase national welfare assumes public servants are publically spirited. They, like most, are not. So they resist change. So, change can only be achieved by either making reform irresistible to those who benefit from the current system (by making them central to change) or overwhelming them with popular support for alternatives. Ultimately, neither of these conditions were met in the attempts to digitise the soviet economy, resulting in it ultimately failing.