

Digital Policy Hub – Working Paper

AI Benefit Sharing and the International Telecommunication Union

Wim Howson Creutzberg

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67 Erb Street West
Waterloo, ON, Canada N2L 6C2
cigionline.org

Key Points

- The resources needed to train frontier artificial intelligence (AI) systems are concentrated in the United States and China, whose strategic rivalry could impede the diffusion of the benefits of AI.
- Cold War negotiations over satellite resources serve as a case study showing that middle powers can successfully advance benefit-sharing agreements by leveraging the strategic interests of great powers.
- Triangular diplomacy may only be viable insofar as the benefit-sharing proposal does not constrain a great power's capacity to develop and deploy AI systems, even if the proposal would further constrain its rival's capacity. Great powers may reject benefit-sharing proposals that are not quasi-Pareto improvements, even if doing so would harm relations with small and middle powers of non-trivial importance.
- Small and middle powers should seek to build coalitions with countries integral to AI supply chains.
- Benefit-sharing proposals will likely be more politically tractable if they focus on gaining access to non-zero-sum resources, such as training data, model weights and software needed to deploy advanced AI systems.

Introduction

Over the coming decades, AI could greatly accelerate technological development and economic growth.

However, these benefits could be diffused unevenly, leaving much of the world behind (Dennis et al. 2024). Only a small number of countries are capable of developing frontier AI systems. The scarce resources required — the semiconductors, energy, talent and know-how — as well as the vast majority of frontier AI companies are concentrated in the United States and China (Mostrous, White and Cesareo 2024). Given their geopolitical rivalry, these two countries have a strategic interest in controlling the diffusion of AI development, a recent example of this dynamic being the semiconductor export control regime launched by the United States to gain a competitive advantage over China (Dennis et al. 2024).

Concerns about uneven AI diffusion leading to lost opportunities for inclusive economic growth and the further entrenchment of extreme inequities between countries have motivated a growing literature scoping out how international agreements could ensure the benefits of AI are shared so as to enable inclusive economic growth and technological sovereignty (ibid.). The options for benefit sharing include providing broader access to leading models and to the resources needed to train and run AI systems. Currently, leading US AI policy makers conceive of winning the AI race in terms of market share (Mitchell 2025), on which view great powers' interests are in promoting the use of their models. While this approach makes room for middle powers to share in the use of frontier models, it does not allow for sharing the resources needed to train and run one's own models. As such, it poses a challenge for the prospects of benefit-sharing agreements focused on resources. And, as the significance of the military and

economic applications of AI grows more broadly, so too will Chinese and US hegemony, which further amplifies the challenges to resource-based benefit sharing.

Resource-based benefit sharing is necessary for countries to share fully in the benefits of AI because it enables them to reach technological sovereignty and avoid dependency on great powers. Moreover, it would better support inclusive economic growth. For example, countries being able to train or fine-tune their own models would allow for systems adapted to their particular context; American models, for instance, would likely be less economically valuable in non-English-speaking countries than models trained on native languages (*ibid.*).

The question of how to negotiate benefit-sharing agreements in light of great powers' countervailing interests is thus crucial for middle powers. In particular, what kinds of leverage should middle powers seek out and what benefit-sharing objectives are most tractable in expectation? This paper takes up these questions by way of a historical case study and examines the efforts of small and middle powers (SMPs) attempting to gain access to the resources necessary for developing their satellite industries during the Cold War, and in particular their efforts at the 1985 World Administrative Radio Conference (WARC).

The broad parallels between the geopolitical landscape that defined the rise of satellites and that which is likely to shape the development of AI make the 1985 WARC an apt case study. Like AI, satellites are a dual-use technology whose development has been led by two states involved in great power competition. Satellite technology emerged alongside the US-USSR geopolitical competition, much as the US-China competition is unfolding alongside the development of AI.

What is more, the options for sharing the benefits of satellites broke across similar lines. There were initiatives to share access to US and USSR satellites and initiatives to share the resources required to develop the satellite industries of other nations. These initiatives were separate: access to American and Soviet satellites was provided by Intelsat and Intersputnik, respectively, while the allocations of resources relevant to developing a satellite industry were determined by the International Telecommunication Union (ITU). Because of the separateness of these efforts, it is straightforward to extract lessons for negotiating agreements focused specifically on the sharing of AI resources.

This case study offers a model for the negotiation of agreements to share resources needed to develop a dual-use technology, despite that technology being a strategic asset in great power competition. It also provides insights into how developing countries could negotiate resource-based benefit sharing. Given its focus on a single case study, its findings are a straw-in-the-wind test. Nonetheless, these findings are relevant to policy makers facing analogous decision environments in AI governance, especially given the nascency of the AI benefit-sharing literature.

Case Study: The 1985 WARC

Background

Satellite technology inherently requires international coordination for its use to be effective. Satellites rely on natural resources while in use: satellite communications occupy bandwidths of the radio spectrum and satellites themselves occupy the geospatial orbit. These resources are limited in quantity; by their nature, access to them cannot be restricted. They are also rivalrous: if one is using part of the spectrum and orbit, another cannot simultaneously use that same part. As such, they are vulnerable to the tragedy of the commons: if two actors would launch satellites into the same orbital slot, the satellites would collide; if they would conduct satellite communications via the same part of the bandwidth, signal interference would result.

For this reason, after the Second World War, the ITU was assigned the task of setting standards and distributing orbital positions and spectrum rights. Every three or four years it hosted a conference where countries negotiated technical satellite standards and the distribution of orbital slots (Slotten 2013). These were known as WARCs.

Throughout the Cold War, these conferences reflected the geopolitical conditions of the time and were treated as a venue for the space race (ibid.). The Soviets and Americans negotiated for standards and allocations that they saw as enabling them to grow their respective satellite industries. This led to concerns among SMPs that the negotiations would be conducted at their expense and would deter them from properly being able to grow their own satellite industries.

These concerns materialized in the SMPs' opposition to the orbital distribution policy. The geospatial orbit was, since its discovery, distributed on a first-come, first-served basis — the result of US leadership and Soviet backing. Thus, dominance of the orbit followed directly from leadership in satellite technology, limiting the ability of states in the Global South to develop their own satellite industries.

In response to these limitations, SMPs came to argue for a more equitable approach: a pre-planning system, in which countries would be allocated a certain number of orbital slots even if they did not currently have the capacity to fill them. The cause gained political momentum through the 1970s and 1980s as global north-south tensions rose, leading the WARC 1985's central focus to be made the negotiation of equitable access to satellite spectrum and orbit.

Great Powers' Concessions at the 1985 WARC Were Driven by Triangular Diplomacy

The WARC 1985 saw the first concrete change toward an equitable distribution of satellite resources: the ratification of the dual allotment plan. According to this plan, each ITU member nation received a nominal orbital position and associated frequency assignments in the new "expansion bands" (Altholz 1986). While the US bloc opposed the proposal, the SMPs convinced the USSR to support it. The United States and its allies, outnumbered, were forced to acquiesce. For the United States, this concession was not entirely inconsequential. The United States had up until that point made some use of the expansion bands for national security-related correspondence. Thus, the victory for the SMPs, even if modest, was of substance.

This victory was the result of triangular diplomacy. SMPs succeeded thus by aligning their interests with those of the USSR's interest in winning in its rivalry with the United States. It was in the Soviets' strategic interests to support the dual allotment plan: the Cold War rivalry was a battle for hearts and minds, where the USSR and the United States were ultimately competing to gain the support of SMPs. Supporting the dual plan allowed the Soviets to gain more support from the SMPs while undermining their support of the United States. Ahead of the 1985 WARC, the USSR had taken public positions supporting equitable access proposals in general, ostensibly in order to "curry favor with the LDCs [least-developed countries]" and destabilize relations between the United States and the SMPs (Central Intelligence Agency [CIA] 1985, 4). And indeed, at the 1985 WARC, delegates from the Soviet Union and unaligned SMPs held additional meetings to coordinate their positions, while the USSR delegates declined to join the United States in resolute opposition to all equitable access proposals.

The Great Powers Refused Proposals That Disadvantaged Their Domestic Industry in Absolute Terms

For the Soviets, supporting the dual allotment plan was cheap (CIA 1985). The small fraction of the spectrum for which they supported the proposal was relatively unreliable and expensive to use — ostensibly of little value to them.

More broadly, at no point throughout the WARC 1985 nor in earlier conferences did either the United States or USSR support proposals that would have constrained their capacity to build out their satellite industry. That is, even deals that would have disadvantaged both in absolute terms but advantaged one of the two in relative terms were opposed by both. Moreover, while the Soviet Union supported equitable access demands publicly, it had coordinated with the United States to block the many more substantive proposals put forth throughout the 1970s and 1980s, such as permanent slot allocations and expansion of spectrum rights (ibid.).

Other Forms of Political Capital Counted for Little

It is notable to what little extent other forms of economic and political leverage translated into leverage in negotiations over satellite technology. The Soviet Union blocked equitable access proposals despite the fact that it was in their strategic interest to win over SMPs to their coalition more broadly, and despite the significant international political movements supporting the equitable access proposals. Of course, part of this backdrop was also that it was in the general interest of both the United States and the USSR to win over SMPs to their coalition.

These organizations succeeded on the procedural level: they gained institutional backing for their cause and they passed resolutions at the ITU that asserted the importance of equitable access. The WARC 1985 being dedicated explicitly to negotiating benefit sharing was itself one such win. Yet, the only result when it came to the concrete distribution of satellites was a single orbital slot in a subpar section of the spectrum. The more substantive equitable access proposals that had been proposed up until that point had all been shot down by the United States and USSR, despite the favourable political climate.

Policy Recommendations

- **Prioritize non-rivalrous resources.** For the sake of tractability, benefit-sharing negotiations should prioritize non-rivalrous resources. For SMPs, negotiating for access to non-rivalrous resources — AI model weights, architectures, software — may be more tractable than for access to rivalrous resources such as AI hardware or human capital.
- **Target AI-specific leverage rather than general political capital.** Diplomatic efforts should aim to leverage resources that directly affect AI development, rather than rely on broader geopolitical or economic leverage. By extension, SMPs should seek to strengthen alliances with other middle powers whose companies dominate critical parts of the AI hardware supply chain such as Japan, Taiwan and the Netherlands.
- **Leverage the strategic interests of great powers.** Middle powers should aim to structure benefit-sharing agreements such that their coalitional implications lend themselves to triangular diplomacy and are in the strategic interests of great power counterparts.

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About the Author

Wim Howson Creutzberg is a former Digital Policy Hub undergraduate fellow who recently completed a B.A. at McMaster University. He is interested in governance mechanisms for mitigating collective action problems and artificial intelligence (AI) policy and has researched how international AI policy proposals might enforce coordination.

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