

Session Title: Symbolic Internationalism: Computing, Users, and (Trans)national Agendas

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Panel Abstract

Our panel addresses the ways in which different groups of users have acted with computer technology to advance and undercut particular transnational agendas. International technical collaboration held real promise for the advancement of their technical and commercial interests, but served also as a symbol of political collaboration. Like computers themselves, our actors proved adept at using the transformation of symbols to create change in the world.

Three of the papers explore computer technologies as objects of international technical collaboration during the Cold War. Providing complementary perspectives from each side of the iron curtain, Schlombs looks at the role of American computer manufacturers within the Marshal plan while both Durnova and Doing examine efforts of the Eastern Block's Comecon organizations to unify computing efforts within the socialist world around the creation of a new "Unified System of Computing." In both cases the dissemination of computer technology was intended to foster the sharing of particular values. American firms and the US government both hoped to spread American business practices along with computer technology, reintegrating Europe around these putative universal values. Comecon, created as a response to the Marshal plan, championed the abandonment of national computer designs in favor of a standard architecture for the socialist world. Ironically, this turned out to be a direct copy of IBM technology. Donig looks at tensions within this project and the creation of a transnational technological community to support its implementation, while Durnova adopts a user viewpoint to look at actions by Czech computer personnel to reassert national independence. All three authors explore the limits and paradoxes of symbolic internationalism, probing the extent to which users resisted or modified the shared cultural values supposedly bundled with these technologies. Rhetorics of internationalism interacted with national and parochial interests in rich and unpredictable ways.

Haigh applies similar questions to the use of Internet technologies to distribute unlicensed copies of music and movies in modern Ukraine. The Internet is often understood as a single global network, a

powerful force for the erosion of national boundaries and the mingling of cultures. Enthusiasts express faith in the power of its protocols to spread putatively universal values. But Haigh argues that an examination of the ways in which people act with Internet technologies shows Ukrainians are literally and metaphorically reconstructing imported Internet technologies in accordance with their own culture.

Our focus on the active role of user communities in reconfiguring and reconstructing technologies reflects a considerable body of recent scholarship both within science and technology studies (for example *How Users Matter*, edited by Oudshoorn and Pinch) and within the literature on the economics and management of innovation (most notably von Hippel's work on user driven innovation).

Donig, Transnational Technology: The Unified System of Computing and its Discursive Practices

Internationalism formed an integral part of socialist discourse and was supposed to be deeply rooted in the perceptions of policy makers and people. In actual fact national identities continued to exist within or less surprisingly against the framework of socialist societies. While crypto-nationalism has been studied extensively in the past, the fragile balance of internationalist discourse and national interests has received far less attention.

The paper addresses this friction featuring the example of a truly inter- if not transnational undertaking, the creation of a transnational large technical system that was hailed as a paradigm of socialist cooperation – the Unified System of Computing (EC).

With the Unified System of Computing, created from 1967 to '69, the Comecon countries created a computer system that was closely modeled after IBM's system /360 and that was developed and produced in at least five Comecon countries, with others joining later. This enterprise required large-scale technical cooperation among the participants, creating the need to coordinate political bureaucracies, research and development as well as sales departments. Documentation and software had to be created for a multilingual environment and a fair amount of travels and coordination was needed not only among the top bureaucrats but also among developers and what came to be software engineers.

The paper will focus on three major aspects of this process. Firstly it will delve into the process of creating the Unified System and trace the frictions of internationalist discourse and national interests and provisos from the side of East Germany. Secondly it will focus on the creation of a transnational technical community and highlight the discursive shifts that made this community possible. Thirdly the paper will reflect on the official image drawn for both western and eastern audiences of the Unified System as an achievement of socialist cooperation.

Dunrova: Socialist Internationalism and its Limits in Czech Computing

My paper explores the changing cultural meanings attached to the Comecon's Unified System of Electronic Computers (also discussed by Simon Donig) in Czechoslovakia. According to official sources the Unified System was a shining example of socialist technological prowess and of the accomplishments of peaceful international collaboration. Compatibility between the computers was to mirror the

economic and political integration of Eastern Europe with the Soviet Union. I argue that a closer examination of the actual reception of these machines by Czech users tells a very different story. This paper integrates work on the technical and political history of the Unified System project in Czechoslovakia, based on hitherto untapped archival sources, with a user-oriented perspective influenced by recent work in STS.

Observed closely, even the idea of international compatibility starts to seem problematic. At the very beginning of the project in late 1960s Czech computer scientists did not want to discard the work design work they had done for the new Czechoslovak computer, so they included a couple of novel features in the Czechoslovak Unified computer, which rendered it incompatible with the computers produced in the other Comecon countries. Czech users also seem to have been aware that the Unified System design was in fact an exact but unlicensed copy of the American IBM system/360 designs. The users of the unified system computers were frustrated by their inaccurate and faulty operation and, when possible, they opted for buying the IBM system/360.

Schlombs, Policy Machines: Shaping European Computer Users.

With technical aid provided through the Marshall Plan, US politicians, administrators and executives sought to shape European firms and markets after the American model. This paper argues that in the years following WWII, computer technology was used to instill in European managers and technical experts the values of productivity, free enterprise and economic integration.

Scholars in Science and Technology Studies have in recent years turned to studies of political interventions with science and technology. Yet, many of these studies implicitly assume the given context of nation states, expressed in regulatory and other local conditions. A few works, leading among them Jasanoff's *Designs on Nature* (2005) and Beck's *Cosmopolitan Vision* (2006), go beyond such national studies; this paper seeks to contribute to this growing literature. Based on research in the records of the Marshall Plan administration as well as in corporate archives of computer manufacturers, it provides a historical case study of the co-production of policy and business with computer technology across national boundaries.

Supporting European postwar recovery, the Marshall Plan comprised a technical exchange program that was aimed at increasing the productivity of European firms and at advancing the economic integration of European markets. Through this program, called the Productivity and Technical Assistance Program, US experts were sent to Europe to consult with corporations and governments, and European study groups were brought to the US to familiarize themselves with American corporate and technical culture. Leading US computer manufacturers, among them IBM and Remington Rand, participated in these efforts: their top executives were part of the progressive business community that supported the Marshall Plan in congressional testimonies, and the companies hosted European study groups, and integrated their own operations in Europe. Even if Marshall Plan administrators and computer manufacturers did not directly collaborate, they were doing the same work: instilling the values of productivity and economic integration in Europeans. Yet, closer analysis reveals differences between their approaches towards shaping Europeans communities. While Marshall Plan administrators sought

to win over Europeans and change their attitudes, corporations single-handedly enforced American ways in their own operations in Europe.

The Marshall Plan stood at the roots of the global development regime, both are characterized through the continuity of ideas, actors and institutions; this paper provides insights into the beginnings of today's global co-production of technology, policy and business in a regime of American hegemony.

The “Goodbye Petrovka” Plan: Internet Use and National Identity in Ukraine

I explore the cultural meanings and social practices of Internet file sharing in Ukraine. The Internet is often understood as a single global network, a powerful force for the erosion of national boundaries and the mingling of cultures. Enthusiasts express faith in the power of its protocols to spread putatively universal values such as capitalism, democracy, or libertarianism. Industry lobbyists and governmental trade negotiators attempt to enforce limits on its capabilities to protect systems of intellectual property that claimed to be just as universal. However almost all research on the use of file sharing technologies to distribute commercial material, has been carried out in North America and Western Europe.

Ukraine, the second most populous of the former Soviet republics, had been named as one of the ten “priority countries” with “unacceptable piracy rates.” Kiev’s open-air Petrovka Market has become a symbol for the blatant distribution of pirated books, films, music, and software. But as living standards and disposable incomes have risen dramatically in recent years, Ukrainians are turning increasingly toward the Internet and to newly-available high bandwidth networks as a new medium for the exchange of music, films, and computer software. How do Ukrainians understand this new technology, and how is their existing cultural and historical heritage reconstructing the apparently universal technology of the Internet?

Peer-to-peer file sharing technologies such as Kazza and Gnutella, widely used in the West for the distribution of illicit material, turn out to be almost unknown in Ukraine. These networks function without apparent regard to national borders. But in Ukraine high-bandwidth domestic Internet service, unlike heat or water, is usually metered. Additional fees are imposed for heavy usage, and fees for international traffic are much higher than for domestic. Instead, Ukrainian ISPs compete with each other to offer the biggest and best collections of commercial music and films for unlimited free download by their customers from special servers. The sites, which are inaccessible from outside Ukraine, include warnings that downloaded files should be used for “evaluation” only but appear otherwise indifferent to issues of copyright. The “Goodbye Petrovka” monthly subscription plan promoted by one ISP reflects the reality that increased downloading in Ukraine poses its most direct threat to the sale of pirated disks by market traders, rather than to large media companies.

Drawing upon the explanatory resources of science studies, particularly the well-established literature on the social construction of technological systems, I argue that Ukrainians are literally and metaphorically reconstructing imported Internet technologies in accordance with their own culture. While most of the Internet hardware and software used in Ukraine is standard, seemingly minor changes in the economic, regulatory, and cultural environments in which the technologies are deployed are making profound differences to their social functioning.