

Organizing Technologies: Genre Forms of Online Civic Association in Eastern Europe

By
BALÁZS VEDRES,
LÁSZLÓ BRUSZT,
and
DAVID STARK

How do civic associations in Eastern Europe organize themselves online? Based on data collected on 1,585 East European civil society Web sites, the authors identify five emergent genres of organizing technologies: newsletters, interactive platforms, multilingual solicitations, directories, and brochures. These clusters do not correspond to stages of development. Moreover, newer Web sites are more likely to be typical of their genre, suggesting that forms are becoming more distinctive. In contrast to the utopian image of a de-territorialized, participatory global civil society, the authors' examination of the structure of hyperlinks finds that transnational types of Web sites are not inclined to be participatory. Whereas other paradigms focus on inequality of users' online access, the authors probe inequality in the accessibility of Web sites to potential users through search engine technology and show how this varies across different types of civil society Web sites.

Keywords: technology; Internet; civil society; Eastern Europe; participation; Web site analysis

After “Internet and Society”

One of the challenges of exploring the coevolution of organizational forms and emergent technologies is to take seriously the expectations triggered by a new technology. Taking them seriously does not mean accepting their sometimes wildly exaggerated claims but, instead, understanding the underlying assumptions about technology and society that give rise to them. The popular as well as the scholarly literature on the Internet and the public sphere is filled with excitement about the transformative potential of new information and interactive

Balázs Vedres is an assistant professor at the Department of Sociology and Social Anthropology, Central European University, and received his graduate training at the Department of Sociology, Columbia University. He is an international fellow of the Santa Fe Institute and a junior fellow of Collegium Budapest. His research interests include economic sociology, economic transformation, social networks, and historical and discourse analysis.

NOTE: Research for this article was supported by NSF Grant N 0115378 and by the Open Society Institute Information Program (Budapest).

technologies that, it was believed, would open a new era of an expanded and vibrant global civil society.

The possibility for connectivity was seen as the key element in this transformation. The new technologies would overcome the one-to-many character of the once-dominant mass media in favor of unmediated connections among the new global citizens. They would revive a dormant public sphere by creating new domains for deliberation. Because connectivity was interactive, the virtual public sphere would be a new field that was, above all, participatory. In place of the passive consumers of the mass communication model or of the tired electorate of the old polity, the cybercitizen would be a user as producer, contributing to online debates and interacting directly with others. Connectivity, moreover, would not only reshape the citizen but would also reshape the topography and the geography of the public sphere. Because technology provided the means for anyone with a network connection to link to someone similarly networked anywhere else on the planet, the virtual public sphere would become increasingly de-territorialized. In the e-topic visions, an imaginary premodern polis became fused with the globally interactive technologies of the twenty-first century (for a critical discussion of this literature, see Hand and Sandywell 2002).

Amid this overheated rhetoric, sociologists posed the sobering question, Is connectivity really so ubiquitous? Who has access? How are patterns of usage such as hours online and types of online activity (e-mailing, browsing, shopping, gaming, instant messaging, etc.) stratified? And how do these patterns correlate with other demographic or social class variables such as gender, age, occupation, income, level of education, and so on? The resulting body of work represents an already

sis methods. His recent publications concern the interdependence of strategizing agents and evolving network structures in large-scale social change in the fields of business networks, political discourse, and civil society organizations.

*László Bruszt is a professor at the Department of Social and Political Sciences at the European University Institute (Florence). In his earlier research, he has dealt with issues of institutional transformation in the postcommunist countries. His more recent studies focus on the interplay between transnationalization, institutional development, and economic change. He is currently conducting research on the evolution of regional interorganizational networks in Central Europe and the formation of regional developmental regimes. Together with David Stark and Balázs Vedres, he is involved in an ongoing research on the technologies of civil society. His recent publications include "Making Markets and Eastern Enlargement: Diverging Convergence?" in *West European Politics* (2002/2) and "Market Making as State Making: Constitutions and Economic Development in Postcommunist Eastern Europe" in *Constitutional Political Economy* (2002/1).*

David Stark is Arthur Lehman Professor of Sociology and International Affairs at Columbia University where he directs the Center on Organizational Innovation (www.coi.columbia.edu/). He is an external faculty member of the Santa Fe Institute. Stark has carried out field research in Hungarian factories before and after 1989, in new media startups in Manhattan before and after the dot-com crash, and in a World Financial Center trading room before and after the attack on September 11, 2001. Supported by grants from the National Science Foundation, he is currently conducting research on the evolution of interorganizational networks in Hungary and on new technologies of deliberation and representation in the rebuilding of Lower Manhattan. Stark's publications and recent working papers are available online at www.sociology.columbia.edu/people/faculty/stark/index.html.

well-developed framework that many refer to as the “Internet and Society” paradigm.¹ Exemplary in its relentless determination to chart the demographics of Web usage has been the research undertaken under the sponsorship of the Pew Project on “Internet and American Life” (see <http://www.pewinternet.org/reports.asp>), as indicated by this sample of titles in its recent reports:

“Asian-Americans and the Internet: The Young and the Connected”
“Wired Seniors: A Fervent Few, Inspired by Family Ties”
“Hispanics and the Internet”
“African-Americans and the Internet”
“College Students and the Web”

If the Internet enjoys a special distinction, it might be that its end-users are the most systematically studied (both for commercial and scholarly purposes) of any newly introduced technology in history.

The Internet and Society paradigm offers an important corrective to the utopian promises of the early literature on the virtual public sphere. But as the flip side of the utopian framework—both emphasizing connectivity, one pointing to transformative potential, the other pointing to obstacles (whether in access or skills)—the Internet and Society approach fails to challenge widely held assumptions about technology. Our objection, to pose it succinctly, is less with the terms “Internet” or “Society” than with the “and,”² signaling that technology is something external to society.³ As sociologists, we agree that our task is to study the social, but we argue for a sociology in which technology is a constituent part of the social.⁴ While we reject the utopian approach that tries to deduce social effects from the properties of technology, we also depart from approaches that focus solely on the effects of the properties of social structure. Instead of trying to understand the structure of civic organization mechanistically from the properties of the new technology, and instead of analyzing the ways social structures might limit these effects, we propose to study combinations of technologies, actors, and types of actions yielding different emerging structures of online civic association.

In this departure, we are strongly influenced by insights from science and technology studies. As Bruno Latour (1991) and Michel Callon (1991) have argued, social network analysis, as practiced by American sociologists, typically focuses only on ties between persons (or anthropomorphized organizations) ignoring the sociotechnical features of organizations as ties among persons and things. Similarly, Hutchins (1995) argued that intelligence is socially distributed—the “social” includes humans and their nonhuman artifacts—as he demonstrated in a painstakingly detailed analysis of how a navy destroyer is navigated into harbor after a power failure. In a pathbreaking study of the relationship between organizational form and technology, Yates (1989) pointed to the importance of such prosaic artifacts as the file folder and the filing cabinet in the emergence of bureaucratic organizations. Eisenstein (1993) demonstrated that the organization of modern science is inseparable from print technology; Orlikowski (2000) criticized the “appropriationist” view that uses are inscribed in technology; and Barley (1986)

provided a set of theoretical tools to grasp how technology interacts with organizational structure. As Boczkowski (2004) demonstrated in his study of online newspapers, technologies offer “affordances.” Although you cannot do just anything you want with a given technology, a given technology typically “affords” more than one application. The history of technology, and of communication technologies in particular, is replete with examples of how technologies, such as the telephone (Fischer 1992), coevolved with social practices in ways that departed dramatically from the usage originally inscribed by their designers.

*The history of technology, and of
communication technologies in particular, is
replete with examples of how technologies . . .
coevolved with social practices in ways that
departed dramatically from the usage
originally inscribed by their designers.*

The postsocialist societies of Eastern Europe provide an extraordinary laboratory for exploring the coevolution of organizational forms and interactive technology: the emergence of voluntary associations in the region coincides with the digital revolution. Prior to 1989, there were almost no nongovernmental organizations (NGOs) in the conventional sense in Eastern Europe, and the Internet was in its infancy. Before 1989, the small number of beleaguered voluntary associations communicated by samizdat. With no access to photocopy machines, they attached special springs to typewriter keys to produce up to seven carbon copies of their documents. In Prague, for example, it was not uncommon for the members of an underground philosophy seminar to circulate texts that were literally in manuscript—some in the handwriting of elementary school children who had painstakingly copied a parent’s writings so it could circulate more widely. Today, both NGOs and the Internet are experiencing exponential growth throughout the region. In Hungary, for example, the number of NGOs jumped to about fifteen thousand in the first year after the democratic transition and now stands at more than fifty thousand, while at the same time, by conservative estimates, the number of people online doubles every year, and the number of Web sites doubles every six months (Kuti 2001). In little more than a decade, the technological framework in which voluntary associations are operating has gone from the limitations of a pre-Gutenberg setting to the opportunities of advanced communication technologies.

Our task in this article is to examine civil society Web sites. As our title, “Organizing Technologies,” suggests, we study technologies of organizing and, in doing so, study how these technologies are organized. Web site technologies can be deployed by civic associations and social movements for organizing civil society. From the array of available technologies, which are featured on their Web sites? Just as we can think about conventional (offline) organizations as particular bundles of routines, we think here about online organization as particular bundles of features. If technology was determinant, then we would expect to find little systematic variation in that array. But as we shall see, we do find identifiable patterns of variation suggesting that civic associations are organizing technologies in distinctive ways. Restated, we are examining a new field of political representation: with the emergence of NGOs, we find new types of actors making new kinds of representational claims outside of electoral politics within a new representational medium. In asking how organizations re-present themselves online, we are examining the technologies of politics. In charting the characteristic patterns of how particular features are combined, we are examining the organization of technology.

Data

To chart structuration processes in the web of civil society in East Central Europe, we gathered data from 1,586 prominent civil society Web sites across the four countries in the region. Table 1 shows the distribution.

Web site data for each of the four countries were collected between March and June 2002 by native-language speakers whom we trained in the sample selection and coding procedures.⁵ We visited each Web site and used a questionnaire to record data on specific features, adopting a procedure that we had refined in a previous pilot project of six hundred Web sites. In that pilot project, we found that many site features involved different ways of organizing relations with other actors: visitors, members, clients and/or potential constituents, actual or potential donors, other organizations, and so on. These features are the elementary forms of online civic organizing. They allow for different forms of activity: from getting in touch with the NGO; to consulting information about its activities, its field of action, or its allies; to more active forms of participation in online and offline actions.⁶ Our task is to identify the distinctive patterns in which these relational features are combined.

For each Web site, we recorded the presence or absence of thirteen features, yielding the following variables:

1. Offline reachability: whether a user could find a street address or a phone number of the sponsoring organization listed on the Web site.⁷
2. The Web site includes an e-mail address to reach the organization.
3. The site includes a mission statement.
4. The site includes a feature of downloadable annual reports or accounts of fund-raising.
5. The presence of a distinct news section.
6. The site includes a calendar of events or a list of scheduled meetings.
7. The Web site posts information about conferences.

TABLE 1
THE DISTRIBUTION OF WEB SITES BY COUNTRIES

Country	Number of Web Sites
Czech Republic	484
Hungary	405
Poland	314
Slovakia	383
Total	1,586

8. Whether the site is available to readers in different languages.
9. The site includes a separate page or dedicated section specifically for links to other Web sites.
10. Whether a user/visitor to the Web site can sign up online to join the group or organization or to register online to join listservs or receive e-mailings of various kinds.
11. The potential to participate online through such features as bulletin boards and chat rooms or to post documents directly to the site.
12. An online database of any kind that can be used on the Web site or downloaded from it.
13. The Web site includes an online survey.

Table 2 reports the overall frequencies of the feature variables in our population of prominent civil society Web sites.

Clusters of Civil Society Web Sites

How are these features selected and combined in actual Web sites? The logical permutations of the thirteen variables make it possible that we could find as many different types of Web sites as the total number in our population. That would be a finding of no pattern at all. Another possibility is that a single model or blueprint is encoded in the technology of the Web. The topology of such a field would be smooth and single-peaked. At its apex would be the modal Web sites that conform most fully to that blueprint. Scattered randomly around the center would be those Web sites that have not yet realized the full potential for civil society Web sites, whether because the creators of these Web site have not yet learned how to use the technology efficiently or whether, because of limited time or lack of resources, they have not been able to complete their site construction. In the single-mode model, these Web sites are expected to converge to the blueprint.

To chart the landscape of Web sites, we used cluster analysis. The result of the Ward-clustering (Ward 1963) partitions our cases into five groups, explaining 38 percent of the variance of Web site features. Table 3 presents the five clusters and the percentage of Web sites within each cluster that have a given feature. For each feature, we also present an adjusted residual that indicates whether the given feature is significantly more or less common in the given cluster than in the overall population. An adjusted residual greater than two indicates that Web sites in that

TABLE 2
THE FREQUENCIES OF WEB SITE FEATURE VARIABLES

Variable	Description	Percentage
OFFREACH	Offline reachability (address, phone number indicated)	86.6
EMAIL	E-mail address indicated	85.5
MISSION	Mission statement	63.7
REPORT	Annual report, information about funders	36.5
NEWS	News section	42.2
CALMEET	Calendar of events, information on meetings	41.7
CONF	Information about conferences	16.1
MORELANG	Site fully or partly available in other languages	33.4
LINKPAGE	Separate link-page	31.0
SIGNUP	One can sign up for alerts, newsletter or e-mail lists; or one can register as member, join the organization online	31.5
PARTICIPATE	There is a bulletin board, chat room, or users can post documents on the site by other means	21.1
DATABASE	Online database	15.9
SURVEY	Online survey	5.1

cluster are significantly more likely to have that feature than average. A residual less than minus two indicates that Web sites in the cluster are significantly less likely to have the feature (Agresti 2002).

Each of the clusters represents a distinctive form of online organization. That is, in place of a single model to which all Web sites conform to a greater or lesser degree, we found five relatively coherent models or blueprints. The creators of civil society Web sites are neither rigidly following a single model nor randomly selecting features. They actively shape their Web sites, but they do so along clearly identifiable types or scripts. As we shall see on closer inspection, four of these types have precursors in print genres: newsletters, solicitations, brochures, and directories. A fifth type, the interactive platform, is an emergent online genre. Faced with new technologies, the creators of Web sites turn to already-existing cultural forms as templates for action. Genre structures organization.

Online Genres

1. *Newsletters*. Making up nearly one-third of the NGO Web sites, this cluster is the most numerous online organizational form. Web sites of this type have a much higher than average probability of including calendars of events or information about meetings. In fact, 90.3 percent of these Web sites do include such a feature, and almost 28 percent of them (higher than any of the other clusters) provide information about conferences. These Web sites are also the most likely to have a “news” feature about the activities of the NGO. Web sites in this cluster function as *online newsletters* of ongoing activities, regularly reporting on activities that have

TABLE 3
GENRE FORMS OF CIVIL SOCIETY WEB SITES

	Clusters of Web Site Features													
	1. Newsletter		2. Interactive		3. Solicitation		4. Directory		5. Brochure		Total			
	a	b	a	b	a	b	a	b	a	b	a	b		
CALMEET	90.3	++	29.1	--	36.3		1.1	--	5.5	--	41.7			
NEWS	62.4	++	47.2	+	32.5	-	19.6	--	23.7	--	42.2			
CONF	29.0	++	13.1		21.8	+	0.5	--	3.8	--	16.1			
PARTICIPATE	16.1	-	61.9	++	6.8	--	2.7	--	0.7	--	21.1			
SIGNUP	34.6		63.7	++	13.7	--	9.0	--	13.8	--	31.5			
SURVEY	3.8		12.0	++	3.0		2.7		1.7	-	5.1			
DATABASE	16.3		21.3	+	17.1		10.6	-	10.7	-	15.9			
MORELANG	27.4	-	29.3		95.3	+	24.9	-	4.8	--	33.4			
REPORT	41.7	+	18.7	--	52.1	+	17.5	--	50.5	++	36.5			
EMAIL	90.3	+	79.5	-	92.3	+	92.1	+	75.3	--	85.5			
LINKPAGE	31.2		38.4	+	23.1	-	64.0	++	6.2	--	31.0			
MISSION	60.2	-	60.8		74.8	+	38.6	--	81.1	++	63.8			
OFFREACH	88.7		71.7	--	96.6	++	84.1		95.9	++	86.6			
Total	100		100		100		100		100		100			
<i>n</i>	497		375		234		189		291		1,586			
Percentage	31.3		23.6		14.8		11.9		18.4		100			

NOTE: a column = percentage of Web sites within the genre form that has the feature indicated. b column = pluses and minuses represent the adjusted standardized residual of the frequency of the given feature. One plus means that the residual is greater than two, two pluses indicate that the residual is greater than four. One minus, accordingly, indicates a residual of at least minus two, while two minuses indicate a residual less than minus four.

already taken place and providing information about the possibilities for participation in upcoming offline events. Consistent with this orientation to a user who is an actual or potential member, these Web sites frequently make use of technologies of registration, allowing constituents to join the organization online and sign up to receive more specific information about the activities of the NGO. Significantly less likely to translate their materials into other languages, these Web sites are oriented to domestic users, whom they seek to get involved in their offline activities. Involvement in this case does not, however, extend to online participation, because these Web sites are significantly less likely to include such features. These online newsletters select, among the affordances on the Web, those features that target their members and constituents with information that encourages them to participate in the offline activities of the organization.

2. *Interactive platforms.* This is the second largest cluster in our population of civil society Web sites with nearly 24 percent of the NGOs grouped in this category. Almost 62 percent of these Web sites include features that allow online participation—by far the highest among our five clusters. The user they are targeting seems to be active and experienced in the online environment: these Web sites are likely to have link-pages for their users and, more significant, they are most likely to allow users to join the organization online or sign up for various kinds of online services (almost two-thirds of their Web sites include such features), to provide online databases, and to use the Web to survey their members or constituents. Consistent with this orientation to individual members, these sites are least likely to provide formal annual reports or information about funders, and they are unlikely to translate their materials into foreign languages. Moreover, consistent with their online orientation, they are least likely to provide information about their offline reachability (more than 25 percent of these Web sites contain neither an offline address nor a phone number). When compared to the average Web site, these sites are significantly less likely to provide an e-mail address, a finding that may seem curious given their otherwise strong online sensibility. But this finding is meaningful in light of the full ensemble of features: perhaps even more important than *reaching the “organization,”* users of these interactive sites might want—and by the ensemble of features presented are most encouraged—to *reach each other.* As the Web sites among our population with the richest opportunities for online conversation with other users, for online participation, for using online databases, and for posting materials online, the format of these Web sites is as a *platform for online interactivity.*

3. *Multilingual solicitations.* The most distinguishing feature of the Web sites grouped in this cluster (representing about 15 percent of the population) is that nearly all of them (95.3 percent) post their site in more than one language version. Across all clusters in the overall average, only one in three Web sites adopts this feature. In addition to this pronounced multilingual character, Web sites in this cluster are more likely to use the Web to establish their professional standing as the beneficiaries of donors and the (formally accountable) spenders of money. On one

hand, they are more likely to have their annual reports and fund-raising information on the Web; on the other, they are less likely to provide an ongoing news feature and to provide for forms of online interactivity. The contrast with the interactive platforms is telling. Solicitation Web sites are three times more likely than the interactive platforms to post reports that establish their legitimacy on a standardized professional basis. Conversely, they are nine times less likely to adopt features that allow for online participation and nearly five times less likely to attempt to attract new members by allowing them to use online forms or join the organization online. Although about 22 percent of these sites post information about conferences, they are far less likely than the more activist newsletters to post calendars or announcements about meetings (36 percent compared to 90 percent). Thus, whereas the Web sites in our first and second clusters appear to be organizing members for online or offline activities, these multilingual solicitations are *oriented to other organizations*, perhaps especially to foreign donors. The organizations creating these Web sites are highly reachable: 97 percent provide an address or a phone number, and 92 percent provide an e-mail address where they can be contacted. But when you reach their Web sites, you are less likely than on the average site to find a link-page feature from which you can reach other (potentially competitor?) organizations.

4. *Directories*. Among the civil society Web sites in our population, about 12 percent are grouped in our fourth, and smallest, cluster, distinguished by the finding that nearly two-thirds of these Web sites post a link-page. Apart from one other variable, an e-mail contact address, these sites are below average on every other feature (that is, the adjusted residuals are negative). They are significantly less likely to have information about conferences and meetings, provide online databases, and adopt various forms of online registration or participation; and among all the clusters, they are least likely to post mission statements and include features of formal accountability. These Web sites are *virtual directories*. Thus, they differ markedly from the online newsletters: Web sites in this cluster are ninety times less likely to have a calendar of events or information about meetings than the sites of the newsletter cluster. They also differ from the sites of the interactive platform cluster in that they are twenty-three times less likely to use the most interactive features of Web technology: bulletin boards, online chat rooms, and sections for member uploads. Finally, they differ from the multilingual solicitors in that they are much less likely to have an annual report or information on fund-raising on their Web sites. About one-quarter of these Web sites have a version of the Web site in more than one language; one in five has a “news” feature; and one in ten provides an online database. These sites are oriented to a user who is expected to be neither a prospective member nor a prospective donor (at least not of, or to, the hosting NGO itself). When you visit these Web sites, what you are most likely to be able to do is *move on to other Web sites* by means of an organized collection of links. In that respect, these Web sites maintain the avenues of online civil society by creating hyperlinks that keep other Web sites connected and accessible.

5. *Brochures*. About 18 percent of our NGO Web sites are grouped in this last cluster characterized as *digital brochures*. The features of the Web that they are most likely to combine are information on offline reachability, a mission statement, and features of formal accountability. Across all the clusters, these Web sites are least likely to include any of the other available features of Web technology. In comparison to the virtual directories, they are ten times less likely to have link pages. Although they do provide more information about their offline activities than the directories, they are much less eventful when compared to the Web sites of the online newsletters—considerably less likely to have a news feature (24 percent compared to 62 percent) and seventeen times less likely to post information about meetings. When compared to the multilingual solicitations, they make even less use of the interactive affordances of Web technology; but the most salient difference between these two clusters is that whereas 95 percent of the Web sites in the former cluster have multilingual versions, only 5 percent of the sites in the pure brochure cluster offer versions in more than one language. This group of Web sites represents a minimal participation in the web of civil society.

Age of Web Sites and Genre Forms

Consistent with the idea that combinations of technological affordances, actors, and actions yield emerging structures, we interpret the clusters of Web site features that we have found as distinct genre forms for organizing technologies. Technology is enacted, rather than encoded. An alternative explanation is that these typical combinations of features are simply stages of development in building a civil society Web site, whereby actors “appropriate” technology. Thinking of the brochure cluster, for example, one might be tempted to assume that this constellation of Web site features signifies a first phase, a temporary placeholder on the Web until further features can be added. In a similar vein, the participatory cluster of interactive platforms could be thought of as an advanced stage where civil society Web sites arrive once their creators are thoroughly familiarized with the potential of online technologies. Whereas a brochure is a first step in the life course of a civil society Web site, interactive platforms come later as the full realization of the promise of the technology.⁸

To test this stage hypothesis, we collected information about the age of each Web site in our population. A chi-square test finds no difference between Web site clusters in terms of age (chi-square = 1.358, $p = .852$). Based on this finding (and other related tests with various statistical controls), we can reject the hypothesis that Web site feature clusters are stages in Web site development or progression along the path to realizing the one real civil society Web site. It is more likely that Web site features clusters are indeed emerging genre forms of civil society Web presence.

If clusters do not correspond to stages of development toward a blueprinted ideal civil society Web site, is the web of civil society in Eastern Europe evolving

toward or away from the five genre forms we have found? That is, although Web sites are not converging to a single ideal type, do Web sites within a given cluster come to resemble an ideal typical site that represents their cluster? Operationally, are Web sites that were created later more likely to approximate their cluster centroid than Web sites that were designed earlier?

To test this hypothesis, we created a measure of closeness to the genre ideal types using discriminant analysis. If the Web is evolving toward the five genre forms, then we would find a significantly higher discriminant score for the newly designed Web sites than for the older ones. An *F*-test of this hypothesis finds that the newer Web sites do have a significantly higher discriminant score ($F = 3.765, p = .053$). Newer Web sites more closely approximate their cluster centroid (within cluster ideal type).

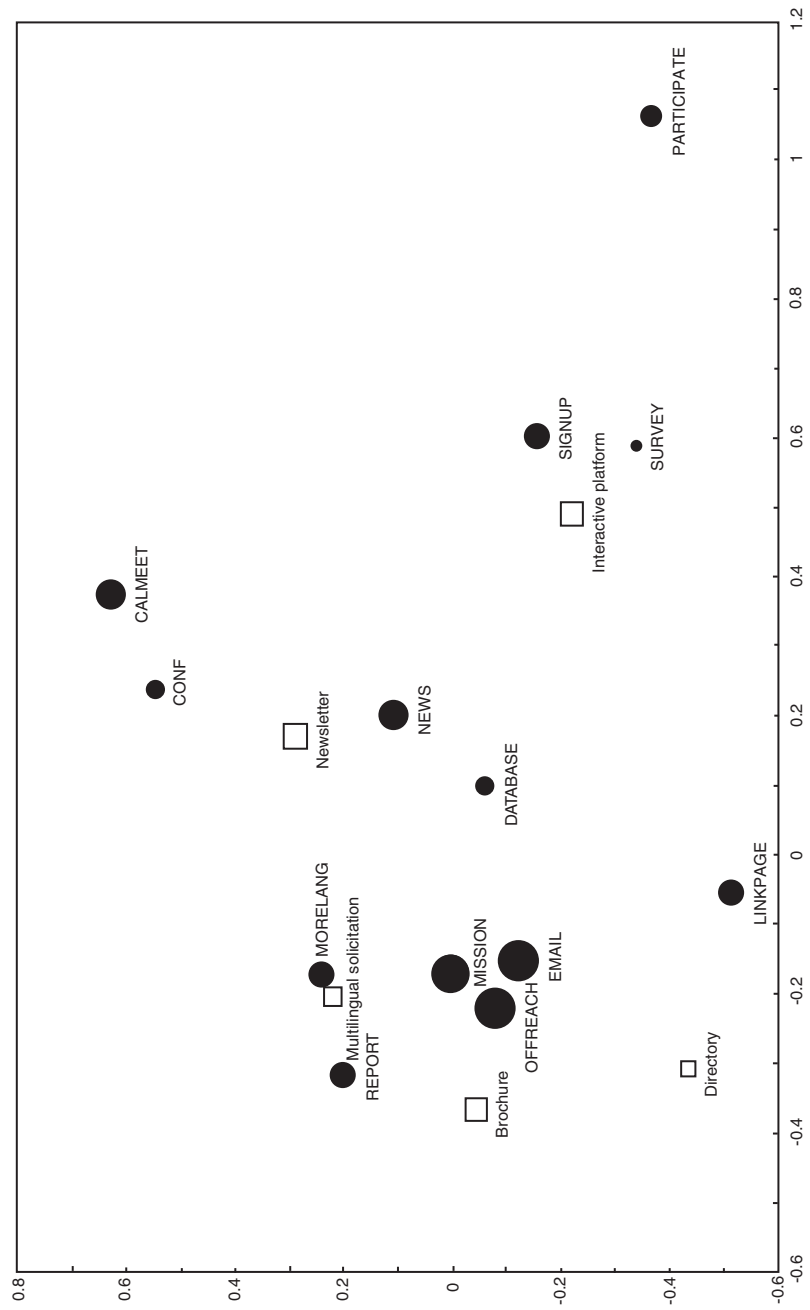
*Faced with new technologies, the creators
of Web sites turn to already-existing
cultural forms as templates for action.
Genre structures organization.*

The finding suggests that genre forms are robust and that they are likely to continue to structure online organization in the near future. A likely explanation of the finding is that the creators of Web sites learn from Web sites they have seen and use them as models. Instead of being instructed simply to “make us a Web site,” webmasters, it seems, are being told to “make us *this kind* of Web site.” But this indexical ordering does not yield a rigid copying. To be clear, our findings here are not that newer Web sites resemble older Web sites within their genre but that *the newer are more likely to be typical of the genre*. At the outset of the process, differences among Web sites were perhaps slight; but based on these initial differences, forms emerged that are becoming more rather than less distinctive. Genre structures. But it does not do so mechanically. In this case, it is reproduced precisely as new actors make modifications that shape the genre form.

The Field of Online Civic Organization

Having examined how genres structure online organization, we turn now to the structure of the organizational field of civil society Web sites. Figure 1 presents the correspondence analysis of the field as represented in a two-dimensional space.

FIGURE 1
THE SPACE OF GENRE FORMS AND WEB SITE FEATURES



One of the advantages of correspondence analysis is that it allows us to represent the clusters and the features of each Web site in a single space. We can thus represent the distance of the various features from each other (understood as the probability of their co-occurrence on the sites) as well as represent the relationship between the clusters as given by their relative proximity/distance from the various features.

Whereas the Internet and Society paradigm focused on inequality of users' access to various aspects of the Web, we now add the problem of inequality in the accessibility of Web sites to potential users.

As a model, Figure 1 is a simplified representation of the original data. The adequacy of the two-dimensional space is measured by the proportion of variance the two dimensions represent of the original variance in the distribution of features across genre forms. In this case, the proportion of variance explained is 59.6 percent, indicating that this two-dimensional model is a good fit to the original data.⁹ On our two-dimensional figure, we indicate the overall frequency of each feature by the size (area) of its circular marker, and the number of Web sites that have been grouped in a given cluster is represented by the area of the respective squares.

We interpret structure in this field as follows: The horizontal axis is organized (reading left to right) as information versus participation. The vertical axis is organized (reading top to bottom) as offline activity versus online activity. Thus, to the right side of the origin, we find Web sites that are oriented to members. Web sites in the upper-right quadrant are oriented to a user-member who does, or potentially wants to do, something offline. Web sites in the lower-right quadrant are oriented to users who are active online. To the left side of the origin, by contrast, we find Web sites that are oriented not to members but to visitors. For example, Web sites in the bottom-left quadrant seem oriented to a visitor who uses a directory to gain information about other sites on the Web. Those in the upper-left-hand quadrant seem oriented to a user who visits sites to gain information related to donation (in Eastern Europe in 2002, this is still very much an offline activity).

Whereas Web sites to the left of the origin control what is posted on their sites, those to the right allow users to post materials by participating in chat rooms and uploading documents. But it would be mistaken to interpret the horizontal axis as

TABLE 4
 LOGISTIC REGRESSION MODEL OF FORMS AND INCOMING LINKS
 (DEPENDENT VARIABLE: 30+ INDEGREE)

	Coefficient	Odds Ratio
INTERACTIVES	0.262	1.300
NEWSLETTERS	0.757 ^a	2.131 ^a
SOLICITATIONS	1.262 ^a	3.532 ^a
DIRECTORIES	0.588 ^a	1.801 ^a

NOTE: The reference category is the pure brochures. A significant positive coefficient means that the given genre has more incoming links than the pure brochures, the least visible category.

^a $p < .05$.

“closed” versus “open.” The sign-up feature is double-sided. On one hand, it indicates that users can sign up to join the organization and/or receive materials; on the other, it suggests that there might be filtering mechanisms. Not just anybody can post materials—only those who have registered, perhaps only those who have in some way been vetted. That is, more participatory Web sites might be more restrictive, even exclusionary. Building online communities, especially as havens for groups out of the mainstream, can require boundaries. By contrast, Web sites to the left of the origin are an open book. Indeed, to some extent, they open their books by posting documents such as annual reports, budgets, and so on. They are open with information, but if you visit the site, there is not much to do there. The sites with more online participation, however, are highly unlikely to post such documents. Open to participation, some of these nonconformist groups would justifiably reject the notion that they should give an open accounting to just anybody.

Accessibility Redux

After analyzing the construction process whereby civil society organizations build Web sites of emerging genre forms, we turn to larger construction processes that incorporate these civil society Web sites into the World Wide Web. We examined the number of hyperlinks pointing to each Web site (referred to variously as “backlinks” or “in-degree”). Studies of the structure of the hyperlink network on the Web overall have shown that there are extreme inequalities—following highly skewed, power-law distribution—among Web sites in terms of their hyperlink centrality (Barabási, Albert, and Jeong 2000). The distribution of in-degree hyperlinks in our population of East European civil society Web sites is very similar to the overall distribution found on the Web. The least central 90 percent of the sites have only 20 percent of all incoming links, and the top 10 percent receive all the rest.

Centrality scores are not simply an academic’s way to assess visibility on the Web. Such scores have practical consequences. Users navigating the Web are more

likely to come across a site if they can click on a link that points to it. More important, today, search engines (not only Google, the most popular, but many others as well) famously use hyperlinks (Hindman, Tsioutsoulouklis, and Johnson 2003). More incoming links increase the probability that search engine Web crawlers (software robots that roam the Web) will find a site to place in their directories. And the equation of hyperlink centrality and “authority” means that Web sites with higher centrality scores will rank higher on search engine result listings.

Search engine technology is search engine politics. The inclusion of hyperlinks and search engine robots as kinds of actors in the society of the Internet gives a new twist to the problem of accessibility. Whereas the Internet and Society paradigm focused on inequality of users’ access to various aspects of the Web, we now add the problem of inequality in the accessibility of Web sites to potential users. On one side, users differ in their access; on the other, Web sites differ in their accessibility to the general public.

How do our Web site genre forms differ in their hyperlink centrality and, hence, accessibility? To answer this question, we ran a logistic regression model to test whether we could find statistical differences among the genre forms in terms of incoming links. Table 4 shows the relative probability (compared to brochure sites) that Web sites in the other four genres belong to the most central ones with more than thirty incoming links.

The directory, newsletter, and multilingual solicitation clusters are each more likely to be highly central than the brochure sites. Interactive platforms, the type that we might think of as making use of the most exciting affordances of the Web, are not the most central Web sites. These sites are not “rewarded” by the dominant metric of the web.

Shaping the Web of Civic Participation

In this article, we explored the coevolution of organizational forms and emergent technologies. We examined a new field of political representation organized by civic associations making new types of claims outside of electoral politics within a new representational medium. In asking how these organizations re-present themselves online, we were examining the technologies of politics. In charting the characteristic patterns of how particular features are combined, we have examined the organization of technology. The emerging organizational forms we found were not “inscribed” in the technology; neither were they stages toward the full realization of the promise of technology leading to the singular ideal “Web site of civic participation.” To put it differently, the social is not exogenous to technology. In our inquiry, we found distinctive sociotechnological networks, genre forms that are diverging patterns of online civic organization based on the combination of technological features, actors, and types of acts.

Strongly linked to offline activities, the online field of civic organization is not a uniform new public sphere with universal visibility and accessibility but a field con-

sisting of diverse specific publics. Inequalities in visibility are shaped by the actions of the editors of news portals and designers of search engines that—relating to the combinations of Web site features—sideline participatory Web sites. In the civic organization of the World Wide Web, active forms of participation and “de-territorialization” are largely separated. Web sites allowing for more active forms of participation are primarily addressed to domestic constituencies, while the Web sites most likely to be multilingual are the least likely to allow for direct forms of participation. Instead of an emerging de-territorialized and participatory “global civil society,” the expectation of techno-romantic approaches, in the field we find diverse organizations of primarily domestic publics.

Notes

1. For example, Harvard and Stanford each has a center on “Internet and Society,” and researchers in the University of Maryland’s program on Scientific Research on the Internet edit the journal *IT & Society*. For exemplary contributions to the paradigm, see DiMaggio et al. (2001); Robinson, DiMaggio, and Hargittai (2003).

2. Here we are more charitable than Bruno Latour (1999, 15) who, criticizing the approach of which he was a founder, famously commented that there were only four things wrong with Actor-Network Theory—“the word actor, the word network, the word theory, and the hyphen!”

3. Attention to the paradigm’s moniker would, of course, be trivial if the division that it denotes did not so deeply inform the approach.

4. Thus, in place of Internet and Society, it would already be better to study the society of the Internet. The simple terminological change suggests an expanded and more heterogeneous constellation of “actors”—not only millions of persons, but also Web sites, routers, servers, search engines, and the rapidly proliferating population of pieces of software code (“intelligent agents”) coursing through the Internet, interacting with us and each other. Systematic study of the social dynamics of these interacting populations is an exciting opportunity for sociology.

5. Details on sample selection, coding protocols, measures, statistical tests, and other methodological questions are available from the authors upon request.

6. Students of political participation will recognize that we translate standard definitions of types of political participation such as “reading about,” “getting in touch,” “identifying with,” and “actually participating in” specific actions.

7. Each feature is recorded as a dummy variable, that is, with a score of one if a given feature is present and zero if it is not found on the Web site.

8. Alternatively, one might argue that Web sites would adopt the state-of-the-art practice current at the time of their founding. In this case, newer sites would be the more interactive. Our tests reject this hypothesis as well. There is no significant correlation between age and genre form.

9. Readers in the field of cultural studies will recognize correspondence analysis from the writings of Pierre Bourdieu. Models that explain nearly 60 percent of the variance are rarely encountered in his work.

References

- Agresti, Alan. 2002. *Categorical data analysis*. New York: John Wiley.
- Barabási, Albert-László, Réka Albert, and Hawoong Jeong. 2000. Scale-free characteristics of random networks: The topology of the World Wide Web. *Physica A* 281:69-77.
- Barley, Stephen. 1986. Technology as an occasion for structuring: Evidence from observations of CT scanners and the social order of radiology departments. *Administrative Science Quarterly* 31:78-108.
- Boczkowski, Pablo J. 2004. *Digitizing the news: Innovation in online newspapers*. Cambridge, MA: MIT Press.

- Callon, Michel. 1991. Techno-economic networks and irreversibility. In *A Sociology of monsters: Essays on power, technology, and domination*, ed. J. Law, 132-61. London: Routledge.
- DiMaggio, Paul, Eszter Hargittai, W. Russell Neumann, and John P. Robinson. 2001. Social implications of the Internet. *Annual Review of Sociology* 27:307-36.
- Eisenstein, Elizabeth L. 1993. *The printing revolution in early modern Europe*. Cambridge: Cambridge University Press.
- Fischer, Claude S. 1992. *America calling: A social history of the telephone to 1940*. Berkeley: University of California Press.
- Hand, Martin, and Barry Sandywell. 2002. E-topia as cosmopolis and citadel: On the democratizing and de-democratizing logics of the Internet, or, Toward a critique of the new technological fetishism. *Theory, Culture, and Society* 19 (1-2): 197-225.
- Hindman, Matthew, Kostas Tsioutsoulis, and Judy A. Johnson. 2003. Googlearchy: How a few heavily-linked sites dominate politics on the Web. Paper presented at the annual meetings of the Midwest Political Science Association, Chicago.
- Hutchins, Edwin. 1995. *Cognition in the wild*. Cambridge, MA: MIT Press.
- Kuti, Eva. 2001. *A nonprofit szektor főbb statisztikai jellemzői*. Budapest, Hungary: Központi Statisztikai Hivatal.
- Latour, Bruno. 1991. Technology is society made durable. In *A sociology of monsters: Essays on power, technology and domination*, ed. J. Law, 103-31. London: Routledge.
- . 1999. On recalling ANT. In *Actor network theory and after*, ed. John Law and John Hassard. Oxford, UK: Blackwell, the Sociological Review.
- Orlikowski, Wanda J. 2000. Using technology and constituting structures: A practice lens for studying technology in organizations. *Organization Science* 11 (4): 404-28.
- Robinson, John P., Paul DiMaggio, and Eszter Hargittai. 2003. New social survey perspectives on the digital divide. *IT & Society* 1 (5): 1-22.
- Ward, Joe H., Jr. 1963. Hierarchical grouping to optimize an objective function. *Journal of the American Statistical Association* 58:236-44.
- Yates, JoAnne. 1989. *Control through communication: The rise of the system of American management*. Baltimore: Johns Hopkins University Press.