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## 9. **ARTICLE 2: WEB TECHNOLOGIES IN PRACTICE. THE INTEGRATION OF WEB TECHNOLOGIES BY ENVIRONMENTAL ORGANIZATIONS**

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### *ABSTRACT*

This article uses a structuration model to explore the interaction between technology and organizations. Based on a case study of three environmental organizations in Norway and opposing visions of a single predetermined effect of web technology, it argues that the implications of web technologies within organizations are diverse and can strengthen existing organizational characteristics. With diverging organizational structures, norms, and culture, different interpretations, meanings, and practices tied to the same technologies develop. Technology is situated and used in concrete social contexts, being shaped by and in turn shaping social and organizational structures. In established and institutionalized organizations new communication technology can reinforce existing ways of conduct, while in less institutionalized groups, features of new web technology may have greater implications for the further development and shaping of these groups. Although this study is context and time specific, the observed patterns of web technology usage, their meanings and implications might also point to functions of web technologies in other comparable contexts.

### *INTRODUCTION*

For years the environmental movement has been at the cutting edge of using new information and communication technology – especially the Internet and web technology – for communication, mobilization, and for the coordination of movement activities globally (Castells, 1999, 2011). As communication is essential for interest groups, the new technology has been held up as a way of addressing the challenges of increased competition, scarce resources and heightened scrutiny and demands for

these types of organizations (Burt & Taylor, 2000; Burt & Taylor, 2003; Hackler & Saxton, 2007). A study in Norway indicates that general Internet usage is positively associated with vitality and organizational survival of voluntary organizations (Eimhjellen, 2013). Also due to the Internet, new forms of volunteering, fundraising and organizing have developed, for example the organization MoveOn.org, born and primarily existing in cyberspace, combining Internet-mediated and concrete forms of civic engagement (Carty, 2010, 2011).

Norwegian interest groups are situated in what may be described as a Network and Information Society in which an infrastructure of social and media networks characterizes the mode of organization on all social levels (Van Dijk, 2012). By studying environmental organizations, we can explore examples of the manifestations of the Network Society (Castells, 1999, 2011). To discover the meanings and implications of web communication for interest groups, we need to focus on interpretations of web technology in specific organizational contexts. In-depth case studies are valuable in understanding the social construction of the web as a medium (Stein, 2011), including how the socio-cultural and political positions of groups affect interpretations of technology (Pinch & Bijker, 2009 [1987]). We need to conceptualize the development of assumptions, beliefs, and values linked to new technologies in organizations, and how these may influence organizational characteristics and practices.

Using case-study methodology, I will investigate and discuss the meanings and implications of the use of websites, e-mail and Social Network Sites (SNSs) by local environmental organizations in Norway: How can the mode of organization, norms, and culture shape and be shaped by the implementation of new communication technologies in environmental organizations? An underlying perspective for this investigation is a structuration model (Orlikowski, 1992; Stein, 2011) and a practice lens (Orlikowski, 2000) with which to study the interaction between technology and organizations. Before outlining this perspective, I will first discuss the process of

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institutionalization of organizations in relation to the adoption and traits of web technologies.

### ***ORGANIZATIONAL INSTITUTIONALIZATION AND WEB TECHNOLOGIES***

Studying the use of technology by environmental interest organizations makes perspectives from political sociology relevant, in terms of the institutionalization of political mobilization. This is the study of the expression and mobilization of social values and interests, and how loose and spontaneous movement activities and events linked to a collective good may eventually become hierarchical and bureaucratic organizations more concerned with organization and management than with their initial values and interests (Blumer, 1946; Brand, 1990; Downs, 1972; Michels, 1962 [1915]; Tarrow, 2005; Tilly, 1978; Weber, 1993). The new social movements of the 1960s and 1970s (including the environmental movement) have often been perceived as intrinsically anti-bureaucratic and anti-hierarchical (Melucci, 1985; Offe, 1985; Touraine, 1981) – the antithesis of institutionalized organizations. Nonetheless, the same social movements do appear to have become institutionalized, incorporated and even co-opted by the establishment (Eder, 1996; Giugni & Passy, 1998; Hajer, 1995; Jamison, 1996; Meyer & Tarrow, 1998; Rucht et al. 1997; Seippel, 2001). A study of a more recent social movement; the movement for the globalization from below (della Porta et al. 2006), may still point to features of less institutionalization and the network-based organization of new social movements.

The use of web technologies by such groups and organizations may affect the organizational structure and the process of institutionalization. Because it allows virtual organization and communication, and cooperation across distance, one effect of web technology is to produce loose group- and organizational structures (Van Dijk, 2012). Today, many organizations are network organizations, consisting of individual teams and projects internally, often connected in networks with other organizations externally. With the Internet and SNSs in particular, new forms, degrees and combinations of social interaction are integrated in the same medium: 1) one-way

mass communication from a center; 2) self-chosen information retrieval by individual units; 3) a centers' gathering of information from a mass of individual units; and 4) decentralized many-to-many communication between local units (Bordewijk & Van Kaam, 1982; Van Dijk, 2012). In decentralized many-to-many communication, the exchange of information between two or more units is executed through a shared medium and not a center. The exchanges may occur instantly or at the time of the participants own choosing. The premises for the communication are set by the units themselves, not by a center (a person or organization). It is particularly the many-to-many element and the combination of different forms of interactivity on the Internet that have attracted media and scholarly attention in recent years (Van Dijk, 2012). This element may challenge established organizational structures, and a popular notion is that web technology will 'flatten' organizations. However, as Van Dijk (2012) contends, with reference to Weber's (1922) characteristics of an ideal-typical bureaucracy, the implementation of web technology may enhance the bureaucratic characteristics of organizations. Web technology could reduce the number of hierarchical levels, yet preserve the difference in control and authority between levels. Regarding centralization of decisive power, a bureaucracy could be centralized through the aid of web technology, but it could also be decentralized, both horizontally and vertically. All four combinations of these processes are technically enabled by web technology, but the exact effect of the technology in an organization will depend on the division of power, the type and size of organization, and on the degree of web technology implementation. (Van Dijk, 2012).

The above discussion exemplifies what Van Dijk (2012) calls trend amplification, one of several 'laws' of the web. He argues that the Internet tends to reinforce existing structures of society instead of overthrowing them – web technologies are trend amplifiers. The Internet is a relational structure that emphasizes and reinforces existing relations between people embedded in social structures. Following this line of thought, web technology will have different roles and implications in different organizations, also internally. To fully comprehend the roles and implications of web technology in organizations, it is important to also include the cultural and normative

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aspects of technology and the interaction between organizations and technology. Therefore, in the next section I argue for a structuration perspective on technology and a practice lens for studying the role of communication technology in organizations.

### ***STRUCTURATION OF TECHNOLOGY IN ORGANIZATIONS***

By using a structuration perspective and a practice lens to study the role of communication technology in organizations (Orlikowski, 1992, 2000) we can explore how technology is used and perceived by the users, and how such usage might form social practices and structures. The focus is on structures that emerge with recurrent use of properties of a technology. The structuration model of technology allows us to understand the interaction between technology and organizations and we can investigate different aspects of groups' patterns of technology usage. A practice lens recognizes a distinction between technology as artifact and technology-in-practice, and this allows us to look at the situated use of technology without making assumptions about its stability, predictability or completeness.

The structuration perspective on technology is based on Giddens' (1984) theory of structuration, according to which human agency is both facilitated and constrained by structures which again are the result of prior human action and interaction. By the same token, structures both shape and are shaped by actors' actions. This logic could also be applied to technology which is first created physically by humans but is then also socially constructed through its actual usage and the meanings attached to it. There is also flexibility in how we design, interpret and use technology. This flexibility is a function of the material parts constituting the technology, the institutional context surrounding the technology – for example the normative or authoritative structures – and the power, knowledge, and interests of the actors using the technology. Conventional understandings and shared meanings by members of an organization constitute some of the interpretive context surrounding technologies-in-practice. These are shared ways of understanding and interpreting technology, shaped by experiences with various technologies and participation in a range of social and

political communities (Orlikowski, 2000). These elements determine how open a given technology is to interpretation and re-design. Further, technology also has structural traits that appear alongside its actual usage. As time passes, technology is often reified and institutionalized, and might eventually be perceived as an objective and structural trait of a social system. As such, it might shape and structure the actions of human agents.

The interpretive flexibility and structuring ability of technology may also be affected by the level of institutionalization in the group or organization. This is captured by the concept of structural inertia (Stinchcombe, 1965), where the established practices of organizing at the time of the founding of organizations tend to affect its further development. With increasing age, an organization tends to become more institutionalized, and tends to have more rigid structures and be less adaptive to changes in the environment. In newly founded and less institutionalized organizations, norms, practices and structures are less stable and the organization or group may be more susceptible to changes, or to being shaped by new technology. The impact of web technology could therefore have more profound implications for the institutionalization of young organizations and groups. Either way, for web technologies to drive significant organizational change (if this is a goal), organizations will be required to actively embrace the technology and new visions. The type of social sphere, field or context surrounding organizations – for example institutional politics or a local neighborhood – will also have implications for the organization's web technologies-in-practice.

### *THE STUDY*

To investigate the relationship between local environmental organizations in Norway and web technologies, I utilize a case study approach and a qualitative in-depth perspective. In the analysis section, I explore web technologies-in-practice within the organizations, and how they fit into categories of technology adoption patterns and types of interaction. Further, I look at the interplay between the organizational context and the technologies-in-practice within the organizations themselves.

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The web technologies-in-practice that I try to identify should not be regarded as exhaustively or exclusively characterizing one organization's relationship with web technologies. The web technologies-in-practice may have evolved or changed, or new ones may have appeared, since the data was gathered. This is particularly relevant when studying new web technology, as changes and practices occur increasingly rapidly. However, over time, people tend to enact similar technologies-in-practice and the enacted technology structures could become routine, taken for granted, and even institutionalized under certain circumstances. Such stabilization-for-now of technologies-in-practice allows us to seek moderatum- (Payne & Williams, 2005) or bounded generalizations about the types of technologies-in-practice likely to be enacted by particular types of users of specific technologies in various contexts and at various times (Orlikowski, 2000).

The three cases in this study are the Green Warriors (the GWs), the City Air List (CAL) and Landås Transition Initiative (LTI), all located in the city of Bergen, Norway.<sup>1</sup> Similar to the way in which the environmental movement generally is characterized by diversity in composition and expressions (Castells, 1999), so too are the three cases here. The organizations diverge in terms of key characteristics such as size, age, organizational form and forms of activity. The Green Warriors are a hands-on environmental organization, CAL is involved in institutional politics, and LTI is a neighborhood-network promoting sustainable daily life. Semi-structured interviews have been conducted with the leaders and communication staff of the three organizations, with a focus on their professional roles there.<sup>2</sup> Other organizational material and documents, and their online representations and activities, are also used as sources of information. A summary of traits of the organizations and their web representations is presented in Table 1.

**Table 1:** Summary of organizational traits and web representation

Name (year of est.)	Green Warriors (1993)	The City Air List (2010)	Landås Transition Initiative (2008)
<b>Area of coverage</b>	National (local, national and international)	Local (city)	Local (neighborhood)
<b>Organization in numbers</b>	1 central leader 20 employees 6 board members 1500 support members	1 leader 1 employed secretary 5 board members 2-4 active (5-10 part time) 70 listed for election 150 supporters (e-mail list) 1435 votes in local election	3 equal initiators 15 group leaders 70 participants 700 on e-mail list
<b>Self-identity</b>	Entrepreneurs of the environment. Hands-on environmentalism. Grass-roots organization	Worried citizens Local political initiative Think-tank Media project	Representatives of the local neighborhood
<b>Objective</b>	To become leading environmental organization in Norway. To improve the environment, to do youth work, to preserve infrastructure, and to help indigenous people. To fight big actors, business companies, the state, political parties, and other environmental organizations	To improve the quality of air in Bergen. To fight political stasis on environmental issues.	To fight overconsumption, problems of the commons and political stasis on environmental issues. To reduce ecological footprint, to increase liveliness and to build community
<b>Web representations</b>	Website, Facebook (4000 likes), Twitter (644 followers), Youtube	Website, Facebook (720 likes), Twitter (404 followers)	Website, Facebook (1255 likes)

## *THE ORGANIZATIONS' WEB TECHNOLOGIES-IN-PRACTICE*

### GREEN WARRIORS

The Green Warriors are a national, member-based voluntary organization in Norway and are also the oldest of the three organizations in the study. The organization has a rigid hierarchical and centralized structure, and it is concerned with a number of environmental issues, often practical and controversial activities. It has a website, a Facebook- and a Twitter profile, and it claims to be the first voluntary organization in Norway with a dedicated SNS-editor. The intended audience for its web

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communication is the general public. Its website is regarded as its main web representation and this is updated daily with organizational views and statements on various environmental issues. On Facebook, the organization's postings usually consist of direct links to its website-posts, but it also posts links to relevant news from other (web) sources, such as online newspapers and other organizations' websites. Its Twitter-posts most often consist of hyperlinks to the Facebook-posts, with no differentiation. The organization also has a YouTube account where it posts videos from operations and demonstrations, with links from the website.

We really want to reach out to our members, we want to be on top of our game to show that we are alert and updated. So, Facebook is the easiest way to reach a lot of people right away. We e-mail a newsletter every other week about news-posts on our website, because few people actually visit our website to check new posts. By using social media, we can show people what we do. (Web editor, Green Warriors)

In general, the organization's activity online mainly consists of one-way information distribution or mass communication, in which the Green Warriors sets the premises for the communication. In showing online its activities, it also tries to attract new members, though it does not have an active recruiting strategy (a few members have been recruited this way). However, its leader's personal and public Facebook-profile (which has more followers than the organization's profile) is more important for recruiting members. The leader of the Green Warriors is a key figure and the founder of the organization. He is the face of the organization and a well-known public figure. On Facebook he is often contacted by potential members and activists who are then encouraged to sign up for membership via a form on the website.

I recruit a lot of people via Facebook. If they write something and if I remember, I write them back: 'Thanks for your message, sign up to the Green Warriors, we need more people like you who care, join us'. Then there's our website, they go there and sign up. That website is really good. [Interviewer: How many have you recruited that way?] I don't know, a

thousand, yes I think so. You see, we've increased by a thousand. People who want to be active and everything. So we find a lot of people on social media if we can stand the work. You see, it's me who has the power. The others can't do it like me. If I ask you to become a member there's a 75 percent bigger chance you'd do than if someone else asked you. (Leader, Green Warriors)

One web technology-in-practice we can find this organization using is *information distribution*, as most of its web representations are concerned with sending information out, and less with bringing information in. There is also a web technology-in-practice which we may term *member recruitment* whereby the organization and its leader, by thanks to his public image and public Facebook-profile, recruit new members and volunteers to the organization. We may also define this as a *charismatic organizational* web technology-in-practice, in which the personal characteristics and public status of the leader are important resources for the organization.

#### THE CITY AIR LIST

CAL, meanwhile is a young political organization, with one representative elected to the Bergen city council. It has a flexible, flat, network-based structure and its objective is to improve through institutional politics the air quality in Bergen. CAL uses several web technologies in different ways. On its website it distributes more in-depth political posts, often official statements pronounced at council meetings the same day or the day before. On Facebook it posts short political arguments, often linked to posts on its website for further reading, or to relevant news stories elsewhere. On Twitter, the political messages are even shorter (maximum 140 signs), and the organization can spend quite some time formulating political punch lines. At times the organization participates especially actively in the conversations and political debates on SNSs, especially on Twitter, on topics such as environmentalism, city politics and air quality in Bergen. For CAL, Facebook and Twitter are regarded as very important arenas for political debate and communication, and Twitter seems to

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be the most important. Facebook seems to be about communicating opinions on political issues and relevant news, while Twitter is more about ‘*quick reactions to things*’. Several of the organization’s activists use their own Twitter profiles in such discussions.

On Twitter, when it comes to who responds from CAL, we distinguish between what is the City Air List, the leader or me, or someone else in the City Air List. The leader usually contacts other people directly on Twitter, but the City Air List doesn’t do this so much. It’s more difficult to enter into a discussion as the City Air List, which in a way is just the logo. You can’t see any name of who’s running the profile, only a symbol, not a human being. First of all, it’s hard for the person you’re discussing with, to know who they’re talking to, and also you are not very free talking as the organization. So, it’s much easier for me to start answering from my own profile, making it clear that I’m a member of the City Air List, or that others from the City Air List are responding to things. This is usually what happens: the City Air List posts something, then someone supports it, then someone criticizes it and others follow, so it becomes like a discussion. But still, the City Air List, which posted the original message, is not participating in the discussion. (Secretary CAL)

CAL also has an internal Facebook-profile used for internal discussions of organizational activities, and where occasionally formal organizational decisions have been taken. An e-mail list is also used to distribute information about events, queries and other relevant information to their ‘City Air Supporters’. It therefore utilizes several forms of interaction through the Internet: one-way mass communication, information retrieval and decentralized many-to-many communication. Its secretary undertakes most of the daily running of the organization at its office at city hall. Nonetheless, there is an almost constant stream of messages by e-mail and phone between the leader, located elsewhere, and the secretary. Within the organization, one characteristic web technology-in-practice is *platform-specific content*, in which

content and its presentation are tailored to each web platform, whether on Twitter, Facebook, or the website. Another web technology-in-practice which seems characteristic is *network flexibility*. By the help of web technology they have a network of people to mobilize for action when needed. With the e-mail list and the internal Facebook-profile they can mobilize help and input from the extended network of dormant helpers, when needed. To different degrees and at different periods, the organization's communication, internally and externally, one-way and two-way takes place through web technologies. Also, its activists used their own SNS-profiles to participate in discussions on the organization's SNS-profiles. This can be interpreted as a *person-to-person communication* type of web technology-in-practice.

#### LANDÅS TRANSITION INITIATIVE

This organization can be described as a less formalized network of connected neighbors in Bergen, working to reduce the ecological footprint of modern individuals and increase the vitality and sense of community in the local neighborhood. The intended audience for its web communication is the internal network of members in the neighborhood. Facebook and the website are the preferred channels of communication and the organization is not on Twitter. On its website it posts documentation and pictures from activities to be seen by the network, and this functions as a resource bank with extensive information about the organization and its activities. Facebook is also increasingly used in this fashion, but mostly to reach and communicate with members about activities and actively ask for input. LTI also has an e-mail list to distribute information. This list of about 700 households represents a large share of the demographic area of coverage for the network. Here, it distributes thematic information, videos, or invitations to events. Much organizational communication and administration of activities are also done without any central control. The group leaders and activists in the different groups communicate and organize events among themselves. When asked what means of communication works best for LTI, one of the initiators responds:

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It's all for different purposes. We use e-mail and a lot of networking face-to-face at soccer-games and the like (...). The posters work surprisingly well, I must say, because our area is so small and defined. I think we can say that last year, 95 percent, or an overwhelming share of the new people we meet, they see it on street lamps. Because, the people who haven't seen us before, we can't reach them by e-mail or Facebook or anything. But the posters on the street lamps and at the grocery store, that's where people see us (...). But, to communicate with the people already in our network, we use Facebook a lot, to spread new ideas and inspiration and stuff like that (...). There we distribute inspiring little videos or stuff about our agenda (...) and we use it to distribute invitations to events when something is happening, we also do that by e-mail, and on the website and on posters, we all do. (Initiator 1, LTI)

LTI also uses web technologies for one-way information distribution and it receives responses and interacts with its network members on its Facebook profile, signifying both information retrieval and decentralized many-to-many communication. However, all its web communication is framed as internal communication within the network. Also, it is not entirely satisfied with its conversational performance online. It wants to be even more open about processes, ideas, and include more two-way communication. It does receive some response on Facebook, but it wants to create an even more fluid and dynamic dialog online. LTI is also involved in developing new technical solutions for the internet- and mobile technology for neighborhood car-pooling and swapping things between households. From this we may term its web technology-in-practice as *explorative*. Also, a *neighborhood centered* web technology-in-practice has been observed.

Based on empirical data, Orlikowski (2000) has developed three clusters of technologies-in-practice: *inertia*, *application* and *change*. First, *inertia* characterizes a way of using new technology that reinforces and perpetuates the status quo and existing ways of doing things within an organization. Existing interpretations,

technology, and institutions prevail, with no- or limited implementation of new technologies that does not change anything in the organization. Second, *application* is a pattern in which organizations implement new technology throughout or in parts of the organization, in order to improve performance. Here, institutional conditions and flexible interpretation might lead to a reinforcement of what already exists, but also to distinct changes in tools and practices, in order to improve the organization. Third, there is *change*. New technology is here used to radically change existing ways of doing things, activities, and technology in organizations, often by experts' improvisation and adaptation of technology to new organizational practices. The category *application* seems apt to describe all three of our organizations' web technologies-in-practice. Nonetheless, the Green Warriors do exhibit some signs of skepticism or ambivalence to new web technology, as they resist wireless technology and two-way communication. *Inertia* arguably also characterizes the GWs. With reference to the category of *change*, LTI seems to have a more explorative approach to new communications technology. In addition to applying new communication technology to its existing activities, and efforts to have two-way communication in its online presence, it also seeks to change and improve technology and social practices by technology. Therefore we might place LTI within the *change* category too. Further, we will investigate how the organizations' different and similar web-technologies-in-practice relates to characteristics of the organizations.

### ***ORGANIZATIONAL CONTEXTS FOR THE WEB TECHNOLOGIES-IN-PRACTICE***

As Norway may be characterized as a Network and Information Society, computers, networked devices, and internet connections are abundant and taken for granted by most organizations. The availability of web platforms is therefore very open. Websites may cost a bit depending on their sophistication, but they can also be relatively cheap, or free of charge. SNSs are most often free of charge. Regarding hardware within the organizations (computers and other devices), all three had computers with internet access for their employees/activists at their respective offices.

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In addition, all interviewees had mobile devices (phones/pads) with web access.<sup>3</sup> An exception is the leader of the Green Warriors. Although his phone was an essential work tool, he did not use it for wireless internet access, only for texts and phone calls using the hands-free. At all their office buildings, the Green Warriors used only broadband by cable for their internet connection. Still, as all three organizations had hardware and devices for being online and used several web platforms, their general technological conditions were somewhat similar. In the following sections I will discuss the interpretive and institutional context surrounding the web technologies-in-practice in the three organizations.

#### AMBIVALENCE AND FIRM STRUCTURES

For the Green Warriors, an important dimension of their activity is to communicate, in different formats and media, their practical, physical, and hands-on environmentalism, and they have the vision to be the best at communication and web communication. Nonetheless, they are primarily an independent environmental organization, interested in ‘doing environmentalism’, often physical work such as restoring old buildings, or being in the field conducting environmental operations or demonstrations. They are also more interested in the issue rather than the format, meaning that they often have a straightforward approach to environmental issues, not always conforming to established norms and the political ‘game’. Most of the organization’s activists are not involved directly in the organizational web communication and functions of web technologies for the organization. There is an ambivalent attitude to web technologies in the organization, and skepticism towards wireless technology, radiation, and the unknown consequences of technology. Even though the leadership does know about Twitter, and the organization has a profile there, there is less knowledge of how it actually works – this is the responsibility of the communications worker. The organization’s activity on Facebook is mostly about reaching an audience with the information it wants to communicate, and to redirect traffic to its homepage. The organization’s conception of being best at communication is all about having a proper website with relevant information about the organization,

its achievements and its stances on environmental issues. ‘The homepage, for me, is the number one. Whatever they may say about Facebook, you have to have a proper homepage’. (Leader, Green Warriors)

Here, new communication technologies are implemented within an organization which has a hierarchical structure, with vertical and centralized control from the top (i.e. the leader). Internally, the organization consists of five levels in the hierarchy of authority, from ordinary members at the bottom, to the board and the leader at the top. Only the leader and case-officers within the organization are allowed to make official statements on environmental issues, both online and offline. Everything is supposed to be checked by the leader beforehand. He is supposed to know about most of the things going on in the organization. In this way, the leader and the leadership of the Green Warriors constitute the center of the organization’s communication off- and online, leaving little autonomy for the lower levels of the organization. Rules of conduct and organizational design have been formulated and formalized. The organization’s activists do have some autonomy regarding micro-coordination of action, but they operate under the authority of the leader who controls the medium- and long-term lines of activity and development within the organization. Due to limited practical skills in SNSs and especially Twitter, a part-time position as a SNS and web editor was created to work with web communication. This position is situated lower in the hierarchy, and this person can formulate statements and post relevant information and content only at the behest of the leadership. The vertically and horizontally centralized structure of the Green Warriors contrasts with the decentralized exchange of information without a controlling center inherent in online many-to-many communication. Accordingly, any dialog or interaction online is hard to achieve, and one-way mass communication is the main form of online interaction. Some feedback on Facebook is received, but the organization’s rigidity makes two-way dialog difficult, and it explicitly does not participate in the Twitter dialog. It seems that the web technologies-in-practice are strongly aligned to the existing organizational norms, practices and structures.

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I think we have adopted this [technology] very well. In a way I feel we have, we are very true to the product [the organization] we made early on. We still are who we are, work the same way. We have changed off course, but no more than what I felt we had to, if you know what I mean. (Leader, Green Warriors)

The organization's relationship with web technologies could be interpreted in line with the theory of structural inertia (Stinchcombe, 1965), in which established or institutionalized communication practices within the organization shape the practices surrounding new web technology. Web technology seems to be institutionalized and subsumed under existing communication practices. In this way, web technology could be a trend-enhancer for the Green Warriors rather than changing the organization. SNSs in particular have added new channels of communication, with the potential to reach new audiences, but the organization still follows the same strategies for external communication: information distribution and member-recruitment.

#### PUBLIC ORIENTATION AND FLEXIBILITY

As Facebook is very popular in Norway and Twitter is especially popular among the politically interested (Enjolras et al. 2013), these SNSs have become important political arenas. As a political organization with politically engaged individuals, CAL seems to have an innate disposition or experiences pressure to be oriented towards the public debate and the media, seeking legitimacy and support from voters and other political actors. This logic of the field of institutional politics affects its web technologies-in-practice. On its initial formation, the phone and social networks were the most important tools for recruiting people to the political association. But, as soon as CAL went public, the website and SNSs became natural and fully integrated parts of its activity, as channels for political communication with citizens and political actors.

[Interviewer: Would you have missed out on much without Twitter and Facebook?] Yes, during the campaign it would have been very hard to do

without, it would have been totally irresponsible. I don't think we would have gotten elected if we were not a bit 'fresh' on Twitter. (Leader, CAL)

The interviewees actively use their own profiles on Facebook and Twitter to participate in political debates. One of CAL's key aims is also to be transparent; not just in terms of itself as a political organization, but also to open up the political system to the public by reporting live from political meetings through SNSs. It puts time and effort into web communication, by tailoring messages and posts to its different web platforms, and by participating in online discussions. A strategy document for activity on Twitter has also been drawn up, which is basically the organization's political program in the form of messages of maximum 140 characters. CAL also has a scheme for prioritizing discussants online; who is important to reply to, and who less so, and how quickly the response should be made. One key idea the leader used to describe the organization is as 'a media-operation', emphasizing the goal of spreading information and drawing attention of the public through new and traditional media. Coverage in the press is also a priority, either by being contacted by journalists or actively calling journalists and expressing views on particular matters, or by writing letters to newspapers. Most of the work in the organization, apart from that of the secretary, who is paid, is done on a voluntary basis, fused with political engagement. With a general pressure on time for many people today, a general understanding behind the organization is to make engagement and participation in the organization as costless as possible. In this way, web technology, especially e-mail and e-mail lists, has been a means to make the organization work, making it flexible with a mobilizable network and a devoted active core.

CAL has a flexible organizational structure, with less rigid divisions of levels and authority. According to its leader, if structures for participation in organizations are too rigid, getting people involved in local politics will prove difficult. The leader possesses the day-to-day authority, while the secretary performs most of the daily running. Important decisions and formal statements are mostly made by the leader. If there are differences of opinion, the leader will bow to the majority of the

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organization. The positions of the leader and the secretary constitute the center and the driving force in CAL. The other activists function as a reference group. Further out in the network, there are the City Air Supporters, who are also included in the communications loop by e-mail. Mainly, the communication work on the web and SNSs is borne by the secretary, while the leader does most of the work involving the traditional media; contacting journalists and writing letters for newspapers. But this is flexible. With regard to the structure of communication, CAL has shifted from a decentralized communication mode during its mobilization for the election campaign, with the online organizational communication dispersed between several people working from a collectively formed strategy, to a somewhat centralized day-to-day running of the organization since the election. Still, several of the activists participate with their own Facebook or Twitter profiles, in political discussions about the air quality and the organization itself.

#### LOCALITY AND TECHNOLOGY EXPLORATION

As LTI is based on physical proximity in a local neighborhood, and has the objective of creating a sustainable local community, at first neither websites nor SNSs were important for communication. Face-to-face meetings, social networks, posters on the billboard at the local grocery store and on street lamps were more important for communication and dissemination of information. But, as the network grew, the need for a more efficient channel of communication became pertinent, and soon a website and a Facebook profile were established. A pragmatic attitude to communication technology seems to be in effect, as LTI utilizes the technology that best serves its needs for information dissemination. It has a clear idea of what it wants, and which technology may help achieve its goal. It puts little effort into trying to reach the general public or people outside the network. As Facebook is the most popular SNS in Norway, this is where its profile was established, and not on Twitter. It perceives web communication as functioning to some extent as a collective memory for the people, of projects, activities and ideas in the network. Along with the organization's explorative approach to new communications technology, web technology is regarded

as fluid and malleable rather than static and as an artifact. LTI wants to develop its own web services to best serve its local environmental needs.

On paper, LTI has an office under a state agency (Bishopric Office), since two of the initiators are employed there. They also have an office at a co-working space for social entrepreneurs in Bergen. The initiators do however seldom meet in these offices. By the help of e-mails, a web-based administration program, and telephone calls and texts, administrative work is done collectively, but often at different places. When the initiators meet face-to-face it is most often at one of the initiators' house. In LTI, the initiators share responsibility for web communication. Even though much information distribution is done by the initiators, much organizational communication is also happening online and in the different groups without the knowing, participation or control of the core of the network. In response to a question on the structure of the organization, one of the initiators answers:

There's a flat structure, and all along we've thought: the thing that kills each fun initiative is that it gets mega boring having the role of administrator, being the one who has to call the board meetings, and then almost nobody shows up. So people think the activity is fun, but it's so incredibly boring being that kind of traditional organization. So we just don't relate to that kind of organization at all. We just say that if you want to run a Christmas-workshop, you're welcome, you won't get any other assignments, and if you're interested in housing and energy, great, join the housing and energy group, and just do that. Do what you think is fun, and all in all a lot of stuff pops up. But sure, at some point we [the initiators] get more of the administrative role. (Initiator 1, LTI)

This more heterarchical network structure and a two-way form of communication have spurred a desire for a more integrated and joint web platform. LTI wants a platform to connect all participants, groups and their blogs.

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So this is one of the things we're doing, we're working on setting up some kind of Landås Transition blog, connected to, not sure how (...) but the idea is that the Housing Group could have its own blog, the Transport Group as well, and we should open up the processes, because that's something we're not really managing to do, because we don't have a place to put things where it's logical. We could always post a picture from a meeting with a politician and say we were there. But actually posting a summary, the ideas we're working on, the processes going on, so that we can get our neighborhood to respond, and say that's a fantastic idea, we're working on this and we want to join in. With this kind of two-way communication outwards we still have some way to go, but we're are working on it, we're aware of it, we're just looking for the right format. We're not best served by having ten different Transition blogs either, not linked together, so we need to somehow create an umbrella-blogsphere. We've looked at Origo [a web platform-provider], but then the problem is moving the users from Facebook, and now the whole world is on Facebook, so how can we manage that, can we use Facebook or Wordpress for instance, how do we do it? (Initiator 1, LTI)

The initiators at LTI were looking for ways to make the activities, processes, and the organization more visible, accessible and dialog-based, but also more administrable. This signifies a desire for both a continuing decentralized and web-supported network, and a desire for some administrative tools for central steering. New web technologies could potentially support this. An important aspect is that for LTI, web technology is malleable and open to interpretations and re-design.

## *CONCLUSION*

In this article the web technologies-in-practice in three Norwegian environmental organizations have been explored. By interpreting interviews, organizational documents and the organizations' web representations in a structuration perspective and in light of institutional and network theory, I have looked at several web

technologies-in-practice and different implications of web technology for interest organizations in a network society. This study seems to show that the technological preconditions for Norwegian environmental organizations are somewhat similar, with easy access to web technologies and web platforms. The three organizations had all adopted websites and SNSs. Nonetheless, the enactment of practices concerning web technologies diverged from centralized one-to-many communication to a more decentralized many-to-many communication. The web technologies-in-practice were further discussed in relation to the three specific organizational contexts. With diverging organizational structures, norms, and culture, different interpretations and meanings tied to the same technologies develop. In turn, the practices concerning web technology can have implications for the organizations. Assisted by theory in analyzing the empirical data, I argue for a trend-amplifying or reinforcing effect of web technology on existing organizations' structures, norms and culture. The degree of institutionalization and established organizational structures, and existing perspectives on web technology within organizations, will affect the impact and further implications of web technologies in organizations. There is no predetermined or deterministic effect of technology on organizational and social structures. Technology is situated and used in concrete social contexts, being shaped by and in turn shaping social and organizational structures. By using an in-depth approach to concrete social contexts we may discover how web technologies are open to different interpretations and have different outcomes in different contexts – this supplements more general and statistical approaches to the field of web communication within interest organizations. Although context and time specific, the observed patterns of web technology usage, their meanings and implications might also point to similar functions of web technologies within similar organizational contexts. Future research should aim to further explore the different meanings, uses, and outcomes of web technologies in different contexts.

**NOTES**

<sup>1</sup> Norwegian names: GWs = Norges Miljøvernforbund, CAL = Byluftlisten i Bergen, LTI = Bærekraftige Liv på Landås.

<sup>2</sup> The interviewees have been informed of the potential for recognition in final publication. The project has been reported to the Norwegian Social Science Data Services.

<sup>3</sup> 35 percent of the Norwegian population uses mobile phone to go online (Vaage, 2013)

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