Political Representation in the Network Society: The Americanization of European Systems of Responsible Party Government?[1]

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The Internet provides a new technological opportunity structure for political representatives to communicate and interact with constituents. Its potential for decentralized, interactive mass communication allows MPs to bypass traditional intermediary organizations such as political parties and to establish a close and direct relationship with their constituents. Students of electronic democracy are divided upon the question whether MPs will take advantage of this new technological opportunity structure. While cyberoptimists envision a transformation of European systems of responsible party government towards a more direct, individualized type of political representation as a result of new digital media, cyberpessimists adopt a more cautious approach and predict a modernization of established systems of political representation. This paper aims at an empirical test of both positions. In its theoretical part, it models these two contradictory positions on the impact of new digital opportunity structures on political representation. In its empirical part, the paper tests both positions in a comparative statistical analysis of the use of personal Websites in the German Bundestag, the Swedish Riksdag and the US House of Representatives.

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1   *Democracy in the Network Society*

The concept of the network society has been popularized by sociologist Manuel Castells in a best selling volume published in 1996 (Castells 1996). It focuses on the emergence of computer networks as a major medium of telecommunication. In 1972, the prototype of contemporary networks, the ARPANET, which was run by a small research group within the US Department of Defense, connected 40 computers located in major research centers across the US. In the year 2000, the Internet consisted of approximately 93 Mio. Hosts worldwide which can be accessed to retrieve information (Deiss 2001, p. 3). According to the Irish market research organization NUA about 407 Mio. people worldwide had access to this global network by November 2000 (NUA 2001).[2]

The concept of the network society is about far reaching change in communication. Traditional mass media such as Radio and Television are channel media which allow a limited number of people to broadcast a small amount of information to a homogeneous mass audience in a uni-directional fashion. Contrary to this, the Internet allows for decentralized and interactive mass communication (Höflich 1994; Morris/Ogan 1996; Castells 1996, pp. 337). With the Internet, each individual is able to broadcast his or her own opinions and experiences in various formats such as one-to-many or one-to-few. With the Net, each one is also able to respond immediately to a message and to enter into horizontal as well as vertical communication. According to some theorists of the network society, computer networks even obscure the boundary between communication and face-to-face interaction because of their large bandwidth and sophisticated hard- and software (Rheingold 1995; Negroponte 1995; Lyon 1997). From this perspective, the Internet is no medium of telecommunication at all but rather a new type of space which exists independent of the physical world surrounding us and which provides new opportunities for social interaction across time and space.

According to the concept of the network society, the Internet also opens up new opportunities for political change towards an electronic democracy. Theorists of electronic democracy argue among others that computer networks open up unprecedented opportunities for new systems of participatory representation based upon direct, unmediated communication and interaction between citizens and legislative assemblies (Krauch 1972; Arterton 1987; Slaton 1992). Discussion-fora, bulletin-boards or electronic opinion polls provide new technological means for citizen to voice their interests towards their representatives. Websites,

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[2]   The Internet is not a centrally administered medium. It is therefore impossible to know the exact number of users. Most published numbers are based upon survey research and vary with methodology. For a critical overview see Norris 2001; Hagen/Mayer 1998 and Scherer/Berens 1998

Mailing-Lists, Web-TV or Web-Cams could increase the transparency of the parliamentary process and thus the level of information among citizens (Coleman 1999; Coleman 2000; Needham 2001). Stephen Coleman envisons the Internet to "cut out middle men" in the process of political communication (Coleman 1999).

These new technological means could transform the current system of interest representation. Political parties have been perceived as the major linkage between citizens and the state (Sartori 1976). Computer networks could open up the opportunity for individual members of parliament to deliberate policy issues with particular constituents, to poll these constituents on issues up for decision and to keep them informed on their own policy views and their legislative behavior. New digital media could thus trigger a development towards a more individualized direct type of communication and interaction between citizens and legislative assemblies (Eulau 1970; Zittel 1998).

Students of electronic democracy disagree on whether the new digital opportunity structure matters in the process of institutional change. With the proliferation of the Internet, students of media and political communication have been most positive regarding the prospects for political transformation. Authors such as Lawrence Grossman or Graeme Browning argue in best selling books that a transformation of democracy is well under way and that current patterns of elitist representative democracy are about to turn into a new type of electronic democracy based upon a direct, participatory representative system (Grossman 1995; Bowen 1996; Browning 1996; Rash 1997).

In recent years, this position has been subject to vigorous criticism. Cyberoptimists have been opposed by cybersceptics who adopt a more cautious approach and who expect a process of political modernization rather than transformation in the network society. While one strand of this criticism is pointing toward the lack of electronic participation on the part of the citizens as a major obstacle to electronic democracy (Norris 2001) another argument is rather putting its focus on political institutions and problems of institutional change in the network society. Case studies on the use of new digital media in parliaments and among political parties emphasize for example that new digital media are being used by political elites to strenghten the role of the middle man rather than to diminish it (Coleman/Taylor/van de Donk 1999; Löfgren 2001). Michael Margolis and David Resnick argue on the basis of this evidence that Cyberpolitics turns out to be politics as usual (Margolis/Resnick 2000). This positions emphasizes the fact that computer networks open up new opportunities to political actors who rather decide not to take advantage of them. It concludes with the hypothesis that

future patterns of political representation will not deviate much from current patterns despite far reaching changes in telecommunication technology.

This paper explores these two positions in the debate on electronic democracy from a theoretical and from an empirical perspective. We argue that cyberoptimism as well as cyberscepticism are based upon serious theoretical evidence. However, both claims have not been subject to a systematic empirical test to verify or falsify either of these positions. Most empirical work in the field of electronic democracy is a-theoretical, impressionistic or in a case study format and thus ill suited to produce general insights in the future of political representation in the network society. This paper touches upon this blind spot in the debate on electronic democracy. In its first part, we will model the two positions sketched above. In a second part we will test both models in a statistical analysis of the use of personal Websites in three parliaments: the US House, the Swedish Riksdag and the German Bundestag. In a third part we will draw some conclusions on the basis of this analysis regarding the explanatory power of our initial model and the future of political representation in the network society.

2   *Two Models of Political Representation in the Network Society*

Both notions of cyberoptimism and cyberscepticism are based upon serious theoretical evidence. This can be demonstrated by developing these two general positions into explicit and explanatory models of political representation in the network society while drawing on some of the existing literature on political change, legislative behavior and political representation. In the following remarks we distinguish between a technological and an institutional model of political representation in the network society. Our technological model of political representation perceives cyberoptimism in line with the position of technological determinism in the social sciences. While technological determinism is a rather broad movement in social theory its various elements are integrated on the basis of the assumptions that technological opportunity structures represent major factors in the process of political change. As a result, crucial technological turning points and breakthroughs which give birth to new types of opportunity structures are perceived as forces which reshape and transform social structures (Street 1992; Sclove 1995, chapter 2).

Contrary to this, our institutional model of political representation in the network society perceives cyberscepticism in line with the institutionalist approach in political science. Institutionalism is not a unified body of thought. It is based upon different approaches which

share a common theme in their focus on the role that institutions play in the determination of social and political outcomes (Hall/Taylor 1996). Institutionalism argues against the notion of externalism. It rather suggests that established political institutions possess the capacity to shield themselves off from external change and to tame external pressures towards change. Institutionalism also argues against the notion of external efficiency which assumes that institutional structures will be driven towards single models due to the impact of external factors (March/Olson 1984).

Our technological model of political representation does not subscribe to strong technological determinism which assumes a direct and deterministic impact of technology on social values and organization. It is rather based upon the notion of weak technological determinism which emphasizes the notion of individual choice and the need for specific mechanisms to get individuals interested in using new technological opportunities. In our technological model of political representation we emphasize two crucial mechanisms of this nature: generational change and social demands. Both mechanisms affect individual choices and thus link technological and political change.

The emphasis on generational change is based upon the assumption that the new digital communication environment has a socializing effect on young people in their formative years.[3] From this perspective, computer networks are assumed to shape the values and the predominant patterns of communication within a specific generational context (Hebecker 2001). This line of reasoning furthermore assumes that "generation @" will keep these predominant patterns and values independent of its institutional context and its life cycle. Technological change will thus trigger political change via the process of generational change within the political realm. Young political elites who grew up with chat-rooms, Websites and E-mail will automatically implement their habit of interactive, direct communication within the political sphere. They will exploit the technological potential of computer networks as a way of life. As a result they will enter into direct, individualized patterns of public communication and interaction. Existing systems of political representation will thus change with the replacement of older members of parliament and the increasing influx of younger office holders.

The emphasis on social demands is based upon the assumption that political choices are driven by the emergence of social coalitions and resulting public demands (Truman 1951;

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[3] Critics of mass media such as Neil Postman (1985) or Joseph Weizembaum (1989) highlight the media as a factor of socialization.

Almond/Powell 1966; Cobb/Elder 1972; Jones 1977). Our model argues that the Internet gives way to new kinds of social demands regarding the use of new technological opportunity structures in all walks of life. Some of these public interests could be driven by economic concerns. The concept of the network society presupposes the increasing social diffusion of computer networks as major means of communication. This will have among others effects on the structure of the economy. It triggers the rise of a so called new economy which produces hard- and software and which provides new kinds of services related to the Internet. As more and more businesses will emerge in this sector, as more and more value is being produced and as more and more people are being employed within this sector we will witness the rise of social interests closely related to the Internet and driven by economic concerns. These interests will organize and generate public demands for using computer networks in most areas of social life and for implementing the technological potential of computer networks in most far reaching ways. These public demands will act as a major influence on political choice and will thus link technological change to political change.

Fig. 1: A Technological Model of Political Representation in the Network Society
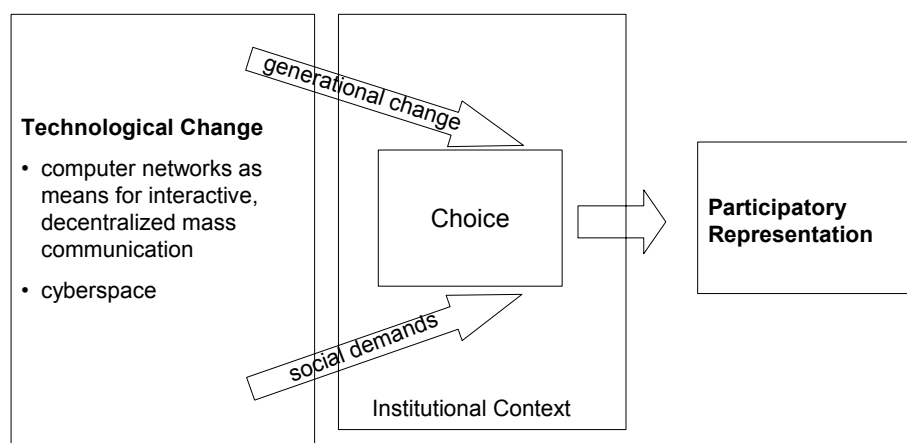
This technological model of political representation suggests far reaching changes in political representation. It assumes that because of generational change and emerging social coalitions political actors will be driven to utilize the new digital opportunity structure and to reshape the existing system of political representation towards a decentralized, direct type of interest representation. This new type of representative system downplays the role of intermediary

structures in general and of political parties in particular. It is based upon a direct and interactive relationship between individual political representatives and particular constituencies.

While the previous model of political representation perceives the existing political system as a black box, institutionalism highlights the inner workings of this box in explaining political representation in the network society. From an institutionalist perspective, external pressures towards change are shaped and counterbalanced by existing institutional structures. Our institutional model of representative democracy in the network society is based upon the notion of path dependency which represents one important strand in institutionalist theory. Theories of path dependency are closely related to historical institutionalism which aims at explaining specific institutional configurations by way of a backward looking, historical analysis (see e.g. Hall/Taylor 1996; Thelen/Steinmo 1992; Pierson 2000). From an empirical perspective, historical institutionalism stresses continuities in institutional development as a result of the fact that initial institutional choices are being reproduced again and again (Steinmo/Thelen/Longstreth 1992).

As Claus Offe suggested, the mechanisms which account for path dependend developments are less clearly understood (Offe, 1996). Historical institutionalism assumes that initial choices affect the interests, routines as well as capacities of political actors in the context of subsequent choices (see e.g. Levi 1997, p. 28). It thus highlights a specific notion of choice. Historical institutionalism assumes that the actor's goals and preferences are given endogenously to the institutional analysis. Established institutions thus pattern and frame the conceptual and behavioral options available to actors. The individual is perceived as being deeply embedded into the world of institutions. As Hall/Taylor suggest, due to the impact of institutions, individuals have a tendency to turn to established routines and familiar patterns of behavior to attain their purposes (Hall/Taylor 1996, p. 939).

With these considerations in mind, the idea of path dependency can also be used to shed light on future developments in political representation within a changing media environment. In order to achieve this goal, we need to identify essential patterns of political representation within the universe of democratic systems. While we do not aim to explain these patterns, our assumption would be that these essential institutional features will affect further institutional choices in a path dependent fashion. The notion of path dependency assumes that many of the conventions associated with established representative systems cannot readily be the explicit objects of individual choice despite new kinds of opportunity structures.

Fig. 2: An Institutional Model of Political Representation in the Network Society
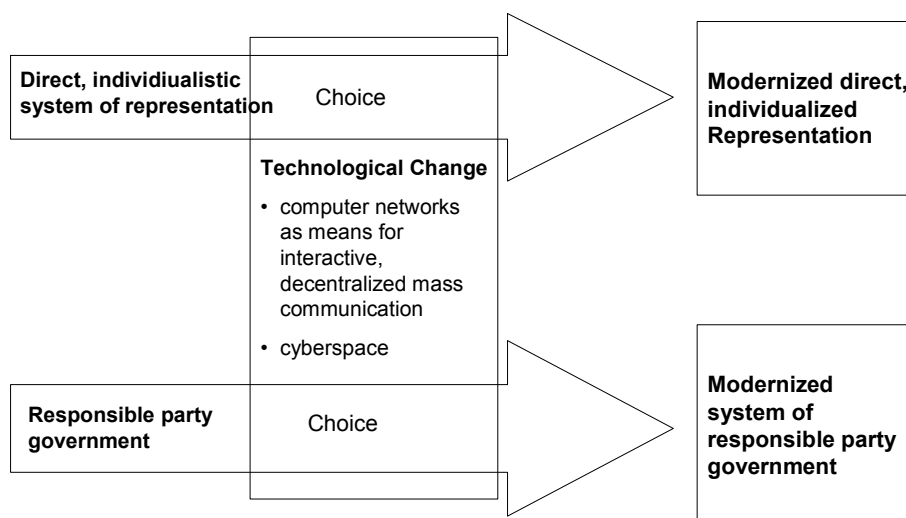
Empirical theories of political representation point towards the existence of two different systems of political representation. Both systems differ regarding the structure which links citizens and political representatives (Miller/Stokes 1963; Esaiasson/Holmberg 1996). While the first system emphasizes a direct, unmediated and participatory relationship between representatives and their constituents, the second system is characterized by an indirect and mediated type of relationship. On the basis of the notion of path dependency we assume that these two different systems will shape the choices of political representatives regarding the use of new digital media in very different ways and with different consequences regarding the future of political representation in the network society. We assume that the second system of political representation raises many obstacles to electronic democracy and allows for a modernization rather than a transformation of political representation in the network society.

This second system of political representation is closely related to the model of European responsible party government which has been in the focus of empirical research on political parties as well as political representation (Katz 1987; Gallagher/Laver/Mair 2001). This model perceives political parties as a critical linkage between legislative institutions and the public. It is based upon the general assumption that political parties compete in elections on the basis of party manifestos and that the party who wins a majority forms a government in order to implement its manifesto. This system presupposes a strong parliamentary organization to secure a permanent and stable legislative majority. It thus diminishes the

political autonomy of individual representatives and keeps them from pursuing their own political agenda or from becoming a representative of a particular geographic constituency. In this system, MPs consider themselves as representatives of their party, they possess few resources in terms of budget or manpower to enter into communication and interaction with constituents and they have little leeway within legislative institutions to pursue public policies. Contrary to this, in the first system of political representation political parties are weak and direct communication and interaction between the public and individual members functions as the main linkage between the public and legislative institutions.

The notion of path dependency suggests that these different representative systems will pattern and shape the choices of political actors regarding the use of new technological opportunity structures in telecommunication. This suggests that the new technological opportunity structure will be used in ways which are compatible to the given institutional framework. Those technological potentials of computer networks which do not meet the political needs as well as the behavioral opportunities which emerge from this existing structure will be ignored.

This institutionalist model of political representation in the network society mirrors a future which is different from the scenario sketched by our first model. First and foremost it suggests a less far reaching and more incremental type of institutional change. It emphasizes the fact that institutional change does not start off from a blank slate but that it rather has to accommodate established institutional structures which will affect and shape the process of change despite new technological opportunity structures which open up new avenues for reform. Second, our institutional model suggests that different institutional systems will keep their distinct features despite similar developments in their external environment. It suggests in particular that the potential of computer networks for interactive and decentralized mass communication are of no use to European representatives who are primarily focused on party and who have little ressources to enter into a permanent full scale debate with constituents. This model suggests that new digital media will be rather used within this existing institutional context to strengthen intra-party communication. Intranets will be much more of an interest from the perspective of a European representative rather than the Internet.

In the following section we will empirically test the models sketched above in a comparative analysis which allows for a cross-national as well as an intra-national comparison. The US, Germany and Sweden share one common characteristic: they are all subject to far reaching change in telecommunication technology and thus fall into the category

of the network society in technological terms. In the US and Sweden, it is already a majority of the population which is online and which uses the Internet to send e-mail, to participate in electronic discussions and to receive electronic information (Norris 2001). While Germany is behind in terms of public access as well as in the number of hosts per 1000 inhabitants, it already has developed a critical mass of users and can be thus considered a network society. Contrary to this characteristic which is common to all three cases we witness cross-national variance at the institutional level among these three cases.

The US are the prototype of an individualized, direct system of political representation. Political parties are weak in this system in terms of party organization as well as in terms of parliamentary organization. This system is based upon the principle of individual autonomy. As David Mayhew put it: "As long as congressmen do not attack each other […] any member can champion the most extraordinary cause without inconveniencing any of his colleagues" (Mayhew 1974, pp. 82). This system of individual autonomy is based upon a particular role perception on the part of the members (Hinckely 1978[2]; Fenno 1978; Davidson/Oleszek 1996[5]), on formal as well as informal rules which give MPs leeway to take positions and to pursue public policies, and on the equal distribution of ressources among MPs (Malbin 1980; Loomis 1988). Particularly this latter aspect supports the individual autonomy of US Representatives and enables them to stay in touch with particular constituents.

This comparative design allows for a comprehensive test of the two models sketched above. The technological determinists position would be strengthened if we would be able to observe similar trends towards decentralized, interactive digital communication across all cases. This trend should particularly be driven by young members who grew up with computer networks and who have aquired the competence of using this medium of communication. Those members who are subject to an extraordinary level of social demands should also be eager to use the new means of digital communication in a most sophisticated fashion.

Contrary to this, the institutionalist point of view would be strengthened if we would be able to observe systematic differences between the US House of Representatives on the one and the German Bundestag and the Swedish Riksdag on the other hand. From this perspective we would expect that US Representatives will seize the new opportunities to communicate with constituents while Swedish and German will adopt a more cautious approach towards using computer networks. The age of officeholders as well as social demands should not matter at all. The terms of office should be a crucial variable to explain deviant cases within

the Swedish Riksdag and the German Bundestag. Freshmen members should be those most likely to deviate from the dominant pattern of digital political communication within our two European systems of representation.

Our comparative design also allows to control for an important variable which we ignored in our model, namely the electoral connection (Mayhew 1974; Bogdanor 1985; Cain/Ferejohn/Fiorina 1987). While the German as well as the Swedish electoral system are proportional list systems they allow for some degree of personalization. This is primarily the case in Germany. Half of the German MPs are elected in single member districts by a majority vote while the other half of German MPs is elected on a party list in a proportional vote. In Sweden, with the election of 1998, electoral law enables voters to cast their vote for an individual candidate instead of a party list. If Candidates are able to gather enough votes to be elected and if they surpass a quota of 8% of the party vote, they will gain a mandate independent from their position on the party list. In 1998, 87 members of parliament fullfilled both qualifications. While 75 of them would have been elected even without individual votes, 12 current members of the Riksdag earned a mandate solely because of the personal vote (Möller 1999). These institutional features could interact with new technological opportunity structures and thus forge a closer link between individual representatives and the public. They could explain moderate intra-national differences in the use of new digital media within our two European systems as well.

Our data are based upon a content analysis of all parliamentary Websites in these three parliaments. These Websites were registered, downloaded and archived in April 2000. They were content analyzed on the basis of an analytical scheme which aimed at a quantitative analysis of these parliamentary Websites. In the succeeding statistical analysis we will use a χ^2-analysis to test for the impact of either institutions or technology on the choices of MPs regarding computer networks. This analysis focuses at four indicators to determine the degree to which individual members are taking advantage of the new opportunity structure in telecommunications: First, we will evaluate the degree of decentralization in digital communication by looking at the extend to which individual members are using personal Websites; Second, we will analyze the interactivity of personal Websites; Third, we will asks for the quantity of textual information on personal Websites; Fourth, we will take a look at the quality of information which can be found on these Websites.

3 Personal Websites in the Swedish Riksdag, the US House and the German Bundestag: Does Technology Matter ?

It is not that easy to define the concept of a personal Website. On a most general level, a personal Website can be defined as a publication which provides information on a particular person in a digital form via the World Wide Web. On the basis of this general definition, almost all members in our three parliaments had a personal Website by January 2000 because the Swedish Riksdag and the German Bundestag published personalized handbook information on their main Website. However, this is not in line with our concept of a personal Website which emphasizes the notion of personalization in terms of content and organization. We define a personal Website as a piece of information which is published by an individual member rather than a parliamentary bureaucracy and which provides personalized information beyond a uniform handbook format. Table 1 focuses at the distribution of personal Websites in the Swedish Riksdag, the US House and the German Bundestag.

Table 1: Personal Websites and Systems of Political Representation

	Personal Website		Total
	Yes	No	
Bundestag	223 (347)	446 (322)	669
US House	430 (225)	5 (210)	435
Riksdag	100 (181)	249 (168)	349
Total	753	700	1453

a   The numbers in brackets indicate the expected count in case of independence of systems of representation and personal Website.

The distribution of personal Websites in our three parliaments is clearly in line with the predictions of our institutional model of political representation. Table 1 indicates, that the number of members in the US House using a personal Website is above expected frequencies while the same numbers fall behind expected frequencies in the Riksdag and the German Bundestag. Almost all members in the US House were using personal Websites by January 2000 while German and Swedish members of parliaments with personal Websites were still in the minority at this point in time. The dark-grey colour in Table 1 indicates that the deviation from expected frequencies is statistically significant ($\chi^2 = 555.978$, df = 2, p <= .05).

The differences among Swedish and German members of parliament displayed in table one raise questions regarding the explanatory power of our institutional model of political

representation in the network society. Who are those MPs in the Riksdag and the Bundestag who take advantage of new digital opportunity structures in opposition to the dominant system of representation they are situated in? Can we explain these deviant cases from an institutionalist point of view? Table 2 looks at the relationship between seniority and the decision to maintain a personal Website in both European national parliaments in order to shed light on these questions.

Table 2:   Personal Websites and Seniority

		Bundestag		Riksdag	
		Yes	No	Yes	No
terms	>= 5	18 (32)	78 (64)	15 (11)	24 (28)
	3 – 4	76 (73)	142 (145)	39 (20)	31 (50)
	<= 2	129 (118)	226 (237)	46 (69)	194 (171)
Total		223	446	100	249

ᵃ   The numbers in brackets indicate the expected count in case of independence of seniority of MP and personal Website.

In the German Bundestag, the pattern displayed in Table two is in line with the expectations of our institutional model of political representation. More members with low seniority have a personal Website than we would have expected while members with high seniority fall behind the expectations. The dark-grey colour in this table indicates that the deviation from expected frequencies is statistically significant (χ^2 = 10.859, df = 2, p <= .05). We would assume that members with high seniority have been socialized within the established system of representation to a much greater degree than it is the case with freshmen who are therefore more likely to deviate from established patterns of political representation. We also witness a significant statistical relationship between seniority and personal Websites in the case of the Swedish Riksdag (χ^2 = 37.475, df = 2, p <= .05). However, in the Riksdag the direction of this relationship is not in line with the predictions of our model. Here, the members with high seniority exceed our expectations regarding the use of personal Websites. Contrary to this, the number of MPs with low seniority who publish a personal Website is much lower than we would have expected.

Our analysis demonstrates that the electoral connection does not matter as an intervening variable affecting choices regarding the use of new digital opportunity structures. Table 3 indicates that Swedish as well as German MPs who have been elected on a personal vote are

using Websites more often than we would have expected while members of parliament who have been elected on a party list are using Websites less often. However, the cells in this table are just shaded in a light grey because the deviation from expected frequencies is below statistical significance (Germany: $\chi^2 = 1.196$, df = 1, p > .05; Sweden: $\chi^2 = 2.873$, df = 1, p > .05).

Table 3:   *Personal Websites and Electoral Systems*

		Bundestag		Riksdag	
		Yes	No	Yes	No
District	Yes	116 (109)	212 (219)	28 (22)	49 (55)
	No	107 (114)	234 (227)	72 (78)	200 (194)
Total		223	446	100	249

ª The numbers in brackets indicate the expected count in case of independence of electoral system and personal Website.

The failure of the institutional model to explain for all of the observed intra-national differences shifts our attention towards the technological model of political representation in the network society. Our empirical analysis stresses the fact that technology matters regarding the choice to publish a personal Website in the Swedish Riksdag and the German Bundestag.

Table 4:   *Personal Websites and Age of MP*

		Bundestag		Riksdag	
		Yes	No	Yes	No
Age	>= 60	35 (42)	91 (84)	26 (17)	33 (42)
	36 – 59	153 (159)	324 (318)	58 (70)	187 (175)
	<= 35	35 (22)	31 (44)	16 (13)	29 (32)
Total		223	446	100	249

ª   The numbers in brackets indicate the expected count in case of independence of age of MP and personal Website.

Table 4 demonstrates that young members of parliament are using Websites to greater degrees than expected in case of independence of age and the use of a personal Website. Contrary to this, mid-aged members are falling behind the expectations. In the German Bundestag the usage pattern of old-aged members is also in line with the predictions of our model because this group does not meet the expectations either. The Swedish Riksdag deviates regarding this

group. Here, old-aged MPs are using Websites more often than we would have expected. The deviation from expected frequencies are statistically significant in both cases (Germany: χ^2 = 13.612, df = 2, p <= .05; Sweden: χ^2 = 10.878, df = 2, p <= .05). This finding suggests that in Sweden as well as in Germany technological change is affecting political developments via the mechanism of generational change.

Table 5 looks at the relationship between social demands and the use of personal Websites in our three parliaments. It demonstrates, that this variable provides no explanation for the observed differences in the Riksdag and the German Bundestag.

Table 5:   Personal Websites and Social Demands

		Bundestag		Riksdag	
		Yes	No	Yes	No
education	high	42 (36)	61 (67)	6 (9)	19 (16)
	medium	33 (40)	81 (74)	8 (9)	16 (15)
	low	41 (39)	70 (72)	13 (9)	11 (15)
Total		116	212	27	46
income	high	38 (32)	48 (54)	7 (9)	18 (16)
	medium	32 (32)	53 (53)	13 (8)	10 (14)
	low	27 (33)	63 (57)	7 (9)	18 (16)
Total		97	164	27	46

[a]   The numbers in brackets indicate the expected count in case of independence of level of education and income in electoral districts on the one hand and personal Website on the other.

The preceeding table is based on the social statistics of electoral districts. Unfortunately, we do not have quantitative data for indicators which can be associated to the concept of social demands such as the level of connectivity, the existence of a new economy or the organization of electronic democracy as a social interest at the level of electoral districts. However, research on the diffusion of the Internet stresses a positive relationship between income and education on the one hand and access to the Internet on the other (Slevin 2000; Norris 2001). We therefore use these available indicators at the district level to test for the impact of social demands on the choice of political representatives to publish a personal Website.

In Germany, we find a relationship between the level of income in the district on the one hand and the choice to publish a personal Website on the other hand. As Table 5

demonstrates, in districts with a high level of income more representatives publish personal Websites than expected. Contrary to this, in districts with a lower level of income and education, MPs either meet our expectations or fall behind. However, these deviations from expected frequencies are statistically not significant as the light-grey colour in Table 5 indicates (χ^2 = 3.802, df = 2, p > .05). In Sweden, we could not find any relationship between the level of education and income in electoral districts on the one hand and the decision of representatives to make use of a personal Website on the other (education: χ^2 = 4.986, df = 2, p > .05; income: χ^2 = 5.499, df = 2, p > .05).

These findings support the temporary conclusion that existing systems of representation influence the choices of political actors regarding the use of the new digital opportunity structure. Members situated within an individualized, direct system of political representation such as the one in the US will utilize personal Websites while the majority of members situated within a European system of responsible party government will remain to be sceptical regarding this new opportunity structure. However, our statistical analysis stresses the marginal relevance of our technological model of political representation. Technological change in telecommunication is putting pressure on European system of political representation while members of "generation @" enter public office ready to use new digital means of communication. We now have to ask whether these patterns hold regarding more demanding indicators for electronic democracy.

In a next step of our analysis we took the quantity of textual information on personal Websites into account to determine whether MPs took advantage of new technological opportunity structures in telecommunication. While members might decide to publish a personal Website they might just leave a digital brochure to be picked up by surfers on the Net. This type of Website provides only a very limited amount of textual information such as a short biography, a picture, and a postal address. It does not differ much from traditional leaflets or brochures regarding the amount of information it contains. This type of Website thus does not take advantage of the large bandwidth of the Internet which allows to publish comprehensive political information.

The dark-grey colour in Table 6 indicates that established systems of interest representation matter regarding this kind of choice. In the German Bundestag and the Swedish Riksdag, less members than expected publish large amounts of text on their personal Website and thus choose to exploit the technological potential of the World Wide Web. Contrary to this, in the US House, more members than expected provide large amounts of textual

information on the World Wide Web. The deviation from expected frequencies is statistically significant (χ^2 = 653.943, df = 2, p <= .05).

Table 6: *The Quantity of Information on Personal Websites and Systems of Political Representation*

	No Website or <= 20	> 20	Total
Bundestag	549 (427)	120 (242)	669
US House	64 (278)	371 (158)	435
Riksdag	314 (223)	35 (126)	349
Total	927	526	1453

a   The numbers in brackets indicate the expected count in case of independence of systems of representation
and the quantity of information on personal Websites.

Contrary to the previous indicator we used there are differences within each of our three parliaments regarding the quantity of textual information on personal Websites. This more demanding indicator increases the number of US Representatives who choose not to exploit the technological opportunities of the Internet in order to enter into decentralized constituency communication. For Sweden and Germany, these differences can again be explained to some part by our institutional model of political representation. Table 7 demonstrates, that the German case is in line with the expectations of our model. MPs with low seniority use Websites with much textual information more often than expected while members with high seniority are more or less falling behind the expectations. The dark-grey colour in this table indicates that the deviation from expected frequencies is statistically significant (χ^2 = 9.187, df = 2, p <= .05).

Table 7: *The Quantity of Information on Personal Websites and Seniority*

		Bundestag		Riksdag		US House	
		No Website or <= 20	> 20	No Website or <= 20	> 20	No Website or <= 20	> 20
terms	>= 5	86 (79)	10 (17)	36 (35)	3 (4)	21 (24)	145 (142)
	3–4	186 (179)	32 (39)	57 (63)	13 (7)	25 (22)	126 (129)
	<= 2	277 (291)	78 (64)	221 (216)	19 (24)	18 (17)	100 (101)
Total		549	120	314	35	64	371

a   The numbers in brackets indicate the expected count in case of independence of seniority and the
quantity of information on personal Websites.

In the Swedish case, the institutional model of political representation can not explain for the intra-national differences we observed. It is the members who are in their third or fourth term who exceed the expectations in case of independence of seniority and the quantity of textual information on personal Websites. Contrary to this, members with lower seniority fall behind the expectations. The deviation from expected frequencies is statistically significant, but it is not in line with our institutional model (χ^2 = 7.084, df = 2, p <= .05). In the case of the US House, we do not observe any relationship between seniority and the amount of textual information on personal Websites. Seniority can not explain for the small group of American MPs who have chosen – contrary to the predictions of our initial model – not to exploit the technological potentials of the Internet.

The electoral factor again does not explain much of the observed difference in our two national European parliaments. In Sweden as well as in Germany, members elected on a personal vote offer in greater numbers information-rich Websites than expected in case of independence of these two variables. However, in both cases, these deviations from expected frequencies are statistically not significant (Germany χ^2 = .055, df = 1, p > .05; Sweden χ^2 = 1.984, df = 1, p > .05).

While institutional context matters regarding choices on the quantity of content published on personal Websites in the Riksdag, the Bundestag and the US House, our technological model of political representation is able to explain some of the intra-national differences we have observed as well. However, our three cases differ regarding the dominant causal mechanism which links technological change with political change.

In the US, social demands appear to be a crucial influence in this respect. Table 8 demonstrates that those members who represent districts with a low level of income and with a low level of education provide digital brochures above expected frequencies while those who represent districts with a high level of education and a high median income fall below expected frequencies. We assume that in this latter type of district more people are connected to the Internet and articulate demands for more interactive digital communication with their political representatives. The dark-grey colour in Table 8 indicates that these deviations from expected frequencies are statistically significant only in the case of education (median income: χ^2 = 3.630, df = 2, p > .05; level of education: χ^2 = 8.553, df = 2, p <= .05). This finding suggests that many American MPs who have chosen not to exploit the new digital opportunity structure and to publish digital brochures are confronted with few social demands relative to their colleagues in the US House.

Table 8:   The Quantity of Information on Personal Websites and Social Demands

		Bundestag		Riksdag		US House	
		No Website or < = 20	> 20	No Website or < = 20	> 20	No Website or < = 20	> 20
education	high	78 (84)	25 (19)	23 (22)	2 (3)	15 (21)	126 (120)
	medium	99 (93)	15 (21)	21 (21)	3 (3)	21 (21)	117 (118)
	low	91 (91)	20 (20)	19 (21)	5 (3)	26 (21)	113 (118)
Total		268	60	63	10	62	356
income	high	62 (69)	24 (18)	24 (22)	1 (3)	11 (21)	130 (120)
	medium	69 (68)	16 (17)	23 (26)	7 (4)	24 (21)	114 (118)
	low	77 (72)	13 (18)	16 (16)	2 (3)	27 (21)	112 (118)
Total		208	53	63	10	62	356

a   The numbers in brackets indicate the expected count in case of independence of level of education and level of income in electoral districts on the one hand and the qualiy of information on a personal Website on the other.

Our analysis of personal Websites in the Bundestag also reveals a relationship between social demands and the decision to exploit the technological potential of the Internet. Table 8 stresses that MPs who represent districts with a high level of education and income use the Internet to publish information-rich Websites in larger numbers than expected. Contrary to this, members representing districts with lower levels of income and education publish Websites that go beyond digital brochures in smaller numbers than expected. However, the light-grey colour in Table 8 indicates that these deviations from expected frequencies are again statistically not significant (education: $\chi^2 = 4.480$, df = 2, p > .05; income: $\chi^2 = 5.096$, df = 2, p > .05). For Sweden, we again did not find any relationship between these two variables.

As we already observed in the previous stage of our analysis, in the Riksdag and the Bundestag, generational change is a crucial mechanism which links technological change in telecommunications with political change. Table 9 focuses on the relationship between the age of MPs and the content of personal Websites. It demonstrates that the direction of this relationship is in line with the assumption of our technological model. In the Riksdag and the German Bundestag, members below the age of 35 offer information rich Websites in greater numbers than expected in case of independence of these variables. Contrary to this, the number of older members who offer large quantities of text on their Website is below expected frequencies in Sweden as well as in Germany. The dark-grey colour in Table 9

indicates that in both cases these deviations from expected frequencies are statistically significant (Germany: $\chi^2 = 14.652$, df = 2, p <= .05; Sweden: $\chi^2 = 20.383$, df = 2, p <= .05).

Table 9:   The Quantity of Information on Personal Websites and Age of MP

		Bundestag		Riksdag	
		No Website or <= 20	> 20	No Website or <= 20	> 20
age	>= 60	112 (103)	14 (23)	55 (53)	4 (6)
	36 - 59	393 (391)	84 (86)	227 (220)	18 (25)
	<= 35	44 (54)	22 (12)	32 (41)	13 (5)
Total		549	120	314	35

[a]   The numbers in brackets indicate the expected count in case of independence of age of MP and the quantity of information on a personal Website.

The quantity of information on a personal Website is no reliable indicator for its political relevance and its accessibility. Members might for example decide to put a lot of personal or technical information on their Website which is of no political relevance. They might also decide not to use hypertext to structure the information on their Website in order to make it more accessible. In a further step of our analysis we took the type of information on a personal Website as an indicator to determine whether MPs exploit the technological potential of the Internet. In our content analysis we just coded hypertext-links which structured political information relevant to citizens such as policy positions of a member, press releases, public statements (speeches or newspaper articles) or information on his or her legislative behavior. For the purpose of this analysis we distinguish between two basic types of Websites: Websites which provide no structured political information at all and Websites which provide some structured information such as press releases or issue positions.

Table 10 focuses on the relationship between systems of political representation and the quality of content on personal Websites. This table demonstrates again a relationship between these two variables which is in line with the expectations of our institutional model of political representation. US Representatives who are already situated in an individualized and direct system of political representation provide in greater numbers structured Websites with politically relevant information than expected if these two variables were independent of each other. This is different regarding German and Swedish members who are situated withing a system of responsible party government and who are focused on party elites to greater

degrees. The dark-grey colour in Table 10 indicates that the deviations from expected frequencies are statistically significant ($\chi^2 = 763.747$, df = 2, p <= .05).

Table 10: *The Quality of Information on Personal Websites and Type of Representative System*

	No Website or no info	Some info	Total
Bundestag	543 (414)	126 (256)	669
US House	36 (399)	399 (166)	435
Riksdag	319 (216)	30 (133)	349
Total	898	555	1453

a   The numbers in brackets indicate the expected count in case of independence of system of political representation and the quality of information on a personal Website.

A closer analysis of the intra-national differences displayed in Table 10 underscores many of our previous findings. Table 11 focuses on the relationship between seniority and the quality of information on personal Websites.

Table 11: *The Quality of Information on Personal Websites and Seniority*

		Bundestag		Riksdag		US House	
		No Website or no info	Some info	No Website or no info	Some info	No Website or no info	Some info
Term	>= 5	85 (78)	11 (18)	35 (36)	4 (3)	18 (14)	148 (152)
	3–4	183 (177)	35 (41)	56 (64)	14 (6)	6 (13)	145 (139)
	<= 2	275 (288)	80 (76)	228 (219)	12 (21)	12 (10)	106 (108)
Total		543	126	319	30	36	399

a   The numbers in brackets indicate the expected count in case of independence of seniority and the quality of information on a personal Website.

For the German Bundestag, this table demonstrates a relationship between these two variables which is in line with the predictions of our institutional model. MPs with low seniority are more likely to publish structured Websites with relevant political information while the number of members with higher seniority is falling below expected frequencies. The dark-grey colour in Table 11 indicates that the deviation from expected frequencies is statistically significant ($\chi^2 = 7.699$, df = 2, p <= .05). In Sweden we also witness a significant statistical relationship between seniority and quality of information ($\chi^2 = 15.672$, df = 2, p <= .05).

However, the direction of this relationship is again not in line with the expectations of our institutional model. Here, the number of members with low seniority who publish information-rich Websites falls below expected frequencies while the number of MPs with higher seniority is above expected frequency. In the US we do not observe any deviation from expected frequencies which is of statistical significance ($\chi^2 = 5.681$, df = 2, p > .05).

We do not find any impact of the electoral connection in Sweden and Germany on the choice to publish a structured, information-rich Website. Members who have been elected on a personal vote do not provide a structured Website with politically relevant information in greater numbers than expected.

Our technological model of political representation again explains some of the intra-national differences we observe. Table 12 indicates a relationship between social demands and the quality of personal Websites in the US House which is along the lines of our technological model. Members representing districts with a high level of education and income publish Websites with structured and relevant political information in greater numbers than expected. Contrary to this, members representing districts with a low median income and a low level of education fall behind expected frequencies. The dark-grey colour in Table 12 indicates that the deviation from expected frequencies is statistically significant only in the case of education (median income: $\chi^2 = 4.022$, df = 2, p > .05; level of education: $\chi^2 = 6.689$, df = 2, p <= .05).

Table 12:   The Quality of Information on Personal Websites and Social Demands

		Bundestag		Riksdag		US House	
		no Website or no structured info	Some structured info	no Website or no structured info	some structured info	no Website or no structured info	Some structured info
education	high	82 (84)	21 (19)	23 (22)	2 (3)	7 (12)	134 (130)
	medium	97 (93)	17 (21)	20 (21)	4 (3)	9 (11)	129 (127)
	low	88 (90)	23 (21)	20 (21)	4 (3)	18 (11)	121 (128)
Total		267	61	63	10	34	384
income	high	62 (69)	24 (17)	24 (22)	1 (3)	7 (12)	134 (130)
	medium	69 (68)	16 (17)	22 (26)	8 (4)	11 (11)	127 (127)
	low	78 (72)	12 (18)	17 (16)	1 (3)	16 (11)	123 (128)
Total		209	52	63	10	34	384

[a]   The numbers in brackets indicate the expected count in case of independence of level of education and income in electoral districts on the one hand and the quality of information on a personal Website on the other.

In the case of the German Bundestag and the Swedish Riksdag, the relationship between social demands and the quality of personal Websites in less clear cut. German MPs who represent districts with a high level of income publish structured personal Websites in larger number than expected while members of the Bundestag who represent districts with a low level of income do not meet the expectations. The dark-grey colour in Table 12 indicates that these deviations from expected frequencies are statistically significant (χ^2 = 5.950, df = 2, p <= .05). However, we were not able to find any relationship regarding education in the case of Germany. We also did not find any relationship between social demands and the quality of personal Websites in the case of Sweden.

For Germany, we witness once again a relationship between the age of an MP and the quality of information published on personal Websites. Young members of parliament at the age of 35 and below offer structured and politically relevant information on their Websites in larger numbers than expected. In contrast to this, the number of older members who publish quality information on their Websites is lower than expected. The dark-grey colour in Table 13 indicates that this deviation from expected frequencies is statistically significant (χ^2 = 13.044, df = 2, p <= .05). In the case of Sweden, the relationship between the age of MPs and the information-quality of their Website is less clear cut and statistically not significant as the light-grey colour indicates (Sweden: χ^2 = 3.816, df = 2, p > .05).

Table 13:   *The Quality of Information on Personal Websites and Age*

		Bundestag		Riksdag	
		No Website or no info	Some info	No Website or no info	Some info
Age	>= 60	111 (102)	15 (24)	53 (54)	6 (5)
	36 - 59	388 (387)	89 (90)	228 (224)	17 (21)
	<= 35	44 (54)	22 (12)	38 (41)	7 (4)
Total		543	126	319	30

[a]   The numbers in brackets indicate the expected count in case of independence of age and the quality of information on a personal Website.

In a final step of our analysis we looked at the interactivity of personal Websites in the US House, the Riksdag and the Bundestag. While members of parliament might publish a Website they might choose not to exploit the interactive potential of this medium. This potential reaches far beyond the type of interactivity which we are accustomed to in the case

of traditional media of telecommunication such as the Telephone or the Fax machine. The Internet allows for decentralized and public many-to-many interactivity as well as for private one-to-one interactivity. We therefore distinguish between three different levels of interactivity: on a first level we coded Websites which contain no interactive feature at all and which thus do not allow users to "talk back"; At a second level, we coded Websites that foster a purely private, one-to-one kind of interactivity by using interactive E-mail addresses or Webmail-forms, for example; At a third level we coded Websites which enhance public decentralized interaction by using discussion-fora and public-guest-books. These Websites exploit the technological potential of the Internet for interactive communication in a most far reaching way.

Table 14 looks at the relationship between national systems of interest representation and the interactivity of personal Websites. Contrary to our previous findings, the relationship between these two variables does not follow the lines of our institutional model of political representation in a clear cut way. As the dark-grey colour in this table indicates, our findings meet the expectations of the model regarding the criteria of private interactivity. While more US Representatives allow for private interactivity via a personal Website than expected in the case of independence Swedish and German Websites fall behind the expectations in this respect. However, this is different regarding public interactivity where our findings run counter to the predictions of the model. More Swedish and German MPs allow for decentralized, public interactivity via a personal Websites than expected while American MPs are falling behind the expectations in this respect. This latter finding deviates from our previous ones. Overall, the deviation from expected frequencies is statistically significant (χ^2 = 565.190, df = 4, p <= .05).

Table 14:   The Interactivity of Personal Websites and Systems of Political Representation

	No Website or no interactivity	Private interactivity	Public interactivity	Total
Bundestag	486 (363)	151 (286)	32 (20)	669
US House	43 (236)	391 (186)	1 (13)	435
Riksdag	259 (189)	80 (150)	10 (10)	349
Total	788	622	43	1453

[a]   The numbers in brackets indicate the expected count in case of independence of interactivity and system of political representation.

Our institutional model of political representation is furthermore not very successful in explaining the intra-national differences we observe regarding the interactivity of personal Websites. Table 15 demonstrates a relationship between seniority and interactivity which is in line with our institutional model for the German case. Members with low seniority are using highly interactive Websites more often than expected. Contrary to this, members with higher seniority either meet the expectations or fall behind. The light-grey colour in this Table indicates that the deviation from expected frequencies does not reach statistical significance ($\chi^2 = 9.001$, df = 4, p > .05).

Table 15:   *The Interactivity of Personal Websites and Seniority*

		Bundestag			Riksdag		
		No Website or no interactivity	Private	Public	No Website or no interactivity	Private	Public
	>= 5	79 (70)	14 (22)	3 (5)	26 (29)	13 (9)	0 (1)
term	3–4	163 (158)	48 (49)	7 (10)	32 (52)	38 (16)	0 (2)
	<= 2	244 (258)	89 (80)	22 (17)	201 (178)	29 (55)	10 (7)
Total		486	151	32	259	80	10

a   The numbers in brackets indicate the expected count in case of independence of interactivity and seniority.

In the Swedish Riksdag we have a statistical significant relationship between seniority and interactivity which runs counter to the expectations of our institutional model regarding private interactivity ($\chi^2 = 59.626$, df = 4, p <= .05). It is again those members who have served three to four terms who use private interactivity in much greater numbers than expected in case of independence of both variables. Contrary to this, freshmen do not meet the expectations in this respect. However, regarding public interactivity, the relationship between these two variables falls in line with the predictions of our model. We again could not find a statistically significant relationship between the electoral system and the degree of interactivity of personal Websites in the cases of the Swedish Riksdag and the German Bundestag.

Some of the observed intra-national differences can again be explained by our technological model of political representation. Tables 16 and 17 display a complex pattern in this respect but nevertheless highlight several crucial findings which are in line with the assumptions of our technological model of political representation.

It is again the age of MPs which matters regarding their choices on interactivity. In the Bundestag, the youngest members are using interactive personal Websites in greater numbers than expected. We also witness that older members are falling behind the expectations regarding the interactivity of their Website. The dark-grey colours in Table 16 indicates that the deviations from expected frequencies are statistically significant (Germany: $\chi^2 = 15.775$, df = 4, p <= .05).

Table 16:   *The Interactivity of Personal Websites and Age of Member*

		Bundestag			Riksdag			US House		
		No Website or no Interactivity	Private	Public	No Website or no Interactivity	Private	Public	No Website or no Interactivity	Private	Public
Age	>= 60	100 (92)	23 (28)	3 (6)	34 (44)	25 (14)	0 (2)	21 (12)	99 (108)	0 (0)
	36 - 59	345 (347)	112 (108)	20 (23)	194 (182)	50 (56)	1 (7)	19 (29)	272 (263)	1 (1)
	<= 35	41 (48)	16 (15)	9 (3)	31 (33)	5 (10)	9 (1)	3 (2)	3 (2)	0 (0)
Total		486	151	32	259	80	10	43	374	1

a   The numbers in brackets indicate the expected count in case of independence of interactivity and age of MP..

In Sweden, is is also the youngest members who are using highly interactive Websites more often than expected while older MPs are falling behind the expectations in this regard. However, the pattern is less clear cut as it is in Germany because it does not hold for private interactivity. Here, the direction of the relationship runs counter to the assumptions of our model. MPs who are at the age of 60 and older are using interactive Websites in greater numbers than expected while younger MPs are falling behind. These deviations from expected frequencies are statistically significant (Sweden: $\chi^2 = 69.289$, df = 4, p <= .05). Contrary to our previous findings, we also found a relationship between the age of MPs and the interactivity of their personal Websites in the case of the US House. Here, the oldest members do not meet the expectations when it comes to the use of interactive features on their Websites. The deviations from expected frequencies are statistically significant (US: $\chi^2 = 12.229$, df = 4, p <= .05).

Table 17 focuses on the relationship between social demands and the interactivity of personal Websites. For the German Bundestag, we found a relationship between the level of income in electoral districts and the interactivity of personal Websites which is in line with our technological model of political representation. MPs who represent districts with a high level of income publish interactive Websites in greater numbers than expected. Contrary to

this, MPs who represent "poorer" districts, do not meet the expectations in this respect. The dark-grey colour in Table 17 indicates that the deviation from expected frequencies is statistically significant ($\chi^2 = 9.305$, df = 4, p <= .05).

Table 17:   The Interactivity of Personal Websites and Social Demands

		Bundestag			US House		
		No Website or no interactivity	Private interactivity	Public Interactivity	No Website or no interactivity	Private interactivity	Public interactivity
education	high	70 (74)	24 (24)	9 (5)	11 (14)	130 (127)	0 (0)
	medium	89 (81)	21 (27)	4 (6)	14 (14)	124 (124)	0 (0)
	low	75 (79)	32 (26)	4 (6)	16 (14)	122 (125)	1 (0)
Total		234	77	17	41	376	1
income	High	52 (59)	24 (21)	10 (5)	8 (14)	133 (127)	0 (0)
	medium	59 (59)	22 (21)	4 (5)	15 (14)	123 (124)	0 (0)
	low	69 (62)	19 (22)	2 (6)	18 (14)	120 (125)	1 (0)
Total		180	65	16	41	376	1

[a]   The numbers in brackets indicate the expected count in case of independence of level of education and income in district on the one hand and interactivity of a personal Website on the other.

We found a similar relationship between social demands and the interactivity of personal Websites for the case of the US House. The dark-grey colour in Table 17 indicates that the deviations from expected frequencies are statistically significant regarding education. MPs who represent districts with a high level of education provide interactive Websites in greater numbers than expected while those MPs who represent districts with a low level of education fall behind the expectations (education: $\chi^2 = 3.166$, df = 4, p <= .05; income: $\chi^2 = 6.534$, df = 4, p > .163). We did not find any relationship between the level of income and education on the one hand and the choices of Swedish MPs regarding interactivity on the other.

4.   Discussion and Conclusion

By way of conclusion we have to emphasize that the Internet is putting pressure upon the current systems of political representation to become more decentralized and thus more accessible and more transparent. Across all of our three cases individual members are using

the Internet to communicate with constituents and to provide political information. Our analysis stressed differences regarding the politics of this trend towards decentralized digital constituency communication. In Sweden and Germany these developments are to some part the result of generational change. Young members of parliament who grew up with computer networks and who adopted new patterns of communication at an early stage of their lives keep their routines while they enter public office. Contrary to this, for the US, we observed a relationship between social demands on the one hand and choices in digital communication on the other. Members who represent districts where large numbers of people have access to the Internet were generally farther advanced in the use of Websites than we would have expected while those members who represent districts with a low median income and with a low level of education were falling behind expected frequencies.

Despite these findings, our comparative analysis does not support a technological model of political representation. It stresses the fact that institutions counterbalance the impact of technological change in telecommunication. Members situated within different systems of political representation take different choices regarding the use of new digital media. In the US where we already have a highly individualized and direct system of political representation, the technological potential of the Internet is implemented in far reaching ways compared to Sweden and Germany where we have a system of responsible party government. This finding is in line with the assumptions of our institutional model of political representation. This models hypothesizes that the Internet will be used according to the political needs and the organizational capacities of existing patterns of representation. This finding refutes the assumption that technological change in telecommunication will reshape European responsible party government and will drive different systems of political representation towards a single model. Regarding future developments in political representation it rather supports the idea that different schemes of political representation will develop in a path dependent fashion in the network society.

The proceeding comparative analysis provides anwers regarding the relative weight of telecommunication technology on the one hand and political institutions on the other in the process of political change in the network society. But it also emphasizes the fact that our two initial models leave many of our observations unexplained and that some of our findings clearly do not meet the expectations of either of these models. Contrary to the assumption of our institutional model of political representation for example, US Representatives are not using advanced interactive features at all and fall behind their European colleagues in this respect. This model can also not explain for the deviant cases within the Swedish Riksdag.

Contrary to the assumptions of this model, MPs with low seniority did not made the most use of new digital media. Our institutional model of political representation also can not explain for the striking differences between the German and the Swedish case. While both cases fall into the category of a responsible party system, German MPs are more ready to exploit the technological potentials of the Internet. According to our analysis, these differences can not be explained by different electoral incentives either. These unresolved empirical observations trigger speculations which define a future research agenda on political representation in the network society.

One type of speculation concerns our initial institutional model itself. The hesitancy of Swedish MPs with low seniority to use interactive Internet applications might mirror differences in individual autonomy between the Bundestag and the Riksdag. Contrary to the German Bundestag, in the Swedish Riksdag MPs are not entitled to a fixed budget and staff support. They are dependend upon their parliamentary party organization which allocates ressources among its members. This might work to the disadvantage for MPs with low seniority who might receive less ressources compared to senior members. While freshmen in the Riksdag might have a strong motivation to use new digital media, they might be those with the least organizational ressources and institutional autonomy to implement this motivation. These considerations stress a more complex institutional system which goes beyond our simple typology and which accounts for variance within the same type of representative system. Qualitative research methods such as semi-structured interviews seems to be best suited to shed more light on this institutional subsystems and the degree of variance in electronic democracy which result from these differences.

Another area of speculation concerns the impact of third variables on the development of political representation in the network society. The scepticism of US Representatives regarding advanced interactive Internet applications might be related to the strong free speech tradition in this country. While in Germany and Sweden, the principle of freedom of speech is balanced with the principle of fair speech, in the US we have a clear hierarchy of values which prevents any kind of censorship, no matter of content. The rulings of the Supreme Court demonstrate this tradition in a very obvious manner. The risks which are therefore related to the use of public discussion fora can only be controlled in the American case by not using discussion fora. Contrary to this, in Sweden and Germany, improper contributions to public discussion fora can be censored on the basis of the principle of fair speech (see Zittel 2002).

Other contextual variables such as the degree of party identification or the strength of community ties might also between technological change and systems of interest representation. A weakening of the party in the electorate and of existing linkage structures might account for example for strategies among citizens as well as political elites to look for alternative means to close the gap between society and the state (see Fuchs/Klingemann 1994). Along with these kinds of developments, the Internet could become a catalyst for change towards a more participatory model of political representation. Qualitative research strategies such as semi-structured interviews might again be best suited to shed more light on these third variables which might affect developments related to electronic democracy.

We furthermore have to remember that the findings of this analysis are nothing more than a snapshot taken at a very early stage of a dynamic technological development. This might account for the relatively weak impact we observe even in the case of the US. While American MPs exploit the technological potential of the Internet in far reaching ways compared to their German and Swedish colleagues, they are nevertheless far away from the visions of theorists of electronic democracy. This might change with accelerating technological change in telecommunication. With universal access to the Internet, increasing bandwidth, more sophisticated systems of data security and new types of hardware such as Web-TV many concerns regarding the technological feasibility of electronic democracy might be resolved. These developments might also continue to reshape economic systems as well as systems of interest articulation. As a consequence, the network revolution will keep on putting pressure on systems of political representation to converge and to develop into direct and participatory systems of representation.

Regarding the dynamics of social change, we ought to remember that in pluralist systems the organization of social demands is cost intensive and also encounters the resistance of established social coalitions. Future research on electronic democracy particularly needs to generate better quantitative as well as qualitative data to shed light on the scope of social change in the network society and on the mobilization of bias towards electronic democracy. However, we also ought to remember that national telecommunications policies might affect the fate of technological developments to a considerable degree. The diffusion of the Internet and the equal distribution of bandwidth is dependend upon public policies. If these policies will be driven by established institutional concerns rather than technological opportunities, these policies might emerge as an important barrier for electronic democracy as well. These considerations suggest that more research is needed on telecommunication policies and its implications for electronic democracy.

Given the static nature of out analysis, we also have to question our findings regarding the effect of generational change in linking technological change with political change. It remains to be an open question whether we witness a generational effect or rather a life cycle or term cycle effect in this part of the analysis. On the basis of our data, we can not control whether the age of MPs really has an effect on their choices in telecommunications independent from seniority. This is due to the structural relationship between these two variables. There are hardly any young members in our sample without low seniority at the same time. Contrary to the assumptions of our technological model of political representation, young members of parliaments might become less willing to experiment with new digital media while they grow older and while they establish themselves within the institution. Future research will thus have to collect longitudional data on generational change and electronic democracy to shed more light on this question.

According to our theoretical and empirical analysis, the effects of technological change in telecommunication will be counterbalanced by established political institutions. We emphasize the fact that institutional change does not take place in a vacuum. This process is rather based upon established institutions which shape the interests as well as the behavioral opportunities of political actors. The current patterns of digital communication suggest that this structure is under pressure but nevertheless well and alive.

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