

State Legislative Institutions & Information Asymmetries: How State Legislatures Respond to Emerging Issues

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Abstract: What encourages state legislatures to institutionalize by expanding new committees or changing committee jurisdiction in response to new and complex policy issues on state policy agendas? State legislatures have faced this policy and institutional dilemma in the past fifteen years as emerging technology issues have become important in state policy agendas. Using a mixed method approach utilizing data from committee lists over the 1997-2012 period in twelve states, mail surveys of legislators serving on new technology and commerce committees in seventeen states and twenty-five semi-structured interviews with committee leaders in ten states, I find that leadership, legislator interest, external policy issue pressures, partisan control and party competition positively influence legislatures' institutional responses, while term limits have significant negative impacts. I find mixed evidence for the role professionalization plays in the decision to expand institutionalization in response to new technology issues.

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Introduction¹

We are now living in a new information society where our economic, political and social lives are being changed by new technologies such as computer technology, biotechnology, nanotechnology and more recently, renewable energy or green technologies. Legislators in Congress and in state capitals are being asked to create new policies to regulate these new technologies or promote the development of new high technology industries. The policies ultimately enacted have the potential for far reaching economic, political and social consequences. These policy issues present challenges to lawmakers since they often do not have the expertise to understand and process policy problems related to new science and technology issues. This presents significant information asymmetry problems for legislators, where they do not hold policy relevant expertise that lobbyists and executive agency officials possess. Many state legislators come from business, agricultural, education or other non-technical backgrounds. Moreover, many state legislatures use legislative or structural rules that hinder the development of legislative expertise to be able to make policy decisions on new technology policy issues. Yet, a number of state legislatures have chosen to create new committees or change the jurisdictions of existing committees to address emerging technology issues in their states. This presents a natural case study of legislative organization and informational deliberation in state legislatures. The question of this research study is how institutional rules, legislative institutions and informational sources help state legislators increase their legislative capacity to address new issues on the policy agenda.

Much work has been done in the Congressional research area on lobbying strategies and tactics, the importance of informational lobbying and the importance of committees in solving

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legislators' uncertainty problems. Other work has looked at the importance of informational committees in Congress and how specialization helps Congress resolve its uncertainty problems (Krehbiel 1992). Yet, we know much less about how state legislatures handle information about proposed policies and their possible policy and political effects. Few studies have developed explanations for how legislatures choose to enact new specialized information gathering institutions in the first place. Previous scholars have studied the sources of information state legislators utilize (Mooney 1991, Mooney 1992, Sabatier & Whiteman 1985), the role of state legislatures in the policymaking process (Rosenthal 2004) and the general roles interest groups play in state policymaking (Rosenthal 2001). However, few studies to date have investigated how state legislatures deliberate new issues on the policy agenda. New issues pose problems for state legislatures since they have not yet developed expertise on the issues yet in the way they have with tax policy, agriculture policy, education policy or other older issues. With new issues, legislatures have not yet had time to establish these new committees or research agencies to increase their expertise. This leaves legislators dependent on outside sources, particularly interest groups, for information about policy alternatives and their potential consequences. This is a particularly worrisome issue in the states, where many state legislatures do not have the kinds of resources the U.S. Congress does to engage in nonpartisan, independent research and policy assessments². A second concern is that legislatures may find themselves much more dependent on the governor's office and executive agencies for information about new issues.

Scholars have, however, noted the importance of institutions in overcoming informational asymmetries in Congressional deliberations (Krehbiel 1991, Bimber 1996). These institutions may include new standing committees, special committees or legislative research agencies that

² Congressional committees receive research reports from the Congressional Research Service (CRS) and General Accounting Office (GAO). From 1970-1995, the Office of Technology Assessment (OTA) also provided nonpartisan research analysis, but this support agency was abolished in 1995.

can assist legislators in understanding the new issues and the possible implications of various policy options being considered. In the past fifteen years, only a handful of states have engaged in this institution-building. Only seven states have created technology focused standing committees in both houses and another fourteen have established such a standing committee in one house. Eleven states have created temporary, joint technology committees and eighteen states have not established any new technology committees in their legislatures. Two other institutional features of state legislatures are causes for possible concern. One is the existence of term limits in fifteen states. Term limits limit the level of legislative experience and expertise, which may be a serious impediment in creating new technology policies to address policy concerns being brought by constituents. A second institutional feature is the existence of citizen legislatures in many states, where legislatures are part-time, have lower salaries and fewer policy resources in the form of staff, research agencies and research support. It is possible that professional legislatures have a greater capacity to develop nonpartisan research reports on new technologies for legislators than citizen legislatures can.

Using mail surveys of legislators serving on technology and commerce related committees in several states and semi-structured interviews with committee chairs and ranking members in ten states, I find that the development of new committees, joint committees and especially interim committees can help overcome informational asymmetries in addressing emerging issues. However, legislative term limits, short legislative sessions, leadership factors and legislator backgrounds can inhibit legislatures from increasing their legislative capacity.

Intuitional Development, Legislative Rules and Legislative Capacity

Recent policy trends in the area of emerging technology issues have presented an opportunity for scholars to test theories of legislative capacity, informational organization and

legislative development. Emerging technologies are highly scientific, technical and complex; this requires the development of policy expertise to understand the policy choices to be made. In contrast, older, established issues such as agricultural policy or education policy tend to be addressed using legislators' own backgrounds in these policy areas or by using party cues. Similar to the era of legislative professionalization in the 1960's and 1970's, state legislatures today are again undergoing upheaval in terms of institutional changes. (Rosenthal 1996). State legislative capacity is a function of institutionalization, legislative professionalization, legislative term limits, legislative turnover, legislative rules, and leadership.

One of the most important factors that can contribute to more informed legislative decision-making is the development and use of a specialized legislative committee system. Previous work has shown that legislative specialization can produce a more informed legislature and resolve uncertainties about policy and political outcomes (Krehbiel 1991, Gilligan & Krehbiel 1990). By specializing, legislators can spend years on committees and become policy specialists where they can send credible signals to the rest of the chamber about which policy choice will produce desired outcomes. Since legislators are not trained in science and technology policy issues (Ornstein 1990), legislators can be dependent on lobbyists for information (Nownes 2006, Smith 1995, Sabato 1985, Esterling 2004). Informative committees can reduce this dependence. Increased institutionalization in the form of new committees or changed committee jurisdictions can potentially help legislatures adapt to the highly uncertain and complex policy environment they now face.

However, changes in legislative institutional arrangements in the form of adding, dropping or changes in committee jurisdictions can also occur from changes to the legislative environment (Thompson and Moncrief 1992), leadership decisions or less professionalization in

the legislature (Freeman & Hedlund 1993). Less professionalized legislatures have been found to be less likely to make changes while professionalized legislatures are more likely to respond to external demands by making committee changes to enhance legislative stability (Freeman & Hedlund 1993). Rosenthal (1996) finds, however, that legislatures have been moving towards deinstitutionalization in response to outside pressures from the public and the media. Given the complex environment legislatures face, which legislatures have responded to the emergence of highly technical and complex issues by institutionalizing?

The growth of legislative professionalization in the form of longer sessions, higher pay, more legislative staff and increased legislative resources have changed state legislatures drastically since the 1960's (Rosenthal 1994, 2004). This has increased legislative seniority and competence; as legislators develop longer legislative careers, ideally they should become more informed about new issues over time. Recent research finds that professionalization has increased informative organization as legislators' assignments are related to their backgrounds and legislators tend to remain on committees across legislative sessions, in effect becoming issue specialists (Hamm, Hedlund & Post 2011). Yet in contrast to the seniority system in Congress that encourages lawmakers to become policy specialists by serving on committees to years or even decades, the seniority system does not exist to the same degree in state legislatures, which can be an impediment to policymaking.

One of the greatest challenges to informative organization and specialization in the modern state legislatures has been the development of term limits. When reform groups pushed term limits onto the policy agenda in the early 1990's to curb legislative careerism and corruption, little did they realize that term limits would have the opposite effects they sought and that these would come at the same time as the technological revolution of the late 1990's.

Scholars have found term limits to give more power to legislative staff (Robinson 2011) and shifted power from legislatures to governors, state agencies and interest groups (Moncrief & Thompson 2001). More concerning is the finding that legislative term limits can reduce collective policy knowledge, weaken policy complexity and are especially problematic in legislatures that do not have an extensive legislative staff to compensate for the effects of term limits (Kousser 2006).

Another effect on legislative capacity is leadership. Legislative leaders can change staff assignments, committee assignments, alter committee jurisdictions and determine which committees bills will be referred to. Even as external policy demands may suggest increased legislative specialization, party leaders may act to restrict bills or committee changes. Research has suggested that professional legislatures are more likely to have powerful legislative leaders (Clucas 2007), suggesting that partisan models of legislative organization may be a stronger predictor than information models of how legislatures have responded to the emergence of highly complex technological issues.

Research Design

Integrating perspectives on information and legislative organization in Congress as well as state legislatures, this research project assesses the factors that enhance or hinder legislative capacity to address emerging issues on state policy agendas. Legislative capacity is a function of legislative institutionalization, legislative professionalization, legislative rules, partisan competition, term limits and leadership goals. To test this concept of legislative capacity, I developed a multi-method, multi-state research design to find whether and how these variables affect legislative capacity.

The dependent variable, legislative capacity, is an index variable consisting of the number of emerging technology bills legislatures have considered on new technology issues

between 1996-2012, the number of technology related bills were considered by relevant committees and how many technology related bills have been enacted. My theory of legislative capacity suggests that state legislatures' level of capacity to process new issues is a function of: term limits, level of institutionalization (measured by creation of new standing committees, specialized legislative agencies and legislative staff), state party competition type, and legislature type (citizen, hybrid or professional). Increased institutionalization, professionalization, and party competition should lead to increased legislative capacity to process new issues.

For this multi-method research project, data is triangulated, using data from a mail survey sent to rank and file committee members on new technology focused and commerce focused committees in twenty-one states, semi-structured interviews with committee chairs and ranking members in ten states, and from committee lists, legislative archives and committee agendas available on state legislative web sites.

The states have been selected using purposive sampling based on three key institutional features (see Appendix A). One is the type of legislature they have (citizen, hybrid, professional); this rating is based on the National Conference of State Legislatures rating system. A second is party competition type, which is based on Austin Ranney's index of party competition (Ranney 1976, Holbrook & Laraja 2007); I created a state party competition index covering the period when technology issues have landed on state legislative agendas (1996-2010). The third feature is based on a variable I have developed on whether they have not developed any standing, joint or temporary technology committees ("No institutionalization"), states that have created special joint or interim technology committees ("Low institutionalization"), states that have established one standing committee in one house of the legislature ("Medium institutionalization") and states that have developed standing technology

committees in both houses (“high institutionalization”). Finally, cases were also selected based on whether they have legislative term limits. This case selection allows for studying variations across levels of institutionalization, party competition and legislature type and the impact these have on deliberation of new issues.

For the purposes of this paper, I focus on the qualitative and quantitative research data from legislative committee lists, the mail surveys and semi-structured interviews with committee leaders to assess the factors that lead legislatures to institutionalize. Six hypotheses are tested using this data:

H₁: Legislators on new technology focused committees will be more informed about emerging science and technology issues than will legislators serving on traditional, established commerce committees.

If the theory of informational committees is the best predictor of legislative capacity to address new issues, then legislatures that choose to specialize and increase their institutionalization in their committee structures should see more informed legislators as a result. Additionally, these newly created committees should attract legislators that have backgrounds and interests in these issues.

H₂: Professional and hybrid state legislatures will be more likely to have medium or high institutionalization in response to emerging technology issues than will citizen legislatures.

One of the characteristics of legislative professionalization is the propensity to specialize and distribute the legislative workload. As legislators develop longer careers in professional legislatures, they should have increased incentives to become issue specialists and engage in the process of informative legislative organization.

H₃: States with competitive party systems will be more likely to increase their legislative capacity by institutionalization.

States with competitive party systems face more electoral competition at the polls, which will increase electoral responsiveness to emerging issues that are raised by constituents, lobbyists and the media. This does not mean that Republican states are more responsive to emerging issues or vice versa. Both parties are supportive of emerging technology issues, but focus on different issue dimensions. In my own research on emerging issues in Congress, I find that Democrats are more supportive of stem cell research in the area of biotechnology policy while Republicans are more likely to oppose it; however, Republicans are less likely to oppose genetically modified foods while Democrats are more likely to support stronger labeling and regulations for consumer protection and environmental reasons (McQuide 2008, 2010).

H4: Legislatures with term limits will have a reduced capacity to address emerging technology policy issues.

Since previous research suggests term limits have negative effects on legislative professionalization, capacity to write complex legislation and informative specialization, legislatures with term limits should be less likely to have increased institutionalization and capacity to address emerging technology issues on the agenda.

H5: States will be more likely to specialize over time as external demands to address new technology issues become greater.

Not only is legislative professionalization an important element in this analysis, but time is also important. When issues are new, legislators often struggle to address them and try to find ways to deal with them within the context of established legislative committees and routines. Over time, the demands for specialization increase, pushing legislative leaders to respond by engaging in increased institutionalization. Additionally, lobbyists representing technology interests may exert pressure to get their issues greater attention from the legislature.

Findings & Discussion

Whether state legislatures have engaged in increased institutionalization or increased their legislative capacity in the last decade, all states have been dealing with an increasingly complex policy agenda as a result of the technological and information revolutions we have been experiencing. According to National Conference of State Legislatures data (www.ncsl.org), 41 states have passed new laws dealing with broadband technology, 45 states have passed new laws promoting or regulating biotechnology, all 50 states have passed new laws on cyberbullying, cyberharrasment and cyberstalking, and 37 states have laws regulating commercial electronic spam mail. More recently, legislative agendas are including nanotechnology, renewable energy technology and data privacy issues.

What factors lead state legislatures to institutionalize by developing new specialized technology committees and adding special emerging issue jurisdictions to established standing committees? To explore this question, I sampled 12 states with varying levels of professionalization across the 1997-2012 time period. This included four citizen legislatures, three professional legislatures and five hybrid legislatures. This produced 123 state-year observations. Using online state legislative committee lists, each year-state observation was coded for the level of institutionalization of new technology committees that were present. A state legislature was coded as 0 if it had no standing, joint, temporary or interim study committees related to technology issues in a given year. A state legislature was given a 1 if the legislature had a joint or interim committee in that year and a 2 was given if one house had created a standing committee related to technology policy issues. States that had standing technology committees in both houses were given a 3, for high institutionalization. The descriptive results are shown in Table 1 below. This shows that professional legislatures were

more likely to engage in medium or high institutionalization by specializing, while citizen and hybrid legislatures were mixed, with slightly greater frequencies in the medium and high institutionalization categories.

Table 1: Legislative Type & Institutionalization

		Leg Type			
		Citizen	Hybrid	Professional	Total
Institutionalization	None	15	8	2	25
	Low	7	19	2	28
	Medium	19	24	14	57
	High	12	9	10	31
Total		53	60	28	141
Pearson Chi-Square: 18.093					
p=.006					
States: Alaska, Arkansas, Arizona, Colorado, California, Georgia, Idaho, Illinois, Montana, South Dakota, Washington, Wisconsin					

Analyses using difference of means tests show that both professionalization and time periods were significantly different. Professional legislatures had a higher institutionalization average (2.14) versus citizen and hybrid legislatures (1.55); this difference was statistically significant at the .01 level using a two-tailed test. Over time, legislatures were much more likely to specialize in response to external policy pressures from constituents, lobbyists and problem identification. State legislatures had an average institutionalization score of 1.99 during the 2005-2012 period, while they had an average score of 1.22 during the 1995-2003 era when these issues were first landing on the legislative agendas. The difference was statistically significant using a two-tailed test at the .001 level.

Using ordinary least squares regression analysis for this sample, I find evidence that time, legislative professionalization, and competitive party systems enhance legislatures' willingness to create new committees. In Table 2 below, the dependent variable is the number of total new technology committees that were present in a legislature for a given year.

Table 2
OLS Regression Analysis of Influences on Legislative Institutionalization 1997-2012

	New Committees Full Legislature (OLS)	New Committees By Chamber (OLS)
Time Period	.434*** (.115)	.284*** (.068)
Citizen Legislature	.619*** (.154)	.170* (.075)
Professional Legislature	.291 (.249)	.328*** (.098)
Term Limits	-.480*** (.126)	-.146* (.073)
Session Length	.003 (.002)	
Party Competition	.830*** (.137)	
Democratic Control	.877*** (.180)	
Republican Control	.080 (.148)	
Party Control		-.399*** (.079)
Institution (lower/upper house)		-.127* (.064)
Constant	-.492 (.180)	.601*** (.104)
	N=141 Adjusted R ² =.602 *p≤.05 **p≤.01 ***p≤.001 Standard errors in parentheses	N=282 Adjusted R ² =.268 *p≤.05 **p≤.01 ***p≤.001 Standard errors in parentheses

This preliminary analysis based on this sample show that time period, legislative type, party competition and party control influence the number of new technology committees created in state legislatures. Citizen legislatures appear to have adjusted to the demands of the technological revolution; in fact as the qualitative data below show, legislators in these states did either engage in institutionalization or find alternative tools to address emerging technology policy issues. Party competition was measured as a dichotomous variable with a 0 for states that were modified one party states and 1 for states that were leaning competitive or two party

competitive states. The statistical analysis shows that states with competitive party systems were much more likely to expand their committee systems in response to new issues than the modified one party states were. Legislatures with Democratic majorities in both chambers were more likely to engage in expanded institutionalization while Republican controlled legislatures were marginally more likely to. This suggests perhaps partisan factors also matter as Democratic leaders are more willing to expand committees and committee jurisdictions while Republican legislatures may be more willing to consolidate and reduce the number of committees. In fact, this is what happened in Ohio recently. From 1989-2005 Ohio had an Economic Development, Technology and Aerospace Committee in the State Senate and in 2007, there were no technology focused committees in either house for the first time in over a decade. When I asked a state legislator about this in one of my semi-structured interviews, the legislator stated that the leadership saw a need to restructure and streamline their committee system to be more efficient. At times legislative efficiency may compete with the need to specialize. This will continue to be a challenge as states are confronting more and more issues on the agenda. One lobbyist I interviewed for another project pointed out that increasingly emerging issues are moving to the states in response to the political gridlock in Washington. As Washington gridlocks, lobbyists are taking their issues to the state capitals.

An analysis was also run on legislatures' creation of interim or special temporary committees to address new technology issues. This analysis showed similar results, with time period being positive and significant and term limits again being negative and significant. However, this time Democratic controlled legislatures were less likely to create special committees while Republican legislatures were more likely to. For the question of whether

legislatures created entirely new standing committees, professional legislatures were much more likely than other legislatures³ to create them.

The data in the right hand column shows the results when the observations only focused on the lower and upper house chambers, leaving out the full legislative entries. Again, time and legislative type were positive and significant while term limits and Republican party control, were negative and significant. This time, the institution code was included to test whether the lower or upper houses were more likely to engage in legislative specialization in response to emerging issues. This showed state Senates were less likely to specialize and this was significant. Given the smaller size of many state Senates and the relatively larger sizes of state houses, this is likely related to the institutional ability to expand committees and jurisdictions without overwhelming legislators.

As legislatures engage in institutionalization, further questions about legislative capacity emerge. Are legislators that serve on new technology policy standing committees more informed than their counterparts on commerce committees? Based on a mail survey of rank and file legislators serving on technology and commerce committees in seventeen states⁴, legislators serving on technology committees had expressed having moderate to high levels of knowledge about new technology issues (86.9% expressed this while 13% expressed weak levels of knowledge). In fact, two legislators shared with me in personal interviews that they had been overwhelmed with the complexity and amount of information their committees were dealing with when they were first appointed. One legislator from a citizen legislature had even gone to

³ The unstandardized coefficient for this was .680 at the .01 significance level.

⁴ The response rate for the mail survey was rather low (8%). Surveys were sent to legislators in eight citizen legislatures, eight hybrid legislatures and five professional legislatures. In 2010 when this was sent, this represented 5 states with no institutionalization, five states with low institutionalization, six states with medium institutionalization and five states with high institutionalization. I received responses from legislators in 17 of the 21 states.

her speaker and asked to be assigned to another committee, but he had rejected her request and asked her to stick with it and that everyone feels overwhelmed in their first term on the committee. She eventually became chair of the committee.

In contrast, legislators on commerce committees had lower levels of knowledge, with 68% expressing moderate to high levels of knowledge while 32% expressed weak to low levels of knowledge. This certainly suggests there is a case to be made for increasing legislative capacity by institutionalizing new committees. The findings on this question support the hypothesis (H₁) that legislators on new technology committees will be more informed about emerging issues than legislators on older, established commerce committees. In fact, several legislators I interviewed had stated that they had been instrumental in creating their committees for this very reason, to expand legislative knowledge about computer, biotechnology or energy technology issues. One legislator from a state legislature that does not have technology committees expressed dismay at the lack of understanding legislators have of advanced technology issues and the lack of interest in tackling issues such as broadband deployment. Another legislator from a citizen legislature expressed her dismay at how low legislative knowledge is about computer technology issues at a time her state is trying to address rural broadband deployment; she stated that one legislator had never even turned on a computer. Even technology lobbyists have observed the lack of knowledge and interest in high technology issues in state legislatures; several lobbyists I've interviewed expressed frustration with this. In fact, one technology association lobbyist in a hybrid state legislature state expressed frustration that his state had not updated its telecommunications act in twenty years since legislators had low knowledge and interest in new technology issues. In some states, legislatures have delegated

policymaking on new technology issues to the executive branch; one state legislator wrote on the mail survey that his state handles technology issues in a state agency, not in the legislature.

One of the most interesting findings from the interviews I conducted with twenty-five committee chairs and ranking members across ten states with varying levels of legislative professionalization and institutionalization⁵ was the manner in which these new committees have been created as well as in how citizen legislatures have been able to overcome shorter session lengths and smaller legislative staffs. Some of these committees were created by legislative leaders. In one professional legislature, a technology committee was created in the lower house because the rules of the house stated that when a legislator has started a third term, they must chair a committee. In this case, the speaker created a new committee related to technology issues to give a committee to a legislator. On the opposite end of the spectrum, legislators themselves have pushed to create new technology committees because of their own interests in seeing policy action on new technology issues. One legislator shared with me how concerned he was that we be competitive with other countries in technological development that he created the new technology committee he chairs.

In several citizen legislatures, I found that legislators had used various tools to overcome the challenges of being a part-time legislature. One response was to create interim study committees to spend time studying new technology issues in between legislative sessions. In the dataset, during fifteen state-year observations, citizen legislatures had one interim committee, in three cases there were two interim committees and in two cases, there were three technology focused interim committees. The opposite was true for professional legislatures as they meet for

⁵ In accordance with university IRB guidelines, all legislators were promised anonymity for their interviews. Interviews were conducted with legislators in four professional legislatures (Illinois, Ohio, California), three hybrid legislatures (Washington, Colorado, North Carolina) and four citizen legislatures (Georgia, Montana, Idaho, Wyoming). These were chosen based on professionalization, institutionalization and the presence of term limits.

longer sessions and tend to use their standing committees instead. In sixteen professional legislature years, one interim or temporary committee was used and in 12 cases, none were used. Unlike citizen legislatures, in no case were more than one interim committees used by professional legislatures. One legislator I interviewed from a citizen legislature strongly emphasized the use of interim committees since their state used short legislative sessions; he stated, “It’s the only way things get done!” and that they were vital to the legislative process due to their short fixed sessions. Another method was to use legislative service staff to research the issues or identify experts around the state to make presentations to standing or interim committees to help inform legislators about the issues. In one citizen legislature that has high institutionalization by having standing committees on new technology issues in both houses, a committee chair shared with me how they tap the state’s university research centers to bring in experts to inform their committees about science and technology policy issues. Legislator interests and initiative are significant to whether new committees get created and used to address emerging technology issues.

However, even with institutionalization of new technology committees in many states, they are not always well utilized. In many states, technology policy bills are sent to state affairs committees rather than technology or commerce committees. Leadership power has much to do with this. While in some states, jurisdictional lines are very clear, in other states majority party leaders have greater control over where to send bills. One legislator shared how the speaker would send new technology and renewable energy technology bills he didn’t like to state affairs rather than the assigned technology committee. One committee chair expressed his dismay at how the speaker would use his committee as a place to send bills he didn’t like; he recently got an agreement with the speaker to stop this practice and allow his committee to focus on science

and technology issues and spend adequate time studying these issues. In some states, committees are categorized into privileged and non-privileged committees; in one state, the technology policy committee was designated as a non-privileged committee. A legislator I interviewed from that citizen legislature stated that she was trying to get a hearing for her renewable energy bill and had to go to state affairs rather than the technology committee because of the legislative rules. Both party leadership power and the initiative and interest of committee chairs to focus on emerging issues are significant to legislative capacity.

One of the most significant negative effects on legislative capacity to address new technology issues has been the existence of term limits. Every legislator I spoke with who was in a term limited state talked about the negative effects of term limits. Several legislators lamented the lack of institutional and policy knowledge that was occurring. One committee chair from a hybrid legislature commented that just as he was most knowledgeable about the issues and helping to steer the committee agenda, he was being term limited out. Another committee chair from a citizen legislature shared her observations of term limits and their effects on technology related committees:

“...there are no legislators that are still here because of term limits, so lobbyist have all the historical knowledge and legislator don't. So you throw somebody in here who can serve a total of 16 months because you meet every, you know, because you meet for 4 month, so by the time 4 x 4 16 months total you spend in the legislature. And people like me who I said go in to that committee and were like oh my God! You know the learning curve is so immense that and I think even by the end of your first term you are not completely and totally comfortable and have so much to learn. By then, by your second term your half way done, so there is no history there really and the lobbyists know it all. So it really gives them an immense amount of power.”

In a professional legislature that has term limits, a committee chair I spoke with expressed the same sentiment and pointed out that legislative staff were the most knowledgeable as a result. In fact, in a conversation with legislative staff aide for another committee chair, the staff aide was able to share numerous instances of how the legislature had been handling

biotechnology, renewable energy and broadband issues. In California's state legislature, any member of the legislature can propose to the Rules Committee to create a select committee on an issue of interest. These can be issues of interest to their constituency or policy issues. In fact, California had three select committees relating to new technology issue in 2010: Assembly Select Committee on Biotechnology, Senate Select Committee on Biotechnology and the Senate Select Committee on Emerging Issues and Economic Competitiveness. This expanded to nine select committees in 2012 with the addition of select committees on clean energy and high technology in the Assembly and renewable energy and green energy in the Senate. However because of term limits in California, these select committees are dependent on whether other legislators are interested in continuing them after the creators are term limited out of office. At times, technology interests will exert pressure to keep the committees so their interests are still on the agenda.

Even with institutionalization, however, party leaders can make frequent changes to committee jurisdictions and committee structures—even in professional legislatures. For example, in Illinois the lower house had a Computer Technology Committee from 2001-2010. In fact, from 2007-2010 the Illinois House had three standing committees on new technology issues: Computer Technology, Biotechnology and Renewable Energy. In 2011-2012, committee changes were made that eliminated the Computer Technology Committee and Renewable Energy Committee, but kept the Biotechnology Committee. One technology association lobbyist from Illinois I spoke with stated that since the speaker didn't send very many policy issues to the Computer Technology Committee anyway and that the committee was in name only. This reflects Clucas's (2007) finding that legislative leaders in professional legislatures can be especially powerful. Additionally, the deinstitutionalization that took place recently may reflect

external pressures to deinstitutionalize to make legislatures more lean and efficient (Rosenthal 1996), which may not have positive effects on some issue areas, particularly highly complex policy issues.

The research findings here show that state legislatures' propensity to institutionalize new committees in response to new technology policy challenges are dependent on the length of time that has passed since the onset of technology issues in the states, party competition and party control of state legislatures. While professionalization might suggest increased specialization, there is mixed evidence for this hypothesis (H₂). Professionalized legislatures were more likely to be interested in creating new standing committees on new technology issues, while citizen legislatures were slightly more likely to address the problem by changing committee jurisdictions. States with competitive party systems and Democratic controlled legislatures were also more likely to engage in institutionalization (H₃). Term limits, however, were negatively associated with institutionalization in state legislatures (H₄). Over time as demands for policy solutions to new technology problems and concerns grew, state legislatures were more likely to respond by institutionalizing technology policy issues in the legislative process (H₅). Finally, the qualitative research data show support for the hypothesis that legislators on new technology committees and interim committees are relatively more informed than legislators on established committees (H₁). Many of the legislators I spoke with talked about the steep learning curve involved with these issues and found that these new technology focused issues were helpful to the policy process.

Conclusions & Future Directions

This research is part of a multi-faceted investigation of how state legislatures have responded to new, emerging technology issues on policy agendas. While previous studies have looked at committee jurisdictions, changes in jurisdictions and legislative issue specialization

(Thompson & Moncrief 1992, Freeman & Hedlund 1993, Hamm et. Al. 2011), this research expands our understanding of how state legislatures address new issues through institutionalization, particularly issues that are highly complex. Using quantitative and qualitative data, this research find additional evidence of the negative effects of term limits and evidence of leadership factors that can affect whether institutionalized committees are even used to address technology policy issues. While technology policy issues initially are not characterized by partisanship initially, partisanship does matter in the decision whether to create new committees or add jurisdictions as Democratic controlled legislatures are more likely to expand committees while Republican controlled legislatures are less likely to expand committees, instead choosing to use interim committees or modify jurisdictions. Yet, deinstitutionalization pressures are also underway (Rosenthal 1996), which needs further study today as legislatures are under additional pressure to save costs and respond to public pressures.

The next direction of this research agenda is to develop an index of technology bills considered by state legislatures to assess whether these new committees, subcommittees and special committees have enhanced legislative capacity to address new technology issues in the last decade. Additionally, I am looking at the micro-level to look at which committees these issues actually go to and whether this makes a difference in the attention these issues receive. For example, in South Dakota, a non-institutionalization and citizen legislature state, most new technology issues go to state affairs. In Idaho, technology issues in the lower house go to the Environment, Energy & Technology Committee and its interim committee, while biotechnology issues are sent to the Agricultural Affairs Committee (particularly for agriculture biotechnology). In the state Senate which does not have a similar committee, these issues go to State Affairs. These institutional choices may be significant in citizen and hybrid legislatures, where they do

not have a full-time legislature and do not have as much research staff support unlike the U.S. Congress, where the highly complex committee and subcommittee system as well as research staffs have helped Congress address new and emerging issues.

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Appendix A: 2010 Table of States by Professionalization & Levels of Institutionalization

		Citizen Legislature ¹		Hybrid Legislature ¹		Professional Legislature ¹	
		Term Limits	Non-TL	Term Limits	Non-TL	Term Limits	Non-TL
No Institutionalization (no new tech committees)	One Party Democratic		Rhode Island				
	Two-Party Competition	Nevada	Mississippi Vermont	Arizona Oklahoma Missouri	Alabama Tennessee Oregon Iowa Kentucky	Ohio	New Jersey
	Modified one-party Republican	South Dakota	Wyoming Kansas		Alaska		
Low Institutionalization (has one or more interim/temporary new tech committees)	One Party Democratic		New Mexico (J) West Virginia (2J)		Maryland (J)		Massachusetts (2J)
	Two-Party Competition	Maine (J)			South Carolina (J)	California (S, 3T)	NY (J)
	Modified one-party Republican		North Dakota (J) Utah (H)			Florida (S)	
	Nonpartisan			Nebraska (J)			
Medium Institutionalization (has a standing new tech committee in one house)	One Party Democratic				Hawaii (S)		
	Two-Party Competition	Montana (H,S,J)	NH (H)	Louisiana (S) Colorado (S)	Washington (H, J) Delaware (H) Connecticut (J)	Michigan (H)	Wisconsin (2S, J) Pennsylvania (S)
	Modified one-party Republican		Idaho (H, J)		Texas (H)		
High Institutionalization (has standing committees on new tech issues in both houses)	One Party Democratic			Arkansas (H, S, J)			
	Two-Party Competition		Indiana (H, S)		North Carolina (2H, S, J) Minnesota (H,S) Virginia (H, S)		Illinois (2H, S)
	Modified one-party Republican		Georgia (H,S)				