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The Tech Industry Meets Presidential Politics: Explaining the Democratic Party's Technological Advantage in Electoral Campaigning, 2004–2012

DANIEL KREISS and CHRISTOPHER JASINSKI

Drawing on theories in organizational sociology that argue that transpositions of people,/ skills, and knowledge across domains give rise to innovations and organizational foundings that institutionalize them, we conducted a mixed-methods study of the employment biographies of staffers working in technology, digital, data, and analytics on American presidential campaigns, and the rates of organizational founding by these staffers, from the 2004 through the 2012 electoral cycles. Using Federal Election Commission and LinkedIn data, we trace the professional biographies of staffers (N = 629) working in technology, digital, data, or analytics on primary and general election presidential campaigns during this period. We found uneven professionalization in these areas, defined in terms of staffers moving from campaign to campaign or from political organizations to campaigns, with high rates of new entrants to the field. Democrats had considerably greater numbers of staffers in the areas of technology, digital, data, and analytics and from the technology industry, and much higher rates of organizational founding. We present qualitative data drawn from interviews with approximately 60 practitioners to explain how the institutional histories of the two parties and their extended networks since 2004 shaped the presidential campaigns during the 2012 cycle and their differential uptake of technology, digital, data, and analytics.

Keywords   elections/voting behavior, Internet/ICTs, media & politics, political campaigns, social media

While innovation is the subject of a vibrant interdisciplinary research tradition in domains ranging from biotechnology to state formation, to date few political communication scholars have considered when, why, or how innovations in electoral campaigning occur. Furthermore, much of the political communication literature has generally overlooked the question of how campaigns keep pace with, and innovate in, rapidly changing media environments. Practitioners must learn how to navigate changes at the "application layer" of the Internet, such as new social media platforms and changes in the algorithms of Facebook and Google (Karpf, 2011), and take up new tools such as relational databases

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and practices such as predictive modeling that provide competitive electoral advantage (Hersh, 2015).

As a result of these trends in the literature, there are few inquiries into the well-documented asymmetry between the two major U.S. political parties when it comes to the staples of contemporary political campaigning: technology, digital media, data, and analytics. A number of journalistic accounts (see Issenberg, 2012) as well as research produced by the political consulting industry and parties themselves (see Growth and Opportunity Project [GOP], 2013) document that President Barack Obama's re-election effort was far more sophisticated in its use of social media, data, and analytics to communicate with voters and mobilize supporters than its Republican rival. As the Republican Party's own internal Growth and Opportunity Project Report (GOP; 2013), a comprehensive assessment of the party's technological systems and comparison with its rival, stated,

> Democrats had the clear edge on new media and ground game, in terms of both reach and effectiveness. … In addition, the president's campaign significantly changed the makeup of the national electorate and identified, persuaded, and turned out low-propensity voters by unleashing a barrage of human and technological resources previously unseen in a presidential contest. Marrying grassroots politics with technology and analytics, they successfully contacted, persuaded and turned out their margin of victory. There are many lessons to be learned from their efforts, particularly with respect to voter contact. (p. 24)

In recent years, a body of work within organizational sociology has sought to explain how innovations in technology and practice emerge. John Padgett and Woody Powell define innovation as "things neither present nor anticipated by anyone in the population. … *Innovations* improve on existing ways (i.e., activities, conceptions, and purposes) of doing things, whereas inventions change the ways things are done" (2012, pp. 1, 5; emphasis in the original). These scholars argue that innovations, inventions, and new organizations emerge through "network folding" (or re-combination). Network folding "involves transposing social relations from one domain into another" through biographies that cross domains or strategically placed actors that reconfigure networks across domains of activity and create the possibility for new practices (Padgett & Powell, 2012, pp. 6–7). In other words, in the political context, staffers who come to politics with significant work experience in other sectors or learn their trade outside of the established Beltway consulting culture are likely the sources of innovation in electoral politics. And, after election cycles, the new organizations (such as political consultancies) that emerge around these innovations likely carry them to other sites in politics.

We draw on Padgett and Powell's theory of innovation and present the first systematic analysis of staffing patterns in technology, digital, data, and analytics and organizational founding during the past three presidential cycles to reveal and explain the differences between the two parties and their campaigns with respect to their uptake of technology. Using an innovative data set coupling Federal Election Commission data on campaign staffers with LinkedIn data on employment biographies, we compiled and categorized the careers of every staffer ($N = 629$) we could identify who worked on technology, digital, data, or analytics for a presidential primary or general election campaign during the 2004, 2008, and 2012 cycles and charted rates of political organizational founding by these staffers, which were often consultancies.[1] In contrast to literature that presumes the professionalization of political campaigns (Blumer & Kavanaugh, 1999; Howard, 2006; Norris, 2000; for

reviews see Negrine & Lilleker, 2002; Strömbäck, 2007), we found that staffers are, at best, unevenly professionalized in these areas (e.g., Nielsen, 2012), with those having previous campaign experience being in the minority of total staffers. On the whole the field is markedly open to new entrants and field crossers and remarkably generative in terms of the spawning of new organizations, particularly on the Democratic side of the aisle.

Meanwhile, in contrast to theoretical perspectives that assume the two major U.S. political parties adopt similar electoral strategies, we found significant differences in the staffing patterns of Democratic and Republican campaigns that accord with the findings of the GOP's Growth and Opportunity Report. Democratic campaigns on the whole, and especially Obama's two presidential runs, had significantly higher rates of staffing in these areas. Furthermore, Democratic campaigns, and again particularly Obama's two runs, attracted comparatively more talent from outside the political field, especially the technology industry. We also found significantly higher rates of organizational founding after elections on the Democratic side of the aisle by these staffers across all three presidential election cycles. Taken together, these findings mean that Democratic campaigns have invested considerably more resources in technology, digital, data, and analytics to keep pace with changes in networked media (Chadwick, 2013), the ways that technology lies at the background of much of daily life (Bimber, Flanagin, & Stohl, 2012), and advances in computational science (Sides & Vavreck, 2014). The party also has a more developed ecosystem of consultancies that diffuse innovations in campaign strategy, technology, and practice across campaigns and electoral cycles (Nyhan & Montgomery, 2014).

We provide qualitative data drawn from interviews with more than 60 party and campaign staffers to explain these differential patterns in hiring and firm founding through the lens of the historical institutional dynamics of the two parties. We argue that the Democratic Party was significantly transformed after the 2004 cycle by new entrants to the political field, and that the cumulative effect of greater investments in technology, digital, data, and analytics across election cycles, the transfer of skills, practice, and knowledge from technology and commercial industries to Democratic campaigns, and the founding of organizations to institutionalize the innovations that emerged led to the party's well-documented advantages on display in 2012.

Literature review

In the four years after Barack Obama's 2008 victory, veterans of that effort saw themselves operating in an entirely different technological context. New social media platforms such as Tumblr and Pinterest, and those with growing user bases that continued to evolve such as Facebook and Twitter, changed the ways campaigns commune with voters and journalists (Kreiss, 2014). All of this makes for a highly dynamic media environment that campaigns and political practitioners must navigate in the service of their electoral goals (Chadwick, 2013; Karpf, 2011).

These changes at the application layer of the Internet are one aspect of sweeping shifts in technology, media, social structure, and cultural practice that have taken shape over the past few decades—all of which have great consequence for shaping the world campaigns must act in for electoral gain (see Bennett & Iyengar, 2008; Chadwick, 2013; Papacharissi, 2015; Stroud, 2011; Williams & Delli Carpini, 2011). A number of scholars have shown how campaigns have adopted new technologies and practices that coincide with these shifts, including networked technologies to mobilize supporters to give money, disseminate campaign messages, contact voters, and turn out the vote (Kreiss, 2012; Foot &

Schneider, 2006; Stromer-Galley, 2014), "micro-casting" advertising (Franz & Ridout, 2007), and data-driven field campaigning (Nielsen, 2012).

Despite this body of work, to date scholars have generally not considered the question of how campaigns and other strategic political actors actually adapt to these changing technological contexts, and few have sought to explain why some campaigns are particularly innovative in taking up new technologies and practice for competitive advantage. In much of this and other literature there is an underlying assumption that campaigns and parties generally take up technologies that are available in response to changing social and media contexts, and that they have equal ability to do so (see Bartels, 1992). The presumption is that campaigns and parties see the world the same way and as a result generally pursue the same strategies. Rational choice perspectives on campaign strategy suggest that any differences between the two major U.S. parties and their campaigns, especially at the presidential level, would be both minimal and short-lived. Writing specifically about how campaigns have adapted to the "personalized political communication environment," Bimber (2014) argues that the commodification of digital tools, increased recognition of their utility, and a seemingly uniform understanding of the contemporary media environment will mean less variation between campaigns.

If scholars do see differences between campaigns, the general belief is that they are primarily attributable to resources or competitive standing. Beginning with Margolis and Resnick (2000, p. 16), scholars have argued that digital technologies generally reinforce or "normalize" the power of political elites rather than "equalize" the power of incumbents and challengers because resources drive technological adoption: "If we ask which political parties and candidates are likely to provide sophisticated Web sites, the answer is clear: those who command the resources to hire the talent to produce them." In a recent piece, Gibson and McAllister (2015, pp. 541–543) argue that normalization and equalization are "better understood as distinct phases"; smaller parties can innovate to take advantage of the affordances of new technologies, but in the long run better-resourced parties can adapt, leading to normalization.

Despite this work, there is much to suggest that assumptions regarding convergent electoral strategies in the long run do not capture the empirical realities of differential technological adoption by campaigns and parties (for a critique of rational choice perspectives more broadly, see Green & Shapiro, 1994). Gibson and McAllister (2015, p. 541) focus on the differences between major and minor parties, even though there is evidence of differential adoption by candidates within major parties and between major parties themselves in their longitudinal data set on Australian candidates. In the U.S. context, the extensively researched GOP Growth and Opportunity Report reveals differences in investments and emphasis on technology, digital, data, and analytics throughout the two parties and their campaigns, and notes these have persisted through two presidential cycles. And, as Hatch (2015) has found, Democratic state parties hire more technology-oriented staffers for the purposes of database management, analytics, and voter outreach than their counterparts.

In this context, the question is why Democratic Party campaigns invest more in technology, digital, data, and analytics and are more technologically innovative than their Republican counterparts. This is especially perplexing for rational choice theories given that resources are generally comparable for presidential campaigns and major parties, elections are closely fought battles, and the Republican Party was even the "out-party" from 2008 to 2012, which Karpf (2011) argues creates incentives to innovate.

An alternative potential explanation for the differences between the two parties lies in historical and institutional perspectives on parties and their development over time.

Through analysis of primary historical data, Galvin (2009) demonstrates that there were significant differences between the two major U.S. political parties with respect to presidential "party-building" from the administrations of Dwight D. Eisenhower to George W. Bush (with Republicans engaging in comparatively more of it). The differences in the approaches of presidents are the result of the competitive standing of their parties as well as "institutional inheritances, timing, and sequence" (Galvin, 2009, p. 17). As Republican presidents engaged in party-building in the attempt to create political majorities in Congress, future presidents inherited the fruits of this labor and built on what came before, which shaped their capacities to act electorally and legislatively.

Theoretically, Galvin offers a sharp critique of rational choice perspectives for being overly presentist and focused narrowly on structural conditions, rather than on how actors work to change these conditions for the future. Other recent work has similarly identified the importance of institutions, time, and organizations such as consultancies in the context of the evolution and diffusion of campaign strategies. Nyhan and Montgomery (2014, p. 293) argue that consultants diffuse campaign strategies through party networks over time, "playing a key role in the process of 'organized trial and error' by which ideas and approaches are developed and spread within parties." The "party networks" these scholars detail encompass many different official party actors, including candidates, campaigns, and party-aligned consultants. While they do not consider the invention of new technologies or consultant organizations, Nyhan and Montgomery reveal the importance of political consultancies as the mechanisms for the diffusion of innovations in strategy and technologies over time.

While far from the context of electoral politics, as detailed earlier, Padgett and Powell (2012) take a historical and network-based approach to show how the movement of people across different fields of activity is often the catalyst that gives rise to new technologies and practices and, ultimately, new organizations built around them. Padgett and Powell (2012) detail the process of organizational innovation:

> We often observe organizational innovation triggered by unanticipated transpositions of people from one domain to another, who carry with them production skills and relational protocols that mix with and transform skills and protocols already there. Organizational invention, following such innovation, is usually the slower process of the new innovation percolating around the networks in which it is embedded, tipping them into new typologies and interactional forms along the way. More radical episodes of this process lead to "innovation cascade." Restructured biographies are the medium through which network spillover is transmitted. (p. 11)

Building off of these diverse literatures, we strive to both document and explain the apparent differences between the two parties to wield technology, digital media, data, and analytics in the service of their electoral goals. We expect to find comparatively more staffers working in technology, digital, data, and analytics on Democratic campaigns for president across primary and general election bids. Consistent with Padgett and Powell's work on innovation, we expect to find higher rates of field crossers between the commercial and technology industries and electoral politics on Democratic presidential campaigns, especially Obama's two runs. We also expect there to be significant differences in firm and organizational founding between the parties based on these investments in and flow of staffers across fields, with Democrats having higher rates of organizational invention following innovations on campaigns. In the context of politics, these organizations are often political consultancies

that work with multiple clients during subsequent electoral cycles. Political organizations also include groups such as the New Organizing Institute, which has played a significant role in training new generations of Democratic staffers in technology, digital, data, and analytics (see Karpf, 2012), and the Analyst Institute, which has brought social science methods to Democratic campaigning (Hersh, 2015).

Taken together, we expect that these dynamics can explain the extended Democratic Party network's competitive edge in technology, digital, data, and analytics. As Padgett and Powell (2012, p. 3) have argued in their studies of innovation and invention, "In the short run, actors create relations; in the long run, relations create actors…. If actors— organizations, people, or states—are not to be assumed as given, then one must search for some deeper transformational dynamic out of which they emerge." The model we propose is that organizational innovations and invention give rise to significant transformations in the party networks in which they occur. Party networks that are able to generate field crossing from the technology and other industries into politics, which in turn has the capacity to give rise to innovations and new organizations such as consultancies, should be more innovative than those that fail to attract this movement across domains. We propose that these dynamics have shaped the trajectories of the two parties over the past decade.

Technology, digital media, data, and analytics will not win an election for a candidate, but they are valuable on the margins with respect to enabling staffers to more efficiently and effectively reach citizens across the hundreds of platforms that form the backdrop for much of daily life. While a vast body of research has shown how partisanship, economic conditions, demographic and generational changes, political contexts, the power of incumbency, and the comparative strength and charisma of candidates all play a role in electoral outcomes, the resources, mobilization, and voter contacts that the effective use of technology, digital media, data, and analytics afford matters as well. The effective use of technology can translate into millions of additional dollars, voter contacts, identifications, registrations, and ultimately supporters that turned out at the polls (Kreiss, 2012; Hendricks & Schill, 2015; Nielsen, 2012; see Sides & Vavreck, 2013 for a discussion of campaign effects and a comparison of the 2012 presidential bids).

Method

As among the most well-resourced campaigns in the world, with comparatively large investments in digital technologies, the tools, strategies, tactics, and practices of presidential campaigns often migrate to down-ballot and even international races through the subsequent work of staffers (see, for instance, Kreiss, 2012; Farrell, Kolodny, & Medvic, 2001; Plasser & Plasser, 2002; see Gibson, 2015 for an argument about why U.S. candidate-centric campaigns are in many ways laboratories for digital campaign practice). This study therefore has the potential to reveal the types of people who do political work in technology, digital, data, and analytics both in the United States and internationally, identify the technologies they create and use and practices they deploy, and more broadly shed light on what are likely to become more general features of campaigns.

Using data from the nonprofit and nonpartisan website Democracy in Action (DIA), which gathers organizational and staffer information directly from campaigns and public accounts of elections in addition to drawing on Federal Election Commission (FEC) data, in addition to FEC reports on campaign disbursements, we compiled a list of all staffers who either worked in campaign divisions dedicated to technology, digital, data, or analytics or who had these words in their organizational titles from the 2004, 2008, and 2012 presidential cycles. While it is not exhaustive (there is no perfect source given

difficulties working with FEC data) and it is limited to paid staff (not volunteers, who can also contribute to network folding), we believe we have compiled the most comprehensive data set in existence on technology, digital, data, and analytics staffers on presidential campaigns going back to 2004.[2]

We chose to start with the 2004 cycle, the first time that campaigns routinely began developing stand-alone "Internet" divisions (Kreiss, 2012; Foot & Schneider, 2006; Stromer-Galley, 2014), while data and analytics only became a routine feature of campaigns in 2012. The campaigns in this analysis are Howard Dean (2004), John Kerry (2004), Dennis Kucinich (2004), Wesley Clark (2004), John Edwards (2004), Joseph Lieberman (2004), George W. Bush (2004), John Edwards (2008), Bill Richardson (2008), Dennis Kucinich (2008), Chris Dodd (2008), Joe Biden (2008), Hillary Clinton (2008), Barack Obama (2008), Mitt Romney (2008), Rudolph Giuliani (2008), John McCain (2008), Ron Paul (2008), Mike Huckabee (2008), Fred Thompson (2008), Barack Obama (2012), Mitt Romney (2012), Newt Gingrich (2012), Rick Santorum (2012), John Huntsman (2012), Michelle Bachman (2012), Gary Johnson (2012), Rick Perry (2012), Herman Cain (2012), and Fred Karger (2012).

Our work netted 629 individual staffers, 507 Democratic and 123 Republican (one staffer worked on both sides of the aisle). The total number of staffers hired by presidential campaigns in these domains is higher given that some of these staffers worked on multiple presidential bids. We then searched for and manually entered details on staffers' professional careers using the professional social networking site LinkedIn. When data were missing, we attempted to find personal and work sites that contained biographies or résumés. This allowed us to find at least limited employment histories for *every staffer* in our data set, with comprehensive data being the norm, which is revealing of the nature of contemporary social network use for professional purposes.[3]

Given our theoretical interest in identifying staffers who crossed between industries and fields of activity, the second author coded their professional work manually based on self-reported, manifest descriptions of their employers and organizations on LinkedIn and other websites and used the following general, mutually exclusive *organizational* categories: *Previous campaign, Campaign, Political, Journalism, Education, Entertainment media, Technology, Data/analytics, Commercial industry firm, Legal services, Government,* and *RNC/DNC*. Importantly, we categorized professional work based on the type of organization that employed the staffer, not his or her role in that organization. We did so based on our analytical interest in staffers crossing between professional fields and for clarity in categorizing professional work given the difficulties of parsing job responsibilities with the lack of standardization of titles.

We coded as "campaign" work on a political campaign at any level of office. We also noted the number of staffers that had campaign work in their background at any level of office (reported as "total staffers with previous campaign work"). We coded as "political" if the position entailed work for strategy or consulting firms, nonprofit, movement, and advocacy organizations or state and local party organizations. "Journalism" refers to work for blogs or more traditional outlets such as CNN. "Entertainment media" refers to work in organizations like MTV Networks, production companies, and other creative media firms. "Technology" designates organizations whose primary business relates to computing, digital media, or mobile technologies. "Education" denotes organizations such as Pearson, universities, or similar institutions. "Data/analytics" denotes companies whose primary business is gathering, storing, or analyzing data. "Commercial industry firm" refers to firms that are not technology, data and analytics, political consulting firms, or any of the other categories listed here. "Legal services" refers to law firms or legal aid

organizations. "Government" refers to public sector work at the local, state, or national level. "RNC/DNC" denotes employment by an official national party organization (the Republican National Committee and Democratic National Committee, respectively). We coded as "N/A" when the campaign appeared to be a staffer's first job while in college or following graduation, or the staffer's employment history prior to the presidential campaign was unclear.

Given our interest in field crossing, after categorizing their professional positions we coded each staffer for their *primary* field of employment prior to each presidential campaign. This is the code that occurred most frequently. We coded a staffer's background as "mixed" when a category did not occur most frequently (both the "N/A" and "mixed" categories speak to the question of professionalization). Staffers who worked multiple cycles were counted and coded anew for each campaign. For example, Uday Sreekanth worked on Hillary Clinton's 2008 campaign and the 2008 Obama general election campaign and was coded for each. Broadly, this gave staffers the possibility of having different primary fields for each campaign. We believe that coding staffers for every campaign they worked on, and their primary field prior to *each* campaign, enabled us to accurately trace rates of field crossing.

Given our interest in firm founding, we coded whether a staffer founded a firm following a presidential campaign and tracked the total rates of firm and organizational founding for each party and campaign. In the interest of being as inclusive as possible, we coded as firm and organizational founders staffers that indicated their titles in LinkedIn profiles as "founder," "founding partner," "partner," "principal," or "CEO" (at the time of founding). The idea is that these legal and commercial distinctions are less important than being on the ground floor of a new venture after a presidential campaign. We opted to include all organizations founded after a founder's presidential campaign work regardless of the timing or subsequent non-presidential work. We opted to classify these individuals as presidential founders given they likely had shared experience, knowledge, and skills with others who were employed on the presidential bid. For example, Zac Moffatt was coded as having founded a firm following the Bush 2004 campaign although the firm, Targeted Victory, was founded in 2009 after his stint working at the Republican Party. Meanwhile, we also accounted for some staffers founding multiple firms or groups of individuals cofounding firms by calculating the number of unique organizations founded as well as the number of founders following a presidential campaign.

Finally, to supplement this data, we drew on open-ended, semi-structured interviews with more than 60 staffers (approximately 35 Democrats and 26 Republicans) active in Democratic and Republican Party politics conducted for a larger book project of the first author. These are approximate numbers because the first author also drew on more than a dozen interviews conducted for his first book project (Kreiss, 2012) from 2008–2011, and the first author also spoke with dozens of individuals in on-the-record and off-the-record trade conferences over the past four years on topics directly related to this article.

The first author selected interviewees on the basis of both their organizational roles on campaigns and in political parties, as gleaned through public records and journalistic coverage, as well as snowball sampling. In a few cases, these interviews revealed staffers who were not in the Democracy in Action or FEC data and who we then added to the data set. The first author conducted these interviews from 2012 through 2015. Interviews generally lasted between 1 and 4 hours, with the average interview being 1.50 hours. As a general approach, the first author structured the interview questions to proceed chronologically, aiming to elicit narrative biographical details regarding individuals' professional work since the start of their careers. This enabled practitioners to reflect upon their

work over the course of their careers and across different sectors, and enabled the first author to chart changes in technology, digital, data, and analytics across electoral cycles. In this approach to questioning, the first author was guided by Robert Weiss's (1999) guidelines for qualitative in-depth interviewing that is tailored to individuals based on their unique experiences and is dialogic yet guided by the researcher. For a full methodological statement on this qualitative data, see Kreiss (in press).

Findings

After compiling, categorizing, and analyzing the 629 staffers in our sample, clear aggregate patterns regarding technology, digital, data, and analytics staffers on presidential campaigns emerged. First, with respect to the degree of professionalization in electoral campaigning, we found significant amounts of field crossing in these domains, with staffers joining campaigns from various commercial and technology firms (see Table 1 for data on select campaigns). This suggests that technology, digital, data, and analytics on campaigns are at best unevenly professionalized, with high rates of field crossers and low rates of career campaign staffers, at least in these domains.

Second, there are significant differences between the two parties and their presidential campaigns with respect to hiring patterns. Democratic Party campaigns hired 507 discrete staffers in the areas of technology, digital, data, and analytics, compared with 123 Republican staffers. We found a similar difference between the parties with respect to the rates of organizational founding and the campaign staffers involved in these launches. From 2004 to 2012, 66 Democratic staffers founded 67 different firms and organizations, compared with 12 staffers founding 13 firms and organizations on the Republican side of the aisle (see the Appendix for a list of firms for select campaigns). We estimate that approximately 87.5% of these entities were for-profit firms, and 12.5% were nonprofit organizations. Of these firms and organizations, we estimate that approximately 72.5% pursue at least some expressly political work promoting or furthering the ends of candidates or causes (although with considerable variation among them; for example, most of the for-profit consultancies work for a range of commerical and political clients, although generally along party lines.)

Differences between the two parties in these domains hold even if we take the Obama campaigns out of the data. The Democratic primary campaigns of Dean ($N = 11$) and Clark ($N = 18$) each hired more staffers in these areas than any of the Republican campaigns of the 2004, 2008, and even the 2012 cycle, except for Romney's 2012 primary bid (N = 23) and McCain (N = 15) and Romney's (N = 87) general election bids. This suggests broad differences in the valuations placed on this comparatively new area of campaigning across party lines. These differences are even more striking when comparing general election bids. The McCain campaign had 15 dedicated technology, digital, data, and analytics staffers, five with previous campaign experience. Many of these staffers came to the campaign with their primary work backgrounds in politics, including work for political organizations and campaigns (N = 5). None of McCain's staffers in these domains came from the technology or data/analytics fields. By contrast, the Obama 2008 general election campaign had 131 dedicated technology, digital, data, and analytics staffers, only 14 of which had previous campaign experience. Significant numbers of these staffers came with employment backgrounds in the political field ($N = 26$), commercial industry ($N = 11$), and the technology and data/analytics fields ($N = 11$), while for many the campaign was their first work experience (N/A is $N = 41$).

Table 1

Employment backgrounds of and organizational founding by technology staffers on select primary and general election campaigns, 2004–2012

	Obama 2012 (D)	Romney 2012 (R)	Romney 2012 (Primary)[a]	Obama 2008	McCain 2008 (R)	Obama 2008 (Primary)[a]	Clinton 2008 (Primary)[a] (D)	Kerry 2004 (D)	Bush 2004 (R)
Campaign, Political, or RNC/DNC	$N = 73$	$N = 17$	$N = 4$	$N = 26$	$N = 5$	$N = 15$	$N = 7$	$N = 9$	$N = 1$
Commercial	$N = 58$	$N = 34$	$N = 8$	$N = 11$	$N = 1$	$N = 4$	$N = 0$	$N = 5$	$N = 1$
Journalism or Entertainment	$N = 34$	$N = 1$	$N = 0$	$N = 13$	$N = 2$	$N = 5$	$N = 0$	$N = 0$	$N = 0$
Technology or Data/Analytics	$N = 48$	$N = 7$	$N = 0$	$N = 11$	$N = 0$	$N = 4$	$N = 1$	$N = 1$	$N = 0$
Education or Legal	$N = 17$	$N = 4$	$N = 1$	$N = 5$	$N = 0$	$N = 2$	$N = 0$	$N = 0$	$N = 0$
Government	$N = 16$	$N = 8$	$N = 0$	$N = 10$	$N = 2$	$N = 4$	$N = 0$	$N = 2$	$N = 2$
Mixed or N/A	$N = 96$	$N = 16$	$N = 10$	$N = 55$	$N = 5$	$N = 20$	$N = 1$	$N = 17$	$N = 2$
Total Staffers	342	87	23	131	15	54	9	34	6
Total Staffers With Previous Campaign Work	$N = 72$	$N = 22$	$N = 10$	$N = 14$	$N = 5$	$N = 11$	$N = 4$	$N = 5$	$N = 0$
Organizational Founders	$N = 24$	$N = 3$		$N = 15$	$N = 2$		$N = 1$	$N = 7$	$N = 2$
Unique Organizations	$N = 19$	$N = 3$		$N = 16$	$N = 3$		$N = 3$	$N = 6$	$N = 2$

Note. Coding is for the *primary* field of employment of these staffers prior to each campaign. For presentation purposes, we combined categories here.

[a] For the primary campaigns of eventual nominees, people were listed only when it was clear that they worked during the primary season. This meant that they listed the primary campaign on their LinkedIn profile, the timeline they provided matched the primary season, or they were listed as working during the primary in the Democracy in Action data.

While there were differences in resources between these bids that likely shaped these hiring patterns, there are also clear differences between comparably funded campaigns, such as Obama and Clinton's 2008 primary campaigns, which clearly reveals differences in electoral strategy (for an overview of the funding of these campaigns, see Kenski, Hardy, & Jamieson, 2010). Clinton's 2008 primary bid had nine technology, digital, data, and analytics staffers. Four of these staffers had previous campaign experience and most had backgrounds working for political organizations or campaigns ($N = 7$). Only one of these staffers came from the technology or data and analytics fields. By contrast, the Obama primary bid hired 54 dedicated technology, digital, data, and analytics staffers, 11 with prior campaign experience and 15 with primary backgrounds in politics. Meanwhile, three staffers came from the technology industry and one from the data/analytics industry.

Meanwhile, looking closely at the 2012 presidential campaign cycle, the Obama 2012 campaign had 342 dedicated technology, digital, data, and analytics staffers, 72 of whom had previous campaign experience. The majority of these staffers came from the commercial industry ($N = 58$), the broader political field ($N = 73$), and the technology and data and analytics industries ($N = 43$ and $N = 5$, respectively). On the other hand, the Romney 2012 campaign had 87 dedicated technology, digital, data, and analytics staffers, 22 with previous campaign experience. These staffers primarily came from the commercial industry ($N = 34$) and the political field ($N = 17$). Romney's campaign had considerably fewer staffers from the technology industry ($N = 7$) and the data/analytics industry ($N = 0$).

The Obama 2008 and 2012 campaigns also produced the most firms and organizations in the data set. Former staffers founded 19 firms and organizations after the Obama 2012 campaign and 16 following Obama 2008. That said, there were significant intraparty differences in firm and organizational founding across the parties as well. The Kerry, Dean, and Clark 2004 campaigns launched more firms and organizations than every other Republican campaign (the former including staffers from Dean's failed presidential bid), as did the Edwards 2008 bid. Seventy-eight staffers (66 Democrats and 12 Republicans) founded firms and organizations. And, in keeping with theoretical expectations, of these staffers, 46 (59%) had primary work backgrounds in domains outside of campaigns and politics, such as commercial industry, technology, data/analytics, journalism, etc., or new or mixed work experiences.

This quantitative data set reveals aggregate patterns as to the asymmetry between the two parties with respect to comparative investments in technology, digital, data, and analytics on presidential campaigns, the flow of differently skilled field crossers into politics, and rates of firm and organizational founding. Given the literature cited earlier, this reveals the extent to which Democratic Party campaigns, and especially Obama's two runs, had more extensive operations in the areas of technology, digital, data, and analytics and were likely more innovative within them. And, given rates of organizational founding, former Democratic presidential staffers perceived greater market opportunities in technology, digital, data, and analytics across the party network after these elections than their counterparts did within the Republican Party network.

What explains these historically differential staffing patterns and what consequences did they have? While we can only sketch the broad contours of a far richer history here, practitioners on both sides of the aisle offer historical explanations for the differences between the two parties that are in line with what we expect from the institutional theories detailed earlier.

Democratic Innovation and Republican Inertia After the 2004 Cycle

First, staffers on both sides of the aisle cite that an important catalyst for Democratic innovations after the 2004 cycle was the extraordinary cultural influence of the Howard Dean campaign in capturing the imaginations of party actors as to the role the Internet could play in politics, despite the fact that the candidate ultimately lost. Along with the Clark campaign, Dean's run attracted a number of young and technically skilled staffers from outside of politics who pioneered everything from the systematic use of e-mail for small donor online fundraising to the development of proto-social networking campaign platforms that supported volunteer-driven organizing and fundraising (Kreiss, 2012). After John Kerry lost a campaign that many in the party believed he should have won, staffers working with technology on various bids of the cycle found market opportunities, launched their own consultancies, and challenged incumbent firms in the field. For example, Chairman Howard Dean hired Blue State Digital, a firm founded by four former Dean staffers after the campaign, three of whom joined the campaign after careers in the technology industry, to work on infrastructural projects that were at the foundation of Obama's bid in 2008, including the platform that eventually became My.BarackObama.com and its e-mail client (cofounder Joe Rospars became the new media director of the 2008 bid; Kreiss, 2012, p. 89).

As Padgett and Powell (2012, p. 3) argue, quoted earlier, "In the short run, actors create relations; in the long run, relations create actors." Over time the innovations that emerged on the Dean campaign during the cycle and the firms launched by his former staffers reshaped the Democratic Party network in terms of the technologies, staffers, and firms available for *future* campaigns (see Kreiss, 2012). Within the Republican Party, there was a markedly different story. Bush's dominant re-election victory from a grassroots mobilization, digital, and data perspective (see Nielsen, 2012) provided little impetus for significantly new investments or new firms. As Alex Lundry (personal communication, June 25, 2013), a senior analytics staffer on the 2012 Romney campaign, details what happened after 2004 that changed the trajectories of the two parties:

> So we win '04. I think a sense of complacency frankly sets in across the right. Whereas you have the Democrats who are facing a situation not unlike what we are facing right now [in 2013], which is how did we just lose an election where we really should have won or at least we feel we should have won…. And, they went out and invested aggressively in various institutions and planted a number of seeds which I think have come to fruition like the Analyst Institute, the New Organizing Institute, and Catalist. I point to those three institutions as kind of the pillars of this liberal data analytics ecosystem that were really the key drivers behind the success of 2012, if not directly then at least indirectly in the buildup to 2012.

A number of Republican staffers join Lundry in pointing to a party network-wide failure to create new firms or invest in new digital and database technologies after the highly successful Bush re-election bid in 2004. Numerous former party staffers argued that the Republican Party's primary technology vendors generally remained the same after both the 2004 and 2008 presidential elections, consistent with the data on firm and organizational founding detailed earlier. After the successful Bush re-election campaign, key staffers went to work for the party instead of founding new firms. This left the overall market for technology consulting services dominated by one firm, Campaign Solutions.

Meanwhile, the housing of many of the Bush team's innovations and staffers within the party meant that technological decisions and future development were subject to the formal apparatus of the party and many competing priorities, the whims of particular party chairmen, the waxing and waning of the party's financial fortunes (which practitioners on both sides of the aisle argue result in less stable revenue streams than consulting firms), and well-established vendor relationships with existing incumbent firms.

Meanwhile, an increasingly unpopular president, a disaster in New Orleans, the failure of signature policy efforts around immigration and social security, and a 2006 midterm election that featured a Democratic sweep of Congress, led to what Republican practitioners cite was a fractured party and diminished energy. As a result, the 2008 cycle featured a wide candidate field that pitted a small handful of digital staffers and consultants from the Bush re-elect team largely against one another. At the same time, John McCain's come-from-behind primary bid on a shoestring budget had little to do with technology, unlike his earlier run, and practitioners cite that the general election campaign used a platform provided by Campaign Solutions that looked much like the tool behind the 2004 re-election bid. This was, in no small part, the product of the fact that the Republican nominee had few resources to develop it, whereas the Obama campaign invested in Blue State Digital's platform from early 2007 through the election to build its capacity. Chuck DeFeo (personal communication, January 18, 2013), who was the e-Campaign manager for Bush in 2004 and became CEO of Campaign Solutions in 2009 in addition to later serving as the Chief Digital Officer of the RNC, argues the following:

> By the time they [Campaign Solutions] walk into 2008 they were literally sitting on not the exact same code base—but not a much more mature product than what we had in '04…. In my opinion the heart of why we lost our advantage was clearly the political environment. You know, that's always going to be—energy was not on our side anymore…. Why we looked so flat footed from a technology perspective is because we stopped investing, we stopped innovating and we stopped fixing.

Party Network Culture Around Technology, Digital, Data, and Analytics

Practitioners cite that these differences in the histories of the two party networks between the 2004 and 2008 elections *produced* different valuations of technology, digital, data, and analytics on subsequent campaigns both up and down ballot. On the Democratic side of the aisle, the Obama campaigns in 2008 and 2012 are the most obvious examples of carving out senior-level and autonomous positions for technology, digital, data, and analytics staffers and putting resources behind them (Kreiss, 2012, 2014). This extended to explicitly seeking talent outside of the political field in the technology industry, an express attempt to create the network folding that Padgett and Powell (2012) identify. In 2008, this included staffers such as the co-founder of Facebook, Chris Hughes, who was integral to the design of the campaign's innovative volunteer platform My.BarackObama. com, and an engineer who worked on the Chrome browser for Google, Dan Siroker, who pioneered the campaign's culture of Web optimization that netted millions of dollars and marked the first systematic use of routine A/B testing on a presidential campaign. In 2012, Michael Slaby (personal communication, September 4, 2013), a veteran of the 2008 campaign who worked in venture capital between elections, explicitly sought out staffers who were outside of politics to undertake the campaign's ambitious plans for technological development, which he describes as "an important shift in our orientation about what

we were going to try and build and the kind of skills that we didn't have that we needed to go get."

Slaby was able to realize this vision because an electoral context provided Obama, as an incumbent, with a comparatively long time frame to plan for technological development, recruit staffers, and field test tools, in addition to granting his team the resources to use them. At the same time, the fact that Slaby was hired and empowered to build an unprecedented technology, data, and analytics operation, and had a senior staff position reporting to the campaign manager that granted him the autonomy to run it, was the product of the party's history from 2004 through 2012.

All of this led to an extraordinary amount of hiring, especially across fields, for positions that were specialized to a degree unimaginable in 2008. A number of innovations in electoral technology resulted from this network folding. One of the comparatively unsung technological innovations of the Obama 2012 campaign, an algorithmic way of buying television ads based on set-top box data about how people were watching television called the Optimizer, reveals precisely the role of field crossers on the campaign and their organizational roles. Before ending up on the campaign, the Optimizer's architect Carol Davidsen spent eight years working in the telecommunications and cable industry on billing and customer relations management systems. Davidsen served as the campaign's director of integration and media analytics, a position that did not exist in 2008 and enabled her to bring her specialized skill set to bear on the well-established campaign practice of television ad buying. The Optimizer used set-top box cable data to find targeted people and what they were watching, and make the most efficient local and national advertising buys.

On the other side of the aisle, numerous former staffers detail little change in how the leadership of Republican presidential campaigns in 2008 and 2012 valued and approached technology, digital, data, and analytics. With McCain's loss, the configuration of consultancies, organizations, campaign operatives, and technologies in the Republican Party network did not radically change—staffers connected to 2008 bids only launched nine new ventures after the cycle compared with 27 new Democratic organizations. In large part this was because the results of the election were easily explained away given the state of the economy, an unpopular incumbent, and the broader political context. Of course, these are likely the reasons for McCain's loss. But it meant that many actors across the party's extended network did not make a commitment to investing in technology, digital, data, and analytics or even perceive a significant and consequential gap between the two parties, despite the enormous crush of media around Obama's so-called social media victory.

This, in turn, shaped the context within which the Romney campaign took shape in 2012. One example that numerous Romney and other party staffers point to is the way that the digital team on the 2012 campaign was essentially in service to the communications department. The campaign had an extensive vetting process that included communications staffers and the campaign's leadership for all of the content digital staffers produced across platforms. Obama's digital team in Chicago, by contrast, had the autonomy to post its own content, enabling it to respond in the moment to events on social media. Zac Moffatt (personal communication, January 31, 2014), Romney's digital director, went so far as to describe the campaign as having "the best tweets ever written by 17 people. … It was the best they all could agree on every single time" (see also Kreiss, 2014). In practice, not all of these people signed off on or even reviewed every piece of digital content, but there were enough hands that touched digital content that over time staffers report self-regulating to produce what they knew would get approved. Meanwhile, numerous former campaign staffers working in technology, digital, data, and analytics on Romney's 2012 bid describe an organizational culture where they were frustrated, blocked, and subverted

by campaign hierarchies that at times put little faith in data and looked skeptically at many aspects of digital. Alex Lundry (personal communication, June 25, 2013) describes the role of data on the Romney campaign:

> You have to have leadership and people who are in the decision making, in a directive position on the campaign, who say "I am going to trust the data and I am going to stick with it or I am only going to override it when I feel exceptionally strong about it in a particular way." And, I don't think that everybody on the campaign had that commitment. I think a lot of people on the campaign did, but I don't think everybody did.

Campaign Technology Diffusion Across Election Cycles

As detailed earlier, the Democrats also had much higher rates of firm and organizational founding after presidential elections by these technology, digital, data, and analytics staffers. This carried through the 2012 cycle, which is also what we would expect from Padgett and Powell's (2012) theoretical account of innovation. New firms became the vehicles through which the innovations of the Obama campaign in 2012 diffused across the Democratic Party network. One example is Civis Analytics, the data and analytics firm founded by Dan Wagner, who was joined by more than one-third of the 54-person analytics team on the campaign. Civis Analytics offers a host of applied data science services, including market research, predictive modeling, and an analytics platform for a range of commercial and political clients. Another is BlueLabs, a data and analytics firm also founded by veterans of the 2012 Obama campaign, including Elan Kriegel, who was the analytics director for Hillary Clinton's 2016 run. Finally, Precision Strategies was cofounded by Obama 2012 deputy campaign managers Stephanie Cutter and Jenn O'Malley Dillon and digital director Teddy Goff. Precision Strategies was active in a number of 2014 races and Goff played a senior advisor role to the Clinton 2016 campaign.

Discussion

While technology, digital, data, and analytics are an admittedly small, yet rapidly growing, area of investment for political campaigns, we found at best uneven professionalization in these domains on U.S. presidential campaigns. This finding runs contrary to a substantial body of literature, developed over 30 years, that has variously described the increased "professionalization" or "management" of American politics. What is clear is that some campaigns, such as Obama's 2012 run, explicitly seek alternatives to the professional staffer and consulting model and expressly work to *de-professionalize* their own staffs (see Stark, 2011). More time needs to pass, and more research is necessary, before scholars can determine whether these patterns of field crossing are the result of the comparative newness of these areas on campaigns, the nature of doing work in technology, digital, data, and analytics in an era of rapidly changing technology, or alternatively if professionalization will happen over time. That said, the findings here accord with what other scholars have found with respect to the confusing degree of "professionalization" of campaigns more broadly, versus what Lilleker and Negrine (2002) suggest is more aptly termed "specialization." What is clear is the increased specialization of technology, digital, data, and analytics services on these campaigns, as Carol Davidsen's work (cited earlier) reveals.

While we did not directly consider the work of political consulting firms for these presidential campaigns here, in part given the methodological challenge of trying to disentangle the services they actually provide, the high rates of field crossing and subsequent firm founding suggests that there are low barriers of entry to working in politics, which Grossmann (2009) also found in his analysis of what he sees as the ongoing professionalizing project that consultants engage in. More research is needed on the comparative roles of staffers versus consultants on campaigns in the areas of technology, digital, data, and analytics. The data presented here suggest that the current emphasis in the literature on consultants misses a significant part of the story, at least in the context of U.S. presidential campaigns. While we would expect presidential campaigns to be atypical given they are comparatively better resourced and unfold over longer time periods, more research is needed on how campaigns actually utilize consultants at all levels of office and in international contexts, the ways they understand the value of turning to consultants versus hiring internally, and the trade-offs of different choices. While, drawing on previous scholarship (Nyhan & Montgomery, 2014), this article argued that the consultancies founded by former presidential staffers diffuse innovative campaign tactics and technologies, more research is needed on the barriers they face as they move down ballot and to different electoral contexts (see Nielsen & Vaccari, 2013, on this point in the context of social media).

Finally, the data presented here reveal clear and persistent patterns of party asymmetry at the highest levels with respect to staffing and and organizational firm founding in the context of technology, digital, data, and analytics. These findings challenge many rational choice perspectives that assume parties and campaigns make similar choices given resource parity and suggest that any differences between them would be short-lived. Across a number of campaigns in the data set with comparable resources there were clear differences in hiring in the areas of technology, digital, data, and analytics (e.g., Clinton versus Obama in 2008). At the same time, while resources clearly do matter (as the earlier discussion of the McCain campaign reveals), the historical evidence suggests they are more complicated than just looking at the total raised. Resources matter with respect to their timing (the beginning of a campaign provides more time for investment in technology) and the entities raising them (if fundraising is split between entities such as super PACs candidates and parties have less money to devote to infrastructural work). Resources also offer an accrued advantage, such as investments in party infrastructure that benefit later campaigns.

This article argues that the institutional histories of the parties better explain macro differences between them in their uptake of technology. Their histories condition perceptions of the electoral efficacy of new technologies among campaign and party actors and, over time, the tools and expertise that are available to them and the ways they structure their political organizations. Even if campaigns on both sides of the aisle saw the world in the same way—and, in the time period covered here, there is much to suggest they did not—the institutional factors of parties would still play a role in shaping technological adaptation and innovation.

Based on the analytical model detailed earlier, the investment, hiring, and firm-founding patterns on display during the 2012 cycle will likely shape the 2016 presidential election and down-ballot races. More research is needed into the findings here that Democrats place comparatively greater value on technology, digital, data, and analytics given the party's history to see how far this carries through the party and shapes how its nominee runs in 2016. Conversely, future research is needed into the dynamics of the Republican Party post-2012, an election that many staffers cite they expected to win and which triggered a wave of internal soul searching and firm founding.

Conclusion

This article revealed that from 2004 to 2012, Democratic Party campaigns made considerably greater investments in technology, digital, data, and analytics than their Republican counterparts, attracted greater numbers of field crossers from industry, and experienced much higher rates of firm and organizational founding, which help explain why they are more innovative in these areas. We have demonstrated that, at least in the domains of technology, digital, data, and analytics, campaigns are at best unevenly professionalized. Even more, in keeping with institutionalist as opposed to rational choice accounts, this article shows that campaigns in similar situations and with similar resources see the world differently in terms of evaluating potential paths toward electoral success, and that this is conditioned by the historical work of party networks. Party networks give rise to campaigns in terms of shaping what their management values, how they organize their campaigns, and the technologies and staffers available to them. Transpositions of people, skills, and knowledge across domains give rise to innovations on campaigns and the creation of new organizations that institutionalize them, which over time work to reshape party networks.

Acknowledgments

Notes

1. In rare cases, staffers who worked in technology, digital, data, and analytics on a later campaign may have worked on a previous campaign in a different capacity (i.e., not technology, digital, data, and analytics). Their work for the previous campaign was still included in the data set. The data set is publicly available online at http://danielkreiss.com

2. For Democracy in Action's disclaimer about the data, see http://www.p2016.org/parties/disclaimer10.html

3. In some cases that did not involve first jobs out of college, staffers only had one or two previous listings for their work.

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Appendix

Firms and Organizations by Select Campaigns

Campaign	Firm
Obama 2012	270 Strategies; Amelia Showalter LLC; Appropriate LLC; BlueLabs; Boost Your BIM LLC; Brad A. Schenck Digital Strategy; Civis Analytics; DO. Consulting; Edgeflip; el el see; Evan Zasoski Data & Analytics; Fluence; Goff LLC; Groundswell Public Strategies (now GPS Impact); Modest Inc; Precision Strategies; Public Good Software; Spearhead Digital; Timshel Consulting
Romney 2012	Deep Root Analytics; Lincoln Labs; Poolhouse Digital Agency
Obama 2008	AKPD Message and Media; Atlas Voter Protection; BlueLabs; Bully Pulpit Interactive; GEER; HaystaqDNA; Jumo; Optimizely; Perseid Group LLC; Pinaxis LLC; Revolution Messaging; Rogue Global Solutions; SGF Consulting; Soapbox Interactive LLC; The Department of Design & Semiotic Research; The Victors Group
McCain 2008	CRAFT | Media/Digital; i360; Outlaw Media
Clinton 2008	Graphicacy; Lever Fund; Timeplots LLC
Kerry 2004	Gladius Strategy LLC; Mayfield Strategy Group; MDC Strategies; New Organizing Institute; Original Gravity Media; Trilogy Interactive
Bush 2004	Engage; Targeted Victory