Digital Member Network Implementation and Coproduction: An Investigation of an Alumni Association Network

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Digital Member Network Implementation and Coproduction: An Investigation of an Alumni Association Network

by

Derrick Vance Warren

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

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ACCEPTANCE

This dissertation was prepared under the direction of the *DERRICK VANCE WARREN* Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

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ABSTRACT

Digital Member Network Implementation and Coproduction: An Investigation of an Alumni Association Network

by

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Given the rapid rate of technological change, IT professionals need continuous guidance to implement digital member networks (DMNs) successfully. Moreover, because key stakeholders can drive initial participation and ongoing engagement in these networks, ensuring that stakeholders have positive implementation experiences is particularly important. Against that backdrop, this study focuses on understanding the enablers and barriers to implementing DMNs and identifies ways to accelerate continuous engagement by involving key members in coproduction of the network. A literature review synthesizes key challenges in digitally enabled social network implementation and coproduction in general and provides background for the study, while Implementation Theory and Coproduction Theory offer the analytical framing. From this foundation, the researcher empirically investigates the enablers and barriers to implementing and coproducing a DMN for a university's alumni association. The findings are discussed in relation to the literature on DMNs, insights on the implementation of digitally enabled social networks, and interventions that may drive coproduction and positive member engagement.

INDEX WORDS: Digital Member Networks, Implementation, Coproduction, Enablers and Barriers, Alumni Association

I CHAPTER I - INTRODUCTION

Digitally enabled social networks have become ubiquitous in both business and our private lives (Valente, Palinkas, Czaja, Chu & Brown, 2015). Indeed, today, the term *social network* is often used interchangeably with various networks enabled by Web 2.0 technologies (Benbasat & Barki, 2007) including

- *Blogs*: individual or enterprise online journals that often feature audio or video podcasts.
- *Content communities*: websites organized around sharing content on topics.
- *Forums*: sites where participants are exchanging ideas, often around special interests.
- *Content aggregators*: applications that let users fully customize web content they wish to access.

These network types are prevalent in our businesses, (Attewell, 1992; Bagazzi, Baumgartner, & Youjae, 1992) community organizations, and educational institutions, and offer users opportunities to learn, share information, and engage with their peers. However, implementing these networks can be challenging (Rogers, 2003), and research focused on mitigating these challenges is therefore highly valuable today.

A *digital member network* (DMN) is a specialized type of web-based social network that allows members of an organization to (1) post a public or semipublic profile in a circumscribed system; (2) create a list of members in that system with whom they share a connection; and (3) view those connections as well as connections made by other members in the system. The nature of these connections depends on the site (Boyd & Ellison, 2007). In addition to the standard social network implementation issues, these networks face challenges related to engagement, as their target audience often spans multiple generations with varying degrees of technical competence, economic resources, and cultural exposure to new social media. Thus,

Implementing a DMN is a complex, challenging process (Rogers, 2003). This reality highlights the need to ensure that the network's implementation is effective in serving the members of the organization and in enrolling them in shaping the ongoing development of the network. Indeed, Hargrove (1976) and others believed that understanding implementation is the "missing link" or "black box" in policy analysis and evaluation, and this may also be true of DMN implementations. As such, organizations are investing in understanding better how to implement these networks, as well as to understand how stakeholders engage with, contribute to, and collaborate in improving the network environments. Against that backdrop, this study seeks to add to the body of knowledge on implementing DMNs through a case study within a member organization: an alumni association at a Historically Black College and University (HBCU).

Two theoretical models are used to frame the study:

- The Practical, Robust Implementation and Sustainability Model, or *PRISM* (Feldstein & Glasgow, 2008), introduces interventions that drive engagement in four domains: *intervention design*, *recipients*, *external environment*, and *implementation and sustainability infrastructure* (Feldstein & Glasgow, 2008). Interventions are events and activities that drive engagement. PRISM's interventions give researchers a lens through which to observe member reactions and analyze them for potential impact on engagement. Using this model, interventions that come in the form of events will be introduced to the organization members to encourage engagement.
- Coproduction Theory (Parks, Baker, Kiser, Oakerson, Ostrom, Ostrom, & Wilson, 1981) offers a second foundation for the study. The term c*oproduction* is traditionally used in the public service sector. In this context, it refers not only to engaging stakeholders but also to empowering them to own the network and contribute to its ongoing development. Several

studies have shown that citizen participation in the coproduction of public services holds great potential to improve those services; among the benefits are greater quality and quantity of the services provided to citizens, as well as more efficient service provision (Brudney, 1983; Parks et al., 1981; Percy, 1983; Vamstad, 2012).

The study adapts these theories on implementation and on coproduction to investigate the opportunities and challenges of implementing and engaging members in a DMN. The goal is to capture insights that add relevant knowledge to and drive positive change for future DMN implementations. Because of their dedicated member base, these digital implementations typically have short development cycles and require strong software reliability. Also, because they are service-oriented, the networks can benefit from insights into the implementation of other types of services. Finally, because resources to maintain the DMN and its databases might be constrained, coproduction can be an especially useful approach to support ongoing service improvement and database accuracy.

The study utilizes data collection and data analysis from the case of a multigenerational alumni association DMN to help develop key insights and capture practical lessons. The alumni association is the Southern University Alumni Federation. '*Federation'* and 'Association' are synonymous in this study. Data collection will include multiple sources of data captured before, during, and post implementation, including interviews with 15–20 key stakeholders, archival data about the implementation and use of the network, and notes taken by the implementation team. Based on analysis of these data, the research addresses two specific research questions:

1. *How can the implementation of a digital member network ensure sufficient network engagement, a critical mass of active network use, and a reasonable level of network coproduction?*

2. *How can lessons from the initial implementation and launch of the network inform future directions toward more widespread engagement in and coproduction of the digital member network?*

Hence, the study will assess this network implementation and directions for future initiatives that will strengthen network use and member engagement. A detailed empirical account of the digital network implementation, with insights into challenges and opportunities, will be provided, along with insights and lessons learned from interventions designed to encourage coproduction in the alumni community following network implementation. On that basis, this study will contribute to the literature on implementing DMNs—particularly regarding the role of coproduction—and to the literature on engaged scholarship related to network implementation for organizations, membership associations, and academia. By better understanding implementation and coproduction enablers and barriers, the research will provide valuable knowledge to improve the overall experience of people involved in alumni associations and other member networks.

This dissertation presents the literature review, theoretical framing, research method, results, discussion, and conclusion. Table 1 shows the research design, using Mathiassen's engaged scholarship approach (Mathiassen, 2017).

Table 1 Research Design

COMPONENT	DEFINITION	PROPOSED RESEARCH
TITLE	The title expresses the essence of the research design, with emphasis on C.	"Digital Member Network Implementation and Coproduction: An Investigation of an Alumni Association Network"
P	The problem setting represents people's concerns in a problematic real-world situation.	Alumni Associations and other member organizations must continuously provide positive engagement experiences for their stakeholders. Digital Member Networks (DMNs) are now used to help ensure positive member experiences. Given the rapid rate of technological change, IT professionals need continuous guidance on implementation of DMNs. Moreover, ensuring positive implementation experiences for key stakeholders is particularly important to the success of member networks. The specific problem setting for this research is the implementation of a DMN for an alumni association. As such, the study investigates specific challenges and opportunities related to implementing the network and engaging the alumni in its coproduction.
A	The area of concern represents a body of knowledge in the literature that relates to P.	Implementation of DMNs
F	The conceptual framing helps structure collection and analyses of data from P to answer RQ; FA draws on concepts from A, whereas FI draws on concepts independent of A.	The research framing combines the Practical, Robust Implementation and Sustainability Model (PRISM) (Feldstein & Glasgow, 2008) and Coproduction Theory (Parks et al., 1981). The two key concepts are as follows: • *Implementation*: intervention design, recipients (alumni), external environment, implementation, sustainability infrastructure. • *Coproduction*: ownership, openness, power-sharing, clear communication, value.
		Cont'd
COMPONENT	DEFINITION	PROPOSED RESEARCH
M	The method details the approach to empirical inquiry,	A case study of a DMN for a multigenerational alumni association. The unit of observation is the implementation process. The case study will use data and

	specifically to data collection and analysis.	analytics from the implementation as well as interviews with 20 stakeholders who have different roles and degrees of engagement during the network's implementation. Network data, captured from the beginning of the implementation, is also included.
RQ	The research question relates to P, opens for research into A, and helps ensure the research design is coherent and consistent.	The research questions are: 1. How can the implementation of a digital member network ensure sufficient network engagement, a critical mass of active network use, and a reasonable level of network coproduction? 2. What lessons from the initial launch and implementation of the network inform future directions toward more widespread engagement and coproduction of the digital member network?
C	Contributions influence P and A, and possibly also F and M.	• (P) Assessment of network implementation and directions for future initiatives to strengthen network usage and member engagement. • (P) Contributions to engaged scholarship on DMN implementation for-profit and nonprofit organizations, membership associations, and academia. • (A) Detailed empirical account of a Digital Network implementation, with insights into challenges and opportunities, specifically as they relate to ensuring sufficient coproduction. • (A) Contributions to the literature on implementation of DMNs, emphasizing the role of coproduction. • (A) Contributions to the area of Implementation Analysis and Science.

II CHAPTER II - LITERATURE BACKGROUND

This literature review draws on research in information and communication technology (ICT) and social network implementation. The review also explores the role of coproduction in social networks. Prior ICT research points to potential benefits and risks during implementation of social networks, which are fundamentally changing the way we communicate, collaborate, consume, and create new information (Aral, Dellarocas & Godes, 2013). The research on coproduction asserts that it can improve social network outcomes, including innovation speed and customer satisfaction (Bendapudi & Leone, 2003), as well as overall social network engagement. Other research, however, claims that involving customers can create challenges such as lower social network innovation (Lawton & Parasuraman, 1980), cybersecurity exposures, and social network enhancement speed. Likewise, implementing any ICT system entails both organizational and individual change (e.g., Rogers, 2003; Van de Ven, 1986). Encouraging user engagement and establishing continuous use have proven challenging (Bullen & Bennet, Burns et al., Grudin, & Kwon & Zmud, 1987). The literature review in this chapter synthesizes key challenges and opportunities around two streams: digitally enabled social network implementation and coproduction.

II.1 Social Network Implementation

Social networks are a type of ICT system that arose in the 1990s to support the operational areas of various organizations (Hanafizadeh, Hanafizadeh, & Khodabakhshi, 2010). The challenges and problems associated with ICT system implementation and engagement have led scholars and practitioners to investigate ways to understand and manage their processes and related phenomena, spawning extensive literature (e.g., Jeyaraj, Rottman, & Lacity, 2006). Whether in the form of online applications, platforms, or media, the aim of social networks (then

and now) is to facilitate interaction, collaboration, and content sharing (Palmer & Koenig-Lewis, 2009). Research in this area has provided mounting evidence that the implementation of social networks causes difficulties and unanticipated challenges (Denning, 2010; Mangold & Faulds, 2009; Noone, McGuire & Rohlfs, 2011). A 2013 study published by Forrester showed that key implementation challenges in social networks included achieving return on investment (ROI), measuring performance, and a lack of financial and staff resources. The unique characteristics of DMNs, including the fact that they are online social networks and focused on a group of members with similar interests and backgrounds, might help us better understand and appreciate the unanticipated challenges that organizations experience. These challenges include engagement and coproduction. The literature records the first recognizable digital social network site as SixDegrees.com (Boyd & Ellison, 2007), which launched in 1997 and let users create profiles, bios, and friend listings, and discuss their interests with other members. SixDegrees.com's main advantage was that it allowed members to communicate, connect, and socialize. This was a key engagement factor and the reason why it attracted many users. Further research asserts that, although attractive to users, SixDegrees.com's business model could not justify network continuation. The service shutdown in 2000; the organizers stated that the closure was due to the network being ahead of its time [as stated in A. Weinreich's personal communication, July 11, 2007] (Picket, 2015). Figure 1 offers a historic look at major social network implementation events (Boyd & Ellison, 2007).

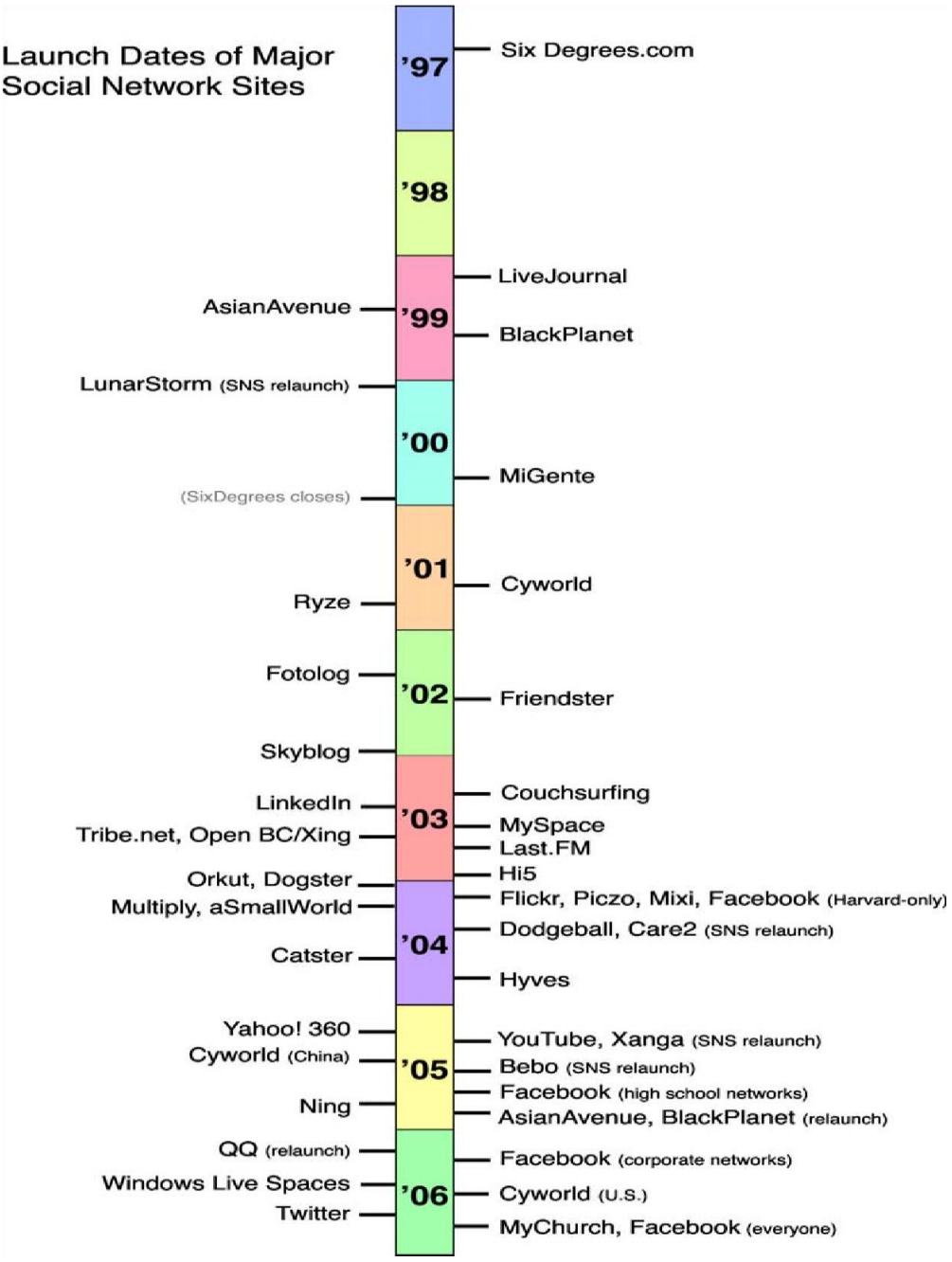


Figure 1 Implementation Dates for Major Social Networks.

When considering social network implementation through this lens, it is essential to understand the importance of implementation management and the organizational and technological preconditions within an organization. These management and precondition issues are characterized in the literature using the 4 C's of social network implementation: control, culture, coordination, and clarity (Valos, Polonsky, Mavondo, & Lipscomb, 2015).

In this context, *control* refers to decision-making. A 2013 study of more than 1,500 executives identified managers' frustration with the ability to quantify results from digital technology (Fitzgerald, Kruschwitz, Bonnet & Welch, 2013). Likewise, the academic literature has provided growing evidence that implementing social networks is a difficult process that creates unanticipated challenges (Denning, 2010; Mangold & Faulds, 2009; Noone et al., 2011). Another 2013 study by Forrester showed that the key challenges faced in implementing social networks were achieving ROI, measuring performance, having insufficient financial and staff resources, and integrating social with traditional marketing and promotion (Ingram, 2013). Further, the lack of control in social network implementation could result in negative public relations and press (Woerndl, Papagiannidis, Bourlakis, & Li, 2008) and implementation risk.

The implementation process is a critical and complex procedure that requires both a new organizational *culture* and a new way of thinking (Korsten, Lesser, & Cortada, 2013). The organizational structure also plays a role here; organizations with a top-down hierarchical approach to management face greater challenges with the diffusion of control and coordination in the implementation process (Denning, 2010). Thus, digital network implementers may need to develop new skills for working in adaptive, open, and collaborative environments with cultures that encourage and support stakeholders in making empowered decisions (Fisher, 2009).

The academic literature has identified many implementation challenges involved in social network *coordination,* including how to assign responsibility for social network implementation activities (Denning, 2010), integrate a social network across organizational functions (Edosomwan, Prakasan, Kouame, Watson, & Seymour, 2011), measure the social network's costs and benefits (Fisher, 2009; Michaelidou, Siamagka, & Christodoulides, 2011), and develop and deploy the personnel to perform the social network activities. Many ICT systems are socially

constructed and learning-intensive (Lyytinen & Damsgaard, 2001), and they often require considerable skills and know-how to be implemented, operated, and adopted (e.g., Andriessen, 2003; Attewell, 1992; Lyytinen & Damsgaard, 2001).

In any technical implementation plan, coordination of the cross-functional and external activities is therefore critical. Social network implementation challenges traditional management structures and organizational formalization due to a social networks' ad hoc decision-making (Munar, 2012). It can also lead to changes in cross-functional coordination. These changes are likely to threaten individuals or departments, particularly if they represent a loss of or change in power relationships. This can compromise interdepartmental cooperation and cause conflict.

Another challenge of social network implementation that the literature addresses is *clarity* of roles (Macnamara & Zerfass, 2012). The lack of strategic role clarity in the implementation process contributes to cross-functional coordination problems in purchasing, creative execution, and logistical decisions (Kunz & Werning, 2013). That is, the ambiguity in both roles and the social network mission and goals can result in inappropriate use of the social network. To address this, the research stresses the role of processes and procedures in understanding ICT system implementation and adoption (e.g., Attewell, 1992; Bagozzi, Baumgartner, & Youjae, 1992; Benbasat & Barki, 2007; Korpelainen & Kira, 2010; Vandenbosch & Higgins, 1996).

As we look at the 4 C's—control, culture, coordination, and clarity—as a whole, it highlights that social network tools and strategies are evolving, and organizations and consumers are both continually adapting to new uses of social networks and shaping that usage. Complexity is created as users obtain information from multiple digital channels; this can require changes in the organizational structures' implementation plan. Internal information flows to allow

information to be accessed simultaneously from multiple sources in a timely fashion may also be impacted. (Oelke, Cunning, Andrews, Martin, Kuschminder, & Congdon, 2009).

II.2 Social Network Coproduction

According to Whitaker, *coproduction* is based on the idea of stakeholder participation in service provision, including "the active involvement of the general public and, especially, those who are to be the direct beneficiaries of the service" (Whitaker, 1980). Alerting city officials to problems is described as coproduction (Nambisan & Baron, 2009); other examples of coproduction point to users helping with application development (Nambisan & Baron, 2009) . Further, while organizations traditionally focus on their resources, coproduction provides a model in which firms can innovate by tapping into external sources, such as customers and partners (Majchrzak & Malhotra, 2013). Key cases provided in the literature include how the Lego Group involves customers in innovation processes (Benapudi & Leone, 2003), and the way Sony developed its PlayStation 2 in collaboration with customers (El Sawy, Amsinck, Kraemmergaard, & Vinther, 2016; Li & Calantone, 1998). Other examples of coproduction highlight how organizations are increasingly encouraging customers to take on more active roles in the services provided to them and the products provided for them (Benapudi & Leone, 2003). Think of people as they crop, enlarge, correct, or enhance their photographs; check in and out of hotels using a code on their phones; and scan and bag their groceries at supermarkets with little assistance (Bendapudi & Leone, 2003). Supermarkets are models of customer coproduction and began letting customers select, cart, and transport groceries themselves in the 1930s (Benapudi & Leone, 2003). Encouraging customers to be "coproduces" is a change further visible in the emergence of the "customizing consumer" (Moyers, 1989)—that is, consumers who examine market offerings and create a customized consumption experience for themselves (Firat,

Dholakia, & Venkatesh, 1995). The literature helps to frame the importance of coproduction and why it matters. Customers are pivotal sources of knowledge and involving them in innovation processes helps translate their needs into new products (Nambisan & Baron, 2009; Prahalad & Ramaswamy, 2000). This shift in the perspective of companies to viewing customers as active coproducers rather than as a passive audience is captured in the move from "What can we do for you?" to "What can you do with us?" (Wind & Rangaswamy, 2001).

While the cases above show the benefits of coproduction, several studies point out that customer involvement as coproducers can cause harm (Ittner & Larcker, 1997). The review highlighted that customer involvement and an overemphasis on customer feedback in the design process can make a firm reactive rather than proactive and can push the organization to exceed its capabilities in an attempt to provide products that respond to every customer demand (Ittner & Larcker, 1997). The literature also revealed that customer involvement could cause project delays and increase cycle time and costs (Lagrosen, 2005).

In relation to social network implementation, coproduction refers to the creation of new products and services by members of the service (Cooper, 1999). An essential part of a social network is the creation of user-generated content, which collaboratively harnesses the collective intelligence of the individual users and leverages network effects (Scherp, Schwagereit, & Ireson, 2009). Huang, Yang, Huang, and Hsiao (2010) discussed how social networks could drive innovation in organizations by fostering the emergence of informal networks, weak ties, boundary spanners, and social capital by enhancing knowledge sharing and transfer. Social networks also engage in continuous development and release of new product or service features, touting anytime and anywhere implementation through their websites, unconstrained by network boundaries and regular work hours. The 24/7 access of these networks allow for updates to

services or products at virtually anytime. For example, the Facebook platform engages users worldwide in codeveloping and continuously releasing new applications for other Facebook users. Continuous innovation, enhancement, and release of new products and services on a web platform are unprecedented, and many of the new product and technology releases are done with the help of third parties that develop the applications for the firm. These partnerships and power-sharing arrangements formed the social network construct (Gnyawali, Fan, & Penner, 2010). Scherp, Schwagereit, and Ireson (2009) and Santos and Eisenhardt (2009) highlight the importance of partnering in nascent markets, such as those related to DMNs. These DMNs—social networks by another name—also depend on their registered members to provide and share interesting content for other members to consume and share. DMN members do this by creating and updating their profiles, messaging friends and family members, and engaging in many other social interactions that create enormous amounts of content for the organizations (Hempel, 2009). More qualitative research is also called for in contexts where ICTs, which include social networks and DMNs, have transformed value coproduction processes (Chen, Tsou, & Huang, 2009), including in "professional service markets, such as consulting" (Payne, Storbacka, & Frow, 2007). Other research has called for customer inclusion in empirical studies to provide a systemic understanding of value coproduction rather than focusing on specific firms (Chen et al., 2009). In such an effort, DMNs can offer new ways of researching and engaging customers. However, these networks' unique characteristics can also inhibit coproduction. Although empirical insights in this key area are rare, researchers have discussed how to capture insights on ICT-induced change and innovation from both a social network and service science perspective. Doing this requires using an implementation science lens, with the implementation as the basic unit of analysis (Spohrer & Maglio, 2008). Therefore, all elements of technology-enabled value

coproduction, including ICTs and interpersonal exchanges, must be taken into consideration (Breidbach, Kolb, & Srinivasan, 2013; Breidbach, Smith, & Callagher, 2013; Makarem, Mudambi, & Podoshen, 2009). The research design draws on these guidelines.

II.3 Literature Gaps

Despite the emphasis on the positive impact of social networks, organizations often confront impediments and deficits in social network implementation and coproduction practices. Although the literature has made attempts to understand and categorize those impediments, little has been said about DMN implementation impediments in a specific, practical context. Likewise, the capture of clear implementation steps and leading practices on coproduction were not shown in the literature. Some researchers have attempted to categorize the barriers to adopting and successfully implementing ICTs, yet studies have yet to examine these enablers and barriers in relation to DMNs. Also, while the extant literature covers social networks, their uses, and their business advantages, it rarely explores the context of coproduction and thus lacks lessons, experiences, and new knowledge from and for this process.

II.4 Summary

In summary, there is an emergent body of knowledge vis-à-vis social networks, but little research focused on how DMNs are implemented. Implementation of these networks is a complex endeavor that introduces a host of challenges for member-based organizations and their stakeholders. Also, existing literature fails to expand on the barriers and enablers to digital network implementation and coproduction. The research focused on these areas will advance knowledge by providing valuable lessons and insights to help organizations improve the implementation experience for their key stakeholders. The results of the proposed case study will also help digital member organizations engage in and increase coproduction. Finally,

highlighting the results of a recent network implementation will help these organizations not only improve their processes but also enhance their overall implementation experience and identify ways to encourage member coproduction. Table 2 captures some of the most important works referenced in this review.

Table 2 DMN Implementation Key Literature Reviews

TITLE	AUTHORS	PUBLICATION	YEAR
Theories of ICT System Implementation and Adoption—A Critical Review	Eija Korpelainen	Working Paper, School of Science and Technology, Aalto University	2011
Making Sense of Implementation Theories, Models, and Frameworks	Per Nilsen	Implementation Science	2015
Social Network Sites: Definition, History, and Scholarship	Danah M. Boyd and Nicole B. Ellison	Journal of Computer-Mediated Communication	2016
Influence of Customer Engagement with Company Social Networks on Stickiness: Mediating Effect of Customer Value Creation	Mingli Zhang, Lingyun Guo, Mu Hu, and Wenhua Liu	International Journal of Information Management	2017
Technology-Enabled Value Co-Creation: An Empirical Analysis of Actors, Resources, and Practices	Christoph F. Breidbach and Paul P. Maglio	Industrial Marketing Management	2016
A Literature Review on the Business Impacts of Social Network Sites	Payam Hanafizadeh, Ahad Zare Ravasan, Ali Nabavi, and Mohammad Mehrabioun	International Journal of Virtual Communities and Social Networking	2012

Cont'd

TITLE	AUTHORS	PUBLICATION	YEAR
Senior Marketers' Insights into the Challenges of Social Media Implementation in Large Organisations: Assessing Generic and Electronic Orientation Models as Potential Solutions	Michael Valos, Michael Jay Polonsky, Felix Mavondo, and John Lipscomb	Journal of Marketing Management	2015
The Impact of Social Networking Sites on College Students' Consumption Patterns	Whitney Sue Thoene	Thesis, College of Liberal Arts, Marshall University	2012
A Descriptive Model of the Consumer Coproduction Process	Michael Etgar	Journal of the Academy of Marketing Science	2007

III CHAPTER III - THEORETICAL FRAMING

The theoretical framing of this research is centered on *Implementation Theory*, which focuses on understanding, identifying, operationalizing, and evaluating implementation situations and phenomena within organizations and projects. The theory is thus particularly helpful for examining how organizations adopt and use social networks. Implementation Theory includes many models, but in this context, PRISM is particularly useful. The study further uses *Coproduction Theory* as a complementary lens to help identify and explicate phenomena related to collaboration and engagement issues associated with implementing social networks. Together, the two theories structure this research and the way it collects and analyzes data to investigate enablers and barriers to implementing DMNs.

III.1 The Practical, Robust Implementation and Sustainability Model (PRISM)

PRISM (Feldstein & Glasgow, 2008) is based on Implementation Theory and has been used since the early 2000s, primarily in the healthcare and life sciences industries. For example, PRISM research often focuses on mental health programs in schools with diverse constituencies and environments. Here, in this research, PRISM will help interpret individuals' engagement patterns in relation to DMN implementation. PRISM is founded on the Diffusion of Innovation theory (Rogers, 1995), the Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework (Feldstein & Glasgow, 2008), and quality improvement (Feldstein & Glasgow, 2008). The model originated in the life sciences industry, where it is used to examine circumstantial factors and interventions that affect program implementation, adoption, and maintenance. Researchers have also used PRISM to examine program implementation and sustainability in classrooms to evaluate how they affect specific areas. As Figure 2 shows, PRISM consists of four areas that are active in digital network program implementations. The

four areas are the 1) intervention, 2) external environment, 3) implementation and sustainability infrastructure, and 4) recipients.

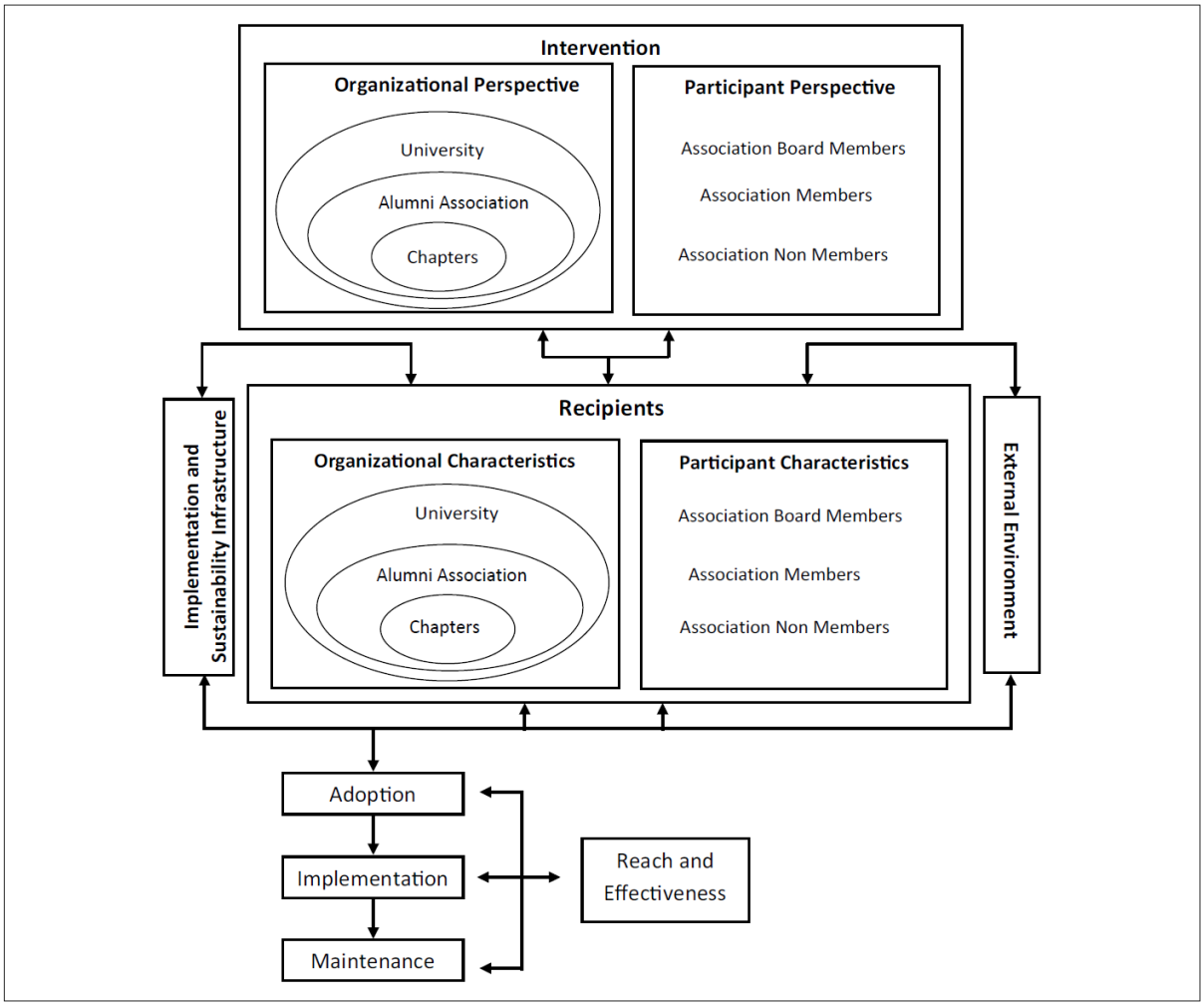


Figure 2 An Adaptation of the Practical. Robust Implementation and Sustainability Model (Adapted from Feldstein & Glasgow, 2008, p. 2030).

III.1.1 *Intervention*

PRISM captures the perspectives of organization and participant stakeholders when an intervention is introduced. An *intervention* is commonly defined as a change to a program, system, or function; researchers use PRISM to assess specific stakeholders' degree of readiness to implement and adopt such an intervention (Feldstein & Glasgow, 2008). As in Figure 2 and for the purposes of this study, the intervention is shown from the perspective of the organizations

involved and from the perspective of the participants. For example, in an alumni organization setting, PRISM can be used to assess the readiness of university, its alumni association, and its chapters to a change the website. In addition to the organization, PRISM also examines the prospective impact of the intervention on participants such as the alumni Association's board, members, and nonmembers. Their readiness to use a program or to introduce, remove, or change a program, system, or function is investigated. Another intervention example might be implementing a new mobile application or a tool that would replace an existing mobile app or service. For this case study, the existing program is a static website driven by Microsoft Office tools and an alumni membership management system that is driven almost solely through manual intervention. In contrast, the new Association Management software-as-a-service (SaaS) program creates a dynamic website that includes secure username-password entry, profile updates, and other new functionality driven by user interactions and focused on interactive engagement and self-service. PRISM is a powerful tool for analyzing such a change and related intervention strategies. Using PRISM allows examination of how the intervention might enhance or support the organization and its participants, identify barriers to implementation and coproduction, and provide recommendations and feedback to improve intervention outcomes.

III.1.2 *External factors*

An implementing organization's external environment comprises market forces, including customer satisfaction, regulatory compliance, business partners, and supporting organizations and communities that influence, collaborate with, or compete with stakeholders (Feldstein & Glasgow, 2008). A DMN relies on its network members for resources, information, feedback, and execution assistance that may not be available from within the foundational DMN environment. The external environment may also include competitive forces that seek to use

network members' resources, along with other related organizations and businesses. The external environment is typically large. For example, it often includes analyzing how government entities, such as the IRS or state audit agencies, might influence member satisfaction with the network. The external technology forces may also play a role in how DMN participants interact with the network. For example, if the technology is deeply infused in the network, will engagement increase or decrease? Processes maturity is another example. Mature, well-documented, accurate processes may improve a user's experience, whereas immature processes might have an opposite effect; both provide a view into how public perception and the reputation of the network impact the intervention. Another example of a collaborative external factor is when a community-sponsored event uses the DMN as its event landing page, which lets participants register for the event and select various activities to participate in, thereby increasing their overall engagement with the DMN and the alumni organization. As these examples show, external factors can be important in either enabling or inhibiting a network implementation.

III.1.3 *Implementation and sustainability infrastructure*

The DMN's implementation and sustainability infrastructure is its flexible and adaptable foundation that provides the required functionality for operating and maintaining the intervention (Feldstein & Glasgow, 2008). A DMN's implementation and sustainability infrastructure includes performance data, the technical team, member training and support, protocols and procedures, and applying and sharing best practices. It captures organizational characteristics focused on stakeholders who design, develop, implement, and maintain the DMN. These stakeholders include administrators, board members, and DMN support staff. Their unique perspectives on implementing this change are critical to understanding factors that enable or represent barriers in the process. Examples of the implementation and sustainability

infrastructure would include operational process manuals, executive dashboards, key performance indicators, and other data analytics that help determine DMN health. This infrastructure also includes training programs and usage-related data important to the DMN's future evolution, while understanding implementation functionality helps determine and prioritize future investment and infrastructure additions.

III.1.4 *Recipients*

The *recipients,* from a PRISM standpoint, mirror the intervention's focus on organization and participant but look at characteristics rather than perspectives. PRISM views recipient characteristics as key factors that influence implementation and sustainability (Feldstein & Glasgow, 2008). Here, in this research, the recipients are the network stakeholders who benefit from the intervention, continued evolution, and growth. The recipients include both an organizational and member-participant perspective, including administrators, board members, staff, and alumni members and non-members who have a vested interest in continued support of the university. Decision-making methods as well as data access methods fall under organizational characteristics that are evaluated through PRISM. Recipient characteristics are the DMN demographics, industry orientation, training, knowledge, beliefs, organizational health, culture, and data that reflect stakeholders' network experiences and ongoing engagement with the university and DMN network. Is the experience positive, negative, or neutral? The characteristics of recipients, both organizational and participant, can be vital to understanding barriers and to enabling future DMN engagement.

III.1.5 *Summary*

As Table 3 shows, this study will capture and analyze the four PRISM concepts in the DMN context, investigating the perspectives and characteristics of the intervention, the external

environment, the infrastructure and sustainability infrastructure, and the recipients. The study will also highlight factors that influence implementation and sustainability in the DMN domain. As the following section describes, the study uses *coproduction* to investigate how the innovation's implementation and engagement impacts network stakeholders.

Table 3 PRISM Concepts and the DMN Context

CONCEPT	DEFINITION	SOURCES	APPLICATION
Intervention	The intervention is a change to a program, system, or function. In the PRISM model, the intervention and the analysis of perspectives occur at both the organizational and recipient levels.	Inspired by Feldstein and Glasgow, 2008	This study introduces a new membership management platform that will replace Microsoft Office tools. The new platform will introduce new functionality that was not previously available. This change represents the intervention. The analysis will be performed from an Organizational (University, Association, Chapter) and Participant (Board, Member, Non-Member) Perspective
External environment	The external environment comprises market forces, including customer satisfaction, regulatory compliance, business partners, and supporting organizations and communities that collaborate with, compete with, or influence stakeholders.	Inspired by Feldstein and Glasgow, 2008	Governmental organizations and their policies play a role in DMN implementation and maintenance. Community events—such as movie showings, community service projects, and lecture series— also present opportunities for collaboration.
Implementation and sustainability infrastructure	The implementation and sustainability infrastructures are flexible, adaptable infrastructures that provide the implementation and support functions associated with the intervention.	Inspired by Feldstein and Glasgow, 2008	The creation of tracking tools, performance indicators, data analytics and decision-support systems can help identify popular functions and troubleshoot issues related to DMN implementation and coproduction.
Recipients	The recipients are the organizations and members that benefit from the implementation of the intervention. Their characteristics are examined through the PRISM lens. They are also key stakeholders for the continued evolution and growth of the intervention.	Inspired by Feldstein and Glasgow, 2008	As participants engage in activities of their choosing, online surveys and direct contact requesting feedback will help us determine good and bad products and solutions. Characteristics of the organization (decision-making and data access) and participants (attitudes, cultures, IT knowledge, and more.) will be examined.

III.2 Coproduction Theory

Coproduction Theory was originally developed in the 1970s by R.B. Parks (Parks et al., 1981), who defined *coproduction* as a blending of the productive efforts of public service agents and citizens in the provision of public services. For this study, *coproduction* is defined as follows:

1. The process through which inputs used to produce a good or service for an organization is contributed by individuals outside the organization (Ostrom, 1996).
2. A relationship between a paid employee of an organization and groups of individual citizens who directly and actively contribute to the organization's work (Parks, 1981).

More generally, coproduction occurs when two or more parties agree to work together to determine the output of their collaboration. These joint efforts may occur independently or through coordinated activities in the same production process (Parks et al., 1981). T. Bovaird and colleagues later expanded Park's definition to include volunteers and community members as coproducers (Bovaird, Stoker, Jones, Loeffler, & Roncancio, 2015). In this definition, two criteria—*complementary* and *participatory*—describe four types of coproduction as seen in Table 4.

Table 4 Types of Coproduction*

INPUT AND ACTIVITY	DEFINITION	EXAMPLE
Complementary coproduction in implementation	Passive involvement in implementation	Visiting the website, intervention or program; minimal feedback on the implementation.
Complementary coproduction in service engagement	Passive involvement and input in service engagement	Minor access of services; minimal feedback on services improvements or new service needs.
Participatory coproduction in implementation	Active involvement in implementation	Logging into the website or visiting multiple areas; active communication regarding implementation with feedback that includes implementation changes.
Participatory coproduction in service engagement	Active involvement in service engagement	Actively utilizing website or program services. Providing feedback that improves services or helps generate ideas for new services.

Note. *Adapted from and inspired by (Bovaird et al., 2015).

This expanded definition captures complementary and participatory inputs to coproduction, as well as how the inputs impact coproduction during the activities of implementation and services. As Table 4 summarizes and the following describes, the four types of coproduction are 1) complementary coproduction in implementation, 2) complementary coproduction in service engagement, 3) participatory coproduction in implementation, and 4) participatory coproduction in service engagement.

III.2.1 *Complementary coproduction in implementation*

Complementary coproduction in implementation occurs when members engage in coproduction tasks that complement, rather than exist within the core implementation process. Complementary implementation tasks support an activity indirectly rather than directly; the tasks are important to the overall network implementation, but implementation is not critically dependent on them. In a DMN or any program, for example, network members may help the organization implement the digital network system by providing and collecting the names, addresses, and email addresses of other alumni (potential members) without participating in the task of importing those names into the database as part of the implementation. These members also provide very little input on the implementation, ways to improve it or areas that went well.

III.2.2 *Complementary coproduction in service engagement*

In service engagement, complementary coproduction occurs when members engage in tasks that indirectly support this process. For example, DMN members might help host a scholarship event or volunteer for charity services that are connected to the organization's mission without directly designing the event or activity, creating workflows, developing service process documentation, testing the service registration process, or ensuring that the service operates as stated in the documentation. As such, complementary tasks support the service engagement process, providing valuable input for the actual service engagement activities.

III.2.3 *Participatory coproduction in implementation*

In implementation, participatory coproduction occurs when stakeholders actively engage in the implementation process. In a DMN, examples include members who design or help in the implementation process through implementation analysis, troubleshooting and loading member data into the DMN system. Direct involvement in implementation is a key component of

participatory coproduction. DMN members may also engage as early program adopters, as participants in pilot testing or system integration activities, or by investigating technology trends and techniques to support the DMN's mission.

III.2.4 *Participatory coproduction in service engagement*

Participatory coproduction in service engagement occurs when members are directly involved in updating, designing, creating, and making a recommendation to network member services and functionality. Any service, event, or program that allows membership interaction can be considered a service engagement. This engagement includes producing and implementing individual and organizational services that will be used to carry out the member network's organizational mission. In a DMN, for example, members might provide input in the design and delivery of the services while also performing validation once a service is implemented. Table 5 exhibits the Coproduction Theory of DMN. Another service engagement example is developing and implementing webinars featuring members, office staff, and other stakeholders, or participating in a DMN event such as a wine tasting or political forum.

Table 5 Coproduction Theory – DMN Summary

CONCEPT	STUDY RELATIONSHIP	SOURCES	STUDY APPLICATION
Complementary coproduction in implementation	Members are engaged in implementing DMN tasks but in an indirect rather than a direct way.	(Brandsen & Honingh, 2015)	Members help the DMN organization collect names, addresses, and emails of alumni, but do not help import the information into the database.
Complementary coproduction in service engagement	Members are engaged in coproducing a DMN service engagement, but their tasks complement, rather than directly create, a new service or function.	(Brandsen & Honingh, 2015)	Members help plan and organize the DMN organization's scholarship and charity events, but do not help design the organization's services.
Participatory coproduction in implementation	Members are actively and directly engaged in the implementation of a DMN service through direct involvement and support.	(Brandsen & Honingh, 2015)	During implementations, a selected group of members' pilot test DMN system services, while others help import member information into the DMN database.
Participatory coproduction in service engagement	Members are actively and directly involved in creating, designing, and implementing the DMN services. They also provide feedback on existing services as well as ideas for new services.	(Brandsen & Honingh, 2015)	Members and other stakeholders design and conduct webinars and participate in and deliver services to other members and themselves. Members act as ambassadors for the DMN through advocacy and training.

III.2.5 *Summary*

Early researchers studied coproduction in the industrial and service markets contexts and found that it offers a competitive advantage and economic benefits from customer collaborations in business-to-business endeavors (Firat & Shultz, 1997; Fitzsimmons, 1985). In the 1990s, coproduction emerged in the consumer markets, where customers who took an active role in the production process were referred to as *customizing consumers* (Firat, 1991; Firat & Venkatesh, 1993; Firat et al., 1995; Firat & Shultz, 1997). In his definition of coproduction, Etgar (2008) includes customers performing various activities in the production process and encompasses all cooperation formats between the customer and the service provider.

PRISM model and Coproduction Theory concepts provide a framework for this study and capture processes, lessons, and insights for implementing a DMN for active use and coproduction. The study will identify and implement experiments aimed at capturing insights into implementation and coproduction engagement.

IV CHAPTER IV - METHOD

IV.1 Research Setting

This study offers a detailed empirical account and assessment of a DMN implementation in an association member organization—that is, an *alumni association*. Note that the alumni association is sometimes referred to as alumni federation. These names are interchangeable regarding this study. The Alumni Association studied consisted of approximately 3,000 financially active members with more than 50,000 living alumni that are not financially active but receive university communications at the beginning of the study. More than 2,000 of the active members are lifetime members, while the remaining members are categorized as annual members. Lifetime members pay a one-time dues amount for a non-expiring membership. Annual members pay yearly membership dues that align with the organization's fiscal year. Subscribing Life Members have two years to pay off their lifetime membership fees. The study contributions include identification of insights into the challenges and opportunities involved in implementation as well as ensuring coproduction among network members. It also identifies future initiatives to strengthen network usage and member engagement. The study uses exploratory qualitative research to examine this DMN implementation and associated coproduction. Data collection includes stakeholder observations, in conjunction with stakeholder actions, to identify enablers and barriers to network implementation and coproduction. The study draws on data from three additional sources: events and documents during the DMN process, interviews with key stakeholders, and network data to gain a deeper understanding of these and other implementation and coproduction issues.

IV.2 Data Collection

Focusing on implementation and coproduction, the researcher conducted a qualitative literature review using the critically appraised topic approach (Baskerville, 2018) and implementation as the unit of observation. The researcher captured processes by observing, documenting, and recording activities before, during, and after the implementation. The same process was carried out to capture coproduction activities that occurred during and after implementation. For stakeholder observation, the researcher used realist ethnography (Maanen, 1988) - that is, the study of people and cultures - to capture additional data in the form of reactions to the implementation and coproduction interventions.

Researchers typically use realist ethnography to gather data about the individuals being studied from a third-person viewpoint, discreetly and without judgment. Because the researcher was also a key implementer, additional reflection, and reliance on outside interview transcripts was used to help minimize bias. In this case study, the researcher collected data on stakeholder responses to the DMN and coproduction activities through email, other messages, and documents used during the process. The researcher also observed stakeholder actions and decision-making processes during network implementation. All observations used in the study are confidential and help in the investigation of the network. Unlike direct feedback from interviews, the observation method is naturally occurring. Additional observations focused on complementary and participatory coproduction during implementation and service usage. As noted in the literature review, underlying assumptions of the DMN included capturing members desire to communicate with other network members. It also included information access and capture, and the personal need of members to increase personal and professional connections.

The study also used structured interviews to allow stakeholders to elaborate on their experiences with DMN implementation and coproduction interventions. Interview participants included the alumni board members, alumni (both association members and nonmembers), and office staff. These members spanned five generations and possessed minimal knowledge of the policies and procedures used to support membership data. Most were accustomed to standard technology, including regular mail and phone support as a way of accessing membership information.

The interviews covered topics such as stakeholder perceptions of the network and its functionality; motivations for using it or not using it; what they liked and disliked about the network; and areas for improvement. Interviews were conducted with a cross-sampling of 20 stakeholders, including alumni board and council leaders, Alumni Association members, and alumni nonmembers. Alumni members participating in the interviews were classified as members of the Alumni Association who had paid annual dues or were currently paying toward their life membership subscription (a two-year process). The alumni nonmembers were not financially active with the organization but were either a graduate of the university or had attended for a minimum of one semester. They were selected based on their role with the organization as well as past and present involvement (or lack of involvement). These alumni stakeholders were interviewed to help the researcher more specifically categorize enablers and barriers to network use and coproduction.

All interviews were recorded and professionally transcribed with the permission of the participant to aid in the data analysis. The interviews lasted between 30 and 60 minutes, and there were no follow-up interviews. The interview questions were designed to capture information that would aid in answering the research questions on barriers and enablers of

implementation and coproduction. The interview data was later imported into NVIVO for further review and analysis as part of the study. All stakeholders were alumni of the institution or connected to it in some way, and their positions ranged from board members to chapter presidents. Some interviewees were part of the association and others were not. All were alumni. Their backgrounds were varied and spanned multiple industries. In addition, key organization and stakeholder perspectives and characteristics were also observed as part of the interviews. Table 6 summarizes the characteristics of the stakeholders interviewed. Appendices B, C, and D contain the interview protocol, questions, and consent form, respectively.

Table 6 Stakeholder Interviewees and Key Characteristics Summary

INTERVIEW #	ALUMNI ROLE	PROFESSION	ENGAGEMENT PRE-DMN IMPLEMENTATION
1	Board Member	Auditor	LOW
2	Board Member	Engineer	HIGH
3	Chapter President	Project Manager	MEDIUM
4	Board Member	Government	HIGH
5	Chapter President	Accountant	MEDIUM
6	Alumni Member	Engineer	LOW
7	Alumni Member	Entertainment Executive	LOW
8	Alumni Member	Administrative Support	LOW
9	Board Member	Recruiter	HIGH
10	Chapter President	Retailer	HIGH
11	Alumni Member	IT Manager	LOW
12	Alumni Nonmember	Staff Assistant	LOW
13	Alumni Member	Comptroller	HIGH
14	Alumni Nonmember	Retail	LOW
15	Alumni Member	IT Professional	MEDIUM
16	Alumni Nonmember	IT Professional	LOW
17	Chapter President	Insurance Agent	MEDIUM
18	Board Member	Project Manager	HIGH
19	Alumni Member	Legal	HIGH
20	Alumni Member	Accountant	LOW

Network data added context to the study. To gather it, the researcher accessed historical and current data from the Alumni Association archives. These archives contain a wealth of physical documents related to the Alumni Association and its operational processes. Further, such data provided contextual information regarding the association's previous implementations, member preferences, metrics, and activities, as well as helped explain certain stakeholder sentiments, perceptions, and responses.

IV.3 Data Analysis

During data analysis, the researcher grouped observations using two analytical activities: 1) analysis based on the conceptual/theoretical framework outlined in Chapter III; because this analysis was based on coding, it broadened the understanding of how the theoretical concepts manifested in the empirical material; and 2) thematic analysis of the empirical material that examined themes and patterns in the data captured through the DMN process, procedures, notes, interactions, observations, and interviews. Using NVIVO, a qualitative tool for analyzing data, the researcher created codes with nodes that mapped to the conceptual framework of PRISM and coproduction. The PRISM nodes were *intervention, external factors*, *infrastructure and sustainability framework,* and *recipients*. The coproduction nodes included *complementary coproduction in implementation*, *complementary coproduction in services engagement*, *participatory coproduction in implementation,* and *participatory coproduction in services engagement.* As the data was analyzed, links to the theoretical concepts that were found in the data were coded under the appropriate theoretical node. Thematic coding was also performed but rather than seeking data points linked to the conceptual framework theories, the focus pinpointed themes. These themes centered on joining the association, dues and donation payments, events, communications, services, and networking. Themes and patterns identified in the data were used as part of the study's results, discussion, conclusions, and implications.

Based on the literature, many qualitative researchers use codification frameworks to structure the outputs of data analysis. This structure allows a comparison of findings against the conceptual framework nodes and the thematic nodes to identify insights and new knowledge that contribute to the research, as documented by Charmaz (2000).

The data analysis was linked to the three-year timeline of the study, which was based on an alumni association's membership data repository and networking needs. The researcher analyzed

the notes, emails, process documents and personal observations aligned with each timeline milestone and captured insights using a conceptual framework and thematic lens. Thus, the written exchanges that occurred during this time helped establish a foundation for the research. They also contributed to a more in-depth analysis of each node and added context to the contributions outlined in the study's Discussion section. For example, most of the quotes were provided through the alumni member and nonmember interviews with some provided through notes. As the study's results section describes in more detail, the candid alumni feedback on what went well, what did not, and how future implementations might be improved both informed the study's goals and contributed to their fulfillment. The interview transcripts supported the theory and thematic areas. It was important to explore theory using PRISM Intervention, External Factors, Implementation and Sustainability Infrastructure and Recipients lens. Expanding on this with Complementary Coproduction Implementation and Service Engagement and Participatory Implementation and Service Engagement was also important. This analysis and categorization contributed to the ongoing evolution of the timeline depicted in Figure 3 displayed in Chapter V. The thematic areas included Intervention Influence, Member Attitude and Readiness, Education, Awareness, Availability of Online and Hands-on Training, Trust and Integrity and Resources. Table 10 captures these areas. Because the areas being explored are somewhat new, analyzing and categorizing data according to theory and theme is useful (Botha, Farshid, & Pitt, 2011) because it facilitates common topic development with practical application across organizations. It also offers insights into how an organization uses social media terminology and applications (Luo & Jiang, 2012). The information is important in this case because it can reveal key enablers and barriers to successful implementation and coproduction.

Understanding these enablers and barriers could help maximize member engagement and satisfaction as well as lead to increased Alumni Association giving and participation.

V CHAPTER V - EMPIRICAL ANALYSIS AND RESULTS

The idea of implementing a DMN for the Alumni Association was born out of necessity. This necessity came in the form of a crash: the only computer in the Alumni Center office that contained current membership information crashed and remained down for two weeks. Although most of the data was recovered, the recovery tool could recover data only up to the last cloud backup. The period between that last backup and the time the system was recovered created a data gap that the organization attempted to fill manually. The following quote from the association administrator captured the motivation for the study:

> *"When my computer crashed and would not come back up, I never expected it would take two weeks to get back in business. I do backups, but not on a regular basis. I know I need a better solution."*

The study evolved during early decision-making and testing, as well as during a series of interventions designed to impact the Alumni Association's core metric areas of membership, financials, and engagement because of this incident. These interventions included: 1) inviting existing association members to join the network as well as encouraging nonmember alumni to join; 2) communicating the national elections; 3) announcing the new DMN and encouraging people to join on Academic Signing Day; 4) hosting a movie night; 5) offering National Conference registration; 6) relaunching the website; 7) relaunching the Career Center. Figure 3 shows a timeline of the study with key milestones and interventions

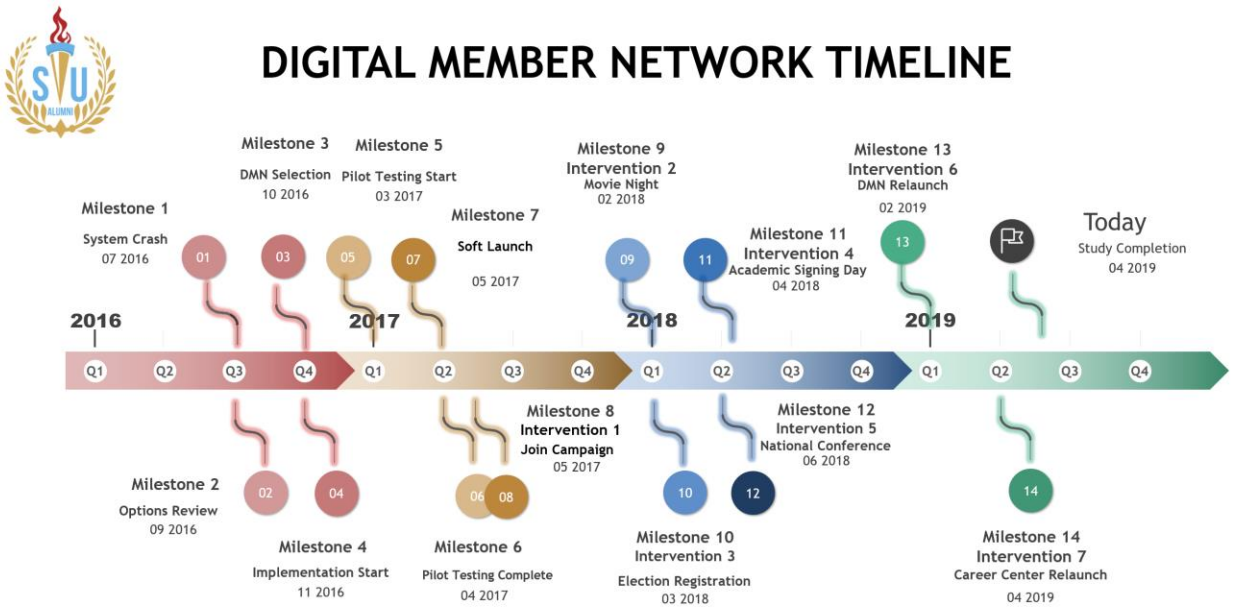


Figure 3 Digital Member Network Timeline.

V.1 Background

The research study was established following a major data loss incident at the alumni association main office. The computer that housed the membership and association data was a key asset to the organization. Data including reports, policies, procedures, handbooks and related information resided on this device. The researcher, who also served as Alumni Director, summed up the study initiation as follows:

> *"Less than a month into my new role as Alumni Director and a data crash occurs. As a Computer Scientist, my priority is to restore and stabilize the environment. My second priority is to ensure this never happens again. We will move to a cloud-based system now to ensure our member data and other information assets are protected from unexpected events."*

V.1.1 *System crash*

The DMN solution is the overall intervention and targeted solution to minimize future member data loss. While the implementation of that solution is the study's unit of observation, including subsequent interventions introduced during the implementation. External factors included the availability of IT resources, workload requirements associated with manually inputting member data, the organization's cultural and habitual history (way of doing things), the readiness and acceptance of change, the dependence on traditional database management (Microsoft Office Toolkit), and the limited staff resources to support the implementation. Implementation and sustainability infrastructure factors included the traditional Microsoft Office Toolkit, with maintenance support managed by the campus IT department rather than a local storage drive or a cloud-based solution. The office staff was responsible for the network's sustainability and maintenance but did not have the skills to do adequate backup, recovery, or ongoing maintenance. This lack of regular maintenance, backup, and recovery left the membership data at risk.

V.1.2 *Options review and digital member network selection*

The Alumni Technology Committee was charged with examining options and choosing a DMN solution. This team consisted of office staff, two board members with technical backgrounds, and alumni members who had some involvement in IT. These committee members were tasked with identifying and evaluation solutions. The members included the Association Executive Director, Association Assistant Director, Association President, Association 1st Vice President, Association 2nd Vice President, and an alumni member at large. The Director and the 1st and 2nd VPs had technology backgrounds, while the President, Assistant Director, and at-large members came from legal, marketing, and sales areas, respectively. Another team member

was an active alumnus who owned a technology company. These diverse stakeholders brainstormed and searched for solutions that would support the association goals and fix the current pain points surrounding member data. The committee focused on three solutions:

- Option 1: Repair the existing environment, possibly including upgrades.
- Option 2: Design and develop a custom cloud-based system from scratch.
- Option 3: Outsource the solution to a SaaS provider of Association Management Software (AMS) designed to support member-based organizations.

All three of these solutions provided ways to mitigate future membership data losses and office interruptions. Staying with the current environment was the most cost-effective and timely approach as it was (by definition) already in place. Before making a final decision, however, the technology committee performed a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis on each of the three options as a safeguard.

Option 1 involved repairing and upgrading the current environment. When the crash occurred, the university IT department immediately began working to restore the computer and data. Although this was originally thought to be a simple task, it proved difficult. The computer was old and had not been consistently updated with current software releases and fixes; basically, it was maintained on an “as needed” basis and required upgrades as part of the restoration process. Once the restoration and upgrades were complete, Option 1 would be the most cost-effective, most straightforward, and quickest solution to implement. These were the strengths. The solution’s weaknesses included no new functionality beyond the cloud storage upgrade; continued instability; continued risk of data loss as data would still be linked to the last backup; and limited support resources.

The Office Administrator expressed a preference for Option 1 for several reasons:

"I already know this system and environment. Why invest thousands of additional dollars in a new system, when this one works fine the majority of the time? Our organization is too small for this type of investment. Let's just stay as is and look into stronger storage options."

Figure 4 shows the full SWOT for Option 1.

• **STRENGTHS**	• **WEAKNESSES**
• Low Cost • Easy Implementation • Speed of Implementation • Convenient • Minimal Learning Curve	• Minimum Functionality • Instability • High Risk of Data Loss • Human Resource Intensive
• **OPPORTUNITIES**	• **THREATS**
• Upgrade Potential • Allows More Time for Additional Analysis • Leverages Existing Knowledge	• Delay in Modernization • Membership Growth Impact • Missed Opportunity for Change (organizational culture and timing)

Figure 4 Repair and Upgrade Current Environment (Option 1).

Option 2 was customized and offered organization-specific functionality, improve personalization, and a cloud-based system to prevent future data loss. The custom solution would offer modern personalized features and services for alumni engagement and ensure a look and feel that reflected our membership. Although more costly than Option 1 (the existing solution), this custom solution's strengths added value through the additional functionality and the stability of a new website and database. This value made the cost impact acceptable from the technology committee's perspective; however, the committee had concerns about system maintenance and support. The 1st Vice President was a supporter of this option:

"Being able to tailor the solution to our needs is a huge advantage to me. Added functionality, features, and we get to design it to fit our specific needs. Plus, an

alumnus is performing the work and has loyalty ties, which keep him and his company vested. Why not give the work to one of our own? It is clearly a win-win in multiple ways."

Figure 5 shows the SWOT analysis of Option 2.

• **STRENGTHS**	• **WEAKNESSES**
• Moderate Cost • Custom Functionality • Alumni Member Designed and Built • Custom Design	• Dependency on Provider • Ongoing Maintenance • Repair/Fix Pricing • Potential Repair Speed • Requires Staff Training on New Solution
• **OPPORTUNITIES**	• **THREATS**
• Allows Policies/Procedures Changes Tailored for Our Organization • Build Alumni Loyalty	• Long Viability of Solution • Unknown Long-Term Costs • Currency of Technology • Potential of Not Being Best in Class

Figure 5 Build a Custom Solution (Option 2).

Option 3, the SaaS Association Management DMN, offered the benefits of the custom solution, along with features and functionality. It also offered sounder support, scalability, and adaptability assurance based on its business longevity and business experience. Upgrades and unlimited help desk calls were a major feature that influenced the selection of the Association Management software solution, as was the fact that all upgrades are included as part of the annual fee, with no hidden costs. This ongoing maintenance, support, and consultation—at no additional cost—was a key factor in the committee's decision to select the SaaS service over the other two options. The fact that more than a thousand companies had implemented the SaaS solution solidified the committee's choice.

One technology team member's view of the SaaS solution was:

"This solution was designed specifically for organizations like ours. It has all of the functionality we need, plus additional features. I realize it is more expensive, but with ongoing support included, as well as upgrade releases, we will remain current. Possibly the biggest advantage is that it is a proven product that has been implemented by over a thousand organizations."

Figure 6 shows the SWOT analysis of the SaaS option.

• **STRENGTHS**	• **WEAKNESSES**
• Moderate Cost • Association Management Software • Proven Design • High Functionality • Integrates High Value Features • Maintenance Included • Technology Remains Current • Implemented by over 1,000 organizations	• Dependency on Service Provider • Political Impact • Less Influence on Design • Solution Strictly Tied to Technology and Those Who Embrace It • Requires Staff Training of Solution
• **OPPORTUNITIES**	• **THREATS**
• Access to Provider Network • Offers Insight into Future Trends and Technology in the Association Management Software and Member Engagement Space	• Mature Member Resistance to Change • Manual Duplication of Certain Functions Due to Digital Member Technology Gaps

Figure 6 SaaS Association Management Solution (Option 3).

Another committee member summed up the final decision as follows:

"The SaaS [Association] Management solution gives us peace of mind and stability. It also has virtually all of our core requirements plus other features in place already. When weighing the pros and cons, it is clearly the best choice for our organization."

V.1.3 *Implementation and pilot testing*

Although other website SaaS solutions were available in the market, none were marketed with a membership-network focus. The organization, therefore, signed the contract for the Association Management option in October 2016. The tool was transitioned from the provider's Sales Team to the Association Management Implementation and Support Team a few days after the contract signing; this helped ensure a smooth transition from the sales to implementation stages. The Implementation Team was staffed with experienced practitioners who understood the SaaS implementation process from beginning to end. This team would work with us through transition, pilot testing, and launch. Following the launch, a third transition to *steady state* - ongoing operations with the SaaS customer and technical support organization. To increase the probability of success, the Sales and Implementation teams focused on a seamless, collaborative transition. A dedicated Implementation Manager was then assigned to guide the team through the implementation process. Working collaboratively, the new team created a detailed, structured implementation plan to capture key implementation steps from start to finish. Because the solution was cloud-based, a software install was not required. The Implementation Manager provided training and support, guiding the team in leveraging the new DMN to identify and eliminate inefficiencies in current processes and procedures, reduce manual activities, and lower administrative costs. Training was simplified through recorded sessions by topic area; these sessions were available 24/7, along with live product training and step-by-step user guides. One-on-one training packages were also offered at a cost.

As part of the implementation plan, the implementation team used a design guide to capture key requirements for the DMN website. This guide documented the logo, site colors, images guidelines, web fonts, social media URLs, and templates. It also asked the implementers

about the goals for the site, which were identified as “client-friendly membership engagement; automation of the registration-profile update process; and membership, networking, and philanthropic giving growth.” In addition, the guide asked the team about the network needs, which were to have easy access to membership registration, profile updates, payment processing; event and information access; networking; and engagement between members and the supporting community. A reflective question aimed at the site’s design asked the implementers about adjectives that they wished to convey; the answers included “professional, ease of use, modern, contemporary, clean, direct, user-friendly, and engaging.” Finally, the design guide asked the alumni association what they disliked about the existing site. Here, in their words, the answer was simple: “static design, costly updates, and limited functionality.”

Although the design guide offered a strong guiding force for the implementation, the dedicated Implementation Manager’s (IM) hands-on support had even more impact. The IM also provided access to additional administrative training, design meetings with subject matter experts (SMEs), and other resources throughout the implementation process. Once the website logos, data, and links were in place, bulk data loading was used to begin the process of copying/transporting the membership records to the new DMN. With the foundational records loaded, the technology team and office staff began pilot testing. During testing, the focus was on ensuring the join and dues features were functional and that the user experience was pleasant. The implementation team was also able to codify key baseline metrics into three areas, 1) membership, 2) financials, and 3) engagement. *Membership* focused on increasing association members; *financials* captured all financial transactions, including dues, donations, and store orders; and 3) *engagement* focused on DMN access through profile updates, app downloads, connections, and event registrations. A baseline for the metrics based primarily on each area’s

pre-DMN implementation numbers was established early in the process. The finance and engagement baselines were set to zero because these DMN functions were not available before implementation.

Once pilot testing was complete, the communications announcing the new DMN was prepared. The team worked with the current vendor to switch from the prior Internet Service Provider (ISP) to the new SaaS provider, which let the team keep our domain name and redirect all users to the new DMN (All websites have both a domain name and a unique Internet Protocol, or IP, address that the network uses to locate a website; in this case, the domain name remained the same, but the IP address changed). Although the organization allocated 24 hours for the changeover, it occurred almost instantly. A technology team member highlighted some of the reasons for this seamless transition:

> *"Pilot testing was very important to our implementation plan. Our organization had not introduced new technology in years, so being able to 'touch and feel' the new system prior to launch revealed valuable insights. It also allowed us to make adjustments in preparation for launch."*

V.1.4 *Soft launch*

Once the Domain Name Switch (DNS) was complete, soft launch was initiated. Because the group only changed the IP address, it was virtually seamless to the association membership. Further, it did not visually change the website but instead added new functionality that was apparent only if users knew where to look. Thus, rather than announce the changes to the general membership, the team shared the changes only with a key group of target users: the technology committee, office staff, and alumni board. From this soft launch, we discovered the need to improve error correction, create DMN documentation, and improve our engagement strategy.

The implementation team also uncovered additional issues, mainly related to data accuracy. A website portal was added to help document key activities when using the new DMN. Some of the challenges (such as missing email addresses and data accuracy) were a surprise, but the team responded quickly. Additional challenges such as member readiness and resources also became a focus. Other challenges experienced during implementation are addressed later in the study. Overall, response to the implementation was good per emails and member calls. One of the board members summed up some of the new system's benefits as follows:

> *"Having our records accessible from the cloud and on our phones is major. Human error has bit us too many times. Having an online database improves our data quality and moves us from an archaic existence to the 21st century. I love being able to use an online system and confirm my membership, make payments, as well as network with other alums. My goal is to use this system to attract more members."*

V.2 Interventions

As part of the implementation study, seven key interventions were observed: 1) Membership Drive (New DMN); 2) Movie Night; 3) Election Registration; 4) Academic Signing Day; 5) National Conference Registration and Participation 6) Website Relaunch; 7) Career Center Relaunch. A summary of these interventions is provided in Table 7.

Table 7 Interventions

#	INTERVENTION	DESCRIPTION	PRIMARY METRIC(S)
1	Membership Drive (New DMN)	Formal launch of the DMN informing members of its availability, new functions, features, and value.	Membership, Financials, Engagement
2	Movie Night	Social event featuring a highly anticipated movie.	Engagement
3	National Elections	Alumni Association Officers are elected every two years. While an outside vendor conducts the election process, the DMN will be instrumental in communicating announcements, key dates, and candidate campaign advertisements. Only association members can vote in the election.	Membership, Financials
4	Academic Signing Day	National Recognition Event for all Recipient of Alumni Association Scholarships. Patterned after Athletic Signing Day, but celebrates academic scholarship acceptance rather than athletic team acceptance.	Engagement
5	National Conference Registration and Participation	The Alumni Association National Conference is held every two years. The DMN will be used for registration in addition to traditional hardcopy methods.	Engagement
6	Website Relaunch	This intervention reminds both old and new members of the Alumni Association's online presence.	Membership, Financials, Engagement
7	Career Center Relaunch	This relaunch reminds both old and new members of the Alumni Association's support for employers and job seekers at all stages of their careers.	Membership, Engagement

V.2.1 *Joining the new DMN*

The joining intervention was initiated via an email from the website in May 2016 and included in the association newsletter. This newsletter was sent online via an email service called Constant Contact rather than through the DMN. A hardcopy notice was sent to members who did not list an email address or if the email address listed was incorrect or bounced (notification that the email was not received). The initial "ask" in the DMN announcement was for alumni who were not already members to join the Alumni Association. There are three types of association membership: life memberships, which never expire; annual memberships, which are renewed each year for $50; and subscribing life memberships, which allow a down payment of $50.00 and two years of quarterly subscription charges. Existing members of all three types were included in the member data bulk load performed as part of the new DMN implementation. In addition to seeking new Alumni Association members, the join email asked life members for a one-time donation of $25 for operations and maintenance of the new DMN.

Before the DMN implementation, membership requests or renewals were sent via standard mail with three payment options: pay by cash in the Alumni Association office, mail a check, or go to the static website and pay through the PayPal interface. The new join request offered the same payment options, except that the PayPal option was replaced by the DMN recommended payment process, *Bluepay*. As a business partner of the SaaS DMN provider, Bluepay offered the advantage of lower overall processing costs than PayPal.

The association administrator preassigned DMN user names and passwords for all existing members with an email address on file. These members were data bulk loaded into the DMN database. They each received the "Join" email, which included their pre-assigned username and default password, along with instructions for joining and resetting their passwords,

and an overview of the new DMN's benefits, Association members who did not have email addresses were assigned "noreply@sus.edu" to meet the system's requirement that all members have an email address. One of the board members shared their 'Join" experience as follows:

> *"I was ecstatic about an online system, but admit struggling a little to log in. I wasn't quite used to having to do this. I appreciate having a username and password, but it is another set of information I must maintain. Regardless, being able to complete a profile and connect with other alumni is worth the learning curve I am experiencing."*

Appendix E shows the join email, flyers sent to the DMN community, and the *Join the Association* intervention brochure. As one of the first introductions to the DMN, this join intervention impacted all metrics, including membership, financials, and engagement.

V.2.2 *Movie night*

The member Movie Night was a "first of its kind" experiment for the association, and the alumni association invited both alumni members and nonmembers to participate in the event. Tickets for the Movie Night could be purchased through the DMN. The featured movie was "Black Panther," starring popular actors Chadwick Boseman and Michael B. Jordan. The event was held in February of 2018. A large amount of publicity surrounded the movie, and once the private Movie Night screening for alumni was announced, the tickets immediately sold out. The association added an extra day to accommodate the event's unexpected popularity. The Movie Night intervention targeted engagement with alumni using the DMN as a registration tool. It was not viewed as a membership or financial driver; instead, it was designed to gauge interest in Alumni association event sponsorship and as a way to engage members and the community at large. New or renewed membership is a desire of event engagement, but not the main focus. The main focus is providing greater member services and experiences. An alumni member commented:

"The movie was fantastic, and having a private screening just for alumni and students added to the experience. Registration on the website was easy and painless as well. I would definitely love to see more of these types of events."

Appendix F shows the Movie Night flyer.

V.2.3 *National elections*

The Alumni Association elects national officers every two years. The election process is important to the organization's history, and it has evolved over time from being strictly a hardcopy, mail-in ballot process, with ballots counted by the Alumni Affairs office, to a hybrid process that uses hardcopy mail and digital processing. Typically, the election period begins a year before the annual conference, where the election results are announced. On the DMN timeline, we show election campaigning as starting in August 2017. Several activities occur leading up to the election, including candidate campaign events, candidate forums, debates, and membership recruitment, reclamation, and retention activities. Communication is absolutely a top priority due to ongoing concerns of trust, integrity, and election bias being levied on the Executive Board and others in past elections. This led the Executive Board to pursue an external service provider to address any concerns about election integrity and member trust. The association now uses an external vendor to handle the election. Although it has helped address these concerns, it also costs two to three times more than performing the work in-house.

An alumni election candidate shared this perspective:

"Having a system in place that could timestamp and validate member standing was an important enhancement to the election process. Anything that can help improve member confidence in the process matters to me."

From an Alumni Associations' standpoint, elections can influence membership and financial growth. This is believed to be driven by the requirement regarding voting rights belonging only to members who are financially active. The new DMN was used as the primary information resource for prospective candidates and members. The alumni association placed the nomination package, articles of incorporation, association by-laws, and election guidelines on the DMN and made them accessible to both members and nonmembers. Alumni had until the end of February 2018 to become members in good standing for election voting participation. This period extended beyond February 2018, however, because some chapters collected membership dues at their meetings and mailed the information and payments to the alumni association office, with the mail timestamped before the end of February 2018. Once in the office, staff members input the information into the DMN for proper logging and information capture. As a result, the actual election voting cutoff timeline was extended to mid-March. Appendix G shows examples of the election materials, including letters and flyers sent to candidates and members during the election cycle.

V.2.4 *National academic signing day*

The Alumni Associations' National Academic Signing Day recognizes high school seniors that are provisionally accepted to any one of the five university campuses. It is patterned after the traditional athletic signing day where schools celebrate athletes who have chosen to attend and play for their institution. The National Academic Signing Day idea was conceived by an alumnus who felt it was just as important to celebrate academic scholars who were attending the university as it was to celebrate the athletes. This Signing Day was the fourth overall intervention and the first to use the DMN for student, parent, and guest registration. The Academic Signing Day—similar to the athletic day it was patterned after was a coordinated

effort with participating alumni chapters from around the country. The days and times were synchronized and videoed via audio-video conferencing and YouTube using a round-robin format. Cities participating in the first Signing Day included Baton Rouge, New Orleans, Shreveport, and Lake Charles, Louisiana; Atlanta, Georgia; Jackson, Mississippi; Houston, Dallas, and Austin, Texas; Los Angeles, California; Chicago, Illinois; and Washington, D.C. Each location takes a few minutes to introduce itself and its location, then introduces the students signing their letters of acceptance and committal to the university.

Registration via the DMN was a requirement so that we could capture key information and an accurate headcount. Because it was a nationally coordinated effort, each registrant selected the location of their participation. Each event also offered an opportunity for students in the various cities to meet other students from their area who were attending the university. The university alumni in attendance served as ambassadors to the Signing Day and used it as a way to network with, connect with, and mentor incoming freshmen in advance of their arrival on campus. We held the signing day at the end of March 2018, and more than 358 students, parents, and guests registered for the event. An alumnus participating in this Academic Signing Day observed that the event, which has implications beyond the day itself, was enhanced through its integration with the DMN:

> *"National Academic Signing Day has become a mainstay in our overall recruiting and admissions process. Higher education's calling is academics, with athletics as a bonus. Both matter but the reason people attend college is for an education—why not celebrate educational excellence? Having a system in place to help with the process improved the overall experience and helped parents see*

the university in a new light. Audio and video conferencing also made a difference. We definitely need to do more of this type of innovation."

Appendix H shows a copy of the flyer used to announce National Academic Signing Day.

V.2.5 *National conference*

In accordance with Alumni Association bylaws, a conference is held every two years (the association holds it biannually rather than annually to keep down the costs). The new DMN implementation allowed the alumni association to offer online registration for the conference for the first time in its history. The association began advertising the conference in summer 2017 and continued until it convened in July 2018. Nationally syndicated columnist Roland Martin was contracted to be the Awards Gala Keynote speaker as an additional draw. The association committee worked with the DMN support team to simplify registration, offering an overall conference attendance option as well as a la carte pricing for those who could not attend every day. The DMN was the main vehicle for registration from January 2018 through the July 2018 conference opening. A Board member found opportunities for improving on this intervention:

"I don't believe we utilized the website (DMN) as effectively as we could have. Maybe this is due to awareness or education. Whatever the reason, we need to maximize usage in the future to help increase registration and overall attendance."

The National Alumni Conference, as with all of the interventions, touches all metrics, but its primary metric was engagement. Full registration, a la carte registration, tickets, ads, and sponsorships were all available through the DMN. Alumni and supporters could also register by

calling the office or through traditional mail. Appendix I shows the flyers used to promote this event.

V.2.6 *Website relaunch*

The website relaunch was designed to remind members of the existence and availability of the new online DMN portal. Although the portal is used in most advertisements and often mentioned often during meetings and presentations, the Executive Board and others felt it was necessary to send a formal reminder to the organization and other alumni about the new DMN's value-added capabilities. The intent was to recruit, retain, and reclaim members. Appendix J shows the website relaunch letter.

V.2.7 *Career center relaunch*

The study concluded with the Career Center relaunch during the first quarter of 2019. In the fall of 2018, the alumni association integrated the Career Center into the DMN website. It includes functionality for both job posters and job seekers. The Career Center is an additional service of the SaaS vendor and added functionality for the existing DMN. It also includes a resume building and evaluation service. An alumnus provided this insight:

> *"I had no idea a career center was available from the website. I wish I had known earlier, but now that I know I will utilize it. We need more education on what is available to us."*

Appendix K shows the Career Center relaunch letter.

V.3 Intervention Results

Implementing the DMN for the Alumni Association was a bold move for an organization that was not known for its technology. The introduction of several new functions and services

seemed overwhelming to some stakeholders—and long overdue to others. In any case, the DMN remains a work in progress, as the following quotes from two board members attest:

> *"[I'm] happy to be able to join and pay my dues and make donations online. It was still harder than I think it needs to be. The user interface needs additional work." - Board Member 1*

> *"I don't think it's very intuitive. You know, with like, your Facebook, you know a lot of these things. Instagram, they're kind of linear, and it's easy to streamline. You could figure it out. With this system, we need five or six webinars a year to help us use it better. - Board Member2*

V.3.1 *PRISM findings*

The findings related to PRISM are captured across the model dimensions of interventions, external factors, infrastructure and implementation stability, recipients, and summary. Table 8 captures key insights from the PRISM findings.

V.3.1.1 Interventions

The DMN Join intervention was a "call to action." Members need a "reason" to act and a "why," and both are important factors in generating a response. The DMN introduction provided both factors, but that alone is not enough for growth. The Membership Drive ("Join") intervention was plagued with challenges around data accuracy. One irate member called the office and shared:

> *"I received an email addressed to "Chris." My name is "Carolyn." I want to pay my dues and would have online, but I do not trust the system if it can't get my name right."*

Addressing data issues around incorrect names, email addresses, physical addresses, and member status became a major effort during the early phases of the launch. Since member data is always changing, members were reminded to review their profiles and update them. This reminder is the coproduction aspect of the DMN. Repetitive requests were used as a way to move members from c*omplementary coproduction* to *participatory coproduction*, where users updated their profiles without a nudge from the DMN administrator. In addition, certain data was made accessible to only members, providing an additional incentive for joining. Some examples of this restricted data included organizational by-laws, articles of incorporation, association policies, and procedures. Members were also admitted free to certain events or received discounts on events, products, and services where nonmembers did not. Members informed us that this played a role in their registering for membership. One member noted:

> "When I noticed that my friends were able to access parts of the website that I could not, I joined immediately. I also like the fact that my I gain free admittance to tailgates while nonmembers are required to pay a $10.00 fee... These benefits definitely played a role in my becoming active with the organization."

The election intervention allowed only financial members to vote. Candidates were key ambassadors for membership (and financial) growth through this election intervention. The Movie Night intervention focused on member engagement. Members registered for this event via the DMN. The Academic Signing Day allowed not only alumni member engagement but nonmember, student and parent engagement as well. The DMN handled the registration seamlessly, and feedback on the registration process was positive. The fact that the DMN was able to produce reports and other key data was an added benefit. More than 270 individuals registered and attended the event. Data quality and accuracy regarding member records is the

most important factor in building trust and integrity based on feedback from interview participants and notes captured by a subset of event attendees.

Relaunch of the DMN was an essential step to remind members and nonmembers of the existence of the DMN. It also highlighted the finding that merely building a network would not bring people to the network. Feedback throughout the implementation period was that one must give people a reason to visit the DMN early and often. In 2016, before the DMN launch, the association had 3400 members. By the end of 2017, post DMN launch, the numbers increased to over 4000 members. The end of 2018 saw membership at 4300. This increase was attributed to elections and football season interest. The Board of Directors decided, considering the membership growth, that a relaunch announcement about the DMN was justified. The announcement focused primarily on the financial metrics and engagement. Membership increased to 4500 in the weeks following the DMN relaunch announcement. This increase added to the study findings highlighting constant communications as an important part of any implementation project.

Similar to the DMN Relaunch, the Career Center Relaunch offered members a gentle reminder that this service and functionality were available. The reminder worked; based on DMN analytics, there were more than 1,000 visits within the first 24 hours following the announcement. While communication is a key instrument in driving engagement, multiple tools are needed to help inspire members to act. Action, in the case of this study translated into coproduction. This productive action is necessary if a member wants to take full advantage of DMN features and functionality.

Reflecting further on interventions, the researcher saw the two-sided network effects of supply and demand. Merely supplying the network, events, products, or services would not

necessarily drive coproduction activity or engagement. Demand generated by need, communications, member loyalty, and other market drivers could help encourage more member engagement and usage. In both implementation and engagement, the demands of the members must be considered so supply can respond to the needs of the market (in these case, the DMN stakeholders.

The findings also revealed that during implementation, the interventions, along with continuous communication, impacted membership and overall engagement in positive ways. Financial impact was also a natural outcome of the implementation and engagement activity. The following tables provide a numerical view of the effect on membership and engagement.

Table 8 Intervention Impact on Membership

INTERVENTION	MEMBERSHIP BASELINE #	MEMBERSHIP PERCENT CHANGE	OBSERVATIONS
BASELINE: May 2017	2,902	0	This number reflects the membership prior to DMN implementation.
1 - Join	3,500	21%	After implementation through year end 2017.
2 - Movie	4,049	16%	The result could be driven more by the election intervention rather than the movie intervention. Movie is tied to engagement rather than membership.
3 - Election	4,217	4%	Additional membership growth during last month prior to election validation cutoff.
4 - Signing Day	4,256	.4%	Registrations were handled through the DMN for members and nonmembers.
5 - Conference	4,450	4.5%	Member Registrations for the conference were handled through the DMN. Discounts were offered for members (incentive to join).
6 - Relaunch	4,951	11%	Reminder of organization and DMN existence, functionality and benefits.
7 – Career CTR	4,992	.02%	Reminder of specific DMN value-added service as well as indicator of interest for future services similar in nature.
TOTAL CHANGE	2090	72%	Membership growth is significant; although DMN is believed to play a role, other factors also could play a part in this growth.

Immediately before the DMN implementation in May 2017, the alumni association membership was 2,902. Following the Join announcement of the DMN and through the end of the 2017 calendar year, over 598 alumni became members of the alumni association. This event reflected an increase of 21%. Many members registered at university football tailgates, hospitality suites, and chapter members when members of the alumni staff visited. The Movie night intervention during February 2018 saw an increase of 549 members and a total membership of 4.049% or 16% increase. Based on discussions with members during this period, this increase in membership was tied more to the Election intervention than the Movie night. The election cycle concluded on March 15, 2019. This cycle was the period that allowed members to join if they desired to cast a vote in the association elections. The cutoff for the election cycle was 30 days after movie night and brought the total membership to 4,217, a 4% increase. The period leading up to Academic Signing Day, two weeks after the election cutoff, saw little change in membership with an increase to 4,256 members, a .4% increase. Membership grew to 4,450 during the Leadership Conference intervention period, a 4.5% increase over a four and a half month period of time. The DMN Relaunch, which was designed to reintroduce current and new alumni to the website, saw a sizeable increase of 501 members to 4,951 or 11%. The study's last intervention was the Career Services Relaunch. Membership grew to 4,992 following this period or .02% increase. This intervention, like Movie Night, Academic Signing Day, and the National Conference, targeted member services and engagement. The Join, Election, and Relaunch targeted membership growth and reflected the largest numerical increases. In summary, from the DMN Study start through the end, membership increased by 2090 members or 72%.

Table 9 Intervention Impact on Engagement

INTERVENTION	PROFILE UPDATES	EVENTS	DONATIONS	TOTALS	OBSERVATIONS
BASELINE: May 2017	0	0		0	Minimum engagement functionality existed (dues payment only).
1 - Join	933	147	162	1242	User managed profiles, event registration and online donation services introduced.
2 - Movie	86	79	12	177	Utilized online registration; opportunity to join/update profiles.
3 - Elections	331	N/A	26	357	Active membership required to vote in alumni association election.
4 - Signing Day	61	292	5	358	Online registration and information access for members and nonmembers.
5 - Conference	241	325	152	718	Online registration and reporting functionality provided for members.
6 - Relaunch	14	N/A	20	34	Reintroduction of the DMN for members and nonmembers.
7 – Career CTR	5	6	5	10	A thousand views of the Career Center within 24 hours of launch.
INTERVENTION TOTALS	1,671	843	382	2,896	Requires information, education and incentives for engagement.
Study Timeframe Engagement Impact	2081	984	473	3,538	Not intended to imply that the DMN is the sole driver of all engagements.

The intervention impact on engagement depicted in Table 9, captured numbers from profile updates, event registrations, and the number of times DMN visitors (members and nonmembers) made donations. Profile updates were the largest engagement influencer with 1,671 updates. This intervention was almost double that of the second area, event registrations, which had a total of 843. Donations were less than half of event registrations with 382. This intervention brought the total number of these engagement activities to 2,896. As shown above, the Join and Alumni Conference interventions provided the highest number of engagement actions. These interventions resulted in 1242 and 718 actions respectively followed by the Academic Signing Day, Elections and Movie Night interventions showing 358, 357, and 177 actions. Engagement impact from the Relaunch of the DMN and Career Center yielded 34 and 10 actions. Relatively small numbers compared to the other interventions. For added insight, the researcher also analyzed the end to end study timeframe impact. Engagement activities increased in area and resulted in a grand total of 3,538 engagement actions. This increase of 642 actions or 18% gives more insight on alumni association engagement. As mentioned previously, the research does not intend to imply that the DMN alone was the driver of all engagement activities. Member feedback, notes, network data, and interviews all show that a combination of activities drove engagement.

V.3.1.2 External factors

External factors played a role in this study because an external organization provided the DMN. Throughout the study cycle and with each intervention, external factors continued to impact the core metrics in one way or another. While information and nomination packets were maintained on the DMN, the actual election was outsourced to an outside vendor, while the DMN database was used to validate election participants. This mix of internal and external

election responsibilities, in particular, the use of external vendors, was used to increase trust in the system. This was based on member conversations and feedback from interviews. In terms of collaboration, contracts, rules, and requirements from external vendors can present challenges. Such conditions should be understood, with proper communication occurring within the organization and outside of it. During the conference, the alumni association also used external vendors for transportation and ticketing on some events; integrating these activities into the DMN menu was key to creating awareness and ease of access for users. Further, external locations were important to the success of events such as the Movie Night and helped the Alumni Association form new relationships. For the Movie Night, the association partnered with the Office of Student Affairs, which helped ensure event success. External publicity was also a factor in engagement and contracting with external community organizations for partnership opportunities was another way to encourage membership growth.

V.3.1.3 Implementation and sustainability infrastructure

Resources such as online guides, webinars, and chapter Subject Matter Experts (SMEs) were linked to the Infrastructure and Sustainability framework. These resources were viewed as key enablers—and barriers—to the growth metric. This was verified by the interviews with most of the participants mentioning the need for these educational resources during implementation and ongoing system support. Quality educational resources were viewed as an enabler, whereas incorrect information or lack of information was a barrier. Internal notes and interviews, face to face meetings, chapter visits, and other feedback were very effective ways to bring awareness about the DMN as well as remove barriers to engagement with the DMN. This intervention allowed members to ask questions, join on the spot, update their profile, and act as ambassadors for other the DMN with other members. One alumni member highlighted the following:

> *"We need more online training manuals, experts on DMN usage, and easier navigation of the core site functionality (Join, Donate, and participate)."*

A second member commented:

> *"Having Alumni Office staff speak with us in person about the network at our chapter meeting helped me gain a better understanding of the network as well the value and benefits it provides. I could ask questions and get immediate assistance joining and updating my information."*

Another infrastructure-related observation included the importance of using outside experts to help enable implementation and remove barriers to participation. These experts could help minimize DMN downtime. Ensuring that infrastructure is adaptable, flexible, and resilient is important when outside party hardware and software come into play. Seamless integration between interfaces is the goal when external infrastructure is involved, and achieving it requires careful consideration and planning in advance. Finally, training for members and nonmembers on an event, target audience, and member culture help the overall member experience. Per study documentation and notes. Doing so provides members and vendors with a better understanding of the product or service impact on the organization.

An additional factor in this area is ensuring that the infrastructure offers availability and easy access. Having resources available in live and saved online formats helps facilitate registration, education, and ongoing engagement. Any SaaS agreement for infrastructure services must delineate and negotiate hardware and software availability and the infrastructure's key performance indicators. These metrics should be clearly understood before and during implementation to avoid availability issues and stakeholder dissatisfaction.

V.3.1.4 Recipients

Lastly, from both an organization and individual standpoint, stakeholders were concerned with technology and in particular with the ease of use, trust and transparency provided by the technology and organization implementing it. But the DMN technology alone is not the only driver of recipient behavior per study feedback. The recipients (members). As noted by one member of the implementation team:

> "Our members did not have an *"implement the DMN, and we will come" mentality; instead, their mentality was more like: "Give me a relevant and impactful reason, and we will engage."*

The Alumni Association includes members spanning five generations. Technology matters to all members of the organization even if it not used. Culturally, the usage driver for the organization—as well as individuals—was linked to need, ease of use, and awareness based on the interviews and member conversations with the implementation team. Member participation was both incentive- and self-driven, as the election intervention showed. People could vote in the election only if they were current, financially active members. Making technology available does not drive member adoption; awareness and education do. The national conference intervention also validated the fact that events were the largest driver of participation. Two key events here were the Lifetime Circle of Achievement Awards and the inaugural *40 under 40* recognition, both of which were highly popular based on the number of registrants and submittals. The DMN maintained the nomination packages, ticketing, and information for these events. Offering high-visibility events and placing the registration and nomination packages on the DMN drove member engagement. As those interviewed noted, the organization and recipients must create a

need for DMN adoption, usage, and engagement. As noted by one member who nominated a 40 under forty alumna:

> *"Man, the nomination process was simple and seamless. I actually did a second after going through the process the first time. Being able to nominate on my own timetable was an added benefit versus having to print paperwork and fax or mail it to the office. It also minimizes information loss through the mail when it is placed online. Great process! I would ensure that an email note of thanks/acknowledgment of completion is sent. I don't remember if this was done or not, but it should be."*

V.3.1.5 Summary

The following quotes from two alumni network members summarize the overall analysis:

> *"I feel the implementation of the system went well. I do feel that more resources need to be devoted toward education. Webinars, online training, and even the creation of chapter ambassadors who can help with the training at the local level would be great ways to improve usage and engagement."*

> *"Yeah, definitely some type of educational support to help others deal with the different membership generations. Designating someone in each chapter as a group administrator could help support future implementations."*

Table 10 summarizes the findings.

Table 10 Implementation Theory Findings Summary

Intervention	External Factors	Implementation and Sustainability Infrastructure	Recipients	Metric (s) Impacted
The Join New DMN intervention demonstrated that members need a reason to go to the DMN.	Utilizing a SaaS provides immediate capability, security, and confidence.	Training and education must be core components of any implementation.	Organization and Individual characteristics were present in member responses to the new DMN.	Membership: High Impact Financials: Low Impact Engagement: Low Impact
The election intervention showed mandating membership prior to voting was an impact.	Information drives DMN visits. The DMN is a great source for house key information.	Outside experts are important in filling skill gaps, although they can be costly. Utilizing alumni helps offset the cost.	Recipient participation was incentive- and member-driven.	Membership: High Impact Financials: High Impact Engagement: High Impact
The Alumni Conference intervention and feedback from members confirmed the importance of data quality.	Contracts, rules, and requirements from external vendors present challenges and should be addressed.	Ensuring that infrastructure is adaptable, flexible, and resilient is important.	The largest driver of participation was the recognition events.	Financial: High Impact Engagement: High Impact
The Movie Night intervention drove member engagement as evidenced by the number of registrants on the DMN,	External locations were important to the success of events such as the Movie Night.	Ensuring availability and easy access through the infrastructure mattered.	Offering high-visibility events drives member engagement.	Engagement: High Impact
The Career Center Relaunch generated more than 1,000 views in less than 12 hours.	Leveraging an external expert specializing in job recruitment adds value.	Marketing and user materials remain a key resource need.	User perspectives and characteristics, can impact implementation and coproduction success.	Engagement: High Impact

V.3.2 *Coproduction findings*

Creating a coproduction culture as captured in the theoretical framing was an important goal implementing the DMN. As the milestones were met, and interventions introduced, important observations and insights were revealed. The following sections describe the four coproduction areas and their findings.

V.3.2.1 Complementary coproduction in implementation

A subset of members exercised complementary coproduction: Although they opened the email, they did not log in to the DMN. As another example, some members contacted the association office or completed a printed data card instead of logging in to the DMN. Members were also resistant to logging in when they felt their data had been compromised. Even when members received information from the DMN or saw it on the website, they remained reluctant to perform the request via the website. This was evidenced by the calls to the office and email replies notifying the implementation team of the issues that were received post launch. Complementary coproduction was also indicated through member inaction. An example includes members who saw implementation areas in which improvements were needed, mentioned it in some way, but did not take any other action. The best example was with the imported member profiles; some members noted incorrect data, but they would not log into their profile to correct it. Instead, they contacted the office or sent an email to ensure the correction was made. The rationale for their reluctance, per notes and interviews, was related to their lack of IT knowledge, lack of trust, or procrastination. This inaction represented complementary coproduction. One member offered the following insight:

"Receiving an email addressed to another person made me uncomfortable. I know mistakes happen, but I hear too many stories of identity theft to take the risk. I would rather mail my payment or deliver in person for now."

V.3.2.2 Participatory coproduction in implementation

A small group thoroughly embraced the implementation and coproduction, logging in and updating their profiles as part of the implementation. These members helped resolve issues and prevent any future impact. They were active in ensuring that their information and the information of other members were included in the DMN. This group of members also saw participatory coproduction as an improvement in their alumni organization experience. Some volunteered to participate in the pilot, offering feedback that included data correction and education suggestions to help with future implementations. The implementation results also revealed that specific organizational processes and procedures were not documented in a way that allowed effective personalization of the website and other interfaces. The SaaS had used generic templates that it had created through numerous implementation experiences over the years. Members who were active in the implementation pilot suggested improvements here, including areas such as adding a portal help section with information on key areas such as logging in, resetting passwords, and joining the Alumni Association. This participation during implementation proved valuable. One alumni board Member shared the following:

"I was surprised to see that we have so many data issues. It makes sense now. If we do not have a process to continuously check and update data, this will remain an issue. The best option is to incent members to perform that updates. If that doesn't work, continuously requesting updates via the DMN and through other mechanisms is the next best option."

V.3.2.3 Complementary coproduction in engagement

Unlike implementation, more users were inclined to provide some feedback on engagement-related services. Ease of use and education around DMN usage was common. Members highlighted service issues, recommended improvements, and in some cases, proposed ways to implement the improvements. During the pre- and post-implementation periods, members received notices regarding dues, events, and other actions. Alumni news was also offered to get members to access the DMN. Responses varied, but the majority fell under the complementary coproduction category. Many engaged, but not that much. Basic actions such as logging in and browsing the DMN were the most common activities for those who responded to the email call to action. However, many others either did not respond or contacted the Alumni Office to perform the action. Typically, members received information on services, and saw and recommended improvement areas, but either they did not take action, or they did not mention it to the IT staff. One member described this action as follows:

> *"I received the announcement. I even logged in and looked around the website. It's a good thing, but I need more handholding and education. I also need a reason to visit, join, and more. Please share the benefits in a more visible way and keep reminding me. I need the extra push."*

V.3.2.4 Participatory coproduction in engagement

During the study, a subset of members exhibited participatory engagement. Of those interviewed, 50% were in this category and this may be linked to their role in the organization. They were actively involved in helping the organization collect names, addresses, and emails of alumni and offered to import them. These members also highlighted service issues, recommended improvements, and provided internal and external recommendations on ways to

execute these improvements. These members received notices for dues, events, and other actions and acted on them. They also helped other members do the same. These champions of engagement were more than users of the DMN; they were ambassadors, promoters, and marketers to other members for DMN involvement. One engaged member described the pride and pleasure of using the new DMN:

> *"I was glad that I owned my profile and could ensure the data in it was correct. I also liked being able to search for my classmates and other alumni online. Using the Alumni network was easier than Facebook to me. Thanks for making this feature available!"*

V.3.2.5 Summary

The implementation of the DMN encouraged coproduction—that is, self-service actions and activities on the part of members—from the very first announcement of the new network. Although, part of the implementation, linkages to coproduction were clear. Complementary coproduction was evidenced by asking members and nonmembers to sign on, using either the assigned username and provided password or creating a new username and password. It was further enhanced as active alumni joined the organization and updated their profiles concurrently. Although joining the organization was not a mandatory action to use the website, access to certain DMN areas was restricted to members, and nonmember alumni did not receive store/event discounts. Considering barriers to complementary coproduction, the researchers observed that members appeared to accept the email, but many did not follow the actions requested in it. For example, "Joining the network" required that people enter their username and password; this was followed by a request to update their user profile with current information. Before the DMN implementation, the Alumni Office updated users' profiles. Encouraging

members to own this important action would help ensure data accuracy and quality—and thus was a key goal. Such participatory coproduction actions help ensure data accuracy and stakeholder satisfaction and eases resource challenges in the alumni office. As the literature notes, having individuals participate in these processes is evidence of successful implementation and coproduction. Participatory coproduction, both in implementation and engagement, provides major benefits in membership and financial growth as well as in membership engagement. Over time, it could impact organizational integrity and trust. Indeed, the researchers noted an increase in membership, financials, and engagement during the three-year study period. Complementary coproduction is also important as it is the foundation that leads to participatory coproduction. In the year after implementation, membership grew by 30 percent, with membership-based revenue mirroring this increase. Engagement through profile updates and event registrations saw natural growth as well—double-digit increases—which makes sense given that these functions were not available before the DMN implementation.

In this implementation, participatory coproduction was most evidenced by the election intervention, which featured all types of coproduction. Indeed, of all the interventions, this one drove the most membership growth and engagement in terms of ratios. The election intervention was linked to election voting being a members-only activity; as a result, members and the candidates they supported joined the Alumni Association. Further, for the first time, the election database was based on the DMN records. The alumni association saw record membership numbers in the month prior to the membership records were pulled on March 15, 2018. While the actual balloting took place on an external website, the candidate packets and all other election information was delivered through the DMN. All candidates were required to access the DMN for information and to fulfill the requirements for election nomination. The DMN also provided

candidate validation, and two candidates were disqualified because their DMN registration did not show them meeting the minimum membership requirements within the designated timeframe. One alumni candidate characterized the change in the election process as follows:

> *"During the last election, everything was hardcopy or accessed through an email request. Being able to go to the web, 24/7, and access the campaign documents as well as being able to advertise are definitely pluses. My only suggestion would to place the documents (and other critical documents) in a more visible location on the website."*

In addition to coproduction issues, our implementation was impacted by external factors included organizations seeking financial support, government requirements, and university obligations, which are areas that must remain in focus. The relaunch of the DMN—communicating its new functions, features, and services to members—also benefitted coproduction. Further, both complementary and participatory coproduction were also evident in the National Alumni Conference intervention. The DMN was used for information sharing, conference registrations, event registration, sponsorship opportunities, and general location details. As with the other interventions, it was a new service for the Alumni Association. In terms of coproduction, users were asked to register online, which was an option that was available 24/7. In past years, members called the Alumni Office to register or mailed in their registration packets. The DMN's social network also allowed members to connect and share their plans for the conference. This process aligned with the literature on PRISM with regard to interventions at the organization and individual level and with coproduction in the participatory aspect. Registration itself was an intervention; inputting data, wants, and requirements is a direct

link to participatory coproduction. Following the elections and national conference interventions, membership grew.

Complementary and participatory coproduction were very evident in the Movie Night intervention activity. Introducing a Movie Night for alumni proved to be a much-appreciated service offering; it impacted engagement from a metrics standpoint, but it was also influenced by external factors including the movie theater, the community, and Greek organizations. The movie selected was "Black Panther," which was receiving a lot of buzz in the press and resonated among the alumni association members. Participatory coproduction was evidenced by the demand for tickets exceeding our initial theater capacity. To accommodate this, the organization moved to a larger theater. This was also exceeded, so a second consecutive Movie Night was introduced. Both nights sold out. From a metrics impact standpoint, engagement was the most heavily influenced; financials saw zero impact as registration and ticket prices covered only the cost of the event. The alumni association received a few new memberships and renewals, but the number was not significant. However, the intervention was a strong driver of participatory coproduction, with online registrations being very high. While on the DMN to register, several people also updated their profiles. This type of intervention, along with the external factors and the implementation and sustainability infrastructure, was a characteristics match for our recipients and an ideal driver of participatory coproduction.

The Career Center relaunch generated more than 1,000 views in less than 12 hours. As captured through the lens of the PRISM theory, the characteristics of the members—in particular, those who are job seekers, as well as member characteristics, wants, and needs appear to influence participatory coproduction here in terms of both implementation and service engagement. Table 11 presents a summary of the coproduction findings.

Table 11 Coproduction Theory Findings Summary

Complementary Coproduction—Implementation	Participatory Coproduction—Implementation	Complementary Coproduction—Engagement	Participatory Coproduction—Engagement
Communication can influence complementary coproduction	Perspectives and characteristics were visible. Actively participated in implementation problem resolution.	Feedback, as well as trust, was conveyed if service data was inaccurate.	Members were active in service improvement and acted as ambassadors of the DMN services.
Data accuracy is a coproduction enabler, while data inaccuracy is a coproduction barrier.	Several members shared feedback and offered to test implementation updates.	Members highlighted service issues.	Members made service improvements and recommended enhancements.
Members received information from the DMN and may or may not have acted on it.	A small set of members were active in ensuring that their information was included in the DMN.	Members responded to notices and other communication.	Members took action on suggestions, helped with events, and encouraged other members to do the same.
Members saw implementation areas where improvements were needed, but either mentioned it or did not.	Members saw areas of improvement and provided insight on solutions.	Members committed to services but did not take actions.	Members received information and made recommendations on ways to improve the services.

V.4 Challenges

Based on this detailed analysis, five key challenges associated with PRISM and coproduction were revealed throughout the study. These challenges are in the areas of 1) intervention influence; 2) member readiness and attitude; 3) education and awareness; 4) data quality and accuracy; 5) skilled resources.

V.4.1 *Intervention influence*

Interventions are drivers of activity from DMN member stakeholders. Whether paying membership dues and donations or registering for an activity and completing the required forms, interventions drive involvement, accountability, and action. Thoughtful interventions encourage membership, financial, and engagement growth. Interventions are resource intensive, but manageable. Major challenges were linked to the system requirement of an email address for participants. Email addresses drove the DMN because they were required to communicate an intervention effectively. When addresses were incorrect, the intended intervention could not be delivered. Another challenge centered on duplication of member records. The DMN captured records based on name, physical address, and email address. If two names were identical, but the email or physical addresses differed, the DMN created duplicate records. This duplication initially caused a miscount of membership numbers. The SaaS implementation consultant helped to remove the duplicates and move on with the implementation. Some duplicates remained because there were multiple emails or addresses included for various members. The alumni association decided to keep these in place, pending verification with the member. One Board member commented on the importance of having a driver for involvement:

> *"I'm not going to the website unless I have a reason to go. There must be an event, information, or other incentive drive for me to access the website and to keep me going to it. An announcement alone won't do it. I need a driving reason to make time."*

V.4.2 *Member readiness and attitude.*

The alumni association member *readiness and attitude* were other issues for the implementation and coproduction. Members were not demanding change and appeared content

with the current solution if it provided a way to pay their dues. The organization spanned five generations of alumni, and some embraced change while others resisted it. This resistance raised an interesting question: Would the tradeoff of new functions, security, risk mitigation, and cloud storage matter—or would members be indifferent? Regardless of the answer, the implementation continued. An important outcome was our realization that not all members are alike; they come from different generations and backgrounds, are different genders, and have different economic situations. Some users were born into the technology, while other members transitioned to it over time. The implementation team realized that we could not assume a technology knowledge baseline for organization members. A key outcome was that all organizations and individuals must ensure that interactions with people, places, and processes and overall experiences are enjoyable. As shown from the popularity of the Movie Night and the response from the Career Center relaunch, embarking on an analysis of member wants, needs, and interests would also be worthwhile. This analysis could serve as input into the types of interventions that would have a higher probability of success with Alumni members; and could, in turn, result in membership, financial, and engagement growth and ensure that the DMN is visited often and recommended by members. As one member noted, the analysis should also consider the needs of various generations of system users:

> *"We need a special indicator for young alumni to identify themselves. Our interests are unique and different from some of the older alumni. Catering to the unique needs of the university.*

V.4.3 *Education and awareness.*

Every stakeholder interviewed mentioned *education and awareness* in some way; implementations must develop clear communication and education plans to help ensure success.

The stakeholders also confirmed that the face to face chapter visits were a positive action in support of the DMN. Investment in resources that help create content that can be successfully delivered online 24/7/365 and face-to-face will improve membership growth, financial growth, and engagement. “Train the Trainer” sessions to create and educate chapter DMN ambassadors were also key enablers suggested by stakeholders interviewed during the study. One member noted the importance of education as follows:

> *“Please provide education on the new website. Also, consider ambassadors or trainers that can go to the chapters and help with education as well as champion key initiatives. It’s a challenge to do this without the added assistance and availability of these types of resources.”*

V.4.4 *Data accuracy and quality.*

To be trusted, data must be *accurate and protected*. The study found (as noted in the first outcome), that there were issues with data quality and availability from the start of the implementation due to member records being outdated, duplicated, or simply missing. Regardless of whether members moved, passed away, or were away on short- or long-term assignments, their records remained the same. Also, updates that did occur yielded poor results if the new information was incorrectly input by office staff members. The unavailability of key pieces of data further impacted implementation; many members did not provide emails or provided addresses with errors, which yielded the same results. Email availability was a key driver for the Association Management solution and a requirement for rollout and communication with members. At the start of implementation, nearly half of our member records lacked email addresses or the addresses they had were incorrect. This was not a part of the initial discussions with the SaaS provider and unfortunately a key missed assumption. Furthermore,

many members with correct email addresses did not use them on a regular basis. Because emails were a DMN driver, this issue became a matter of utmost importance. To address the missing email issue, a pseudo username: noreply@sualumni.org was created and used for all members without valid email addresses. The pseudo username allowed the implementation to progress while association management relied on manual means to secure updates and correct the data. Because the alumni office had physical addresses for most members, a hardcopy "Please update your records" form was mailed to all members. Social media was also used to solicit and secure membership data updates. Once those updates were received, the member profiles were corrected. Moving forward, data quality and accuracy will continue to be a major focus of our organization. As this member noted, data accuracy is essential to building and sustaining trust.

> *"The election ballot and one other Alumni Association communication that I received was addressed to another person. It had my address, but the name was wrong. I also received another Alumni Association election ballot that had my correct information shortly after. This causes me to distrust the process."*

V.4.5 *Skilled resources.*

The fifth issue was *resources*, which were linked to skills, numbers, and availability. Alumni Office staff members did not possess computer systems knowledge or AMS knowledge; they had Alumni Association knowledge. As a result, the organization chose to rely on the assigned IM to help with clarity and working through the learning curve. Technology committee members helped to address the resource issue by assisting with support throughout the implementation process. Most notably, they helped with pilot testing in anticipation of the larger launch. They also helped capture feedback and repair issues, along with the actions of the SaaS service provider. The pilot's primary activities were usability related adjustments, broken links,

photo and text updates and fixes, and administrative changes. The DMN implementation did not require a software installation because it was cloud-based. The dedicated IM/consultant who provided training and support also helped offset resource deficiency. The technology committee took full advantage of this support to help ensure a smooth and efficient implementation. In addition, support help, live and recorded webinars, 24/7 videos, step-by-step user guides and blogs were available to assist with implementation training and support, and onsite training was available for an additional charge. Recording portions of the implementation, as well as key website function areas for future viewing, was also an area of improvement as part of the implementation, and it provided insight on ways to improve/resolve issues. Although the implementation team declined onsite training at this time, it may be considered for future implementations. As this team member noted, accessibility is a key issue:

> *"Being able to access information and education 24/7 was a life saver for me. I learned at my own pace and could still schedule additional assistance if I wasn't satisfied with the existing online material. Recording specific sessions by our website site would be beneficial as well. We should work to make that happen."*

Table 12 presents a summary of the five challenges.

Table 12 Challenges Summary

OUTCOME	IMPLICATION	CHALLENGE	DESCRIPTION	PRIMARY METRIC(S) IMPACTED
Intervention Influence	Drives membership dues, donations, and participation with requirements and events.	Technology complexity, ease of use.	Technology interventions require careful implementation planning.	Membership, Engagement
Member Attitude and Readiness	Slow implementation and coproduction progress.	Dislike of change and distrust of new technology.	Members who fear change or do not embrace new technology require additional focus, education, and attention.	Membership, Financials, Engagement
Education. Awareness/Availability of Online and Hands-on Training	Awareness and education are key influencers of DMN implementation and coproduction growth.	Difficulty of offering the right education at the right time and place.	Providing education that can be used by different skillset levels is key for success.	Financials, Engagement
Trust and Integrity	Impact on trust and integrity building among the DMN community.	Data field matching; securing correct information from users; challenges contacting members because of invalid data and other verification needs.	Incorrect records, data, and communication errors—including in names and email addresses—impacted member trust.	Membership, Engagement, Financials
Resources	Skilled resources improve execution, accuracy, and the overall member experience.	Inability to secure skilled, stable, and reliable human resources as they are already employed by the top companies or work for themselves.	Competition with school priorities impacted staff member reliability and our members' overall customer experience.	Financials, Engagement

VI CHAPTER VI - DISCUSSION

VI.1 Introduction

This study was driven by the general lack of understanding about the opportunities and challenges related to alumni engagement during DMN implementation and coproduction. Through its analysis and investigation of an alumni association's transition to a DMN, the study illuminated the processes and practices that furthered these opportunities and addressed these challenges. The research makes five specific contributions: two contributions focus on the problem setting; two contributions focus on the area of concern; and a fifth contribution unexpectedly helped frame the area of concern. In terms of the problem setting, the study assesses network implementation and directions for future initiatives to strengthen network usage and member engagement. It also contributes to engaged scholarship on DMN implementation in for-profit and nonprofit organizations, membership associations, and academia. In terms of the areas of concern, the research provides a detailed empirical account of digital network implementation, with insights into challenges and opportunities related to ensuring coproduction. It also contributes to the literature on DMN implementation, emphasizing the role of coproduction. Lastly, the study demonstrates how to frame the area of concern. The study helped identify a need for more knowledge about how PRISM utilizes a coproduction context as applied to DMN implementation. As noted in the literature review, most of the literature on PRISM and coproduction focused on health-related programs. The researcher found very little information on technical social and digital member networks. PRISM and Coproduction Theory could also be applied to other industries, including finance, telecommunications, hospitality, consumer products, retail travel, and transportation.

Table 13 Study Contribution though Application and Artifacts Summary

CONTRIBUTION	AREA	APPLICATION	ARTIFACTS
Assessment of network implementation and directions for future initiatives to strengthen network usage and member engagement.	Problem Setting	Leveraging existing solutions (SaaS) accelerates implementation.	Identified challenges and opportunities. Provided SWAT analysis of different DMN solutions.
Contributions to engaged scholarship on DMN implementation in for-profit and nonprofit organizations, membership associations, and academia.	Problem Setting	Engaging experienced practitioners with practical knowledge complements training. Applied PRISM and Coproduction in a technology setting.	Practical case study of a real-world nonprofit DMN implementation.
Detailed empirical account of a digital network implementation, with insights into challenges and opportunities, specifically as they relate to ensuring sufficient coproduction.	Area of Concern	Utilized planned interventions across study timeline. Captured alumni association member insights and perspectives on implementation.	Timeline and results. Content, templates, policies and procedures that can be applied to future implementations.
Contributions to the literature on implementation of DMNs, emphasizing the role of coproduction.	Area of Concern	Documented PRISM and Coproduction components as applied in a technology based implementation. Created content and materials for future use.	Literature Review. Identification of literature and areas for future theoretical study.
Contributions to the area of Implementation Analysis and Science.	Framing of Area of Concern	Applied PRISM components in a Coproduction context.	PRISM/Coproduction framework (CoPRISM or $PRISMCoP^{C}$ and $PRISMCoP^{P}$).

PRISM and Coproduction Theory offered both an introspective and a reflective model for capturing information, insights, and results. Revisiting the results and various references from the literature review expanded on the key activities that occurred as the Alumni Association

transitioned from a static, office-systems-based membership support system to a SaaS-based system. As a preface to this material, it is helpful to restate the research questions:

1. *How can the implementation of a digital member network ensure sufficient network engagement, a critical mass of active network use, and a reasonable level of network coproduction?*
2. *What lessons from the initial launch and implementation of the network inform future directions toward more widespread engagement and coproduction of the digital member network?*

These questions target both implementation and coproduction opportunities and challenges (Research Question 1) and lessons about future directions for implementation science and coproduction (Research Question 2). Sections 6.2 and 6.3 contribute to answers to Research Question 1 in relation to both implementation and coproduction enablers and barriers. Section 6.4 discusses study insights in relation to future directions, contributing answers to Research Question 2. It also reveals interesting insights on how researchers might use PRISM and Coproduction Theory to help improve implementations and engagements in IT areas. Finally, in terms of framing, Section 6.5 highlights contributions in the area of implementation analysis and science from a coproduction perspective. The chapter's final section presents the study's limitations and conclusions.

VI.2 Implementation and Coproduction of Digital Member Networks

The lessons from the literature provided insight, context, and guidance as the researcher prepared for the implementation and coproduction activities. In particular, the study's literature review contributed new knowledge on how alumni association members might be key sources for information about their local chapters, national news, and personal characteristics. Further,

the literature helped the organization understand the reality members were experiencing—that is, they were being presented with the new DMN, then asked to join, update their profile, pay dues, make donations, and register for an event. This understanding helped the implementation team avoid certain pitfalls and challenges during implementation. For example, because the team understood the implementation environment, member culture and had some familiarity of the technology landscape, they were able to brainstorm, design, create and implement interventions for member and organizational learning. The literature also helped the implementation team translate member requirements into live and active member services on the DMN (Nambisan & Baron, 2009). The current Alumni Office staff is small, so the literature's emphasis on customers/members filling the gap through self-service-like participation was important—and similar to having an extended staff. Members are instrumental in filling gaps in skill areas and must be utilized wherever possible to help ensure support for the organization's data and key functional areas. In other words, organizations implementing technology must evolve from a mentality of "*what can I do for you?"* to one of "*what can we do together?"* (Rangaswamy, 2000). Care must also be taken here, however, as involvement without knowledge can cause harm. Looking at the PRISM model, external factors such as laws and policies are especially likely to introduce complexity for smaller organizations. Clear communication and expectation setting must occur at the start of implementation to counter this. These qualities can help resolve any issues as well as indicate the protocol for relationships going forward.

While not a specific research literature contribution, the study also contributed literature insight on DMN use and functions, including guidelines for using the DMN's key features, functionality as well as problems and solutions encountered during the implementation period.

These guidelines provide a vehicle that can be a foundational building block for members to document feedback, lessons, and insights around the DMN's evolution into the future.

VI.3 Reflections on Theory and Engaged Scholarship

The study provided contributions to engaged scholarship by applying the PRISM framework (Feldstein & Glasgow, 2008). The study considered the four C's of social network implementation: *control*, *culture*, *coordination*, and *clarity* (Valos, Polonsky, Mavondo, & Lipscomb, 2015). *Control*, which by definition means *decision-making*, was most prevalent as part of the solution selection process. In one specific observation, one board member exerted pressure to select an alumni member's solution. Engaged scholarship here emphasized the practical and theoretical evaluation of top solutions.

Culture also played a role from both an organizational and individual standpoint. Introducing the new DMN required members to think and act differently. Of note, the implementing organization added member benefits toward events and store purchases; members received discounts, and nonmembers did not. The organizational and individual culture was previously equal, but now, these member benefits created an imbalance. Several nonmembers joined based on this cultural phenomenon.

Further, new skills were being developed and shared between members. Members applied their knowledge and experience with other DMNs—such as Facebook, Instagram, and LinkedIn—to the new DMN. Based on the size of the organization, the membership numbers were substantial and continue to grow. Current growth over the study period is 30% (3,600 to over 5,000). This cultural aspect of the organization had significant impacts on coproduction.

One of the largest areas of challenge was in *coordination*. With limited staff and other resources, the implementation plan had to focus on coordinating our resources and achieving

clarity on the implementation, including how to assign responsibility for social network implementation activities (Denning, 2010). Such *clarity* went hand-in-hand with *coordination*, particularly in relation to roles. The literature spoke of *clarity*, specifically concerning implementation (Macnamara & Zerfass, 2012). Because the staff for this study was small, roles were understood, but another requirement—helping the overall team do what needed to be done—was more challenging and an essential overall factor in the ability to move forward.

Revisiting the literature on social networks proved valuable during the study analysis. As referenced in the literature review, most implementation assessments focused on ROI; in contrast, this study was interested in assessing implementation enablers as a primary focus, and barriers as a secondary data point. Naturally, from both a for-profit and nonprofit standpoint, ROI is a top factor. This research, however, aims to add knowledge in areas that support DMN adoption, maintenance, and sustainability, which in turn can enhance ROI. It was clear from member discussions and the actual membership metrics that technology matters. This research team cannot automatically assume that adoption or coproduction activities will occur. The research shows that introducing an unfamiliar intervention is typically accepted and tolerated by the organization. However, as noted earlier in the study, encouraging user engagement and establishing continuous use have proven challenging (Bullen et al., 1990; Grudin, 1989; Kwon & Zmud, 1987). For implementation and co-production to truly take effect requires prescriptive planning and actions that drive members to participate actively. Teams also must ensure that external factors—such as government and state laws, as well as other guidelines—are addressed as part of the implementation plan. Further, DMN implementation must keep a continuous eye on sustainability, social advances, and the perspectives of organizations and their members as they enhance and evolve the DMN. In essence, *interventions must help members become*

accountable for the success of the implementation, which in turn informs research questions on implementation areas and future directions.

VI.4 Future Directions for Digital Member Networks

This research produced a better understanding of implementation knowledge and expands current knowledge about PRISM and Coproduction Theory. A major contribution is a better understanding of how PRISM can be used in conjunction with a co-production focus; eventually, such a research path could create a new area of research that provides insights with this context in mind. Merging these two theoretical areas is a significant advancement in the implementation and coproduction science. Its benefits will include helping both nonprofit and for-profit organization execute effectively promising DMN functions, services, and solutions to support their organizations. As an experiment, the researcher designed a "PRISM-CoPC" model, which stands for PRISM in a complementary context, and a "PRISM-CoPP" model for a participatory context. Such experiments are a clear area of future exploration extending research beyond implementation and services into other technical and nontechnical spaces. The analysis also helped demonstrate how these ideas and concepts improved engagement among DMN stakeholders. Arguably, one of this study's most exciting contributions is the lessons learned from outsourcing the DMN implementation. This outsourcing led to valuable information on the DMN implementation process and member behaviors and also informed the analysis of specific feedback from key stakeholders involved in the implementation. The researcher also saw this contribution as filling a gap in academic knowledge. It can address issues both inside and outside of organizations as part of the study. This matters because it touches key university areas such as academia, multinational organizational behavior, and individual motivations regarding technology adoption, organizational and individual perspectives and characteristics. Lastly, the

study provides guidelines for maintaining quality research and analysis. All of these contributions supported the study's ultimate goal: to illuminate and more deeply understand DMN implementation and coproduction opportunities and challenges.

VI.5 Limitations and Conclusions

The study's qualitative findings reiterate the power and influence technology can have both on an organization as a whole and on the individuals that comprise the organization. In particular, the study supports past research analyses that highlight the positive impact that a DMN can have on carrying out an organization's purpose. As noted early in the study, an initial limitation is researcher bias linked to the researcher also being the implementer and a technologist. Actions such as external interviews, reflection, and fact-based documentation were in place to combat any bias. It is, however, important to acknowledge the bias and continue to maintain a focus on eliminating it. Also identified, was the research gap regarding the opportunities and challenges to digital network implementation, especially in the context of member-based organizations. This Alumni Association case study used a series of interventions in the form of activities to improve implementation and coproduction success. Implementing the PRISM model and Coproduction Theory in an alumni association context did have limitations, however. First, while interview participants consisted of a representative sample of the alumni membership, the interviews did not capture all organizational and member perspectives and characteristics, which are key PRISM inputs. For example, most of the interviewees were leaders of the organization. As such, they were and will always be more active in and involved with the organization and its technology than other stakeholders. Expanding the sample to include more members who were not in leadership positions, as well as more alumni who have chosen not to be financially active within the Alumni Association could provide more input and answers on

driving a critical mass of activity and engagement. Further, limiting the research to a single alumni association eliminates opportunities to discover the different perspectives that are possible when including a second or third alumni association as well. Another limitation relates to the data. Having to bulk load existing data, which was in some cases incorrect, was both a blessing and a curse. It was a blessing because it helped us understand a key barrier to DMN implementation: the need to input data one by one, which can require considerable time and resources. It was a curse, however, because some of the alumni data we bulk loaded was incorrect, which created barriers in relation to trust and engagement for those alumni. A final limitation stems from the use of a single third-party provider. Would different insights have been generated using a different provider? Or from choosing a set of providers? Or from developing the solution with a custom solution provider? All of these factors reveal key considerations for future DMN implementations and the research around them, and all are potential future research areas. As mentioned above, a key area of opportunity is in doing PRISM research in a coproduction setting. Also, carefully designing new studies that identify factors that facilitate self-service activities could be valuable to organizations that are challenged by resource limitations, technology constraints, and manual process overload. Finally, as this study sought to do from the beginning, identifying challenges and opportunities to implementation will continue to be a fruitful area of study as technology continues to evolve. Performing additional research into PRISM in a coproduction context will expand that evolution even further. This is an area of research that is worthy of pursuit.

VII APPENDICES

Appendix A. Search Strategy

In this search, the researcher targeted three databases: GSU Gil-Find, Google Scholar, and ABI/Inform. The initial search terms were *social network OR implementation OR coproduction*; it yielded 18,832 results across multiple languages for Gil-Find; 190,000 for Google Scholar; and 5,194,182 for ABI/Inform. The second search refined the terms further, using *"social network implementation" OR coproduction*. For this search, Gil-Find returned a total of 437 articles, and ABI/Inform returned 10, while Google Scholar returned 167 articles on coproduction and 9,700 on social network implementation. The third search removed duplicate results. In the fourth search, the researcher focused on Gil-Find and ABI/Inform, refining the search to include only scholarly journals and the keywords *social network OR implementation OR coproduction*. This yielded 106 articles after manual elimination. In the final step, the researcher manually reviewed abstracts and citations. This yielded a list of 19 articles on IT implementation, ten on coproduction, and 26 on social networks. Table 2 in Chapter 2 shows the ten articles that the researcher deemed most useful for this study: four articles focused on implementation, and three each on social networks and coproduction. Figure A outlines the researcher's literature review process.

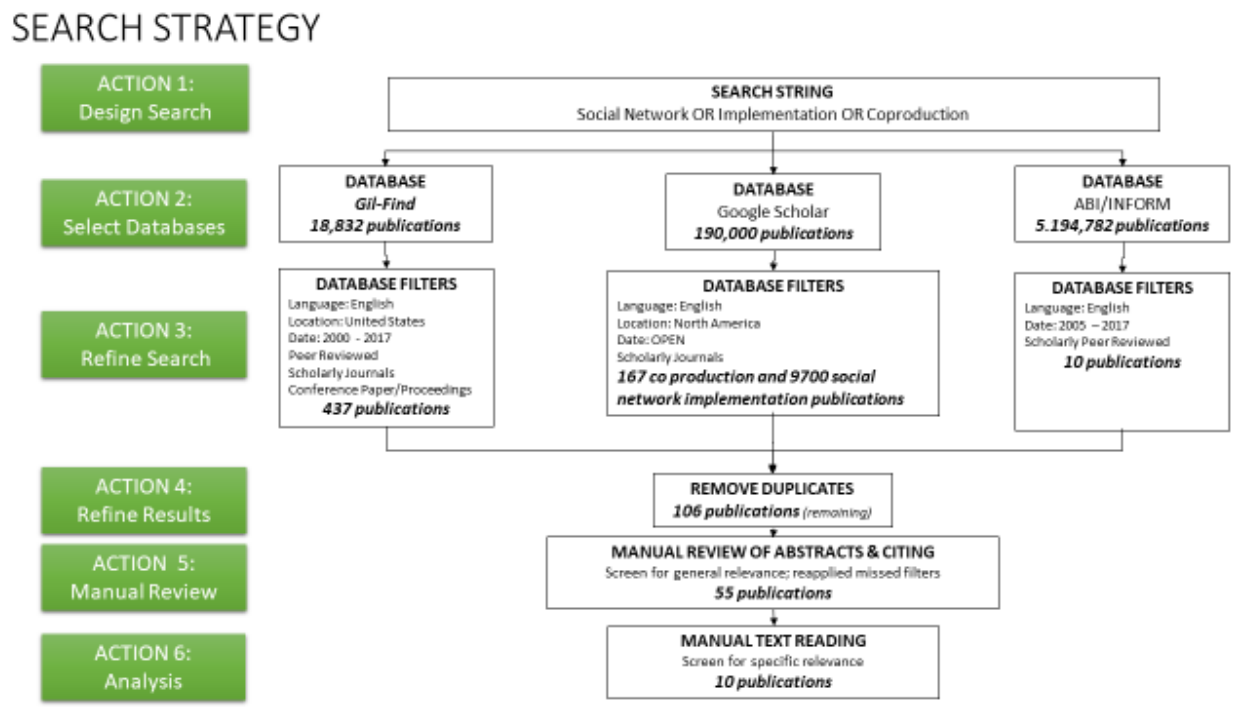


Figure 7 The six search phases of the literature review process.

In addition to the literature review, the researcher collected data in three ways: 1) case study process-capture during DMN implementation and coproduction; 2) stakeholder observation and unsolicited responses; 3) interviews with administrators, board members, staff, and alumni network members and nonmembers; 4) archival research.

Appendix B. Research Protocol

Summary

This study focuses on understanding the enablers and barriers around implementation and coproduction of dedicated digital member networks (DMNs). The network is Association Management software that supports an Alumni Association and its members. The study also seeks to identify ways to accelerate continuous engagement with the goal of increasing network coproduction. My objectives are to 1) gain a better understanding of the enablers and barriers to dedicated digital network implementation; 2) gain a deeper understanding of lessons learned that would encourage greater adoption and coproduction; and 3) identify activities that accelerate continuous engagement and encourage network coproduction. To do this, I use a case study methodology with targeted interviews (Miles, Huberman, & Saldana, 2014; Myers, 2013; Yin, 2017) with stakeholders who are currently involved in implementation, management, support, and use of the Alumni Association's dedicated DMN. To fulfill the study's objective, I conducted qualitative analyses on the collected data (Miles et al. 2014; Myers, 2013; Yin, 2017).

1. Description

1.1. Rationale: The rationale of the study is to investigate how the introduction of a dedicated DMN impacts an organization specifically from an implementation and coproduction standpoint.

1.2. Objectives: To gain a better understanding of how the organization may improve its use of the dedicated DMN; understand the enablers and barriers to implementation and coproduction; and gain a deeper understanding of the lessons learned throughout the implementation and how these lessons can improve future transformations.

1.3. Methodology: A case study methodology will be used for the study (Miles et al., 2014; Myers, 2013; Yin, 2017). Qualitative analyses on the data will be conducted to fulfill the study's objectives (Miles et al., 2014; Myers, 2013; Yin, 2017).

1.4. Data management and analysis: Archival data, process documents, research notes, and emails will be the foundational data. Stakeholders, who are currently involved in using, managing, and supporting the organization's network, will be asked to participate in an interview. A total of 15–20 interviewees will be recruited for this study. Notes will be taken by investigator during the interview. With the interviewee's consent, the interview will also be digitally audio-recorded to facilitate data collection. The interview will be conducted by phone or in person at the interviewee's office or the interviewer's office. The interview should take no more than 60 minutes. This study involves no compensation to the participants.

2. Ethical Considerations

Participation in this study is voluntary. If a participant decides to participate at first but changes his or her mind later, he or she has the right to drop out at any time. The interviewee may skip any question in the interview or stop answering questions at any time. Whatever the decision, the participants will not lose any benefits to which they are otherwise entitled. Participants in this study will not have any more risk than they would face in a normal day of life.

We will keep the records of the interviewees private to the extent allowed by law. Only the PI will have access to the information provided. Information may also be shared with those who make sure the study is done correctly (GSU Institutional Review Board and the Office for Human Research Protection (OHRP)).

Each interviewee will be assigned a random identification number. This number, rather than the interviewee's name, will be used on both paper and electronic study records. A code sheet that links the participant ID with the name will be created and stored separately from the study data to protect the participants' privacy. The PI will be the only person who will have access to this code sheet. All electronic materials related to interviews (digital audio recordings, transcripts, etc.) will be stored as password-protected files on the PIs' computer. This computer is protected by a username, password, and firewall. The code sheet, all paper documents, and the digital audio recordings produced for this study will be stored for 15 years and then destroyed. The names and other identifying facts of the participants will not appear this study is presented, or its results published. The findings will be summarized and reported in group form. The participants will not be identified personally.

3. References

Miles, M. B., Huberman, A. M. & Saldana, J. (2014). *Qualitative data analysis: A method sourcebook.* CA, Sage Publications.

Myers, M. D. (2013). *Qualitative research in business and management*. CA, US: Sage Publications.

Yin, R. K. (2017). *Case study research and applications: Design and methods*. CA, US: Sage Publications.

Appendix C. Interview Protocol

Interview guidelines:

- At the beginning of the interview, the participant will be informed about the study purpose and be reminded not to use any names or share information that can identify other people. Research Questions:

1. *How can the implementation of a digital member network ensure sufficient network engagement, a critical mass of active network use, and a reasonable level of network coproduction?*
2. *How can lessons from the initial implementation and launch of the network inform future directions toward more widespread engagement in and coproduction of the digital member network?*

Note: The following bullet points represent the planned universe of questions that may be asked. The Digital Member Network (DMN) refers to the sualumni.org membership network. Not all of these questions are relevant for all the informants and therefore the actual questions asked during interviews will depend on the informant's role within the organization. Moreover, since this study involves semi-structured interviews, other relevant questions may be generated during the course of an interview based on the informant's responses. The interview will be conducted and recorded following participant confirmation (oral consent).

- Which among these best describes your role in relation to the Alumni Association?
    - Administrator
    - Board Member
    - Office Staff
    - Alumni Association Member
    - Alumni Association Non-Member
    - Other_____
- How do you currently use the sualumni.org membership network?
- Has there been a shift in your engagement with the Alumni Association today since the implementation of the sualumni.org membership network vs. prior to its implementation?

- What went well with the implementation of the sualumni.org membership network?
- What could be improved with implementation of the sualumni.org membership network?
- What activities do you perform utilizing the sualumni.org membership network?
- What are the biggest enablers toward your use of the sualumni.org membership network?
- What are the biggest barriers to fully utilizing the siualumni.org membership network?
- What external services, knowledge and support have been most valuable in helping you and your personal network make effective use of the sualumni.org membership network?
- What sort of additional internal support would be most valuable to your use of the sualumni.org membership network?
- What sort of additional external support would be most valuable to your use of the sualumni.org membership network?
- How has the implementation of the DMN affected your overall engagement with the SU Alumni Association?
- What activities would you recommend that could encourage additional Alumni Association member engagement with the sualumni.org membership network?
- What activities should be reduced or eliminated in the implementation and use of the sualumni.org network?

What future functions and features would encourage your engagement with the sualumni.org member network? Working with stakeholders from the organization, we will seek interviews of 30 - 60 minutes with an estimated 15–20 interviewees, as follows:

- Administrator (1)
- Board Member (7)
- Office Staff` (2)
- Alumni Association Member (7)
- Alumni Association Non-Member (3)

Appendix D: IRB Consent Form

Georgia State University Center for Process Innovation

Informed Consent for Interview

Title: *Dedicated Digital Member Network Implementation and Coproduction: An Investigation of an Alumni Association Network*

Principal Investigator: Derrick V. Warren

I. Purpose:

You are invited to participate in a research study. The purpose of the study is to investigate the enablers and barriers to implementation and coproduction of the sualumni.org membership network, a new dedicated DMN, and lessons that could inform and accelerate future member network engagement. You are chosen as a candidate for an interview because you are currently involved in either implementing, using, managing or supporting the organization's use of the technology. A total of 15 - 20 participants will be recruited for this study. Your participation in this study is completely voluntary and should take between 30 – 60 minutes of your time.

II. Procedures:

If you volunteer for the study, you will be asked to participate in an interview. The interview will be about the implementation and use of the sualumni.org membership network and ways it has affected your engagement with the Alumni Association. There are no right or wrong answers to questions asked in the interview. Please answer the questions honestly. Notes will be taken by an investigator during the interview. With your consent, your interview will also be digitally audio-recorded to facilitate data collection. The interview will be conducted by phone or in person at your workplace. The interview should take no more than 30 – 60 minutes of your time.

Following the interview, the researcher will store the data on his personal Microsoft Office One Drive account. This account is password protected. The researcher is the only individual with access to the data, recordings, and other archival information.

III. Future Research:

Researchers will remove information that may identify you and may use your data for future research. If we do this, we will not ask for any additional consent from you.

IV. Risks:

In this study, you will not have any more risk than you would face in a normal day of life.

V. Benefits:

Participation in this study may not benefit you personally. However, we hope to gain a better understanding of how the organization may improve its use of membership management network systems in the future. Moreover, other organizations and society may benefit from a deeper understanding of membership management technology in organizational contexts.

VI. Alternatives:

The alternative to taking part in this study is to not take part in the study.

VII. Voluntary Participation and Withdrawal:

Participation in this research is voluntary. If you decide to participate but change your mind later, you have the right to drop out at any time. You may skip any question or stop participating at any time. Whatever you decide, you will not lose any benefits to which you are otherwise entitled.

VIII. Confidentiality:

We will keep your records private to the extent allowed by law. The following people and entities will have access to the information you provide:

- PI: Derrick Warren, Co-PI: Lars Mathiassen
- GSU Institutional Review Board
- Office for Human Research Protection (OHRP)

We will use a random identification number rather than your name on study records. The information you provide will be stored will be stored as password-protected files on the PI's and student PI's computers. These computers are protected by a username, password and firewall. When we present or publish the results of this study, we will not use your name or other information that may identify you. The code sheet, all paper documents and digital audio recordings produced for this research will be stored for fifteen years and then destroyed. Your name and other facts that might identify you will not appear when we present this study or publish its results. The findings will be summarized and reported in group form. You will not be identified personally.

IX. Contact Information:

Please contact Derrick Warren at (404)702-8508 or dwarren16@student.gsu.edu

- If you have questions about the study or your part in it
- If you have questions, concerns, or complaints about the study

Contact the GSU Office of Human Research Protections at 404-413-3500 or irb@gsu.edu

- If you have questions about your rights as a research participant
- If you have questions, concerns, or complaints about the research

X. Copy of Consent Form to Subject:

We will give you a copy of this consent form to keep.

If you are willing to volunteer for this research and be audio recorded, please sign below.

Participant _____ Date _____

Principal Investigator or Researcher Obtaining Consent _____ Date _____

Appendix E: Join Materials

Dear @@first_name@@,

Welcome to the New SUALUMNI.ORG Portal!

The Southern University Alumni Federation and Alumni Affairs are excited to announce the launch of our redesigned website/portal, sualumni.org. The new site has a clean and updated look, improved navigation, and expanded functionality. Alumni can now perform the functions listed below and more:

- **Join or renew your membership online; pay via credit card, Bluepay, or check**
- **Easily maintain your profile**
- **Reset your password or request your username in real time**
- **Post calls for participation, event announcements, research queries, and member news**
- **Member-only access to SUAF archives including newsletters and other documents**
- **Search the member-only directory**
- **Make a donation or buy online**
- **And much more**

If you have not already done so, you can activate your account on the new portal by signing in using the username and password below:

Sign in: www.sualumni.org

Username: **@@username@@**

Password: [The generic password that was imported]

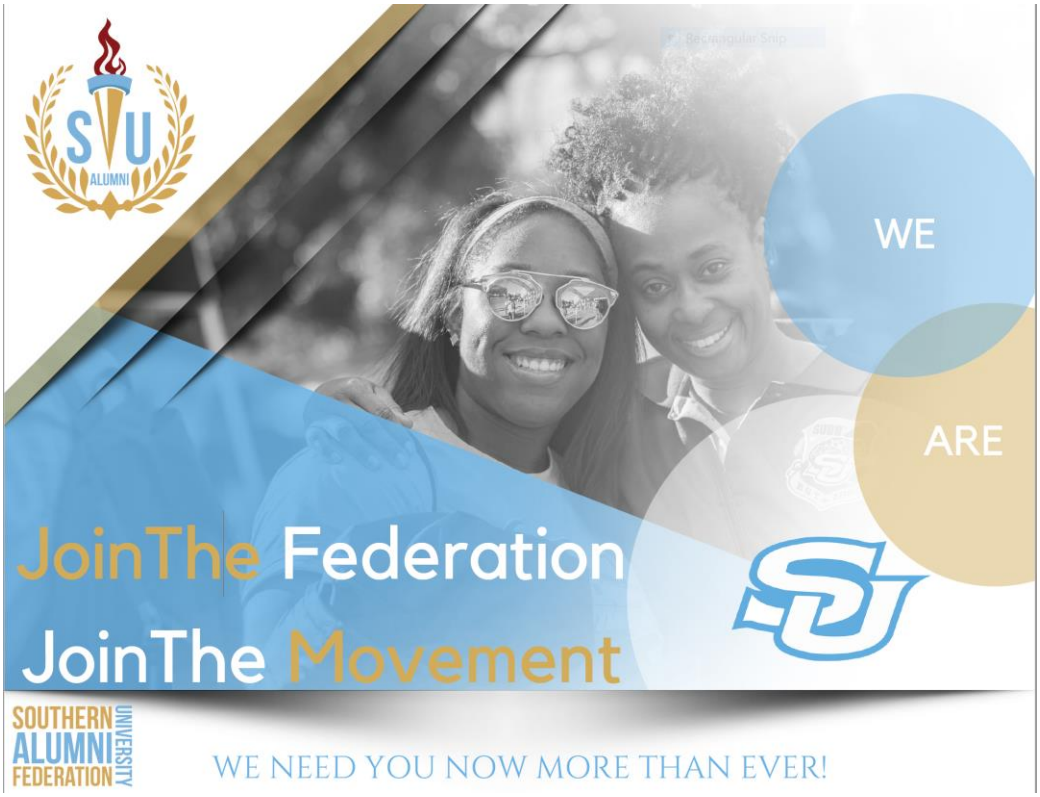
Please change your password. You may also change your username, if you would like, while editing your member profile. Please email sualumni@sualumni.org or call Alumni Affairs at 225-771-4200 if you experience any problems or have questions.

The Southern University Alumni Federation's updated online presence is a significant step forward for our organization and we invite you to help us make www.sualumni.org a timely, engaging place for members to share and connect.

Sincerely,

Southern University Alumni Federation

Figure 8 The DMN join letter.



AS A MEMBER OF THE SOUTHERN UNIVERSITY ALUMNI FEDERATION...

SUALUMNI.ORG

We are pleased to announce the launch of our brand new sualumni.org member community. Now you'll have a new way to easily connect with fellow "Southernites", share information across the Southern University Alumni Federation (SUAF) network and manage your membership preferences.To get started, go to sualumni.org and sign in. You can use your current member login information or sign in through Facebook or LinkedIn.

DISCOUNTS

You will receive discounts on hotels during the football season and save money by utilizing out comprehensive PerksConnect program that offers discounts on fine and casual dining to financial and legal services, insurance and more.

NETWORKING

You will have access to out vast and diverse alumni base. Getting connected to a local chapter in your area will prove to be one of the best networking decisions you'll make.

NEWSLETTER

You will receive frequent and timely alumni relevant and University based insight keeping you informed and connected to the Federation and the Southern University System

SOCIAL LINK *NEW*

As an added bonus, we now have an App! Go to the Apple or Google Store and download the "Social Link" app. Similarly to the above, you can use your sualumni.org username and password to log in. It is a similar experience to "Facebook" and "LinkedIn".

Figure 9 The DMN banner flyers.

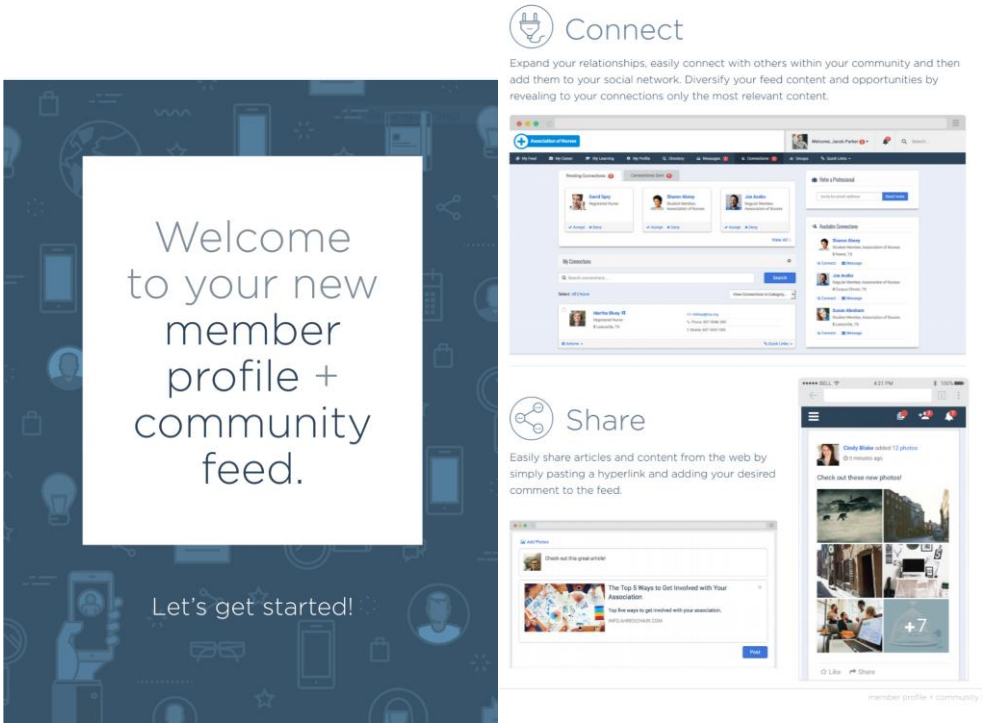
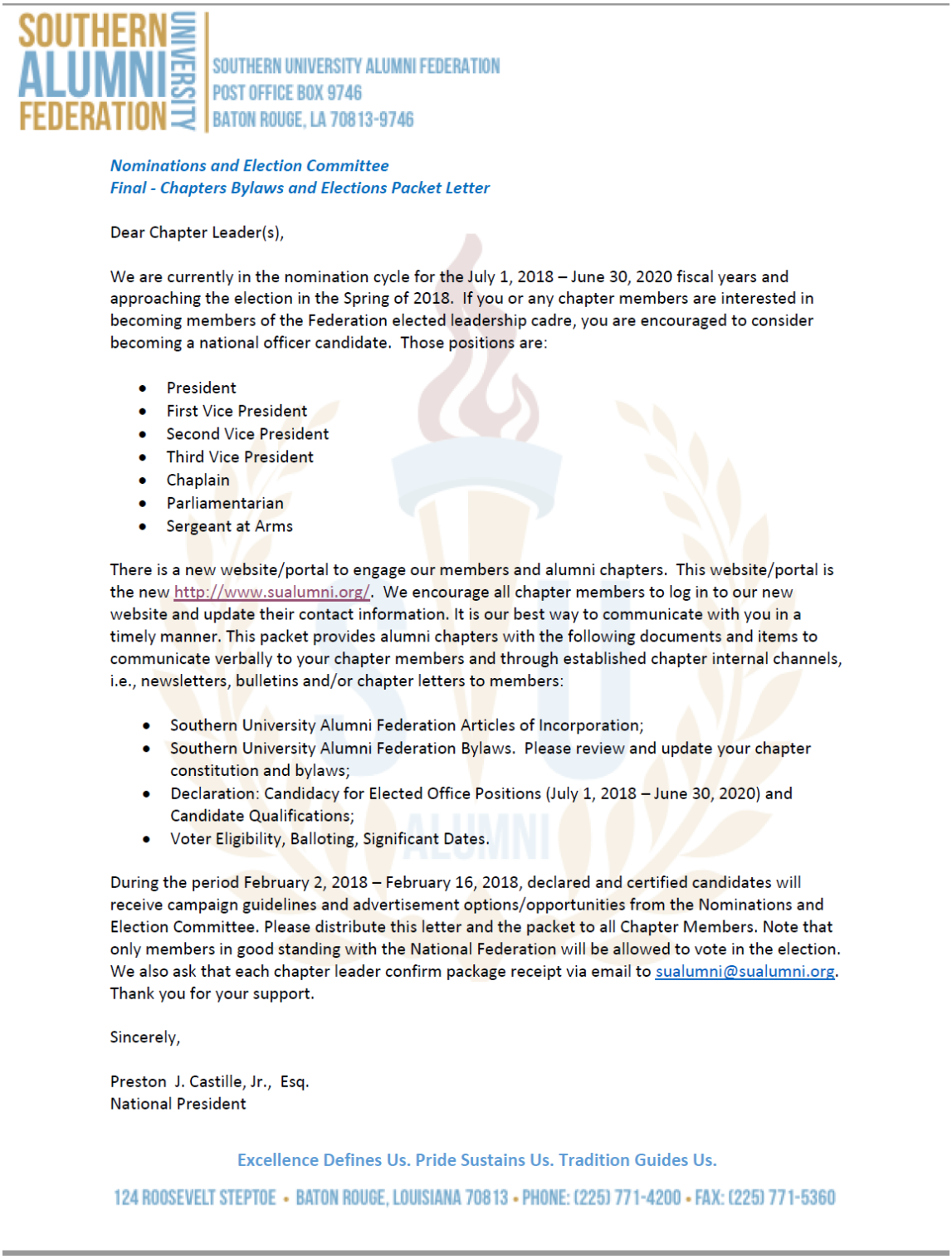


Figure 10 The DMN join information brochure.

Appendix F: Movie Night

Figure 11 DMN movie night announcement.

Appendix G: Election Materials



SOUTHERN UNIVERSITY ALUMNI FEDERATION
POST OFFICE BOX 9746
BATON ROUGE, LA 70813-9746

Nominations and Election Committee
Final - Chapters Bylaws and Elections Packet Letter

Dear Chapter Leader(s),

We are currently in the nomination cycle for the July 1, 2018 – June 30, 2020 fiscal years and approaching the election in the Spring of 2018. If you or any chapter members are interested in becoming members of the Federation elected leadership cadre, you are encouraged to consider becoming a national officer candidate. Those positions are:

- President
- First Vice President
- Second Vice President
- Third Vice President
- Chaplain
- Parliamentarian
- Sergeant at Arms

There is a new website/portal to engage our members and alumni chapters. This website/portal is the new http://www.sualumni.org/. We encourage all chapter members to log in to our new website and update their contact information. It is our best way to communicate with you in a timely manner. This packet provides alumni chapters with the following documents and items to communicate verbally to your chapter members and through established chapter internal channels, i.e., newsletters, bulletins and/or chapter letters to members:

- Southern University Alumni Federation Articles of Incorporation;
- Southern University Alumni Federation Bylaws. Please review and update your chapter constitution and bylaws;
- Declaration: Candidacy for Elected Office Positions (July 1, 2018 – June 30, 2020) and Candidate Qualifications;
- Voter Eligibility, Balloting, Significant Dates.

During the period February 2, 2018 – February 16, 2018, declared and certified candidates will receive campaign guidelines and advertisement options/opportunities from the Nominations and Election Committee. Please distribute this letter and the packet to all Chapter Members. Note that only members in good standing with the National Federation will be allowed to vote in the election. We also ask that each chapter leader confirm package receipt via email to sualumni@sualumni.org. Thank you for your support.

Sincerely,

Preston J. Castille, Jr., Esq.
National President

Excellence Defines Us. Pride Sustains Us. Tradition Guides Us.

124 ROOSEVELT STEPTOE • BATON ROUGE, LOUISIANA 70813 • PHONE: (225) 771-4200 • FAX: (225) 771-5360

Figure 12 The DMN election packet information letter.

From: **SU Alumni** <suafelections@gmail.com>
Date: Fri, Feb 23, 2018 at 4:06 PM
Subject: RESPONSE TO QUESTION ON ELECTED OFFICER CANDIDATES USING SUAF WEBSITE
To: SUAF Candidates

RESPONSE TO QUESTION ON ELECTED OFFICER CANDIDATES USING SUAF WEBSITE

Candidates may use the Federation website in campaign advertisements to encourage alums to become Federation members during the nomination and election cycle. Candidates may include the following in their respective campaign advertisements:

sualumni.org > Membership > Join the Federation

REMINDER
All candidates have not acknowledged receipt of the Specific Campaign Guidelines. Not later than February 27, 2018, each candidate should send an e-mail to the Nomination and Election Committee Chairperson indicating receipt of those guidelines and this response on using the Federation website in campaign advertisements.

Sincerely,

Chairperson
Nomination and Election Committee
suafelections@gmail.com

Send

Figure 13 The DMN website usage guidelines letter.

Figure 14 Flyers for the DMN election.

Appendix H: National Academic Signing Day Flyer

Figure 15 National signing day flyer.

Appendix I: National Conference Materials

Figure 16 DMN conference flyers - headliner (top) and registration (bottom).

Appendix J: Website Relaunch Letter

Dear @@first_name@@,

The Southern University Alumni Federation wanted to ensure you are aware and are utilizing our redesigned website/digital member network portal, www.sualumni.org. The new portal has a clean and updated look, improved navigation, and expanded functionality. You can:

· **Join or renew your membership online; pay via credit card, Bluepay, or check**
· **Easily maintain your profile**
· **Reset your password or request your username in real time**
· **Post calls for participation, event announcements and research queries**
· **Search the member-only directory**
· **Make a donation or buy online**
· **And much more**

If you have not already done so, you can activate your account on the new portal by signing in using the username and password below:

Sign in: www.sualumni.org
Username: **@@username@@**
Password: [The generic password that was imported]

Please change your password. You may also change your username, if you would like, while editing your member profile. Please email sualumni@sualumni.org or call Alumni Affairs at 225-771-4200 if you experience any problems or have questions.

The Southern University Alumni Federation's updated online presence is a significant step forward for our organization and we invite you to help us make www.sualumni.org a timely, engaging place for members to share and connect.

Sincerely,

Southern University Alumni Federation

Figure 17 The DMN website relaunch announcement.

Appendix K: Career Center Relaunch

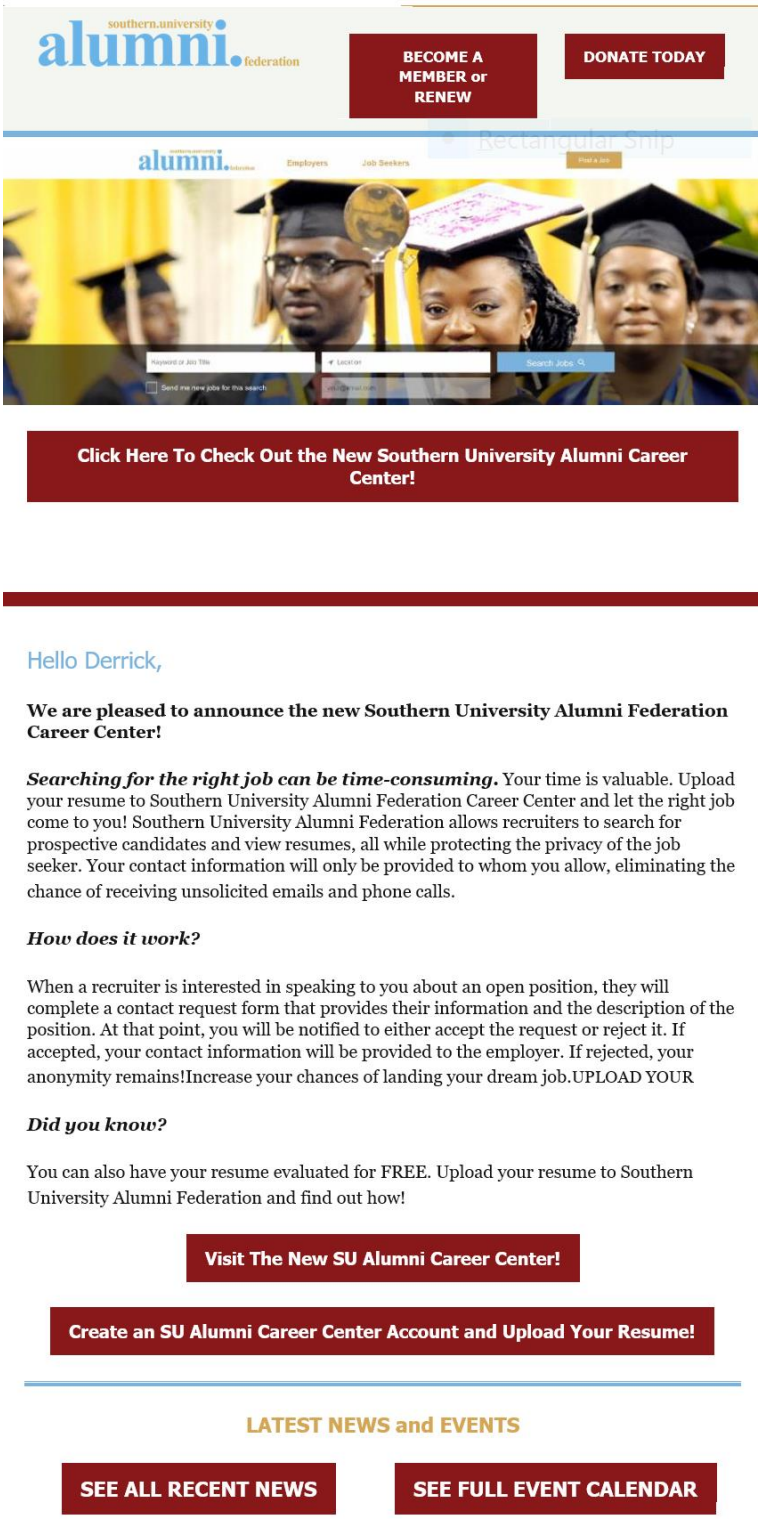


Figure 18 The DMN career center relaunch letter.

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VITA

Growing up in a small, close-knit community in Louisiana taught Derrick the importance of relationships and results. “From a young age, I understood that education was key and that you can learn something from everyone you meet.” he states. Now, this “Global Life Learner” drives positive transformation for multinational corporations utilizing analytic research, science, and innovation. This analytic research, grounded in technology/Big Data, unlocks new possibilities that help clients rapidly refine their organizational processes, thus leading to more informed, predictive, and accurate decisions. He also advises C-Suite executives on new ways of working, speed-to-market concepts, and creative strategies to differentiate themselves in today’s highly competitive marketplace resulting in accelerated business value and growth. Derrick’s specialty is services productization—that is, helping organizations create a value-added advantage by integrating services, software, and hardware to create market-driven solutions.

During his 32 years at IBM, Derrick achieved success living abroad leading teams that provided complex technology solutions for corporations in Asia Pacific and Africa, including in Australia, Brunei, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, Vietnam, South Africa, Nigeria, and other countries across Africa and the Middle East. While overseas, he established IBM’s Project Executive Competency, increasing certifications by more than 300%; rapidly drove positive double-digit account revenue/profit growth for nine consecutive quarters (52% in one year); increased signings and mitigated base erosion; grew C-Suite references; and engineered a marked improvement in overall client satisfaction year to year. Derrick also served as a member of the IBM Technical Leadership Team and was featured in the company’s’ “On Demand” Thinker Ad Campaign, which appeared globally in business publications including *Time*

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Derrick is a cum laude honor graduate of Southern University in Baton Rouge, Louisiana, with a Bachelor of Science degree in Computer Science. Mr. Warren was also honored to deliver Southern University Fall 2011 Commencement Address. He earned an MBA from the University of South Florida in Tampa as part of the school's Executive MBA Program.

Derrick and his wife (college sweetheart), Anita, currently reside in Baton Rouge, Louisiana. They are the proud parents of two sons, Derrick II and Dillon, a daughter, Dhalyn, and granddaughter Emersyn.