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Crowdsourcing Strategizing: Communication Technology Affordances and the Communicative Constitution of Organizational Strategy

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Abstract

Disruptive environmental trends are forcing organizations to be more innovative in their approaches to organizational strategy generation. Rather than using a traditional top-down approach, some organizations are turning to open strategizing, which involves a large number of stakeholders who communicate in transparent, virtual environments. This study used a case analysis to explore one organization's use of crowdsourcing technology in a move from a traditional to an open strategizing approach. Drawing on technology affordance and communicative-as-constitutive perspectives, we identified individual and collective crowdsourcing technology affordances for strategizing. Subsequently, we explored how the technology affordances influenced organizational strategizing. Results showed that crowdsourced strategy was constituted as multivoice, divergent, egalitarian, and inclusive.

Keywords

strategy, open strategy, communicative constitution of organizations, CCO, crowdsourcing, social media, technology affordances

Introduction

> They get a finite set of senior leaders . . . put them together in a closed room . . . similar profiles in stature, experience, and alignment to the organization. There's little to no

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> interaction outside that closed group. . . . They've gone to an offsite . . . and lo and behold out comes this strategic plan. Almost kind of like a papal initiative. . . . You see the smoke and then a new pope. So MMOWGLI [crowdsourcing tool] is completely opposite of that.
>
> —From research interview

Advancements in social media technologies (e.g., blogs, social networking, and crowdsourcing) are revolutionizing communication processes within organizations and radically altering social interactions by allowing the inclusion of diverse levels and functions in more transparent communication (Leonardi, Huysman, & Stenfield, 2013; Whittington, Cailluet, & Yakis-Douglas, 2011). These changes are profoundly affecting strategy-related communication in organizations.

Approaches to strategizing, once thought to be the purview of top management and elite specialists (Andrews, 1971; Angwin, Paroutis, & Mitson, 2009; Hambrick & Chen, 2008), are being reconsidered because of rapid shifts in the environment and the advent of new collaborative technologies that enable more inclusive, real-time communication. "Open strategy" refers to an approach described by Chesbrough and Appleyard (2007) and Doz and Kosonen (2008), which allows transparent strategizing by a wide range of stakeholders. Despite the emergence of crowdsourced, open strategy and its adoption by several pioneering organizations (e.g., IBM's strategy jam and Shell's Game Changer initiative), the question, how does crowdsourcing influence organizational strategizing has barely been addressed (Amrollahi, Ghapanchi, & Talaei-Khoei, 2014; Chesbrough & Appleyard, 2007; Stieger, Matzler, Chatterjee, & Ladstaetter-Fussenegger, 2012).

Since its inception, crowdsourcing has primarily been used to allow large numbers of external stakeholders to solve problems collaboratively in a common digital space (Brabham, 2009; Pedersen et al., 2013). It has been praised for its ability to support open innovation by breaking down intractable interorganizational boundaries (Chesbrough & Appleyard, 2007). Crowdsourcing has the potential to reshape organizational strategizing and provide new research opportunities for communication scholars who are especially well positioned to conduct studies of this phenomena (Thomas & Stephens, 2015).

Although a few scholars have foregrounded talk, text, and conversations in strategizing processes (Barry & Elmes, 1997; Duffy & O'Rourke, 2015; Jameson, 2001; Kaplan, 2011; O'Connor, 2002; Whittington, 2015), we argue that the intersection of strategy, communication, and technology is largely understudied in the business communication literature and deserves more attention. One avenue for putting communication at the center of strategizing is a relatively new perspective that is termed the "communicative constitution of organizations" (CCO; Putnam, Nicotera, & McPhee, 2009). This perspective focuses attention away from container-like metaphors of organizational communication and instead on the (co)production and reproduction of the organization through ongoing communicative interactions (Axley, 1984; Brummans, Cooren, Robichaud, & Taylor, 2014).

In this study, we use the CCO perspective as a lens to explore the research question: How does crowdsourcing influence organizational strategizing? Toward this end, we conduct a phased analysis of two cases of strategy generation within one organization in the U.S. Navy. In the first phase of the study, we compare two cases, one in which the organization used a traditional strategy generation process and, another, in which they relied on technology to crowdsource the strategy generation processes to identify affordances of crowdsourcing technology for strategizing. In the second phase of the study, we focus on the crowdsourced strategy case to more deeply explore how the features and affordances of crowdsourcing technology influenced organizational strategizing. We begin by presenting the two theoretical perspectives that informed our analysis: technology affordance and CCO. Next, we explain our research approach and findings including individual and collective affordances for actions allowed by the crowdsourcing technology and the key differences between traditional and crowdsourced strategizing. Last, we provide a discussion of contributions to the literature and suggestions for further research.

Theoretical Perspectives

Technology Affordances and Crowdsourcing

Organizational scholars are increasingly drawing on a technology affordance perspective to explore how communication technologies influence organizational behavior and outcomes (cf. Faraj & Azad, 2012; Leonardi, 2009; Orlikowski, 2007; Treem & Leonardi, 2012). Technology affordances represent the possibilities of action enabled by selected technology features or combinations of features given an individual's goals and abilities within a social context (Faraj & Azad, 2012). For example, Kaplan (2011) studied the affordances of PowerPoint (PPT) technology that enabled collaboration and meaning making among diverse participants during the strategy-making process. The four affordances identified were (a) PPT offers materiality to strategic ideas, (b) PPT allows users to change the material representation of ideas, (c) PPT allows cut and paste or modularity, and (d) PPT provides easy transmission. Her study is among the few that highlight the neglected role of technology and communication in constituting organizational strategy.

Researchers now argue that crowdsourcing technologies can afford actions that enable more participative approaches to strategizing (Cardon & Marshall, 2015; Matzler, Füller, Kock, Hautz, & Hutter, 2014; Stieger et al., 2012; Whittington, 2015). Howe (2006, 2008), who coined the term crowdsourcing, argues that crowdsourcing allows organizations to tap into the capability of crowds, which are "smarter than an elite few, no matter how brilliant—better at solving problems, fostering innovation, coming to wise decisions, even predicting the future" (Surowiecki, 2005, as cited in Stieger et al., 2012, p. 46). Extant studies that explore crowdsourcing and organizational strategizing primarily describe and document outcomes, suggest best practices, and offer ideas for future research. For example, Stieger et al. (2012) document an Austrian technology company's use of a crowdsourcing platform to support its

strategizing and present a practical framework to guide internal crowdsourcing. Matzler et al. (2014) explore four cases illustrating four modes of open strategizing, which they categorized along two dimensions: the stage (generation or implementation) and the degree of inclusion of stakeholders (internal or external). Few studies specifically explore or explain how crowdsourcing technology influences strategizing. Our study proposes to narrow this gap.

The CCO Approach

A relatively new group of scholars has turned its attention to the practice of doing strategy or "strategizing" (Jarzabkowski, Balogun, & Seidl, 2007; Johnson, Langley, Melin, & Whittington, 2007; Whittington, 2006). Related to this stream are studies that comprise a narrative perspective on strategy practice (Jameson, 2001; Martens, Jennings, & Jennings, 2007; O'Connor, 2002). To illustrate, Jameson (2001) explores in vivo "storybuilding" and its contributions to helping managers understand the past, cope with the present, and plan for the future. Likewise, Livesey (1999) tells how leaders manage "story traffic" in high-stakes interorganizational strategizing. Finally, Martens et al. (2007) study the content of strategy text to understand how narrative contributes to persuasiveness and legitimacy. While communication is clearly in the foreground for these scholars, these strategy-related studies predominantly frame strategy as a top-down phenomenon wherein communication is generally disseminated or cascaded from the apex of the organization (Spee & Jarzabkowski, 2011). This view does not capture the dynamics of more open approaches to strategy, where stakeholders from all levels of the organization are included in the strategy-making conversation. To address these two emergent phenomena—open strategy and crowdsourcing—we argue that a communicative-centric lens provides new insights into strategy generation processes supported by crowdsourcing technology.

One relatively new communication-centric lens is the CCO perspective. This emergent body of work theorizes the role of communication in the production and (co) production of organizational social processes (Brummans et al., 2014; Cooren, Kuhn, Cornelissen, & Clark, 2011). Communication scholars have forged different paths for explaining how organizations are constituted in communication (Cooren, 2000; Luhmann, 2006; McPhee & Zaug, 2009; Taylor & Van Every, 2000). The specifics and comparisons of these three CCO approaches are beyond the scope of this article, but more detailed descriptions of the three schools can be found in Schoeneborn et al. (2014). For this study, we draw on McPhee's Four Flows because a more macro-level approach is appropriate for this study.

McPhee's Four Flows (CCO). Grounded in Giddens's structuration theory, which explicates the balance between structure and agency, the four frames link interactions and higher system-level phenomena (McPhee, Poole, & Iverson, 2014). The four flows are explained as circulating systems or crosscurrents of interactive processes that constitute organizations (McPhee & Zaug, 2009). Thus, information is not transmitted but instead consists of "chains" of interactive episodes, including messages, that become

relevant in successively larger domains of the organization. The flows involve reproduction as well as resistance to the rules and resources of the organization (Brummans et al., 2014). Each of the flows is considered analytically distinct, but any interactive episode can contribute to multiple flows. These flows interact with one another to produce and reproduce an organization. Because of their interrelated nature, it has been difficult to assign specific messages or communicative strings of interaction to one specific flow. Instead, one chain of communication might conceivably overlap two or more flows (McPhee et al., 2014). Like other scholars who have applied the CCO perspective, we focus our attention on organizational strategy generation because the notion of developing vision, mission, and strategy are essential to organizing. Thus, we translate each of McPhee's flow questions into four flows of strategy communication beginning with McPhee and Zaug's (2009) and McPhee and Iverson's (2009) description of each of the flows.

Organization-membership negotiation focuses on the way that communication integrates people as organizational members. It includes socialization, identification, and self-positioning activities. With respect to the practice of strategizing, we suggest that this flow considers, "Who are organizational strategists?"

Reflexive self-structuring includes conversation around control activities and managerial activities. This flow concerns internal relations, procedures, and norms often codified in organizational charts, policies, and processes, as well as informal processes and routines. With respect to the practice of strategizing, we suggest that this flow considers, "What rules and procedures govern strategizing?"

Organizational activity coordination aligns and connects local work activities and allows members to organize their joint work. With respect to the practice of strategizing, we suggest that this flow considers, "How is strategizing accomplished?"

Institutional positioning consists of the external communication with the purpose of positioning the organization in a field of other organizational entities, including suppliers, customers, competitors, government regulators, and partners. With respect to the practice of strategizing, we suggest that this flow considers, "How do we position ourselves with regard to external stakeholders?"

The four flows framework suggests that the four flows are necessary conditions in the constitution of organization (Putnam & McPhee, 2009). We adopt this framework, assuming that four flows of strategy communication are necessary conditions in the constitution of organizational strategy. This framework provides a lens through which we explore how the affordances provided by crowdsourcing technology influence the communicative constitution of strategy.

Research Approach

To advance understanding of how crowdsourcing technology influences the constitution of strategy, we conducted a case analysis (Eisenhardt, 1989; Yin, 2009) of two strategizing cycles in a single organization. In one cycle, the organization used what we term a traditional strategic planning processes, and in the other cycle the organization used a more open process supported by crowdsourcing technology. We first compare

the two cases and then focus on the crowdsourcing case. Case studies are particularly appropriate when "a 'how' or 'why' question is being asked about a contemporary set of events, over which the investigator has little or no control" (Yin, 1984, p. 20). Furthermore, this approach addresses recent critiques of extant affordance studies, which have not used comparisons to mitigate false positives or false negatives (Walther, 2013). As is typical with case studies, we collected data from diverse sources (Miles & Huberman, 1994), including interviews, organization documents, organization websites, and the crowdsourcing website. We adopted an inductive, grounded approach to analyzing the data (Strauss & Corbin, 1990), which was guided by the broad research question and related literature; this served to sensitize us to potentially important concepts rather than to provide ex ante hypotheses (Chamez, 2014; Eisenhardt, 1989). Our understanding of the literature evolved through the course of analysis such that the theoretical background presented previously is focused on concepts that became salient during the course of the research rather than before we began.

Setting and Case Selection

We selected the cases for this study purposefully (Pettigrew, 1990) because they were likely to extend understanding of the influence of technology-mediated communication on organizational strategizing. The case of the U.S. Navy's experimentation with crowdsourcing to support strategizing can be considered "extreme." Extreme cases provide valuable data for qualitative studies because, in such instances, social processes are likely to be transparent and observable (Eisenhardt, 1989; Pettigrew, 1990).

Like many organizations, the U.S. Navy is facing intense global pressures (The National Military Strategy of the United States, 2015) and has publicly recognized a need to find new and innovative strategies. The nature of the geopolitical changes confronting the U.S. Navy and the consequences of strategic decline are arguably extreme (e.g., increasing asymmetric global conflicts). Additionally, the traditional and hierarchical nature of the Navy's organization structure and culture is somewhat incongruent with technologies that enable transparent communication among and across levels. The Navy, a highly bureaucratized organization, has traditionally displayed a strong need to control communication flows and, thus, differences between the two cases make the influence of crowdsourcing technologies more observable.

Data Sources

We collected background information about the organization from its websites, including description, mission, and strategy. We then collected trace data remaining from both strategizing cycles, such as e-mail invitations, agendas, PPT presentations, meeting notes, and the final written strategic and operating plans. For the crowdsourcing case, we also reviewed a wealth of data from the *Massively Multiplayer Online War Game Leveraging the Internet* (MMOWGLI) crowdsourcing website, including the game play cards (details of the platform are described in the Cycle 2 case that follows), game blog, and videos. We downloaded and collected reports from the crowdsourcing

website that provided descriptive data such as the number and types of cards played, number of players, screen names, and awards or points to each player. We also conducted interviews with a leader responsible for guiding both strategizing cycles, a game master and the lead designer of the crowdsourcing platform, who was the technical lead for the focal crowdsourcing game. Each interview lasted approximately 90 minutes. The interviews were recorded and transcribed. We requested additional documents and clarification through e-mail as we noted gaps in the data. Table 1 summarizes the data.

Analytic Approach

We adopted an inductive, grounded approach to analyzing the data (Corbin & Strauss, 1990; Eisenhardt, 1989), iterating between analyzing, theorizing, and reviewing related literature. We began our analysis by reviewing the background data (PPTs, agendas, minutes, MMOWGLI overview, strategic plans) and interview data to create a detailed timeline and narrative summary for each case. We reviewed the timeline and narrative for each case individually to become "intimately familiar with each case as a standalone entity" (Eisenhardt, 1989, p. 540). Drawing on the approaches of related studies (e.g., Kaplan, 2011; Treem & Leonardi, 2012; Orlikowski, 2007), we sought to understand who was involved, what tools or technology features they used, how they used tools and technology features, and what outcomes emerged from their strategizing process. We prepared tables and illustrations summarizing the data to compare the cases (Eisenhardt, 1989; Miles & Huberman, 1994) and developed a preliminary list of individual affordances.

We then focused on the crowdsourcing case, exploring how the features and affordances of the crowdsourcing technology influenced organizational strategizing. We reviewed the MMOWGLI game reports, tracing the action plans back through the posting threads from which they were generated and drawing on the four flows of strategy communication. We asked how do the flows consider "Who are organizational strategists?" "What rules and procedures govern strategizing?" "How is strategizing accomplished?" "How do we position ourselves with regard to external stakeholders?" and "How did the affordances offered by crowdsourcing technology influence each flow?" We selected and grouped examples illustrating afforded actions and outputs and continued reviewing the data, comparing the crowdsourcing and traditional strategizing cycles, and discussing our impressions to generate more abstract categories. We concluded our analysis by comparing our conclusions to the findings and arguments of other studies, "enfolding" our findings in extant literature (Eisenhardt, 1989) to further refine our conclusions and explore limitations and areas for further research.

Case Analysis

Strategy Generation at Naval Air Warfare Center Aircraft Division: Cycles 1 and 2

Naval Air Warfare Center Aircraft Division (NAWCAD) conducts research, development, testing, and evaluation of naval aviation systems for the U.S. Navy and U.S.

Table 1. Data Sources.

Source	Description	Quantity	Unit
E-mails	Strategy—10JUL15	1	Page
	Inquiry—20JUL15	3	Pages
	MMOWGLI—16AUG15	6	Pages
	MMOWGLI—16AUG15	2	Pages
Interviews	Game designer/game master/player	32	Pages
		1:29:10	hr:min:sec
	Strategy cell leader/game master/player	26	Pages
		1:13:07	hr:min:sec
	Game master/player	29	Pages
		1:27:51	hr:min:sec
MMOWGLI documentation/reports			
Background	MMOWGLI Informational Slide	1	Slide
	MMOWGLI Game Summary MAR15	49	Pages
	About MMOWGLI	7	Pages
Game reports	Action Plan Report	62	Pages
	All Card Chains	141	Pages
	Idea Card Chain Report	241	Pages
	Player Profiles Report	218	Pages
Data Excel files	Action Plans With Cards	153	KB
	Action Plan Summary	41	KB
	MMOWGLI Data	137	KB
NAWCAD records	NAWCAD Strategic Off-Site Agenda	2	Slides
	NAWCAD 2030 Assessment Data Summary	12	Pages
	NAWCAD Strategic Cell Executive Summary	7	Pages
	NAWCAD Strategic Cell MMOWGLI Graphical Summary	12	Pages
	NAWCAD Off-Site Summary	10	Slides
	NAWCAD Strategic Assessment 2030	125	Pages
Traditional documentation/reports			
Background	NAVAIR, "Let's Get to Work: Employment Opportunities"	3	Pages
	NAVAIR Proof of Concept	67	Pages
Planning records	Strategic Cell Off-Site Minutes APR2010	3	Pages
	NAWCAD Strategic Plan 2011	33	Pages
	NAWCAD Strategic Operating Plan FY13-15	48	Pages
	NAWCAD Workshop Survey	1	Page
	Strategic Cell Process	69	Slides

(continued)

Table 1. (continued)

Source	Description	Quantity	Unit
	NAWCAD Strategic Planning and Operating Planning	2	Slides
Websites	MMOWGLI portal	https://portal.mmowgli.nps.edu/nsc	
	NAWCAD website	Navy internal website	
	NAVAIR website	Navy internal website	

Note. MMOWGLI = Massively Multiplayer Online War Game Leveraging the Internet; NAVAIR = Naval Air Systems Command; NAWCAD = Naval Air Warfare Center Aircraft Division.

Marine Corp. NAWCAD, established in 1993 as a result of a reorganization, operates in three locations within the United States, employing more than 13,000 people—about 1,500 active duty and 11,500 government civilians[1]—with an operating budget of more than $4 billion.

As the U.S. Navy faces intense global pressures, NAWCAD has been tasked with developing new and innovative naval aviation strategies to keep pace with national security challenges. Within NAWCAD, a working group called the Strategic Cell (SC), under the leadership of a full-time director, has been responsible for conducting strategic assessments and creating strategic and operational plans. From 2010 to 2015, the director of the SC oversaw two strategic planning cycles. The first cycle, using a traditional strategizing process, began in 2010. It resulted in a 2011 Strategic Plan and a 2012 Strategic Operating Plan covering 2013 to 2015. The second cycle, which began in late 2013, introduced crowdsourcing technology. This second cycle occurred over 2 weeks in September 2014 and resulted in a 2015 Strategic Assessment. Key characteristics of each of the cycles or cases are shown in Table 2 and described below.

NAWCAD Traditional Strategizing. In 2010, the SC director e-mailed leaders of each of the competency areas (similar to departments) within NAWCAD to request that a senior-level representative be assigned to participate in the SC. The mission of the SC was to

> Facilitate the identification, assessment, and exploitation or mitigation of influential environmental factors that are likely to impact the NAWCAD operations in the future supporting of combat readiness and capabilities.[2]

The original SC included 32 members, representing 20 competencies or departments, and the SC director.

Preparation for the 3-day off-site. The SC director explained the envisioned SC planning process to NAWCAD leadership prior to the group's first meeting. The envisioned process would include environmental scanning resulting in "strategic thrusts," which would be implemented by executives as shown in Figure 1.

Table 2. Comparison of Traditional and Crowdsourcing Strategizing at NAWCAD.

	Traditional strategizing	MMOWGLI-crowdsourcing strategizing
Number of participants	32 people	646 players, 41 game masters
Recruiting	Appointment by leader	Snowball sample from contacts of 41 game masters
Level of participants	Higher level leadership from 20 competencies	Diverse levels
Source of participants	NAWCAD	NAVAIR/NAWCAD/other government/industry/academia
Duration of effort	1.5-year strategic plan, 1-year operating plan	9-month planning, 10-day game
Medium/tools	3-day off-site workshop, weekly face-to-face meetings over 1 year	2-day off-site planning workshop, face-to-face and teleconference planning meetings, Internet crowdsourcing game
Output	Agendas, published plans	Web-based data, reports, action plans, 5,455 idea cards
Access to output	Limited, available on request from resource owners	Open to public to view and search
Action thrusts/plans	19 narrowed to 6	36

Note. MMOWGLI = Massively Multiplayer Online War Game Leveraging the Internet; NAVAIR = Naval Air Systems Command; NAWCAD = Naval Air Warfare Center Aircraft Division.

The strategic planning effort would be launched through a 3-day off-site meeting. The SC director prepared for the off-site by distributing a survey to SC members to collect their perceptions of the desired future of NAWCAD, concerns and issues, opportunities, expected paradigm shifts, and trends. The final question asked: What can NAWCAD do today to prepare for tomorrow? The SC director also compiled data describing NAWCAD's product requirements, stakeholder expectations, and the internal and external trends likely to influence the organization in the decades ahead.

Strategizing process and output. In April, the newly formed NAWCAD SC working group attended the 3-day off-site. The NAWCAD SC director organized and facilitated the off-site. The purpose of the off-site was

> . . . to orient SC members to their mission, (2) to identify areas of strategic importance, and (3) to establish teams to study these areas to determine if they warrant further action by the NAWCAD leadership.[3]

After introductions and presentation of the data, SC members separated into three subgroups tasked to brainstorm as follows:

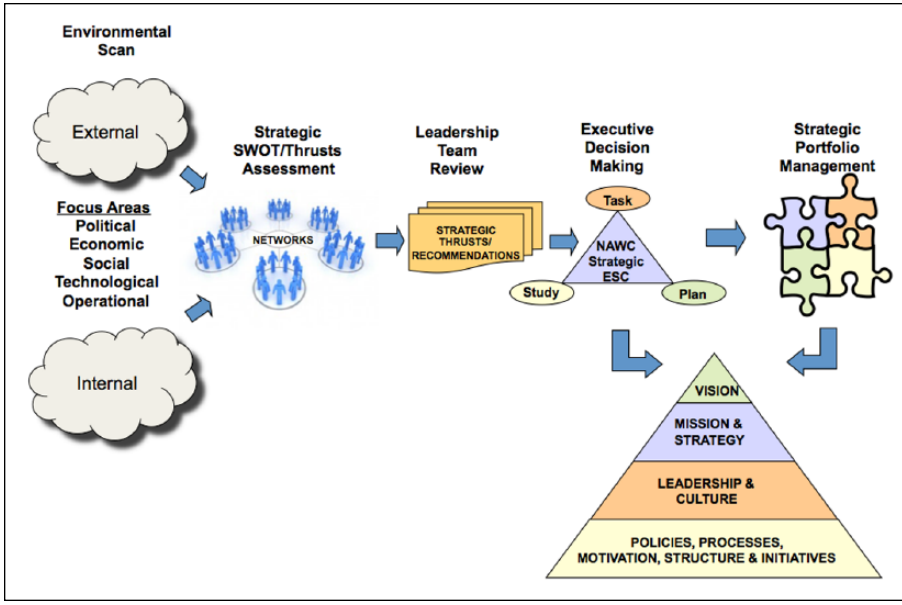


Figure 1. Strategic Cell network process flow.
Source. Presentation to Naval Air Warfare Center Aircraft Division's (NAWCAD) leadership.

- Group 1: Organization "as-is" and "to-be"
- Group 2: Internal organizational strengths and weaknesses
- Group 3: External environment opportunities and threats

The subgroups met separately, then reconvened with the larger group to present and debate their conclusions, then separated again for further discussion. This iteration was repeated multiple times over the course of the 3 days. The group prepared affinity diagrams to identify priority topics. The off-site resulted in the identification of 22 factors likely to have an impact on the organization's mission. Each factor was assigned a team leader and colead who were tasked to return to the SC in 30 days with a charter outlining plans for the investigation. Over the next year and a half, members of the SC met weekly in subgroups and then together to refine the ideas generated during the workshop. The group reported to leadership during the process. Following leadership's recommendation, the 22 factors were narrowed to 10 thrust areas, which were further narrowed to a final six key strategic thrusts supporting three objectives included in a 2011 Strategic Plan.

The SC then led an effort to operationalize the strategic plan. The Strategic Operating Plan took an additional year to develop. Implementation was expected to occur over the subsequent 3 years. Each strategic objective was assigned a strategic leader with a team of 5 to 10 individuals from different departments within NAWCAD

and NAVAIR. The team developed projects, a plan of action and milestones to support each objective, and identified a responsible party for each task.

NAWCAD Strategizing With Crowdsourcing

In late 2013, the SC gained approval to use the MMOWGLI-crowdsourcing platform to update the strategic plan. According to the SC director, the use of MMOWGLI was motivated by

> a desire to . . . expand our envelope of understanding. . . . It just seemed like a natural fit as an extension of the open innovation ideas. . . . So we sold it to our leadership as a way to do a comprehensive strategic plan.

As he explained, NAWCAD "had strategic plans, but they had a small group go off and do them and they really weren't built to a large scale."

MMOWGLI Technology Platform. MMOWGLI is a robust messaging game that acts as a crowdsourcing tool. MMOWGLI provides a space for large and diverse groups of people to work together on idea generation and action planning. Players include game masters, who are either subject matter experts or MMOWGLI process experts, and players. Game masters monitor activity, respond to questions, and encourage play in order to facilitate the conversation. Game masters are identified as such with usernames displayed as gm_username. Game masters can mark cards as "Super Interesting" and can initiate action plans by recognizing promising idea chains and inviting players responsible for them to create action plans. Game masters also usually play as players. Game masters are instructed to use a player username rather than their game master username when playing as opposed to facilitating so that their contributions will not be attributed any greater importance than contributions of players.

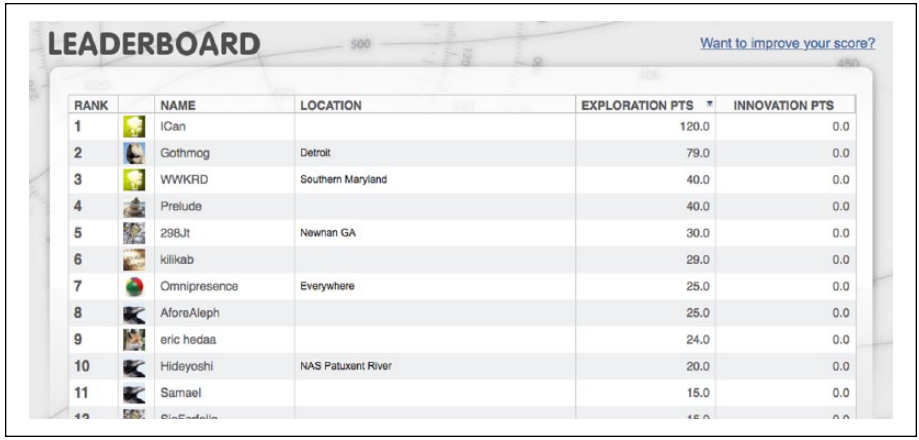
Players can register and participate by providing only an e-mail address; other information such as affiliation is voluntary. Players are identified only by their chosen screen name. After registering to play, a participant may view a "call to action" video that introduces the focal problem or objective of a particular instance of the game. Participants play by posting comments on cards. Each post or card is limited to 140 characters, and the cards are organized in threads. Most games begin with seed cards developed by a group of game designers working with the MMOWGLI technical team. Players respond to the seed cards by electing and posting one of four types of cards: An expand card builds on an idea "to amplify its impact," a countercard challenges a previously posted idea, an adapt card "takes this idea in a different direction," and an explore card asks a question. Figure 2 shows the game space for a training game. Players can click on the type of card to add to the idea chain.

A player earns points when he or she responds to a card posted by another player—but not when responding to a seed card—and also when another player responds to his or her post. Thus, the system rewards posts that increase discussion. Players also win badges for particular achievements, such as contributing to action plans, playing one

Figure 2. Game space for MMOWGLI-crowdsourcing platform.

of each type of card, playing a card marked as super interesting by a game master, or playing a card marked as a favorite by another player. Figure 3 shows the "Leaderboard" where a player can view play points.

As noted above, game masters can initiate action plans. Action plans are built from threads of Idea Cards and provide more in-depth explanations about the *who, what, why, when*, and *where* of a single idea. Players invited to contribute to an action plan can collaborate using tools such as text messaging, a blog space, mapping tools, and video hosting. Action plan authors can invite other players to help them build the plan, and players can request to be included in action planning. When an action plan is complete, other players can comment on it and can invite participants to collaborate offline to realize the plan. At the conclusion of the game, players can assess the developed



RANK		NAME	LOCATION	EXPLORATION PTS	INNOVATION PTS
1		ICan		120.0	0.0
2		Gothmog	Detroit	79.0	0.0
3		WWKRD	Southern Maryland	40.0	0.0
4		Prelude		40.0	0.0
5		298Jt	Newnan GA	30.0	0.0
6		kilikab		29.0	0.0
7		Omnipresence	Everywhere	25.0	0.0
8		AforeAleph		25.0	0.0
9		eric hedaa		24.0	0.0
10		Hideyoshi	NAS Patuxent River	20.0	0.0
11		Samael		15.0	0.0

Figure 3. Leaderboard for MMOWGLI.

action plans with a one, two, or three thumbs-up, providing an overall ranking of the plans. Figure 4 shows the action plan dashboard for a training game.

Preparation for the MMOWGLI experience. The design team met with MMOWGLI technical experts to design the NAWCAD strategizing game, as one leader explained, "to include everything from marketing to training and preparation, to subject matter analyzing, to security and PAO, and contracts, and union legalities and negotiations." The MMOWGLI design team created a video to set the stage for the game and developed 80 questions for seed cards covering general topics and three possible future scenarios. The design team was particularly concerned with who the invited population should be. As one of the design team explained:

> We could have limited it, we could have cast a net to include anybody in the world who had [an e-mail account] and had access to MMOWGLI. We could have sent to anybody with . . . a .mil [e-mail address]. We had the opportunity to sort of vet along or to create a boundary along any one of those. So the beauty of MMOWGLI is that you can cast the net as wide as you want, depending on the nature of your question. We chose to cast larger . . . because we really, really believed that even though this sounded like a Navy sensitive topic, really, really understanding what it was that we were trying to go for, we understood . . . that it was more important to get diversity of thought and outside perspective.

This effort resulted in 6,000 invitation e-mails sent from the MMOWGLI system to potential participants including NAVAIR and NAWCAD employees, academia, and industry.

Process and output. The NAWCAD MMOWGLI strategizing game was held for 2 weeks in September 2014. The invitations resulted in 646 registered players. The

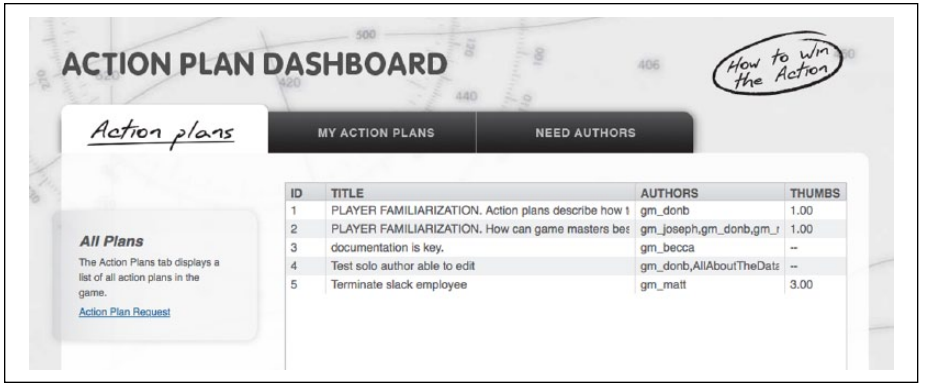


Figure 4. Action plan dashboard.

majority were from the U.S. Navy, but other organizations were represented as shown in Figure 5. Play began with 80 seed cards, 40 for each week. The first week focused on generating ideas about the future state of the environment. The second week of play focused on generating ideas about how NAWDAD should prepare.

The MMOWGLI-crowdsourcing effort resulted in 5,455 idea cards, 127 of which were marked "super interesting." Thirty-six action plans were created. Card play per day was the highest on the opening day, went to zero over the weekend, and then climbed and tapered again the following week. As shown in Figure 6, play was divided relatively evenly among those who played, but more than half of participants did not play any cards.

The MMOWGLI game play resulted in a rich database of postings and reports that documented the entire game play, including idea chains and action plans. Reports also documented game play statistics and award winners by screen name. All data and reports remain accessible via the site website and are publicly open to viewing and download (https://portal.mmowgli.nps.edu/game-wiki/-/wiki/PlayerResources/About+MMOWGLI).

Technology Affordances: Collective Strategizing Through Crowdsourcing

We conceptualize the output of strategy generation as a pool of potential discursive resources for ongoing and future strategizing. Discursive resources are "concepts, expressions or other linguistics devices, drawn from practice and texts that explain action while also providing a horizon for future practice" (Kuhn, 2009, p. 684). Consistent with CCO and practice perspectives, we see strategy as constituted in practice. Strategy is a pattern of decisions evident as strategy in hindsight but which become strategic only through practice. Similarly, potential resources for strategy generation become resources only when they are used as such (Feldman, 2004). MMOWGLI-crowdsourcing technology afforded actions, which constituted potential resources

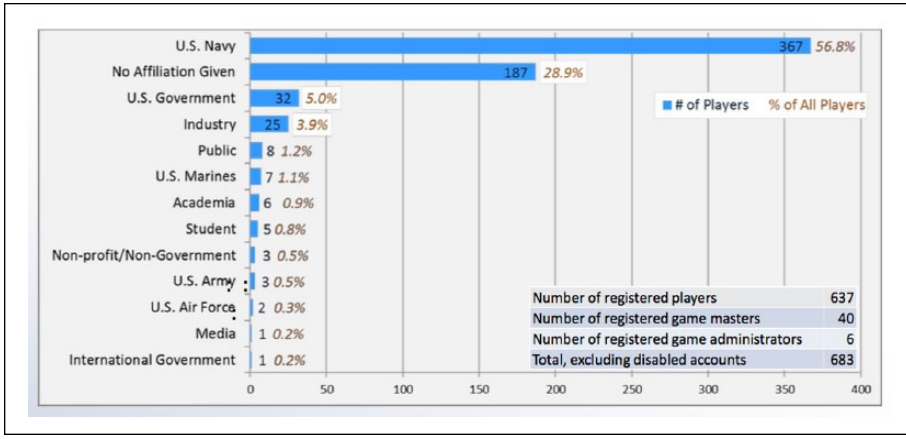


Figure 5. Organizations represented in the MMOWGLI game.
Source. MMOWGLI Report.

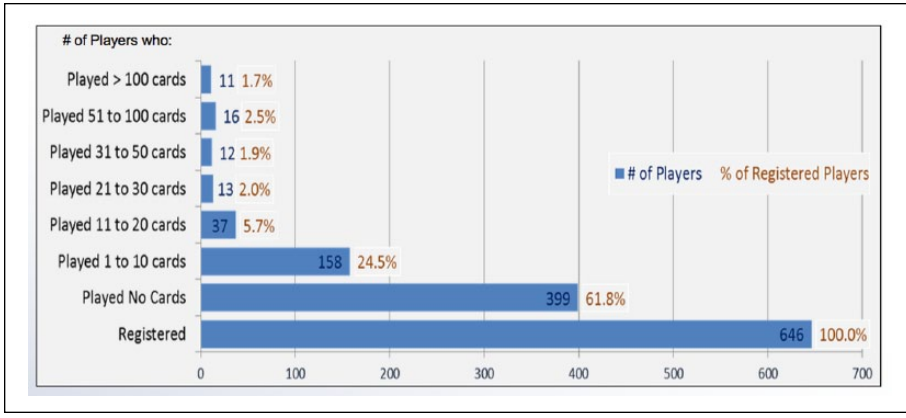


Figure 6. MMOWGLI player participation by number of cards played.
Source. MMOWGLI Report.

suggested in the trace output of strategy generation (strategic plan documents, PPT slides, agendas, minutes, and routines and practices). This output recorded and contributed to the constitution of the four flows, which in turn became potential resources for future flows and future strategy generation.

We found that crowdsourcing technology afforded individual and collective actions. The lack of limitations on participants and participation in combination with the individual affordances afforded collective actions. Technology-afforded collective actions constituted strategy communication flows and potential discursive resources that differed from those constituted in traditional strategizing. In the sections that follow, we

first present and explain the individual affordances. Then, we discuss the collective affordances and crowdsourced four flows of strategic communication.

Individual Affordances

Consistent with related research (e.g., Nardon, Aten, & Gulanowski, 2015; Treem & Leonardi, 2012), we find that social media affords unique, communicative actions. These actions are afforded by groups of features, which overlap such that multiple features may support an affordance and an affordance may support multiple features. Our initial comparative analysis of the cases revealed that MMOWGLI afforded visibility; persistence; anonymous participation; systematic reward; player control of participation; and questioning, opposition, and expansion. Table 3 summarizes these individual affordances, and we elaborate below.

MMOWGLI afforded individuals the ability to view anonymous yet individual contributions and ideas. More than 5,000 idea cards, each associated with an individual contribution, were viewable to all players. In a face-to-face setting, contributions are attributable to individuals but are not anonymous. MMOWGLI retained the individuality of contributions while providing anonymity.

MMOWGLI afforded individuals the ability to see a history of contributions and ideas in context. Idea cards were linked in threads and to action plans, and a complete record was available as an automatically generated report. In a face-to-face setting, only the participants in the room are privy to the context in which communication occurs, and there is no lasting record. Conversely, the entirety of the crowdsourced strategizing is recorded and available. Thus, anyone interested can view the entire communication including the flow and context, rather than only the conclusions absent the communication that preceded and followed.

MMOWGLI afforded individuals the ability to participate anonymously. All players were identified with screen names, which preserved individual contribution but did not reveal identity. Conversely in face-to-face settings, contributions are attributable to those who make them when they are made, but then condensed to organizational communication in final strategic plans.

MMOWGLI afforded individuals the ability to earn system-driven, automatic awards. MMOWGLI awarded badges based on criteria set before the game began. In face-to-face settings, reward comes from individuals when they assess and recognize a contribution. Reward is thus linked to individual decisions, usually decisions of those in leadership positions. MMOWGLI separated individual assessment from rewarding by automatically granting points based on criteria in the system.

MMOWGLI afforded players the ability to control their level of participation and time commitment. Because posts were limited to 140 characters, were available at any time during the 2-week course of play, and included links and references, participants could view without participating, could participate at any time and for any duration, and could easily enter and exit. Conversely, in face-to-face settings, meeting times are fixed, participation is often mandatory (i.e., one cannot just watch), and it may be difficult to pick up on a thread if, for example, one is late.

Table 3. Individual Affordances for Crowdsourcing Strategizing.

Affordance	Action afforded	Supporting features
Visibility	Able to view anonymous yet individual contributions	Individual idea cards are visible to all participants; 5,455 idea cards
Persistence	Able to see history of individual contributions and ideas in context	Idea chains viewable and linked in threads and to action plans; idea chain report and action plan reports
Anonymous participation	Can participate anonymously	Players do not know one another's identity; screen names
Systematic reward	Able to earn automatic awards through participation	Discussion results in points; award report, system awards badges
Player control	Can control level of participation and time commitment	Posts are limited to 140 characters; available 24/7; record of card chains and links allow easy reference and entry
Questioning	Can pose questions as participation	Each day begins with questions/seed cards; "Explore" cards allowed and labeled
Opposition	Can pose divergent ideas as participation	Opposing ideas remain visible; controversial ideas gain more discussion and, thus, points, "Counter" cards allowed and labeled
Expansion	Can expand on ideas	Expansion threads remain visible, no limit on time or number of cards posted; no limit on number of participants; "Expand" and "Adapt" cards allowed and labeled

Finally, MMOWGLI afforded players the ability to pose questions and divergent ideas, and to expand on and adapt ideas as participation. The different types of cards served to encourage each type of participation and give equal weight to each type. Although each of these types of participation are possible in a face-to-face setting, they are often not weighted equally. Organizational culture and leadership influence the weight given to posing questions versus, for example, suggesting solutions.

Collective Affordances

MMOWGLI allowed an unlimited number of participants and contribution. This, in combination with the individual affordances discussed above, afforded four key collective actions: (a) multivoice strategizing, (b) divergent strategizing, (c) egalitarian strategizing, and (d) inclusive strategizing. Table 4 summarizes the collective affordances and key individual affordances that supported them, with illustrative quotes from interviews.

Multivoice Resource Construction. MMOWGLI afforded the collective construction of multivoice strategic resources. The technology allowed an unlimited number of participants to contribute as many 140-character ideas as they chose. Because ideas were

Table 4. Collective Affordances for Crowdsourcing Strategizing.

Collective affordance	Supported by	Illustrative example
Multivoice resource construction	Visibility, persistence, anonymous participation, systematic reward, player control	. . . the crowd came up with these as a collective
	Unlimited participants and participation	Part of the magic behind MMOWGLI is that you can play as much or as little as you have time for. You can jump in anytime . . .
Divergent, networked strategizing	Player control, questioning, opposition, expansion	It's not, "What are the top three big ideas?" that are of interest, it's . . . the 5% outliers that are just really unusual platinum nuggets that nobody ever thought of before.
	Unlimited participants and participation	
Egalitarian strategizing	Visibility, persistence, anonymous participation	When you are in a face-to-face environment, you can't help but know who you are speaking with. You often know their rank and association.
	Unlimited participants and participation	There was a ranking for most played cards . . . at the end of the day, it was just Teddy Bear played the most cards on Tuesday . . . [and] you never really knew who that was. So the person had the ability to be jazzed . . . but there was no punitive consequences felt to anybody who didn't make it to the leader board.
Inclusive strategizing	Visibility, persistence, anonymous participation, systematic reward	In this space, there is really no barriers whatsoever . . .
	Unlimited participants and participation	

limited to 140 characters, there were frequent breaks in the threads, allowing easy entry. That is, a participant did not have to wait for a break in the conversation to contribute. Ideas were identified by screen name and remained in the record alongside the screen name, leaving a trace of the many voices that contributed. Figure 7 shows an example taken from the idea cards chain report generated by the MMOWGLI platform.

The SC director commented on this collective affordance:

> You know, I didn't have all of these ideas before . . . the crowd came up with these as a collective. So it's kind of hard to deny the results when the crowd comes up with it. So that's really the beauty . . . you get past this not-invented-here thing and it becomes far more real and far more meaningful.

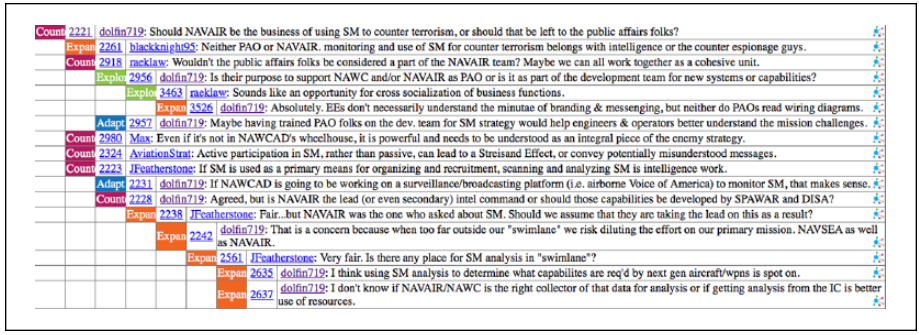


Figure 7. Idea cards chain report.

As revealed in the trace data and interviews, we found that MMOWGLI afforded the collective construction of multivoice discursive resources for strategizing.

Divergent Strategizing. The MMOWGLI platform afforded divergent strategizing. The crowdsourcing strategy generation cycle resulted in a large (5,455) number of idea cards and diverse pool of potential discursive resources for strategizing. This finding is consistent with arguments of proponents of open strategy (e.g., Amrollahi et al., 2014; Chesbrough & Appleyard, 2007; Stieger et al., 2012).

The SC director noted the outliers when he compared the output of the two cycles:

> The traditional approach we did not have any real disruptors. So you could actually anecdotally say that the enablers really were far richer and more insightful than the traditional approach. The disruptors were a whole separate category that wouldn't have existed otherwise.

He continued with an example:

> So when we got [creative ideas]—I mean one of them was amazing, they were talking about undersea basing in the arctic, like an undersea base. I mean that never, ever would have come out. We had ideas about creating very highintheatmosphere-type nodes for communication like a deployable net in a domain of like unmanned vehicles swarming around that were part of an information net. Right? So stuff like that just was just outside—I mean as soon as you saw it, you would say, "Well, that's really wild."

MMOWGLI encouraged countering and questioning by offering and rewarding those types of cards. The outliers generated then became a part of the records. Player control and questioning, opposition, and participation along with unlimited participants and participation preserved outliers and allowed tightly coupled, asynchronous (as well as synchronous) collaboration.

Until recently, distributed collaborators often performed work in decoupled tasks. That is, tasks can be completed separately and then brought together (Bjørn, Esbensen,

Jensen, & Matthiesen, 2014; Olson & Olson, 2000). MMOWGLI, however, afforded tightly coupled, asynchronous collaboration (i.e., highly interdependent, collective work). This enabled an emergent, networked rather than funneled process of strategizing, whereby ideas were linked in threads and key themes emerged.

Because strategizing with MMOWGLI was not constrained by physical space or scheduling, and the technology provided a complete record of the interaction, an unlimited number of people could work together, either asynchronously or synchronously. Conversely, in a traditional setting, strategizing is often divided into separate strategies, tactics, and operation plans, which are developed in a decoupled fashion by small groups and then integrated. This affordance is illustrated in the action plans shown in Figure 8 (which depicts author-to-author chat) and Figure 9 (which depicts player comments from one action plan). Although action plans were created by subgroups, participants could request to be included and could also comment on the plans and influence their direction. As revealed in the trace data and interviews, we found that MMOWGLI afforded divergent strategizing.

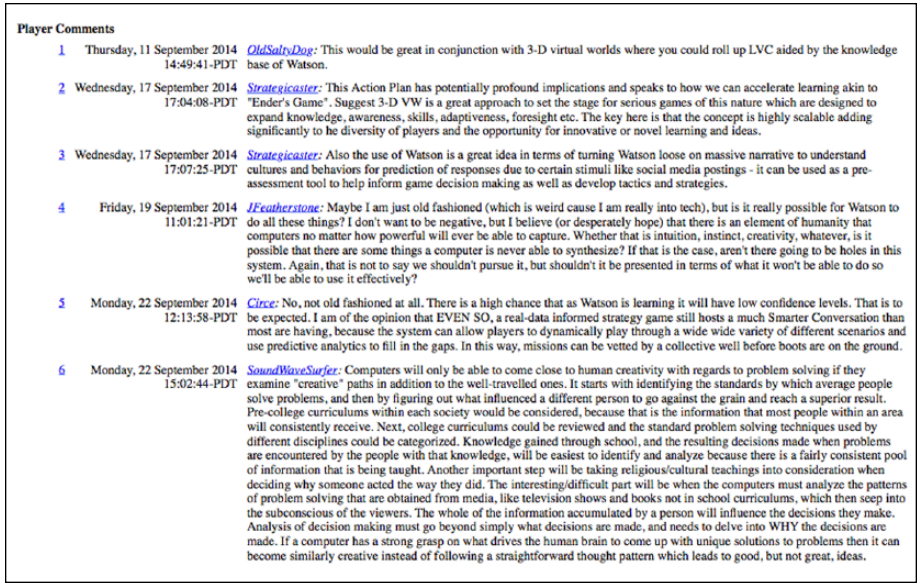
Egalitarian Strategizing. MMOWGLI afforded egalitarian strategizing. Because participation was anonymous, participants and contributions were not afforded ex ante status based on organizational structure, culture, or position. The game master elaborated on this feature:

> So if you had logged in as—I don't know—Teddy Bear, and I logged in as Sugar Cookie, we carried a conversation and I have no idea whether you were a three star [Admiral] or you know, a GS 5 administrative person. Or, whether you were a college student who had

Author-to-Author Chat Messages

1	Thursday, 11 September 2014 13:15:46-PDT	*blackknight95:* What is it? a RTS game using MMO game engines that are out there today
2	Thursday, 11 September 2014 13:16:13-PDT	*blackknight95:* will need to get game studios to provide engine
3	Thursday, 11 September 2014 13:24:03-PDT	*blackknight95:* How do you get the AI to behave in ways that are un-American? most of us would play in a chivalrous, honorable manner but that is not how the current and future adversaries will behave.
4	Thursday, 11 September 2014 13:25:33-PDT	*Circe:* Hi blackknight. Read this whitepaper: http://www.redbooks.ibm.com/redpapers/pdfs/redp5128.pdf We can train Watson on Enemy doctrine so that it begins to inform the game's state machine on their likely responses.
5	Thursday, 11 September 2014 13:25:59-PDT	*Circe:* THe game engine that we are using is called the Resequencing Engine by a company called Hazardous Software.
6	Thursday, 11 September 2014 13:27:01-PDT	*blackknight95:* I just scanned it. will read it fully later today.
7	Thursday, 11 September 2014 13:27:08-PDT	*Circe:* The Resequencing engine offers something called 4D gaming- Imagine the ability to granularly manipulate time as a means to best your opponent...not just resources. It is an UNPARALLELLED way of optimizing war strategy
8	Thursday, 11 September 2014 13:27:53-PDT	*blackknight95:* Like pausing a RTS game?
9	Thursday, 11 September 2014 13:39:46-PDT	*Circe:* no no- much more powerful. I can go to the past and change the time line that affects your present. Do a YouTube search on Achron.
10	Thursday, 11 September 2014 13:58:05-PDT	*blackknight95:* that would be a powerful learning tool
11	Thursday, 11 September 2014 14:27:18-PDT	*Circe:* yep. At an Operational Level.
12	Friday, 12 September 2014 09:32:18-PDT	*JFeatherstone:* i might be confused...but how does manipulating time in a game scenario translate into strategies in the real world. I get the cool factor and whatnot, but I think I am missing a key step.
13	Friday, 12 September 2014	*JFeatherstone:* Ah, never mind, think I got it.

Figure 8. Author-to-author chat messages.



Player Comments

1	Thursday, 11 September 2014 14:49:41-PDT	*OldSaltyDog:* This would be great in conjunction with 3-D virtual worlds where you could roll up LVC aided by the knowledge base of Watson.
2	Wednesday, 17 September 2014 17:04:08-PDT	*Strategicaster:* This Action Plan has potentially profound implications and speaks to how we can accelerate learning akin to "Ender's Game". Suggest 3-D VW is a great approach to set the stage for serious games of this nature which are designed to expand knowledge, awareness, skills, adaptiveness, foresight etc. The key here is that the concept is highly scalable adding significantly to he diversity of players and the opportunity for innovative or novel learning and ideas.
3	Wednesday, 17 September 2014 17:07:25-PDT	*Strategicaster:* Also the use of Watson is a great idea in terms of turning Watson loose on massive narrative to understand cultures and behaviors for prediction of responses due to certain stimuli like social media postings - it can be used as a pre-assessment tool to help inform game decision making as well as develop tactics and strategies.
4	Friday, 19 September 2014 11:01:21-PDT	*JFeatherstone:* Maybe I am just old fashioned (which is weird cause I am really into tech), but is it really possible for Watson to do all these things? I don't want to be negative, but I believe (or desperately hope) that there is an element of humanity that computers no matter how powerful will ever be able to capture. Whether that is intuition, instinct, creativity, whatever, is it possible that there are some things a computer is never able to synthesize? If that is the case, aren't there going to be holes in this system. Again, that is not to say we shouldn't pursue it, but shouldn't it be presented in terms of what it won't be able to do so we'll be able to use it effectively?
5	Monday, 22 September 2014 12:13:58-PDT	*Circe:* No, not old fashioned at all. There is a high chance that as Watson is learning it will have low confidence levels. That is to be expected. I am of the opinion that EVEN SO, a real-data informed strategy game still hosts a much Smarter Conversation than most are having, because the system can allow players to dynamically play through a wide wide variety of different scenarios and use predictive analytics to fill in the gaps. In this way, missions can be vetted by a collective well before boots are on the ground.
6	Monday, 22 September 2014 15:02:44-PDT	*SoundWaveSurfer:* Computers will only be able to come close to human creativity with regards to problem solving if they examine "creative" paths in addition to the well-travelled ones. It starts with identifying the standards by which average people solve problems, and then by figuring out what influenced a different person to go against the grain and reach a superior result. Pre-college curriculums within each society would be considered, because that is the information that most people within an area will consistently receive. Next, college curriculums could be reviewed and the standard problem solving techniques used by different disciplines could be categorized. Knowledge gained through school, and the resulting decisions made when problems are encountered by the people with that knowledge, will be easiest to identify and analyze because there is a fairly consistent pool of information that is being taught. Another important step will be taking religious/cultural teachings into consideration when deciding why someone acted the way they did. The interesting/difficult part will be when the computers must analyze the patterns of problem solving that are obtained from media, like television shows and books not in school curriculums, which then seep into the subconscious of the viewers. The whole of the information accumulated by a person will influence the decisions they make. Analysis of decision making must go beyond simply what decisions are made, and needs to delve into WHY the decisions are made. If a computer has a strong grasp on what drives the human brain to come up with unique solutions to problems then it can become similarly creative instead of following a straightforward thought pattern which leads to good, but not great, ideas.

Figure 9. Player comments.

> signed up. . . . The anonymity allowed, both from the author and from the receivers, both sides of the conversations remained very safe and it kept the play pure because there was no fear for punitive action or attribution or delicacy of wording and that sort of thing.

With the exception of the "super interesting" and "favorite" badges, players were awarded badges automatically, through the system. Points were awarded based on the discussion generated from a post, and action plans received anonymous thumbs-up. These features afforded system-driven awards. Figure 10, from a MMOWGLI report, illustrates the awards.

The game master continued, comparing MMOWGLI with face-to-face strategizing:

> There is more hierarchy in a face-to-face setting and your need for reward is based on whether the senior stakeholder nods and says, "Thank you. That's a good point." Otherwise, you know . . . you are caught in whether [you] have participated enough. In MMOWGLI, it really was more about what you had to say and not who specifically was approving it or the hierarchy and stature was all gone. It leveled the playing field for conversation. So you were rewarded based on merit of thought.

As revealed in the trace data and interviews, we found that MMOWGLI afforded egalitarian strategizing.

Inclusive Strategizing. The MMOWGLI platform afforded inclusive strategizing. Participants included both internal and external stakeholders. Affordances and features that

1.	*Root cards.*	Played at least one of each root card type (Innovate & Defend)	*4 players earned this badge*: Administrator, gm_karenc, gm_Ted, SeedCard
2.	*All cards.*	Played at least one of every type of card (all 6)	*0 players earned this badge.*
3.	*Super-active root.*	Played the root card of a super-active chain	*1 players earned this badge*: SeedCard
4.	*Super-interesting card.*	Played a card marked super-interesting by a game master	*68 players earned this badge*: 619NET, acetef, AJK, AllAboutTheData, Arch, Aurelian, austinminicooper, B43, banannatango, BeamRider28, blackknight95, Cincinnatus, Circe, condor37, cookie, Data_Analyst, deep thinker, Dessorag, dolfin719, Dub, Ender, EscherLibrary, gm_donb, gm_karen, GT350, Guido, Halbarad The Ranger, handoff, Hideyoshi, HollywoodUSMC, ICan, Idea_man, Jack Frost, JFeatherstone, JoshC, kaleidoscope, KEYSO, Kynes, Mad Dog, MAG1234567, Mapko, Max, mdempsey, ModSix, Newbee, NickFury, Old_Crab, OldSaltyDog, Pilgrim, pogomaster, Professor, raeklaw, Ruthless, Seadevil, SeedCard, Shamus@42, Skipper, SoundWaveSurfer, Spartan, SPEAR2F5, Strategicaster, Teddy_Bear, TEF, Tenacious D, Terrapin, vixenofvengeance, vtacrohead, Wolfman
5.	*Favorite.*	Played a card marked as a favorite by another player	*132 players earned this badge*: 619NET, acetef, AJK, An Inconvenient Poop, Arch, atcbrown, Aurelian, austinminicooper, Autonomous B.I.G., AviationStrat, B43, Babukas, Balance Point, banannatango, BeamRider28, BigStick, blackknight95, blindao1, BTW, bugnomore, Buzz, car, Chalis, chiefchilly, ChopperIronHammer, Cincinnatus, Circe, claudius, condor37, cookie, CrashMan, Cryogm, d-kronenwetter, Data_Analyst, deep thinker, Dessorag, dolfin719, Dub, Ender, EscherLibrary, ETCJohn, Fenton B, Feydin, gazoo, GizUSN, gm_barbara, gm_dale, gm_karen, gm_tom, godspeed, GoNavy25, GT350, Halbarad The Ranger, handoff, Hideyoshi, Hollywood Knight, ICan, Idea_man, ilikedesi, Jack Frost, JD1364, JFeatherstone, JoshC, jtoshiroh , kaleidoscope, KEYSO, Kynes, Lady, Lafayette, Lucy, LyrLobo, Mad Dog, MadChemist02, MAG1234567, Mapko, Max, mdempsey, ModSix, MyNameisNobody, neven surfac, Newbee, NickFury, Obliesk Ordarian, Old_Crab, OldSaltyDog, otispotas, OtterSong, Oxygen4Ideation, Palmetto87, PaxSpace, philliRS, Pickle, Pilgrim, pogomaster, raeklaw, Range Rat, red5, Ruthless, Sandeman, Seadevil, SeedCard, Sefako, Shamus@42, Shark5, Skipper, SMCM2017, Snardo, SoundWaveSurfer, SPEAR2F5, stingfighter, Strategicaster, sunjammer, TechnoKid, Teddy_Bear, TEF, Tenacious D, Terrapin, TheMelvin, theraven, tigerdad, tony4970, vixenofvengeance, vtacrohead, WEN1WOLF, westld, Wolfman, xkcd, YaLi, yoda871, Zeeky Pants, Zombord, zoo7661
6.	*Action plan author.*	Accepted at least one Action Plan authorship invitation	*59 players earned this badge*: Administrator, AJK, Arch, Aurelian, BeamRider28, blackknight95, Cincinnatus, Circe, claudius, Data_Analyst, Dessorag, DirtSailor, dolfin719, gm_barbara, gm_becca, gm_courtney, gm_dale, gm_dana, gm_donb, gm_donm, gm_eric, gm_karen, gm_lainie, gm_pete, gm_ray, gm_rich, gm_richard, gm_Ted, gm_tom, gm_vanessa, Halbarad The Ranger, ICan, JFeatherstone, JoshC, kaleidoscope, LyrLobo, Mad Dog, MAG1234567, Max, MyNameisNobody, Newbee, NickFury, Old_Crab, OldSaltyDog, Pilgrim, raeklaw, Range Rat, Seadevil, SeedCard,

Figure 10. Player recognition.

allowed for multivoice resource construction, divergent strategizing, and egalitarian strategizing contributed to the affordance of inclusive strategizing. External and internal stakeholders participated without barriers. The game master linked the technology to the lack of barriers:

> There is no name association you could pretty much say whatever you want and it is nonattribution. Right? In this face-to-face environment, you are there with your peers, you know you have a certain role or stature in there, you come from different groups. You know, is an engineer going to say anything bad about test and evaluation or anything good about contracts? I mean it's just—you have got all these kinds of barriers to what is said. Whereas in this space, there is really no barriers whatsoever, and you actually get more kind of what seems to be cross dialogue among all of the different areas.

Because participation was anonymous, the data do not reveal the extent of external versus internal stakeholders' contributions. The trace data, however, show that internal and external stakeholders participated and the interviews describe actions afforded by the technology. Our analysis thus suggests that MMOWGLI afforded inclusive strategizing.

Traditional Versus Crowdsourced Strategizing

Our analysis revealed that crowdsourcing technology afforded actions not possible in face-to-face settings. These actions constituted the practice of crowdsourced strategy as multivoice, divergent, egalitarian, and inclusive as compared with traditional strategizing, which is usually constituted as elite, funneled and transmitted, formal and hierarchical, and exclusive and bounded. Table 5 summarizes these contrasts.

In the traditional process as described in extant literature and evident in the traditional case we examined, strategizing is conducted by a small set of elite top managers who produce and own the strategy process and final product. Their product is encapsulated in a formal strategic plan that is handed down to members in the organization through formal speeches and PPT presentations. The traditional process reproduces the hierarchical structure of organizing, positions the top management team in a power role and constitutes strategizing as a practice and output of an elite group.

We found that MMOWGLI-crowdsourced strategizing shifted the ownership and production of strategizing to all participants, legitimating diverse organizational members as strategists. Crowdsourcing allowed participants to create and thus own discursive resources for strategizing and constituted strategizing as multivoiced. Our findings suggest that with crowdsourcing, wide-ranging organizational members are likely to be seen and to see themselves as strategists who have valuable knowledge about the organization and are capable of envisioning the future in innovative ways.

In the traditional process, strategizing is funneled and transmitted. In traditional strategizing, an elite group was divided into subgroups to work on small parts of the effort, and then came back to present the pieces. Strategizing was divided into separate thrusts, which were developed in a decoupled fashion by small groups and then integrated. The appearance or actualization of consensus on an integrated whole occurred with the support of face-to-face meetings, PPT presentations, and e-mail exchanges within the elite group. The consensus, organizational strategic plan was then transmitted through the organization with communication meetings.

Conversely, we found that strategizing with MMOWGLI was divergent and networked. Rather than driving toward consensus, MMOWGLI encouraged and preserved divergent communication. Ideas of interest generated conversations, which were then linked in networked threads that allowed leading ideas to emerge and demand action plans. The final output thus resulted from a networked rather than funneled process of selection.

Consistent with extant literature, we found that traditional strategizing was characterized by hierarchical processes and information flows (Zammuto, Griffith, Majchrzak, Dougherty, & Faraj, 2007). The traditional strategy process was codified in PPT slides. These, along with more aggregated and higher levels of strategic plans and also previous years' plans, provided resources and structured strategizing. Conversely, we found that strategizing with MMOWGLI was egalitarian. All participants could participate equally and were rewarded based on the merit of their ideas according to systematic and anonymous recognition. The only information about

Table 5. Comparison of Traditional and Open Strategizing.

Four flows	Traditional strategizing		Open strategizing via crowdsourcing	
Membership negotiation: Who are strategists?	Elite	Elite senior leaders of the organization	Multivoice	All crowdsourcing participants
Activity coordination: How is strategy accomplished?	Funneled and transmitted	Consensus building through face-to-face meetings, supported by PowerPoint, e-mail	Divergent and networked	Disrupters and outliers are encouraged and preserved
Self-reflecting: What are the rules and processes that govern strategy?	Formal and hierarchical	Formal strategic planning processes, documented rules and roles including previous planning documents	Egalitarian	All participants and participation are equal, all players have equal vote on conclusions
Institutional positioning: How do we position ourselves relative to external stakeholders?	Exclusive and bounded	Separate and distinct from the external environment and stakeholders	Inclusive	External stakeholders are included, boundaries are permeable

participants was their participation. Thus, the processes and rules that governed crowdsourced strategizing were egalitarian.

Finally, the traditional strategizing process drew a boundary around the organization and excluded all but internal participants. The elite group scanned the environment to determine priorities and create a vision of the future. External stakeholders were not included, and the strategizing process was not transparent to them. Conversely, MMOWGLI-crowdsourced strategizing invited external stakeholders to make traditional boundaries permeable. Multitudes contributed to the scanning process and external stakeholders contributed to the communication. This was recorded and transparent, allowing the possibility of further external involvement in the future.

Discussion

This special issue spotlights the increasing prevalence and importance of collaboration through social media within organizations. Social media collaboration tools have the potential to revolutionize organizations' communication and processes by allowing organizational members to engage in both different types and manner of social interactions. This study explored one organization's innovative use of a social media collaboration tool (crowdsourcing) to support open strategy generation.

The purpose of our research was to explore how crowdsourcing technology influenced strategy generation. To accomplish this, we drew on an affordance perspective and the four flows framework to identify actions afforded by MMOWGLI-crowdsourcing technology for strategizing and to show how this technology influenced strategy generation. Our analysis of data from two cases, traditional versus crowdsourced strategizing, in one organization showed how crowdsourcing afforded the organization new communicative possibilities. Consistent with the arguments made by proponents of open strategy (e.g., Mantere & Vaara, 2008; Stieger et al., 2012), our analysis shows that crowdsourced strategizing generated a diverse and substantial pool of ideas, which we conceptualize as potential discursive resources. Furthermore, we found that these potential discursive resources differed from those constituted of traditional strategizing communication.

The results of our study make a contribution to the business communication literature in three ways. First, we demonstrate that crowdsourcing, a social media collaboration tool, does not function as a channel by which communication is transmitted, but rather operates as a platform in which social interactions occur (Leonardi, Huysman, & Stenfield, 2013). Social media collaboration tools provide a conversational space that is uniquely different than traditional organizational spaces such as offices, board rooms, auditoriums, and hallways. Furthermore, these platforms have the capacity to accommodate interactions among thousands of employees from anywhere in the world at any given place (digital space) and time. They thus differ from traditional media channels such as face-to-face, phone, and e-mail. Leonardi et al. (2013) assert that these new communication platforms have the capacity to transform organizations in unprecedented ways. Strategizing is fundamental to organizing and although proponents have extolled the benefits of social media collaboration tools, few studies have examined empirical cases of organizations' use of crowdsourcing technology to support strategizing. This study was needed to narrow this gap. We advance understanding of the intersection of business communication, social media, and strategy and explore how social media may reshape a critical organizational process and point toward new avenues for research in business communication.

Second, our study shows how strategy discourses are embedding a form of the future within crowdsourced communication. Extant strategy-related communication research often frames top managers as heroes who are positioned to better see the future and offer superior solutions to create competitive advantage (Fenton & Langley, 2011). In face-to-face meetings, using PPT slides and strategy consultants, leaders often appear to come to consensus and are able to wordsmith visions of a strategic plan codified in glossy brochures with lists, bullets, and photographic images. While the top management team may have a common understanding of the assumptions and choices behind the bullet points, other organizational members (which can number in the thousands and who are usually not privy to the interactions which created the plan) may have little idea from where the text originated or how their leaders arrived at the plan. Organizational members are thus left to translate abstract, formalized language that may make little sense in their day-to-day activities into something meaningful.

The persuasive effects of organizations' strategies are thus diminished and the narrative fidelity weakened (Fenton & Langley, 2011; Fisher, 1989).

This view of strategy generation has driven business communication research that focuses on the implementation of strategic plans. Unlike this traditional approach, our exploration of crowdsourced, open strategy suggests new avenues for thinking about the production and consumption of organizational strategy and may address some of Mintzberg's (1994) concerns about strategic planning. Our results suggest an explanation for why traditional strategic plans often lack legitimacy and offer an alternative. Crowdsourcing offers a complex process through which multiple actors may produce a rich and diverse vision of the future through thousands of ideas, from multiple levels of the organization, captured and recorded in the crowdsourcing platform. Using a CCO perspective, we were able to see that text is more than a static, strategic plan. On the contrary, text, itself, can mobilize its creators allowing them to draw from their pasts, interact in the present, and develop narratives about their collective futures. Thus, we can envision strategy as emerging from and constructed in the communication of the actors. In other words, the crowdsourcing space captures the organization becoming for all to see (Tsoukas & Chia, 2002). The evolving communication is persistent in the crowdsourced output and can help individuals know where they have been and where they need to go. Strategy is constituted in communication, which then shapes the future of the organization. Participants become actors in their own stories, or what Deuten and Rip (2000) or Golant and Sillince (2007) refer to as telling yourself or your organization forward. These insights suggest new and exciting opportunities for business communication scholars who are particularly skilled at conducting narrative and other types of textual analysis.

Last, we contribute to the study of communication in organizations more broadly by advancing understanding of the changes likely ushered in by social media. Our research highlights aspects of theory that may need to be expanded to account for emerging enterprise social media. For example, our exploration of MMOWGLI strategizing prompted us to consider the relationship between talk and text. Spee and Jarzabkowski (2011) discuss Ricoer's (1981) concept of distanciation, which refers to ways in which talk is transformed and fixed in text. Hence, distanciation is said to lead to decontextualization of talk. But what happens when talk *is* the text? In our study, all conversations were encapsulated in, and recorded by, the crowdsourcing platform. Face-to-face conversations were not available to the players (within the game). In fact, central to the crowdsourcing game was player anonymity (i.e., no face-to-face conversation). Ricoeur (1981) asserts that when talk is converted to text, it is freed from its context and becomes an atemporal object. But, what happens when the totality of the conversation is embodied in an inclusive text? Is that text now contextualized?

Similarly, we began to ask about the virtual conversation and how it relates to time and space dimensions, which are central to structuration theory. Crowdsourcing affords types and manners of communication that heretofore have been impossible. Platforms such as MMOWGLI allow large numbers of individuals to simultaneously participate in conversations (i.e., no need to break into small groups to accommodate face-to-face physical constraints). Crowdsourcing conversations are captured and

searchable at any point in time so that participants can add to any previous conversations. How might we expand our theorizing to accommodate these new possibilities in human communication with respect to time and space dimensions?

Finally, our study yielded a rich corpus of textual data. In the process of conducting our analysis, it became clear that other theoretical approaches might yield different insights into the influence of social media on organizations' strategy generation. Other analytic frameworks and tools that are particularly suited to communication scholars—such as narrative analysis, rhetorical analysis, critical discourse analysis, and CCO's micro-textual approach—would likely provide new avenues for expanding extant new social media theory as it relates to organizations and organizing.

Implications for Practice

Advocates of open strategy extol advantages such as shared understanding among a larger number of organizational members, stronger commitment, and effective implementation (Stieger et al., 2012). Scholars claim that a lack of participation in strategy formulation leads to poorly developed strategies (Woolridge & Floyd, 2000), discontent among the excluded (Westley, 1990), and problems in implementation (Mantere & Vaara, 2008; Mintzberg, 1994). The results of this study show how crowdsourcing platforms can be used to increase participation in the strategizing process, generate a multitude of innovative ideas, and bring both internal and external stakeholders at all levels into an organization's strategic conversation. By creating these real-time, digital conversations, large numbers of stakeholders create a plethora of innovative and divergent conversation threads or discursive resources that can be useful for identifying potential threats to an organization, envisioning possible futures, and detecting future crucial skills.

Our analysis revealed that implementing such technologies for strategizing is not a simple feat. Developing the MMOWGLI strategizing game took 9 months to plan and a staff of more than 35 game leaders to implement. Therefore, managers interested in crowdsourcing strategy generation must be prepared to resource efforts accordingly. Additionally, while the crowdsourcing tool creates a residual wealth of ideas and plans, top management or others must still devise ways to connect the conversations to day-to-day activities.

Limitations and Future Research

While this study employed a comparative analysis of two cases, these two cases represented just one government organization. As such, wide generalizations to other types of organizations are precluded (Eisenhardt, 1989). Additionally, while we had access to the entire corpus of data from the MMOWGLI game, we were not able to observe or record the conversations of the traditional strategizing meetings. This meant that we were limited to the traces left from the traditional strategy generation. Last, while our affordance informants were some of the most knowledgeable about the MMOWGLI platform—filling the roles of designers and experts as well as

players—our interview data are limited to interviews with three individuals. Future research could include replication of our study in other organizations to improve the generalizability of our findings. Additional research could expand on the affordances of crowdsourcing and related organizational processes such as strategizing by conducting more interviews with users. Researchers could also collect longitudinal data to better understand the long-term, organizational outcomes of crowdsourced strategizing efforts.

Conclusion

Crowdsourcing technology ushers in a generative approach to organizational strategizing. Extant literature offers few empirical studies that explain the technology's affordances and how crowdsourcing influences organizational strategizing. This study presents an analysis of two cases of strategizing in one organization—a traditional strategy generation approach (our baseline) and a crowdsourced, open-strategy approach. Using technology affordance and CCO perspectives, we analyzed informant interviews and a rich corpus of strategy generation data to identify four affordances of crowdsourcing technology for collective strategizing: multivoice resource construction, divergent strategizing, egalitarian strategizing, and inclusive strategizing.

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Notes

1. Personal e-mail communication with Public Affairs Officer, NAWCAD, August 25, 2015.
2. Internal organization documents.
3. From meeting minutes.

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