

# government for the 100%

using games to democratize  
innovation and innovate democracy



INSTITUTE FOR THE FUTURE

124 University Avenue, 2nd Floor  
Palo Alto, CA 94301  
650.854.6322

[www.iff.org](http://www.iff.org)

Originally written for the White House  
Office of Science and Technology Policy  
(OSTP) Working Group on Serious Games

about ...

### **Institute for the Future**

The Institute for the Future is an independent, nonprofit strategic research group celebrating more than 40 years of forecasting experience. The core of our work is identifying emerging trends and discontinuities that will transform global society and the global marketplace. We provide our members with insights into business strategy, design process, innovation, and social dilemmas. Our research spans a broad territory of deeply transformative trends, from health and health care to technology, the workplace, and human identity. The Institute for the Future is located in Palo Alto, California.

### **Office of Naval Research**

As the Department of the Navy's science and technology provider, the Office of Naval Research (ONR) identifies science and technology solutions to address Navy and Marine Corps needs. Since its establishment in 1946, ONR continues to be the first place that senior naval leadership turns to for addressing emerging technology issues and challenges. The ONR mission, defined in law, is to plan, foster, and encourage scientific research in recognition of its paramount importance as related to the maintenance of future naval power, and the preservation of national security; and to manage the Navy's basic, applied and advanced research to foster transition from science and technology to higher levels of research, development, test and evaluation.

# contents

---

<b>from blueprints to conversations</b>	1
<b>lessons from mmowgli</b>	3
<b>a call to action</b>	8
<b>authors</b>	11



# from blueprints to conversations

---

We see a future where our approach to problem solving is transformed by ubiquitous gaming: where the many, not just the select few, are engaged in addressing our most compelling problems, and where anyone, not just those with access to resources, can change the game.

---

Chaos and uncertainty have been with us since the time of the prophets. More recently, however, a chorus of voices has emerged, telling us that our old-school, garden variety complexity looks quite tame when compared to what is before us today. British designer John Thackara, in his book *In the Bubble* sums it up best: “We are facing an array of ‘wicked problems’ that are simultaneously complex, uncertain and urgent.” Wicked problems are just that because of incomplete, contradictory and changing requirements. They are full of complex, even hidden, interdependencies. A hallmark of wicked problems is that our attempts to “solve” them often end up changing the very nature of the problem, revealing or creating new problems, even as we are in the midst of “solving” the original one. For Thackara, in a world characterized by wicked problems, “A single-vision, top down approach to design and planning simply does not work in the face of so much uncertainty.”

So, if “a single-vision, top down approach” doesn’t work anymore, what does? According to Thackara, “the primary activity, in this context, is more of a conversation, than the production of a blueprint.” With mmowgli, we have been exploring this conversational metaphor in depth, experimenting with a re-purposeable game platform designed to evoke fresh insight by engaging large crowds around a serious topic—piracy in the 21st century. In the process, we have discovered a way to address some of our most compelling issues. Our method involves updating some ancient “technologies,” like dialogue and storytelling, and combining them

with newer ones, like massive multiplayer games and social media. From where we stand, we believe it is now possible to reframe our grandest challenges as a grand opportunity—an opportunity to tap into our collective intelligence, and harness it to our most pressing issues; to engage with our most difficult situations while simultaneously engaging with each other more deeply and meaningfully. We see a future where our approach to problem solving is transformed by ubiquitous gaming: where the many, not just the select few, are engaged in addressing our most compelling problems, and where anyone, not just those with access to resources, can change the game. In short, we see this as an opportunity to innovate our approach to democracy, while democratizing our approach to innovation. We think this world is not only possible, but, figuratively speaking, only a few clicks away. We can get there in the near term, and we can do it in a resource-constrained environment.

From here, our paper proceeds in two parts. The next section describes the salient design features we tried to bake into mmowgli—features that, when combined, give rise to our optimistic view of the future. While this section is written from our experience with mmowgli, it is ultimately platform-agnostic. Our paper concludes with a call to action, in which we outline the steps needed to propel us forward, from crawling to walking and, ultimately, to running.

Our hope in putting forth this paper is to spark a national conversation which will advance the state of thought and practice around serious games.

# lessons from mmowgli

---



The mmowgli main page is a ‘gameful’ interface—that quickly sets up the current scenario—and a call to contribute ideas.

We began mmowgli with a simple question: could a game generate insight into a complex problem facing the Navy? mmowgli launched in Spring 2011 with a small-scale pilot centered on a plausible near-future scenario of Somali piracy. We chose Somali piracy simply as a means of exercising the mmowgli concept. Somali piracy met our criteria of being sufficiently challenging and open ended, while also being sufficiently known by a general audience, thus allowing us to engage with a large number of players. Our target audience was a mix of experts and interested, but not necessarily expert, stakeholders. The pilot played out in a series of three distinct moves, over three separate weeks. We invited 2,400 players, of which 832 created an account and played the game. Along the way, these players generated 5,142 ideas, of which 80% were “builds” off of other players’ ideas, and 29 action plans.

We spent the summer retooling based on lessons learned from the pilot. Last fall, we opened the game to a wider public audience, this time asking players to respond to a more open ended, but no less wicked scenario: to come up with the new skills and capabilities the Navy would need in a more distant future where piracy had spread across the globe. For the public run, we invited 15,000 players, of which 1,333 created an account and played the game. This time the game took place over a continuous six-day period. Players generated 9,836 ideas and 40 action plans.

Prior to our 2011 launch, we spent a year architecting and designing the mmowgli platform, in the process converging on a few salient principles:

	Somali Piracy	Future of Global Piracy	Naval Energy
Dates	May 31–July 8, 2011	November 7–13, 2011	May 22–25, 2012
Gameplay duration	11 days	6.5	4
Players	832	1,333	559
Ideas played	5,142	9,836	5,121
Action plans	29	40	37

mmowgli games have tackled three scenarios to-date, from near-term Somali piracy to the next decade of naval energy.



- scale and diversity of players
- narrative white space
- facilitating a meaningful dialogue
- invisible hierarchy
- radical re-purposeability

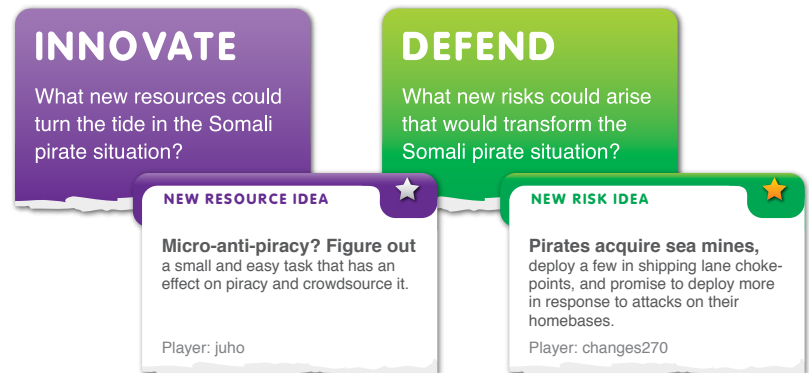
The first four elements, taken together, comprise our working definition of collective intelligence. The final element, radical re-purposeability, when combined with collective intelligence, takes the platform over from simply being a good idea, to a good idea that makes it easier to have other good ideas. Taking each of these five elements in turn:

### scale and diversity

Our ultimate goal was insight—a useful idea that we would not have arrived at using our own devices. To get there, we wanted to open the aperture of our thinking beyond our “usual suspects,” the relatively small pool of experts who routinely engage on these issues. We were seeking a form of diversity—diversity in thought, diversity in perspective, which we ultimately came to see as cognitive diversity. We were looking for more ideas overall, but also looking specifically for more outliers: those ideas that might be statistically insignificant but prove to be strategically relevant.

### narrative whitespace

Narrative was essential to mmowgli. In each game, a short video greeted players upon registration. The spring pilot opened by inviting players to a mysterious, elite conference which was tasked with “turning the tide” of Somali Piracy. Players in the fall game were granted “exclusive access” to a senior briefing about the state of the Navy in 2022. Like

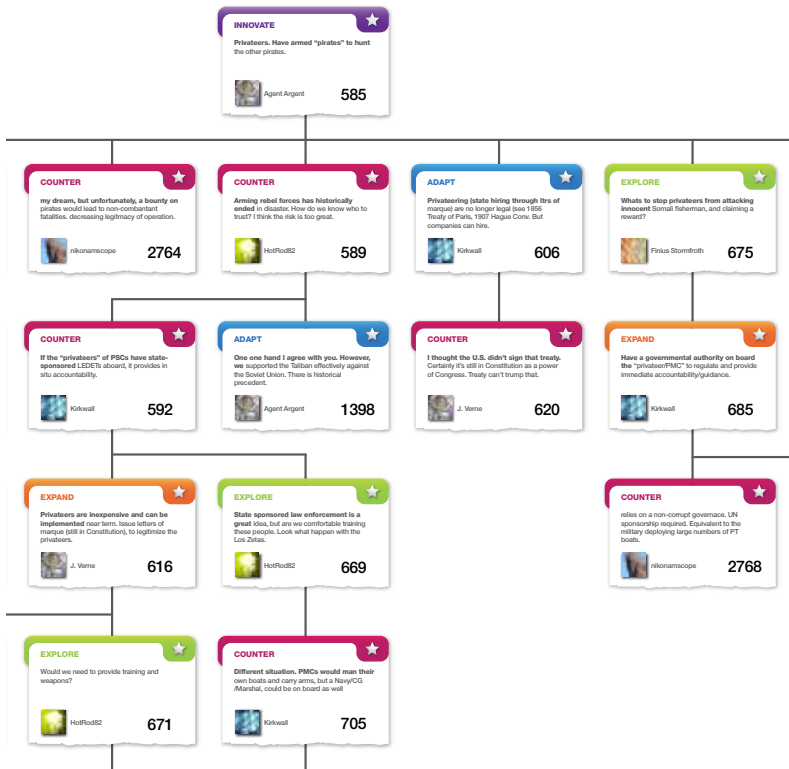


Idea cards are the heart of a mmowgli game. Space is limited to 140 characters to encourage back-and-forth collaboration.

any modern video game or alternate-reality game, we tapped into the power of story to engage, intrigue, and inspire. But unlike those genres, the scenarios in mmowgli didn’t have intricate plots and elaborate details. They were deliberately open ended, designed to even feel incomplete. We were asking players for original contributions, so we first had to make it clear that we didn’t possess all of the answers ourselves. This narrative vacuum permeated all of mmowgli and was the energy behind many of the players’ contributions.

### facilitating a meaningful dialogue

Our use of the term dialogue is intentional, and our treatment here is deeply indebted to the work of David Bohm, as summarized in Peter Senge’s *The Fifth Discipline*. David Bohm, stimulated by his collaborative work as a physicist, found himself “thinking about thinking.” His research led him back to the ancient Greek roots for the word dialogue: *dia* + *logos*. Taken literally, it means “a free



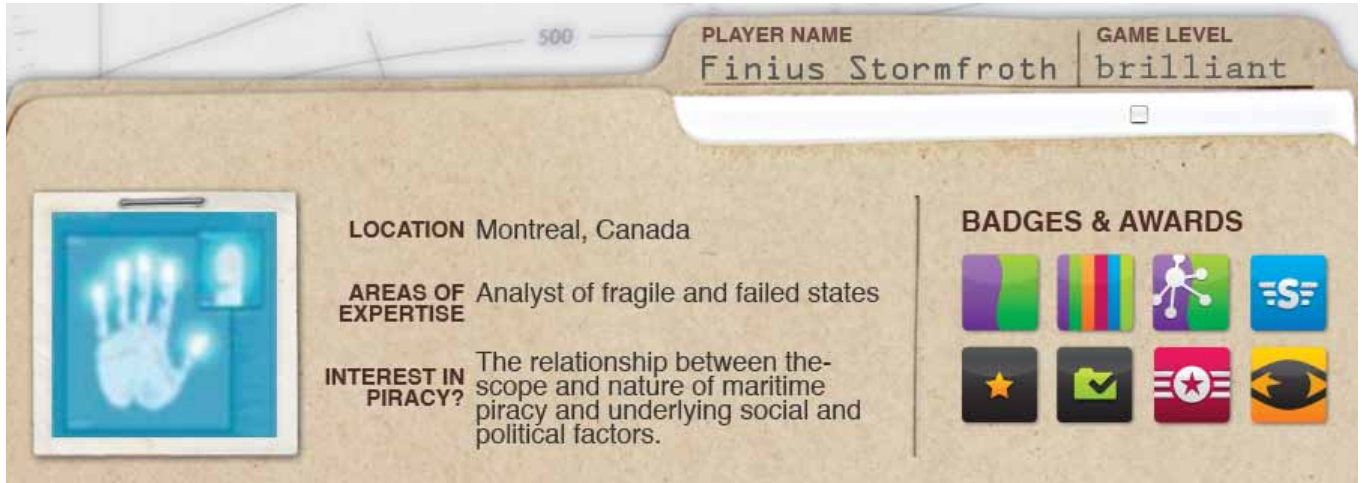
Cards soon become conversations as players Expand, Adapt, Counter, and Explore other ideas.

has noted in *Where Good Ideas Come From*, very few ideas come into the world fully formed. Most ideas are half-formed at their birth, and to become real, they need to be put in the presence of other ideas, where they can meet up in space, recombine, and make new ideas. Borrowing a term coined by Duke Professor Tony O’Driscoll, we came to call these events *knowledge accidents*: those novel intersections and interactions between ideas that never would have happened otherwise. So our goal with mmowgli ultimately became something of an oxymoron: to systematically drive more knowledge accidents. Finally, we felt that good ideas were not enough by themselves, they needed a place to go. We found that while large groups were great for generating fresh insight, we needed to create a transition from conversational idea generation to the heavy lifting of fleshing out these insights. So, we created *action plans* as a shared, private space where small, self-selecting groups could flesh out the Who, What, Why, When, Where and How of their idea.

### invisible hierarchy

Close your eyes and imagine yourself as a teenager. Perhaps you are sitting in the school cafeteria. You are surrounded by all of your best friends, and you are in the middle of a deep conversation. Together, you have hit on an idea that will change the world. Now, picture this: the High School Principal, whether from a sincere desire to engage, or in an awkward attempt at being hip, tries to enter the conversation. Imagine what happens to that great conversation now. As it turns out, this situation is not unique to teenagers. It plays itself out with adults every day in corporations large and

flow of meaning between people, where a group accesses a larger pool of common meaning, which could not have been accessed individually.” This mirrored Bohm’s own experience as a physicist, “participating in those special conversations that begin to have a life of their own, taking us in directions we could never have planned in advance.” Gradually, Bohm began to “look on thought as a collective phenomenon, arising from how we interact and discourse with one another.” Although dialogue was the starting point, we wanted to take it further with mmowgli. As Steven Johnson



mmowgli players have persistent but pseudo-anonymous identities.

small, and it certainly happens in the Navy. The net effect is to truncate the universe of possibilities. With mmowgli we felt it was essential for free-flowing collaboration that no one know if you are an Admiral, or a Seaman Apprentice, whether you are from an NGO, or from academia, or even from Somalia. Therefore, we asked for only one piece of information, and that was an e-mail address. Everything else was voluntary self-disclosure. Recent research from DISQUS, the online commenting software, validates this approach. Their findings show that allowing pseudonyms not only produces more comments, but that the quality of the comments is also better. In mmowgli, most players chose to go with a pseudonym.

### radical re-purposeability

Our goal with mmowgli was to make it re-purposeable, rather than a single-point solution, so that other Navy commands

and other government agencies could take the platform and create a game around a scenario of their own choosing. In its current form, re-purposing mmowgli can be as simple as dropping in a new opening scenario. We have already re-purposed the game several times, and we are getting ready to do so again later this spring. Our deeper vision is drawn from Erich Von Hippel's *Democratizing Innovation*. In a world where "users of products and services—both firms and individuals—are increasingly able to innovate for themselves," we asked ourselves "what if we treated our 'end user' as an innovator, and allowed players to more easily modify our game, or even design their own game?" This led us to embrace open-source development and user-generated content from the beginning. Our intent is to ultimately put the code out to the larger community for further use and development.

# a call to action

---

Game designer Jane McGonigal has issued a famous challenge: that by 2032, a Nobel Prize winner will come from the ranks of game designers. We hope that the prize winner is out there right now, reading this paper, or participating in the conversation it generates. Building on Jane's challenge, we offer the following specific actions as a starting point. As we stated in the opening, nothing on this list requires a large infusion of resources. The first element calls for a shift in our collective mindset. While shifting our mindset presents its own set of challenges, expending resources is not one of them. The second element is a call for continuous experimentation. And while this element does require resources, our experience running mmowgli tells us that we can do this while still being faithful to our fiscal constraints.

### a shift in our collective mindset

Earlier we described the mmowgli scenarios as narratively incomplete. As the potential for gaming to engage “the 100%” takes hold, the metaphor of incompleteness will start to hit closer to home. We in government may need to make an analogous mental leap, as we consider the “completeness” of our own roles. We see the following as key to making this shift:

- embracing the role of storytelling and narrative as legitimate ways of thinking
- restoring the role of qualitative thinking, balancing our over-reliance on quantitative thinking
- embracing surprise, being open to outcomes not necessarily predictable in advance
- being willing to admit that we don't possess all of the answers



Could game platforms like mmowgli help catalyze more participatory forms of government?

- being willing to open our aperture beyond our usual ways of knowing
- committing to make use of the insights our players give us

### a call for continued experimentation

We need to embark on a program of continuous low-level experimentation using lightweight, re-purposeable games: The first reason is that we stand to gain so much in

---

The more we learn from our experimentation, the easier it will be to shift our collective mindset. The more we shift our mindset, the more we can learn from our experimentation.

---

the way of generating insight into our hardest problems while engaging more of our stakeholders. The second reason is to advance our understanding of what it truly means to be re-purposeable. With mmowgli we have barely scratched the surface of our understanding. There are any number of issues we need to get a better handle on if we are to truly approach an end-state where anyone can play the game and anyone can change the game. A sample set of issues would start with: understanding fixed costs vs. variable costs; exploring alternatives for hosting and infrastructure; exploring what it means to “manage” an open source user/development community; determining what other situations this methodology might be applied to; further reducing the barriers to entry; better understanding questions around player size: are there factors such as minimum critical mass or maximum player size, and are these answers different for different problem sets; how do we manage the glut of raw information in a game; and how can we improve our back-end analysis?

Finally, we see these twin calls to action as part of a single self-reinforcing feedback loop. The more we learn from our experimentation, the easier it will be to shift our collective mindset. The more we shift our mindset, the more we can learn from our experimentation.

# authors

---



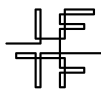
**Garth Jensen** is the Director of Innovation at the Carderock Division of the Naval Surface Warfare Center, in West Bethesda, Maryland. He has led mmowgli since its inception in 2009.



**Jason Tester** is the Research Director for Human-Future Interaction at the Institute for the Future, based in Palo Alto, California. Since 2010, Jason has been the chief architect and visionary for mmowgli.

We offer special thanks to the rest of the mmowgli development team and to the mmowgli player community. We acknowledge the influence of **Erich Von Hippel**, as articulated in his book *Democratizing Innovation*. Finally, we are grateful for the pioneering work of **Jane McGonigal**, without whom none of this would have been imagined.

**mmowgli** is sponsored by the Office of Naval Research.



INSTITUTE FOR THE FUTURE 124 University Ave., 2nd Floor, Palo Alto, CA 94301 650.854.6322 | [www.iff.org](http://www.iff.org)