

# Patriot Points

## Using Game Theory to Improve Citizenship Behaviors in 21<sup>st</sup> Century America

*"We make a living by what we get, but we make a life by what we give. "*

*— Winston Churchill*



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## **Abstract**

An American investment in infrastructure – schools, broadband, energy-efficient buildings, highways, etc – should include a “national point system” to provide an incentive scheme for people to volunteer and help America grow. To create a new spirit of cooperation will require a bit of a nudge. The demographics of the country illustrate that a large percentage of citizens have grown up with and/or actively play video games. There is a sense of optimism about what Americans can accomplish, but hard work will be required. The establishment of a “Patriot Points” system will provide a way to attract volunteers, encourage cooperation, and track progress in a cost-effective and entertaining way.

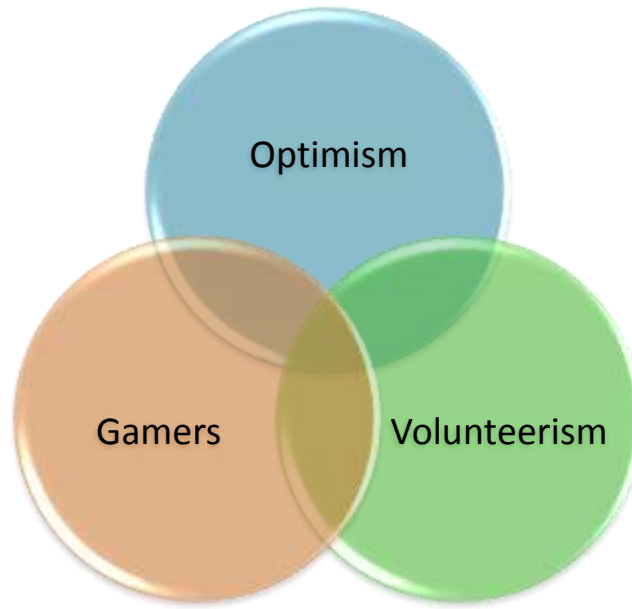
## Introduction

Change comes in many forms. The excitement and fervor around the 2008 presidential election has influenced behavioral change. This paper builds on the learning from productivity games (see [www.productivitygames.blogspot.com](http://www.productivitygames.blogspot.com)) to explore how game elements could be applied to broader national citizenship issues.

This paper is based on a simple triad of suppositions. While the details can be debated, the hope is that these basic premises are mostly accurate in early 2009.

- Americans, particularly the Gen X and Gen Y folks, love to play video games.
- The new presidential administration evokes an air of optimism.
- If America is to prosper in the 21<sup>st</sup> century, we need a more active populace.

This proposal is based on these generalities. There are likely supporting points that can be found elsewhere, in other data, but I hope this paper begins with a gentle nodding of agreement by the reader.



*Figure 1 - Basic Premises*

## **Gamers**

Americans are gamers. A study by the Pew Internet & American Life Project found that 53 percent of American adults play video games. A few interesting tidbits from the study<sup>1</sup>:

- 81 percent of those 18-29 years old play games.
- 23 percent of those over 65 years old play games.
- Men (55 percent) are more likely than women (50 percent) to play.

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<sup>1</sup> Pew Internet Project, December 2008

- People in urban areas (56 percent) are more likely than their rural counterparts (47 percent) to play.
- Younger people are more likely to be gamers. But older adults (the ones that actually play) tend to be more active gamers.

Over one-third (36 percent) of gamers 65 and older say they play games every day or almost every day, compared with 19 percent of adults aged 50-64, 20 percent of adults aged 30-49, and 20 percent of adults aged 18-29. Senior gamers may play more frequently because they have more time to play than younger gamers, as 77 percent of senior gamers reported being retired.

## **Game Theory**

Game theory is a rich and fascinating topic that is, I'm sure, familiar to many readers and well beyond the scope of this paper. The value that an understanding of game theory can provide here is to help with motivating people to act. The logic and problem solving inherent in game theory help with the design of scoring or achievement systems, understanding where design can go wrong, and improving the ability to attract "players" or volunteers. Because Patriot Points are introducing a secondary reward scheme outside of the monetary system, it's important to understand the motivational aspects of game play and treat them carefully. The application of game theory can help with that.

**game theory** *A mathematical theory, developed by J. von Neumann ( 1903-57) and O. Morgenstern ( 1902-77) in 1944, concerned with predicting the outcome*

*of games of strategy (rather than games of chance) in which the participants have incomplete information about the others' intentions. Under perfect competition there is no scope for game theory, as individual actions are assumed not to influence others significantly; under oligopoly, however, this is not the case. Game theory has been increasingly applied to economics in recent years, particularly in the theory of industrial organizations.<sup>2</sup>*

The children's game of Rock-Paper-Scissors is a great example of a simple game that benefits from the science and mathematics behind game theory.

*THE WORLD RPS SOCIETY - OFFICIAL ABRIDGED RULES OF  
PLAY<sup>3</sup>*

*1.0 The Game is played where the players substitute the three elements of Rock, Paper and Scissors with representative hand signals.*

*2.0 These hand signals are delivered simultaneously by the players*

*3.0 The Outcome of play is determined by the following*

*Rock wins against Scissors,*

*Scissors wins against Paper*

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<sup>2</sup> A Dictionary of Finance and Banking, 1997

<sup>3</sup> [http://www.worldrps.com/index.php?option=com\\_content&task=view&id=14&Itemid=31](http://www.worldrps.com/index.php?option=com_content&task=view&id=14&Itemid=31)

*Paper wins against Rock*

A simple example of using game theory in a volunteer situation can be quite helpful: Let us suppose that it is snowing outside and there are 10" of new snow, blocking the driveway of our apartment building. The road is clear and wet, but the cars and apartment building driveway are overflowing with the white stuff. All fifteen residents in the building need to get to work, and all of them drive their own cars. The driveway needs to be shoveled for anyone to get out, and the shoveling will take at least an hour, since the street plow has backed it up. Should you get out of bed an hour early so you can shovel the driveway and be to work on time? If you don't, and no one else shovels it, then you'll be late, and likely lose your bonus. But, if you roll over and go back to sleep, one of your neighbors will likely be in a hurry to get to work and will do the shoveling. But, of course, they face the same dilemma. What choice should you make? This is the essence of game theory. And the same applies to picking up litter in the neighborhood, volunteering at the soup kitchen, helping the elderly, and all of the other citizenship behaviors that America needs from its citizens if we are to return to greatness as a country.

**Optimism**

“Team Obama” was first on the Fast Company Magazine “50 Most Innovative” list<sup>4</sup>. Over 130 million people voted in the 2008 Presidential election. According to Michael McDonald of George Mason University, there was a 62.5 percent turnout rate.<sup>5</sup>

*"Young voters have dispelled the notion of an apathetic generation and proved the pundits, reporters and political parties wrong by voting in record numbers today," said Heather Smith, the executive director of Rock the Vote. "The Millennial generation is making their mark on politics and shaping our future."*

According to a January 2009 Gallup organization poll, 72% of Americans feel that the country will be better off in four years

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<sup>4</sup> <http://www.fastcompany.com/list/team-obama>

<sup>5</sup> <http://www.iht.com/articles/ap/2008/11/05/america/NA-US-Elections-Voter-Turnout.php>



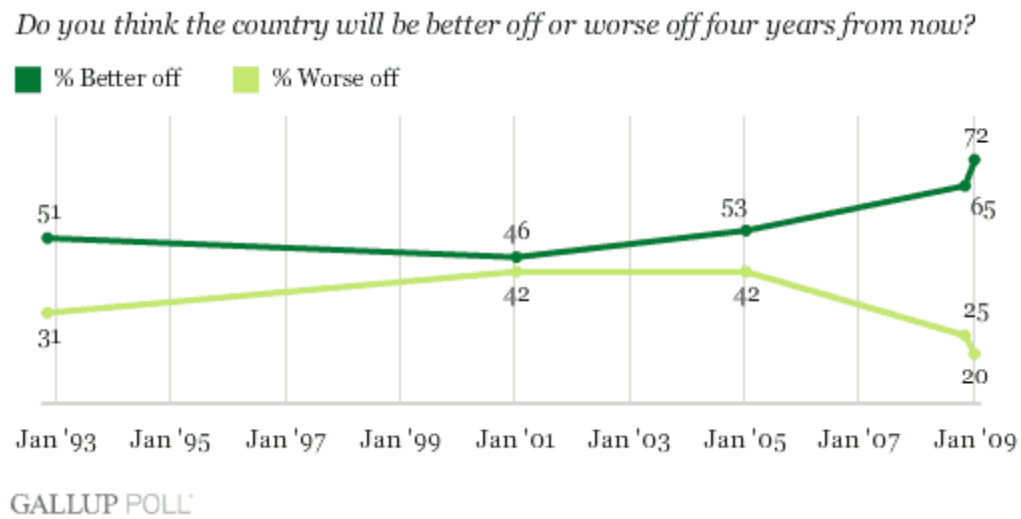


Figure 2 - Gallup Poll on Optimism

## Volunteerism

At the time of this writing, early 2009, the United States has a new president who is encouraging citizens to volunteer at unprecedented levels.

*"Your own story and the American story are not separate -- they are shared. And they will both be enriched if we stand up together, and answer a new call to service to meet the challenges of our new century ... I won't just ask for your vote as a candidate; I will ask for your service and your active citizenship when I am president of the United States. This will not be a call issued in one speech or program; this will be a cause of my presidency."*<sup>6</sup>

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<sup>6</sup> Barack Obama, Speech in Mt. Vernon, IA December 5, 2007

And in the Inaugural Address, President Obama talked about the infrastructure investments. These investments would modernize the country and bring it into the 21<sup>st</sup> century.

*“We will build the roads and bridges, the electric grids and digital lines that feed our commerce and bind us together. We'll restore science to its rightful place, and wield technology's wonders to raise health care's quality and lower its cost. We will harness the sun and the winds and the soil to fuel our cars and run our factories. And we will transform our schools and colleges and universities to meet the demands of a new age.”*<sup>7</sup>

The web site USA Service offers a location where people can sign up to volunteer.

*President Obama believes that we, as Americans, have a responsibility to help our communities and fellow citizens. In summoning a new spirit of service, he is calling on us to make an enduring commitment to our neighborhoods. Sign up today and let's renew America together.*<sup>8</sup>

For more, see [www.usaservice.org](http://www.usaservice.org)

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<sup>7</sup> Barack Obama – Presidential Inaugural Address -

[http://www.whitehouse.gov/the\\_press\\_office/President\\_Barack\\_Obamas\\_Inaugural\\_Address/](http://www.whitehouse.gov/the_press_office/President_Barack_Obamas_Inaugural_Address/)

<sup>8</sup> <http://www.usaservice.org/>

## Proposal

From Aristotle and B.F. Skinner to Abraham Maslow, sales contests, and the Xbox 360, centuries of experimentation and research have only scratched the surface on how to motivate and engage people. Humans are driven by four motivational needs<sup>9</sup>

- To acquire (obtain scarce goods, including intangibles such as social status)
- To bond (form connections with individuals and groups)
- To comprehend (satisfy our curiosity and master the world around us)
- To defend (protect against external threats and promote justice)

After reviewing the success of productivity games in changing employee behavior, it's logical to ask, "how broadly can gaming elements be applied?" This chapter introduces a proposal for a national achievement system. The "Patriot Points" system is modeled after the leader boards and Xbox 360 achievement system, but with a goal of driving *national* citizenship behavior.

This paper proposes that an infrastructure investment be made in a national achievement or points system, known here as "Patriot Points". The current White House site lists a number of items on the Service agenda that would be greatly facilitated by the introduction of a national point system.<sup>10</sup>

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<sup>9</sup> Employee Motivation, Nohria, Groysberg, Lee Harvard Business Review; Jul-Aug2008,

<sup>10</sup> <http://www.whitehouse.gov/agenda/service/>

**Enable All Americans to Serve to Meet the Nation's Challenges**

- Expand Corporation for National and Community Service
- Engage Retiring Americans in Service on a Large Scale
- Expand the Peace Corps
- Show the World the Best Face of America

**Integrate Service into Learning**

- Expand Service-Learning in Our Nation's Schools
- Expand Youth Programs
- Require 100 Hours of Service in College
- Promote College Serve-Study

**Invest in the Nonprofit Sector**

- Create a Social Investment Fund Network
- Social Entrepreneurship Agency for Nonprofits

Each of these areas could benefit by an incentive system that reconciles patriotism and national service, with conscription or financial reward.

**Achievement System Benefits**

An achievement system, or “player points” can provide a variety of benefits to a game or game ecosystem. The Xbox 360 achievements, for example, help build a community around the system. These community members come from everywhere. The achievements encourage players to compete, compare scores, demonstrate pride, and talk smack to motivate others. The achievements encourage games to played many times, in different ways to unlock the achievement points – in other words, the system drives people to change the way they do things, and provides a way to recognize those skills.

**Building a Community**

A national points or achievement system will help building communities of people. Patriot points will provide a common language and taxonomy across all types of citizenship behavior. For example, the goal to “Engage Retiring Americans in

Service on a Large Scale” could be greatly aided by a common taxonomy that acknowledges, showcases, and identifies effort and enables retiring Americans to engage in new and inspired ways.

### **Connecting Diverse People**

A well designed achievement system will reward effort. People come in many shapes, sizes, and colors – and by focusing on the similarities in a community makes it easier to see past the differences. For example, public transportation advocates can earn points for riding a bus to work and gather in targeted forums to share best practices. Reputation and credibility can be easily illustrated through a *player’s* level and scoring. Commuters who “walk the walk”, so to speak ☺ - can talk the talk and be viewed as credible.

As University of Wisconsin-Madison education professor Constance Steinkuehler comments on players in World of Warcraft:

*Players "hang out and engage with one another in informal social ways," she said. "Most people go for the game and stay for the people." Interacting with people from all over and of all backgrounds exposes players to far more diversity than they get from their immediate social circle of friends and family, she said. "I grew up in a small town in Missouri," Steinkuehler said. "Kids today are growing up in thoroughly*

*networked global spaces." Learning how to navigate that diversity is "in the big scheme of life" about citizenship, she said.<sup>11</sup>*

### Competition and Pride

Leader boards and other gaming elements can help foster community pride and healthy competition. In addition, the threat of public embarrassment is also powerful motivator. In the example below, point scores are tabulated for commuting for the month of Feb by commuter home residence.

Rank	City	Score
1	Eastsound	1143
2	Redmond	1022
3	Bellevue	992
4	Richmond	977
5	Duvall	816
6	Spokane	801
7	Ocean Shores	788
8	Lynnwood	776
9	Snoqualmie	720
10	North Bend	709

*Figure 3 - Sample Commuting Points - Feb 2009*

Patriot points would help join existing commute initiatives that are typically initiated by cities or corporations. See <https://www.gortrip.com/home/home.aspx> as

<sup>11</sup> Online games like World of Warcraft can create better citizens

<http://www.madison.com/tct/news/stories/437876>

an example. As individual scores are aggregated into affinity group, a variety of competitive leader boards can help motivate players and groups of players.

Rank	Organization	Score
1	Microsoft	1052
2	Boeing	940
3	Amazon	913
4	Seattle City Light	899
5	Safeco	751
6	Nintendo	737
7	Wells Fargo	725
8	Paccar	714
9	Issaquah QFC Market	662
10	Sea-Tac Airport	652

*Figure 4 - Sample Commuting by Organization*

Leader boards can be created for individuals, for neighborhoods, Toyota Prius owners, etc. Just as with Productivity Games, the goal is to attract players, not find the winners, so the more ways the system can foster competition, the better.

In addition, beyond commuter savings, points for service activities encouraged by the White House, such as “Prepare a care package for a soldier, read to a child or fix up a local basketball court”<sup>12</sup> or conservation or citizenship behaviors. Energy savings, helping the elderly or homeless, tutoring. Existing organizations can

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<sup>12</sup> <http://thehill.com/leading-the-news/obama-tapes-nba-message-2009-02-14.html>

help sponsor and reward these activities with points. (See “How do Patriot points work” below for information)

### **Sharing Best Practices**

A competition among homeowners to lower energy consumption would identify the families that are most successful. These people could then identify the “winning” practices and share them with the community and across the country.

### **Recognizing Skills**

A leader board is a way to show a ranking. Assuming that the nuances of awarding points can be rationalized, a list of leaders will help identify those with the greatest skills and those who’ve put forth the greatest effort. Again, just as with productivity games, care must be taken in assuring that awards are fair and justified. The glory of being on the leader board and it’s recognition of the skills of the players will motivate many. If the leader boards come in many flavors, then people can monitor the lists that motivate them, and ignore others. An achievement system will reward and recognize people who have the desire and skills to put forth an effort to serve.

### **Financial Rewards**

The Patriot Points system is not directly tied to money. Attaching money (ie: a tax credit) to points will induce cheating or influence the value of points relative to the value structure of money. Perhaps the system could allow 501(c)(3) organizations and cities/states the ability to exchange points for federal funds, but that is unhealthy (for the competition and the game itself) to allow individual players to do. If points



have a direct financial value, players will start to value and treat them differently.

There has been evidence of this in the productivity games we've run.

Perhaps points could be accepted by colleges/universities for continuing education, but if there's too much money involved, player motivation can change for the worse. Allowing a player to earn points to get an advanced college degree by volunteering at a soup kitchen is a good thing. The school can use the points to get federal money to offset the discount the player can receive. It's essentially the same as federal money going to soup kitchens, but it's no longer an upfront expense – it's paid after the work has been done. There is risk in attaching financial value to a point system, and that must be understood ahead of time and monitored carefully.

### **Achievement Levels**

A “player” can reach a new level by donating his/her points – so for example, if I'm a “bronze” level with 1000 points, then I need to donate them somewhere to advance my status to silver – I donate them to my local homeless shelter, my account is reset to zero, but I'm now at the silver level. The homeless shelter adds my points to their pool and can use them to give away to others to attract volunteers.

### **How do Patriot Points work?**

Every citizen who has a social security number gets an annual allotment of Patriot Points. These points may be “ordered” online and received in a variety of different forms:

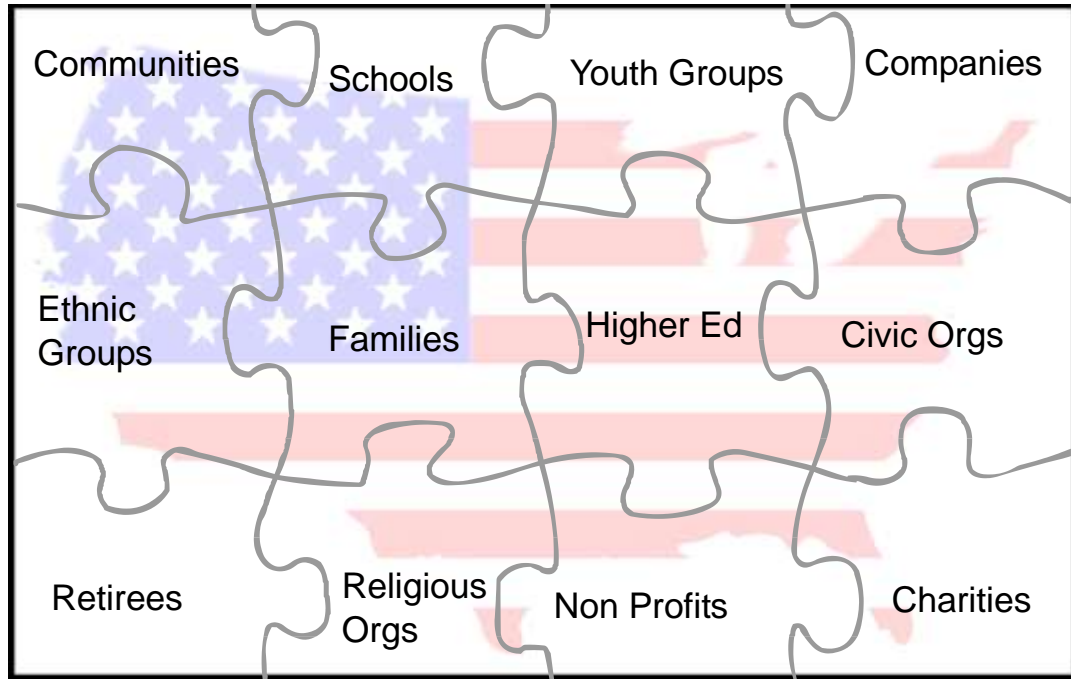
- Gift cards
- Text messages
- Email

This allows the recipient to distribute the points to others in different ways. Elderly folks who need help shoveling snow can “pay” a willing neighbor using gift cards. These cards will have a point value, and an online verification number that the recipient must enter to receive the points credited to their account.



*Figure 5 - Patriot Points Card*

In addition to individuals, communities, non-profit organizations, and companies can receive or purchase Patriot Points to distribute.



*Figure 6 - Patriot Point users*

While individuals can receive an annual allocation of points, or earn them through service activities, organizations who want to pay out points can receive them in a couple different ways. They may receive an allocation from the government, they may receive individual or corporate donations (or points or funds to buy points), or they may purchase them directly.

When players advance through a certain level, they can donate their points to the organization, charity, or group of their choice, and in return, advance to the next level.

### **Accessing Account Online**

Members can login to [www.patriotpoints.com](http://www.patriotpoints.com) or an equivalent, and check the balance of their account, view their service event history, register or find new events, or log points from a Patriot Points card.



*Figure 7 - Patriot Points Web Site*

## **Traffic, Transportation, Automotive, and Energy Savings**

Honda Insight – the new Honda uses game elements, progress meters, trophies, and artificial intelligence to help drivers save fuel. Simple user interface elements, such as the blue green arch in the speedometer indicate fuel efficiency.

According to Popular Science<sup>13</sup>, “The arc's color varies from blue (wasteful) to blue-green (somewhat efficient) to green (efficient), depending on how a driver accelerates or decelerates. A separate screen near the tachometer displays twin bar graphs that show drivers how their starting and stopping habits affect fuel consumption.”



*Figure 8 - Honda Speedometer with blue arc fuel efficiency gauge*

### **Games to Cut Energy Consumption**

There are several examples of using competition to save energy. Puget Sound Energy has a pilot in Seattle that has neighbors competing to save energy.

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<sup>13</sup> <http://www.popsci.com/cars/article/2009-02/eco-drivers-ed-2010-honda-insight>



*Figure 9 - Utility Bill Neighborhood Comparison<sup>14</sup>*

In Massachusetts, the BrainShift Foundation started the “Energy Smackdown” – <http://www.energysmackdown.com/> - in which towns compete to collect “nuggets”

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<sup>14</sup> [http://www.nytimes.com/2009/01/31/science/earth/31compete.html?\\_r=1](http://www.nytimes.com/2009/01/31/science/earth/31compete.html?_r=1)

– actions that reduce energy usage.

	<b>1. Topsy-Turvy</b>			
	<b>Level Requirements</b>	<b>Required</b>	<b>Recurring</b>	<b>Points Available</b>
	Complete Home Audit	Y	Y	1,000
	Create Energy Plan	Y	N	500
	Invite 1 Companion Household	Y	Y	1,500/companion
	Locate Energy Hogs	C	N	500
	Log Auto Trips	C	N	250
	Recycle Town Items	C	Y	250
	Document Local Food	C	N	250
	Track Water Use	C	Y	1,000
	<b>2. El Oso's Universe</b>			
	<b>Level Requirements</b>	<b>Required</b>	<b>Recurring</b>	<b>Points Available</b>
	20% Reduction from Baseline	Y	N	5,000
	Invite 2 Companions	Y	Y	1,500/companion
	Install CFLs	C	N	variable
	Alternate Transportation	C	Y	variable
	Lo-Flow Shower Heads/Aerators	C	N	250/fixture
	<b>3. Blind Ally</b>			
	<b>Level Requirements</b>	<b>Required</b>	<b>Recurring</b>	<b>Points Available</b>
	40% Reduction from Baseline	Y	N	10,000
	Invite 2 Companions	Y	Y	1,500/companion
	Air-Seal & Insulate Home	C	N	7,000
	Purchase 50% Green Electricity	C	N	variable
	Line Dry Laundry	C	Y	3.5/weekly load
	Replace Old Appliances w/ Energy Star	C	N	3,000
	5-Minute Showers	C	Y	2-4 pts/shower

Figure 10 - Energy Smackdown Point Levels

Patriot Points offer the opportunity to scale up these successful programs nationwide and expand the savings. At a recent conference on Behavior, Energy, and Climate Change, Stanford University professor Byron Reeves proposed using smart meters to feed a massively multiplayer online game, similar to World of Warcraft or

Second Life, and make a game out of reducing home energy consumption.<sup>15</sup> There is a video [here](#).

## Unanswered Questions

The Patriot point economy will have to find a market balance for value, and trained economists should help here. Is a 50 point reward sufficient for an hour's volunteer work? Should it be 500 points?

How do individuals transfer points to others? Or is that even possible? Should an individual be allowed to "spend" points for goods or services? How does that impact the intrinsic value? Should an individual be allowed to volunteer at a child care facility for a day and exchange those points for a 10% discount on groceries? A free meal at a neighborhood restaurant?

## References

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<sup>15</sup> <http://www.ecogeek.org/content/view/2479/>



Customer Loyalty Programs - <http://www.cioinsight.com/c/a/Special-Reports/Trends-Loyalty-Programs/>

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