

Prediction Markets for Concept Testing

An Innovative Way to Improve the Speed and Accuracy of Concept Screening and Testing



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Synopsis

Quantifying the potential success of products, packages, and creative materials has always been challenging – particularly in the accelerated pace of today's markets. Tried and true methods (such as monadic concept test surveys) produce valid results, but these approaches can be cumbersome, costly and time consuming.

Prediction markets have been hailed by leading academics like Wharton's **Justin Wolfers**, as well as popular, best-selling commentators like *The Wisdom of Crowds*' author **James Surowiecki**, as the way to achieve accurate insights into the future of your concept – at a fraction of the time of other methods.

This paper shows you how to harness the proven power of prediction markets for online concept screening and testing.

IN THIS PAPER, YOU WILL LEARN:

- How prediction markets work
- Why prediction markets accurately screen concepts more quickly than traditional methods
- Why prediction markets are more cost-effective than traditional methods
- When to utilize a prediction market for your research



Introduction

WHAT IF THERE WERE A BETTER WAY TO TEST YOUR IDEAS?

More than \$15 billion is spent on market research annually¹— much of it on new product, packaging, and advertising concept screening and testing. Accurate concept tests make market researchers seem like time travelers, pulling the future forward and revealing which new products, creative designs, and product development ideas will pay off.

But as you know, predictive accuracy comes with an investment – often a substantial one.

Fortunately, we’re at a turning point regarding best practices in concept screening and testing. Both academic and empirical evidence mount in favor of harnessing what best-selling author **James Surowiecki** has named “the wisdom of crowds” through the intelligent use of prediction markets.

This paper is your guide to the latest research, evidence, and methods regarding more effective and efficient concept screens and tests as:

- We reveal how and why prediction markets are becoming a preferred research method for accurately testing ideas.
- We share why forward-thinking corporations – including **Google**, **Hewlett Packard**, and **Motorola** – have relied on prediction markets for strategic planning and decision making for years.
- We then discuss Intengo prediction markets and how they free up companies to engage in faster, more effective concept screening and testing.

Of course, new methods in market research, just as in all scientific endeavors, have to be rigorously tested and validated before they become mainstream. Once you read this paper, we think you’ll agree that the balance is tipping in favor of prediction markets, and you should consider a prediction market the next time you want to test an idea or concept.

Let’s take a look at why.



Prediction

THE AGGREGATE WISDOM OF A CROWD

When celebrated *New Yorker* financial columnist **James Surowiecki** wrote the book, *The Wisdom of Crowds*, he shattered the conventional wisdom that a small group of experts is smarter than the masses.

Surowiecki pulled from a wide variety of sources to deliver the idea that the aggregate wisdom of a crowd is better than a poll of a trusted few or even the deliberation of an expert elite. In fact, his research – which is corroborated by real life examples like the NYSE, as well as academic literature – reveals that if the aggregate is properly assembled, the outcomes are actually more accurate than any other research method.²

James Surowiecki's research reveals that if the aggregate – or “crowd” – is properly assembled, the outcomes are more accurate than any other research method

Specifically, group consensus exhibits uncannily accurate predictions when three elements are present:

- Reasonable diversity – so that participants are bringing different pieces of information to the table
- Independence of group members – so that each participant focuses on their own information rather than the opinions of others
- Decentralization – so that no one at the “top” is dictating the crowd's answer

EXAMPLES OF CROWD WISDOM

Surowiecki gives example after example of how diverse groups of regular people routinely exhibit precision and accuracy in their collective wisdom.

For example, in the story that opens his book, Surowiecki details how 800 members of a crowd at a local fair in Scotland were asked to place wagers on the weight of a giant ox after it was prepared for market. The best guesses would get a prize. The crowd included butchers and farmers – “experts” – as well as people who had no special knowledge about livestock.

After the fair ended, a scientist ran statistical tests to prove that the individual experts were smarter than the crowd. Instead, he discovered that the crowd had guessed the weight of the ox within one pound.

In another example from *The Wisdom of Crowds*, Surowiecki describes the case of the naval submarine, Scorpion, which disappeared in 1968.

Salvage experts defined a search and rescue zone 20 miles wide – hopelessly large for a successful recover. Non-experts, meanwhile, competed over a bottle of Chivas Regal to guess the sunken ship's location. The aggregated estimate of the group of Scotch aficionados was 227 feet from where the Scorpion was actually found.



PREDICTION MARKETS PROVIDE THE PLATFORM FOR CROWDS TO EXHIBIT THEIR WISDOM

So, how do you provide “a crowd” with the structured ability to deliver its insight? One answer lies in the prediction market – a constructed opportunity for crowds to quickly exhibit their collective wisdom. More specifically:

“Prediction markets are speculative markets created for the purpose of making predictions. Assets are created whose final cash value is tied to a particular event or parameter. The current market prices can then be interpreted as predictions of the probability of the event or the expected value of the parameter.”³

A well-known example of a prediction market is the **New York Stock Exchange (NYSE)**, where investors trade equity shares in public corporations. The share price of a corporation can be interpreted as a predicted value of the company’s future earnings – an extremely accurate prediction, in fact.

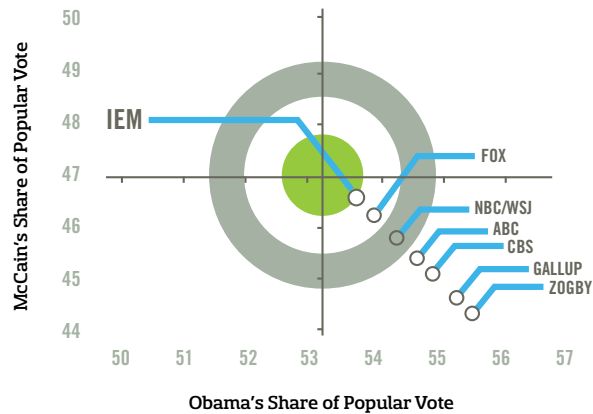
Prediction markets have proven themselves over and over for many years. For example, one of the most famous prediction markets, the **Iowa Electronic Markets**, is used to predict election outcomes. It’s more accurate than Gallup polls in predicting election outcomes 75% of the time.

The **Hollywood Stock Exchange (HSX)** is a lesser-known example. This prediction market allows anyone to wager “play money” on prospective winners of the Academy Awards.

In 2000, a group of Wall Street Journal reporters went head-to-head against the predictions of the HSX. Before the awards were announced, the reporters interviewed 356 Academy judges to learn their votes. With the information they’d been given, the WSJ accurately predicted five out of six awards, while the HSX predictions were 100% accurate (six out of six), and they didn’t cost a dime.

The uncanny, but well documented, ability of prediction markets to provide accurate insight has also caught the attention of the defense industry. According to the 2007 paper, “The Securities Trading of Concepts,” which details the concept testing research from MIT that was sponsored by the **Office of Naval Research (DARPA)**:

Our trading experiments show that the market prices of securities designed to represent product attributes and features are remarkably efficient and accurate measures of preferences, even with relatively few traders in the market . . . [and] may offer a particularly efficient screen mechanism for firms developing new products and services, and deciding where to invest additional product development dollars.⁴



The above graph represents the final poll results/predictions from various organizations on election eve, 2008. As you can see, the IEM prediction was closer to the actual popular vote distribution than many of the most widely cited sources.



GOOGLE USES PREDICTION MARKETS FOR STRATEGIC DIRECTION

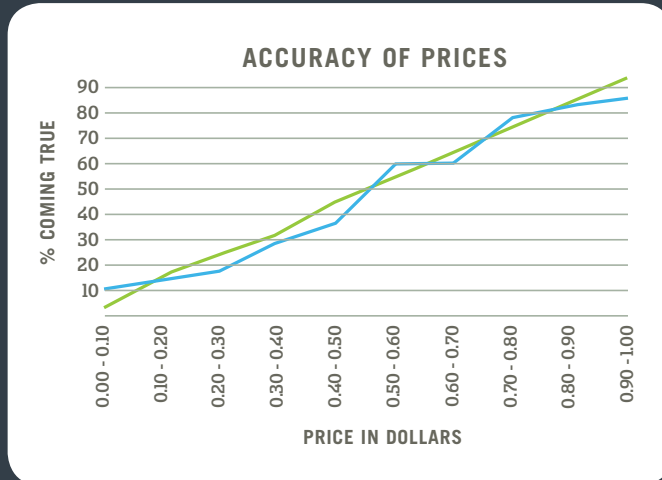
Bo Cowgill, a former Google project manager, led an internal prediction market system for Google, enabling employees to provide strategic direction on a variety of concepts, including new products. The markets proved remarkably accurate on events ranging from new product penetration to the viability of new office locations.

"The prediction market is a conversation among employees," Cowgill explains.

"This is a conversation that is happening without politics, and no one has any incentive to kiss up, fudge the numbers, or sandbag."⁴

Cowgill's appreciation for the non-bias of participants is something other market researchers can also appreciate. Prediction markets remove all incentives to 'fudge' or 'play with' opinions. Instead, they only reward accuracy.

To learn more about Google's use of prediction markets, check out Bo Cowgill's research paper, *Using Prediction Markets to Track Information Flows: Evidence from Google*: <http://www.bocowgill.com/GooglePredictionMarketPaper.pdf>



THE ANATOMY OF HIGH PERFORMANCE PREDICTION MARKETS

Across the many empirical and academic approaches to prediction markets, it has been found that **three key elements** must be present to produce accurate results:

1. Concepts/ideas in the prediction market must be clear and understandable
2. There must be an incentive to motivate traders
3. Information discovery and sharing must take place⁴

Researchers are particularly interested in the prediction market approach because it ensures that **personal accountability** backs each answer – in much the same way that a bet or a stock trade is intentional and personal. By incenting participants to make an accurate prediction, each participant has a personal stake in making the right prediction.

Furthermore, the market itself provides a decentralized framework of values through which decisions are weighed. Traders are utilizing their own knowledge, and tapping into a variety of information sources and experiences.

And finally, each participant self-selects his or her level of participation and the weight of his or her valuations. These attributes make prediction markets much different than polls or surveys.

THREE ESSENTIAL ELEMENTS FOR ACCURATE PREDICTION MARKETS:

The question or predicted outcome must be clear

Incentive

Open sharing of information



How Prediction Markets Improve Concept Screening and Testing

SPEED

It can take up to four to six weeks to design, field, and analyze a traditional concept test. The turn-around time for screening and testing concepts through Intengo prediction markets is much shorter, being completed in as little as one week, from project kick-off to presentation of top-line results.

Intengo prediction market projects can be completed more quickly due to the efficiencies of our approach, from ease of setup through our patented online platform, to participant recruitment, to data analysis.

ADVANTAGES OF PREDICTION MARKETS FOR CONCEPT SCREENING AND TESTING

Speed | Accuracy | Clarity in data
High engagement | Easy recruitment
No participant misrepresentation
Qualitative input | Cost savings

MORE ACCURATE IDENTIFICATION OF “WINNER” AND “LOSER” CONCEPTS

In validation studies, prediction markets have proven more accurate at predicting the success of new concepts than traditional, monadic concept tests. Prediction markets also tend to produce more polarized ratings of the concepts screened. They rarely produce “flat lined” scores, making it easier to differentiate between good and bad concepts, and provide a rank order of the concepts to differentiate between good and great concepts.

LOW RISK OF OVERSTATED PURCHASE INTENT

By asking traders to make predictions based on “what others would do” versus “what you would do,” prediction markets help researchers avoid overstated purchase intent and enhanced optimism. Since prediction market traders can only gain rewards by investing in winning ideas, their predictions tend to be much more reflective of the target market’s actual future behavior.

BETTER PARTICIPANT ENGAGEMENT

One of the chief concerns in the market research industry today is participant engagement. Because surveys are often long and uninteresting, participants have the tendency to rush through the surveys just to collect their incentive.

In contrast, Intengo participants find participating in the prediction market to be an entertaining venture, much like a game, with both intrinsic and extrinsic rewards. Because participants stand to earn an additional incentive for accurate predictions, they have ample motivation to play, and remain engaged in the process.

EASY PARTICIPANT RECRUITMENT

Intengo prediction market participants are recruited just like survey respondents. Intengo uses top survey panel providers and well-established online communities to recruit a statistically valid sample of “general population” consumers to participate in each prediction market.



Though specific demographic subgroups may also be targeted, this usually isn't necessary. In addition, a client's own customers or employees may be used as participants.

QUALITATIVE CONCEPT FEEDBACK

Intengo prediction market participants have the opportunity to explain why they bought or sold shares in certain concepts, allowing companies to collect qualitative feedback that answers the elusive question: "Why?" While this feedback can be used to explain the behavior of the prediction market, it can also be used to create more innovative and successful future concepts.

Because respondents move through a staged trading process, we also are able to ask for potential improvements to each concept that can be rated by subsequent traders. As a result, companies gain valuable input and new ideas for concept improvement and refinement – before finalization and marketplace launch.

COST SAVINGS

Costs are lower with Intengo than traditional concept tests because a "general population" sample is used for most Intengo prediction markets. Given that a traditional concept test typically targets participants within a specific market or niche, the use of a general population often comes as a shock to market researchers.

Participant targeting isn't necessary because Intengo follows best practices for prediction market accuracy. Participants have an incentive to "self-select" only for markets they think they can win. Nobody likes to lose money, real or virtual. Respondents therefore only participate in exercises dealing with topics and target market segments they are familiar with, even though they may not be in that segment.

In addition, Intengo prediction markets don't ask participants, "Would you buy this concept?" Instead, the markets ask: "Would others buy this concept?" The Intengo prediction markets harness the wisdom of crowds to allow non-experts to answer expert questions often more accurately than the experts themselves.

INTENGO'S PROPRIETARY APPROACH INCORPORATES THESE PRINCIPLES

With Intengo's proprietary prediction markets, participants are invited to engage in an online stock market. They buy shares in virtual "stocks" that represent new ideas – products, marketing concepts (from logos, to ads, to packaging), branding statements, and more.

- Prior to making their predictions, participants, known as "traders," receive ample details about each "stock," so they can make the most informed trading decisions possible.
- Traders buy shares in concepts based on how likely they are to answer a specific question (e.g. "Which of these products will have the highest sales next month?")
- Traders are rewarded according to their prediction prowess. The traders who make the best predictions receive real cash prizes.



When to Use Prediction Markets Versus More Traditional Methods

Clearly, prediction markets have speed, accuracy, and cost advantages compared to more traditional market research methodologies. However, because they are a relatively new addition to the market researcher's toolkit, there is a lot of confusion around when it's best to use them.

Prediction markets should be used when:

- An accurate rank ordering of concepts is necessary
- There are a large number of concepts that must be tested cost-effectively, or
- Clear differentiation is necessary between "good" and "great" concepts

Prediction markets are especially effective at evaluating new product concepts, product line extensions, and a wide variety of marketing/advertising elements.

In general, prediction markets are most cost-effective and efficient when your project involves:

- Consumer research
- A large number of ideas to test
- Critical, tight deadlines for time-to-market
- The need for a clear go/no-go decision

Prediction markets should not be used as a stand-alone tool when you need to gather extensive diagnostic information about the concepts. Prediction markets collect qualitative feedback from participants to help understand why the winning concepts are winners and the losers are losers. However, they are not well suited for determining price elasticity or defining a specific combination of features for a particular product innovation.

To get the best of both worlds, researchers are combining prediction markets with more traditional research

COMPARISON OF TEST ATTRIBUTES

	PREDICTIONS MARKETS	TRADITIONAL CONCEPT TESTS	HYBRID APPROACH
<i>Accurate rank ordering of concepts</i>	●	●	●
<i>Differentiates clearly between good and great concepts</i>	●	●	●
<i>Large numbers of disparate concepts to test</i>	●	●	●
<i>Concepts contain visual, audio or interactive elements</i>	●	●	●
<i>Fast turnaround required</i>	●	●	●
<i>Collect general qualitative feedback</i>	●	●	●
<i>Ask specific follow up questions</i>	●	●	●
<i>Low budget</i>	●	●	●



methodologies, such as online concept tests or focus groups. For example, a prediction market could be used to quickly and inexpensively screen for the most promising concepts and ideas. Then, other methods could be used to determine the optimal feature/benefits, pricing, and distribution channels.

For the market researcher, there are some clear situations in which a prediction market or hybrid approach (prediction market + traditional research methodology) is much more preferable than a traditional approach.

As more and more companies harness the power of prediction markets, we will see new approaches to using them to gain accurate business information, and we look forward to sharing those uses.

WOULD YOUR BUSINESS BENEFIT FROM PREDICTION MARKETS?

While prediction markets are conceptually simple, they're surprisingly tedious to create, monitor, and manage on your own. That's why Intengo thoroughly investigated best practices in accurate prediction markets to create its proprietary, patented markets.

The Intengo prediction markets have been designed with market research concept screening and testing in mind. They can be used on demand – your concepts can literally be assessed and analyzed in as little as one week.

"When we began developing our prediction markets, we had three clear goals in mind: faster delivery of insights, lower investment per concept, and clear differentiation among ideas," shares Kyle Burnam, product developer for Intengo.

"For concept screening and testing, prediction markets clearly deliver on all three objectives. We delivering results in five to seven days and allow our clients to conduct more than twice the amount of research with their current budgets."

"Not only that, but we're delivering clearly differentiated results that have gone head-to-head with traditional methodologies and consistently produce results that provide the same strategic direction – but with added confidence."

To request a case study, a demonstration or simply a conversation, interested companies can contact Intengo at 855.844.3172 or AskUs@gointengo.com.



Summary:

Why Prediction Markets Are Highly Efficient Concept Screening and Testing Platforms

Prediction markets are efficient methods for concept screening and testing because:

- 1) They produce more accurate results. Our validation research indicates that prediction markets produce insights that are directionally consistent with targeted, in-depth research, but provide a higher degree of confidence.
- 2) They take less time due to efficiencies in respondent recruitment, demographic profiling, questionnaire design, and data analysis.
- 3) They cost less because participants are motivated by self-interest. They do not have to be controlled for demographic variables as precisely, and more concepts may be tested simultaneously.

Because of these efficiencies, you cut out major traditional market research steps when you rely on prediction markets – while enjoying improved validity and accuracy.

ACADEMIC STUDIES ON PREDICTION MARKETS

For anyone wanting a deeper introduction to prediction markets, we highly recommend James Surowiecki's book, *The Wisdom of Crowds*. If you'd like more academic fare, you can find a host of validation studies from academic institutions that provide more ammunition for using prediction markets in concept testing and other testing scenarios. (Please consult our table of references for details.)



References

- (1) The 2011 Honomichl Top 50 Report, citing revenue and spending statistics from 2010.
- (2) Surowiecki, James. Anchor Publishing, 2005. "Large groups of people are smarter than an elite few, no matter how brilliant – better at solving problems, fostering innovation, coming to wise decisions, even predicting the future."
- (3) "Prediction Markets." Wikipedia article as of December 30, 2008.
- (4) Cowgill, Bo, Justin Wolfers (Wharton), NEBR, CIPR, IZA and Eric Zitzewitz (Dartmouth). "Using Prediction Markets to Track Information to Track Information Flows: Evidence from Google." 2008.
- (5) Rhode and Strumpf, "Historical Prediction Markets: Wagering on Presidential Elections, UNC Chapel Hill, 2003. According to Paul Rhode and Koleman Strumpf, prediction markets almost never got it wrong forecasting the 19 presidential elections that took place from 1868 to 1940.
- (6) Masse, Chris. "CHRONOLOGY & HISTORY: Prediction Markets Timeline", Midas Oracle <http://www.midasoracle.org/predictions/timeline/> Robin Hanson was the first to set up and run a corporate prediction exchange – at Xanadu, Inc., in April 1989. Robin Hanson: "I started a market at Xanadu on cold fusion in April 1989. In May 1990, I started a market there on whether their product would be delivered before Deng died."
- (7) Servan-Schreiber et al, "Prediction Markets: Does Money Matter," Electronic Markets, September 2004. "Researchers have closely studied the predictions... in these markets and have found them to be remarkably accurate."
- (8) Snowberg, et al. "The Wisdom of Crowds, Information Efficiency in Prediction Markets," The Wharton School, February 2005. "The incentives provide by a prediction market must be large enough to motivate the collection and sharing of information through the market mechanism... The presence of a few informed traders can still lead to very accurate predictions. "